

**DIETARY PATTERNS OF CONSUMING WILD EDIBLE
PLANTS AMONG LEPCHAS OF KALIMPONG
DISTRICT OF WEST BENGAL**

A Dissertation Submitted

To

Sikkim University



In the Partial Fulfilment of the Requirement for the
Degree of Master of Philosophy

By

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JUNE-2021

DECLARATION

I, Samnim Lepcha, hereby declare that the dissertation entitled "Dietary Patterns of Consuming Wild Edible Plants among Lepchas of Kalimpong District of West Bengal" is an original work carried by me under the guidance of Dr. Maibam Samson Singh, Assistant Professor, Department of Anthropology, Sikkim University. To the best of my knowledge, this dissertation has not been submitted by me for any research degree in any other University/Institute. This is submitted to Sikkim University, for the award of the Degree of Masters of Philosophy in Anthropology.

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**Dietary Patterns of Consuming Wild Edible Plants among Lepchas of Kalimpong
District of West Bengal**

Submitted by Miss Samnim Lepcha under the supervision of Dr. Maibam Samson Singh, of the
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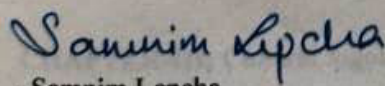
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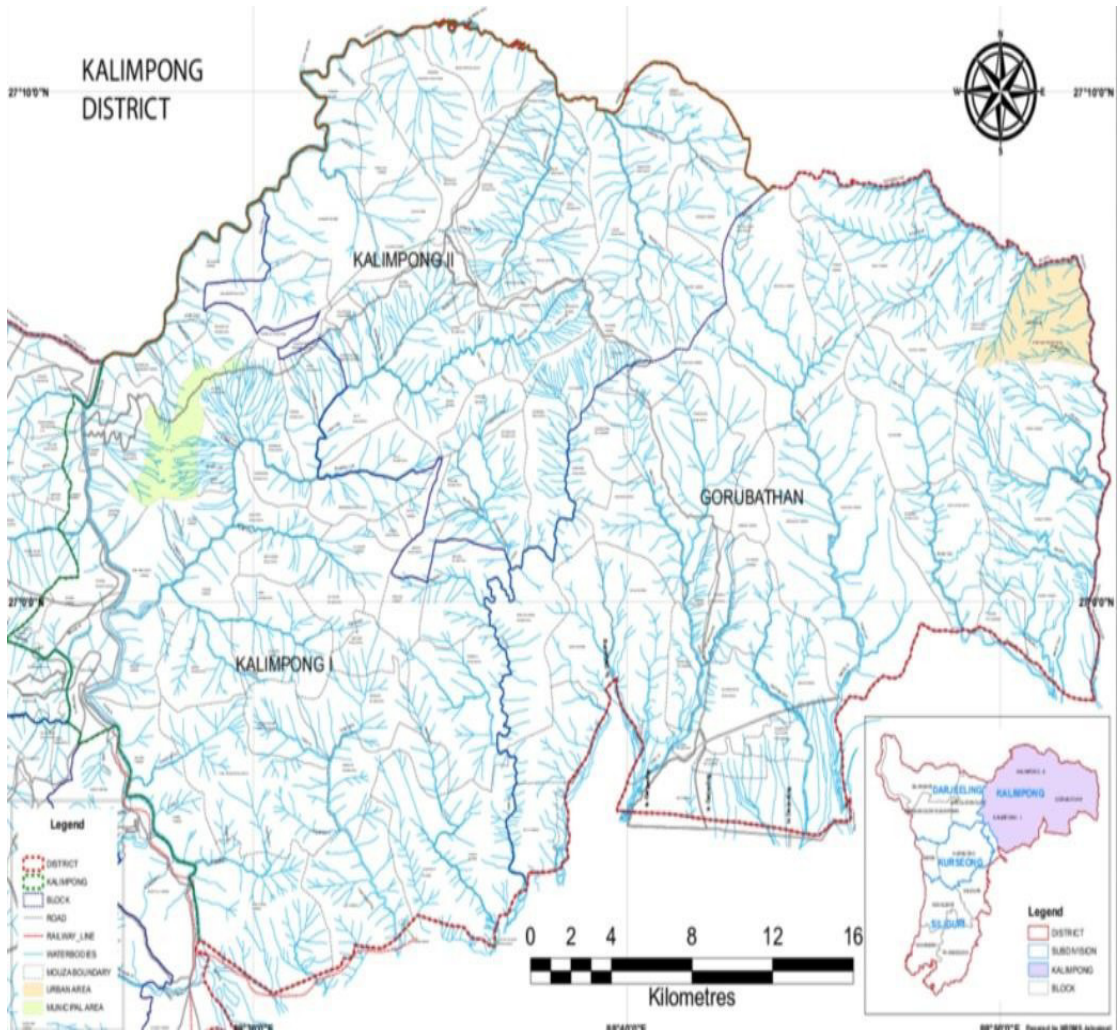

-Samnim Lepcha

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**TABLES OF WILD EDIBLE PLANTS KNOWN TO THE
LEPCHAS OF KALIMPONG**

Sl no.	Lepcha name	Nepali name	Botanical name
1.	<i>Gazyang</i>	<i>Bhangrea Sisnu</i>	<i>Girardinia diversifolia</i>
2.	<i>Gazyu</i>	<i>Patle Sisnu</i>	<i>Utrica diocia</i>
3.	<i>Kuntyol</i>	<i>Jungali paan</i>	<i>Piper Sarmentosum</i>
4.	<i>Ka-aung Bee</i>	<i>Boke saag</i>	<i>Cleroderumtrichotomun</i>
5	<i>Pandam</i>	<i>Bhimsing patea</i>	<i>Buddleja asiatica</i>
6.	<i>Poruk</i>	<i>Tamba</i>	<i>Bambusa vulgaris</i>
7.	<i>Tung-bap reep</i>	<i>Dhobini</i>	<i>Mussaenda roxburghii</i>
8.	<i>Sang-jee Kung</i>	<i>Khasrea Khanneu</i>	<i>Ficus semicordata</i>
9.	<i>Kirching</i>	<i>Gittha</i>	<i>Dioscorea bulbbifera</i>
10.	<i>Patang book</i>	<i>Soon Tiki</i>	-----
11.	<i>Kasor</i>	<i>Bhyagur</i>	<i>Dioscorea deltoida</i>
12.	<i>Ruklea</i>	---	<i>Dioscorea hispida</i>
13.	<i>Puzok Book</i>	<i>Baan Tarul</i>	<i>Dioscorea villosa</i>
14.	<i>Sangol Book</i>	<i>Pani Tarul</i>	<i>Dioscorea hamiltonii</i>
15.	<i>Su-um Bookb</i>	<i>Panglang</i>	<i>Dioscorea altata</i>
16.	<i>Singkree</i>	<i>Pindalu</i>	<i>Colocasia esalenta</i>
17.	<i>Puyong Poth</i>	<i>Damai Gera</i>	<i>Ardisia Crenata</i>
18.	<i>Ruu</i>	<i>Beth gera</i>	<i>Calamus erecrus</i>
19.	<i>Kasyo Poth</i>	<i>Katus</i>	<i>Castanopsis tribuloides</i>

20.	<i>Sumlyu poth</i>	<i>Kusum</i>	<i>Baccaurea ramiflora</i>
21.	<i>Tunghril Chyaor</i>	<i>Bhakimlo</i>	<i>Rhus semialata</i>
22.	<i>Karhyo</i>	<i>Indreni, Jangali iskus</i>	<i>Trichosanthes tricuspidata</i>
23.	<i>Tamee</i>	<i>Ruk Amala</i>	<i>Phullanthus Emblica</i>
24.	<i>Salot Poth</i>	<i>Lapsi</i>	<i>Choerospondias axillaris</i>
25.	<i>Tungdong</i>	<i>Nebara</i>	<i>Ficus Roxburghii</i>
26.	<i>Kuldung</i>	<i>Julgali Kera</i>	<i>Musa balbisiana</i> or <i>Musa barchycarpa</i>
27.	<i>Yell poth</i>	<i>Chewriee</i>	<i>Diploknema butyracea</i>
28.	<i>Narook poth</i>	<i>Kalo Gokul</i>	-----
29.	<i>Puyong Poth</i>	<i>Damai Gera</i>	<i>Ardisia Crenata</i>
30.	<i>Kullu Poth</i>	<i>Pangra</i>	<i>Entada rheedii</i>
31.	<i>Sakyu Poath</i>	<i>Bhadrasae</i>	<i>Elaeocarpus lanceafolius</i>
32.	<i>Tumbeur</i>	<i>Timbuur</i>	<i>Zanthoxylum acanthopodium</i>
33.	<i>Manthet Kungknock</i> (black colour), <i>Manthet Kungdum</i> (white colour)	<i>Kalo Jamuna, Seto Jamuna</i>	<i>Syzygium cumini</i>

34.	<i>Tuktyaol Tungkrok</i>	<i>Kaleey Ningro, Uttano</i>	
35.	<i>Pakpa</i>	<i>Gai Khurea</i>	----
36.	<i>Tungkrok krim</i>	<i>Titea Nungro</i>	----
37.	<i>Pook- Zeek</i>	<i>Bhalu Unew</i>	<i>Cyathea spinulosa</i>
38.	<i>Bushika</i>	<i>Seto Chua</i>	<i>Adhatoda vasica</i>
39.	<i>Chyungbur</i>	<i>Rato Chua, Asur,</i> <i>Titea</i>	<i>Phlogacanthus</i> <i>thyrsiformis</i>
40.	<i>Phagorip</i>	<i>Totola</i>	<i>Oroxylum indicum</i>
41.	<i>Raa</i>	<i>Koiralo</i>	<i>Bauhinia variegata</i>
42.	<i>Door Chyor</i>	<i>Amilchey</i>	-----
43.	<i>Kashyo Door</i>	<i>Katusea Chew</i>	-----
44.	<i>Be-Et Door</i>	<i>Goberea Chew</i>	-----
45.	<i>Tamsaak Door</i>	<i>Jhari Chew</i>	<i>Termitomyces</i> <i>microcarpus</i>
46.	<i>Teertong Door</i>	<i>Kalingay Chew</i>	<i>Agaricus silvaticus</i>
47.	<i>Nambong Kung</i>	<i>Khamaree</i>	<i>Gruelina arborea</i>
48.	<i>Sag- Greak- Dok</i> <i>Moan</i>	<i>Ghati Dukhne ko</i> <i>Dabai</i>	-----
49.	<i>Rom Chillim Poth</i>	<i>Amara</i>	<i>Spondias mombin</i>
50.	<i>Mik-Thum-Rik</i>	<i>Jarelo</i>	<i>Ampelocissus barbata</i>
51.	<i>Kutnim</i>	<i>Pipla</i>	<i>Piper Longum</i>
52.	<i>Ka-Shyom Poth</i>	<i>Aishilo</i>	<i>Rubus ellipticus</i>
53.	<i>Salim Poth</i>	<i>Harra</i>	<i>Terminalia chebula</i>

54.	<i>Songrip</i>	<i>Attar Ful</i>	<i>Menha australis</i>
55.	<i>Mahi Rong/ Moan Krim</i>	<i>Ultea Kara</i>	-----
56..	<i>Mukh Takvak</i>	<i>Gol patta</i>	<i>Centella asiatica</i>
57.	<i>Ayok Pandyam</i>	<i>Abijal</i>	<i>Drymaria cordata</i>
58.	<i>Pong Mukh</i>	<i>Dubo</i>	<i>Cynodon Dactylon</i>
59.	<i>Cham- chat Kung</i>	<i>Bajra Dandi</i>	-----
60.	<i>Faat Amalo</i>	<i>Pani Amala</i>	<i>Nephrolepis exaltata</i>
61.	<i>Eet-Peet Rik</i>	<i>Pade Lahara</i>	<i>Padederia foetida</i>
62.	<i>Parshyong Muk</i>	<i>Gandea Jhar</i>	<i>Houttuynia cordata</i>
63.	<i>Rong Poth</i>	<i>Fyakrea</i>	<i>Calamus erectus</i>
64..	<i>Phagorip</i>	<i>Totola</i>	<i>Oroxylum indicum</i>
65.	<i>Chyung burr</i>	<i>Asur/ Titea</i>	<i>Phloacanthus thysiformis</i>
66.	<i>Alyu Maon</i>	<i>Boksi Jhar</i>	-----
67.	<i>Salek</i>	<i>Fachyang</i>	-----
68.	<i>Ghising</i>	<i>Haledo</i>	<i>Cuucura caesia</i>
69.	<i>Sa- Ka- Pa- Am</i>	<i>Beth lawrie</i>	<i>Costus speciosus</i>
70.	<i>Sohor Poth</i>	<i>Jangali Bee/ Sanu Bee</i>	<i>Solanum indicum</i>
71.	<i>Roklop</i>	<i>Bojo</i>	<i>Acorus calamus</i>
72.	<i>Mukchyor</i>	<i>Amilo Jhar</i>	<i>Begonia tessaricarpa</i>
73.	<i>Ka-Aung Bee</i>	<i>Boke saag</i>	<i>Clerodendrum trichotomum</i>
74.	<i>Syok-Nok Poth</i>	<i>Kalikat</i>	-----

75.	<i>Sanjee Kung</i>	<i>Khanew</i>	<i>Ficus semicordata</i>
76.	<i>Kangsang Rik</i>	<i>Gurjo</i>	<i>Tinospara cordifolia</i>
77.	<i>Sonpak Maon</i>	-----	-----
78.	<i>Long Klep Lop</i>	<i>Pakhanbeth</i>	<i>Bergenia ciliate</i>
79.	<i>Kannu</i>	-----	-----
80.	<i>Chyongheng</i>	<i>Gurbo</i>	-----

CHAPTER-I
INTRODUCTION

Since the very beginning, humans have depended on nature for their survival and the relationship that the two shares is a symbiotic one. As long as human dependence on nature is concerned, the wild edible plants are one of the very essential and a large part of the nature that has sustained humans since time immemorial. The usage of wild edible plants by human goes back to thousands of years ago since the time they were hunters and gatherers which is still being practiced in the current days.

Well-known botanist and organizations have explained the wild edible plants as a plant category that grows without any human interventions in a wild ecosystem. John Kallas, a famous botanist writes that the “Wild edible plants (WEP) represent species that are collected from the surrounding ecosystems for human consumption but are not cultivated” (Kallas, 2010). The FAO (The Food and Agriculture Organization) defines them as “plants that grow spontaneously in self maintaining populations in natural or semi-natural ecosystems and can exist independently of direct human actions” (Thakur et al. 2017). The above definitions have indeed made the concept of the wild edible plants very clear and understandable by providing technical explanations of what a wild edible plant is. But to define the same from a cultural perspective is lot more complicated as the concept of “wild” differs in different culture, communities and places. Often times or mostly in case of indigenous communities, the term “wild edible” is not applicable because if we look from their perspective; these plants were never wild to them. They have been dependent and have been using these plants for many generations. Only after the term “wild” was introduced that today it is being practiced as an umbrella term.

Often times the line differentiating the “wild” and “domesticated” is very blur and overlapping. Karen Coates, an independent journalist with the background of Anthropology, who worked among the Kelabit tribe, writes in her article “The Myth

of the Virgin Rainforest” that while she had a picture of a virgin and untouched rainforests; the Kelabit tribe of Kelabit highlands in Malaysia introduced her to a very different image of the rainforest than what she was familiar with. Initially, the ancestors of the Kelabit tribe used to shift from one spot to another in the forest building wooden houses. After the houses had become old, they left their lands to be covered with the vegetation again. They erected menhirs as a mark for the younger generations to recognise their ancestral homes in the future. Today, they live in well-settled villages with kitchen gardens, poultries, buffaloes and practice agriculture. But even today, the Kelabits move freely in the forest, like their ancestors they have planted fruit trees in the jungle and even brought the wild edible plants and herbs in their kitchen gardens. To quote her, she writes, “It is not the wild, untamed place many people have long assumed it is. Rather, the rainforest we see today bears the mark of long-term human intervention” (Coates, 2016).

The primary purpose of the wild edible plants in indigenous communities was that it served as food to them. Since a very long time, they have been a very importance part of people’s food culture and a much sustained resource to our needs. But, the role these plants play in our life is much more than just as a part of food culture as the dependence on the wild edible plants have successfully been a saviour to mass population suffering from severe food crises around the world. As food security is a major concern the world is facing with the changing environment and population growth, the wild edible plants have managed to sustain many communities around the globe. The dependence of the rural communities on the wild edible plants is not only their substitute to cultivated crops but this practice has also helped in improving their livelihood in various ways (Khan et al. 2017). For an instance, Zimbabwe faced major socio-economic crises from 2000-2008 due to poverty. The majority of Zimbabwean

rural communities had switched their diet from maize, which was their staple food into the diet of foods collected from the forest. Collecting wild edible plants and hunting wild animals were their only alternative to survive the severity of food crises at that point of time (Duri, 2018).

An important fact about the wild edible plants is that they have proved to be a great source of nutrition. The amount of wild edible plants usually collected for consumption is less, but since these plants grow in a different environment than compared to the cultivated crops, they are very rich in nutrition. According to archaeological evidences, the early hunters and gatherers were healthier and suffered less from nutrition deprivation than the farmers. “Farming resulted in less varied and less balanced diet food than hunting and gathering does. Bushmen eat around seventy-five different types of wild plants, rather than relying on a few staple crops. Cereal grains provide reliable calories, but they do not contain the full range of essential nutrients” (Standage, 2009). By comparing the skeletal remains of both the hunter gatherers and the farmers, archeologists found that the early farmers suffered from dental problems and they were shorter in height due to lack of nutrition (*ibid*: 2009).

The forest has not just been a great source of food and nutrition to the people but a basic supply to all our needs. Various indigenous communities residing near the forest regions have been using the wild edible plants for various purposes. Medicine is one of the important forms that the wild edible plants are being taken by the indigenous communities. The communities hold their traditional knowledge about the medical properties of different wild edible plants and how they should be used is transmitted to the younger generations. Since in the remote areas the health facilities are not easily accessible, the people normally would prefer to visit the local healers and shaman to cure common illness. They would only see a medical doctor if they have

more serious health issues like cancers and tumors, considering that the medication of the local healers does not work. However, to quite an extent, the community healers and shamans have managed to cure people with the help of the wild edible plants in cases of common sickness.

The use of wild edible plants has always been deeply rooted in various indigenous cultures; not just because they are an important part of food culture but also because of the sacred values the plants hold for the community people. For instance, the Tohono O'odham living in Sonoran Desert have been harvesting the fruits of Saguaro (cactus tree) for hundreds of years. The harvest of the Saguaro plant is not just a harvest for food but this mark as a beginning of the year for the community people. The fruit is usually foraged and cooked and transformed into jams and sweet syrups for food and to use in ceremonies. The Saguaro tree was not only a part of their culture but the community members considered these trees as people. They believe the Saguaro Cactus to be their ancestors and they are like brothers and sisters to the community members. After fruits have been plucked from the tree using a long stick, then open pods of the fruits are left on the ground by the trees as a gesture to thank the Saguaro Cactus tree for the food (Arizona Public Media, 2020). Similarly, various communities have different beliefs associated to the wild edible plants which proves that these plants are more than just food to the people. But as the years have passed, the tradition of collecting the wild edible plants has seen phases of changes. This resulted in the mixture of traditional and modern techniques. In Navajo community of United States of America, collecting pine nuts was a traditional practice many years ago. The member of the community especially women would collect pine nuts in the forest in a group. The nuts are washed and roasted which made them edible. This practice is still alive but in a smaller scale among the elder generations. The people

now used modern technologies such as machines to grind the roasted pine nut, which was not a part of traditional methods to prepare the nuts for consumption. In such ways, the culture of using wild edible plants has seen blends of both traditional and modernity in its way to the present days (Wood Culture Tour, 2013).

As the tradition of using the wild edible plants is coming across changes, the challenges are inevitable as well. The wild edible plants have gradually made its way as a commercial food. These plants are not just being collected for the community use, but are being sold outside the communities in a large amount as well. This practice has put a great pressure on the wild edible plants growing in their habitats. Some wild edible plant also comes under vulnerable plant species; the collection of the entire wild edible plant species in a very large amount for commercial purposes may lead to the extinction of some important plant species. In the current days, the outer influences in a community are very common. Younger generations today are more inclined towards food cultures from outside their own community culture. For instance, fast food and processed food are very famous among the younger generation of today. In addition to that, due to busy schedules of the younger generations in current days, they are mostly depended on fast foods. In these circumstances, the only people who hold the traditional knowledge of wild edible plants are the community elders.

In today's world, often the practice of foraging wild edible plants for consumption is "poorly considered in many food systems" (Duri, 2018). For example, "modern foods" often were socially preferred by people and collecting wild edible plants from the forest was considered as a food of "ancient people" (*ibid*: 2018:47). "In 2008, Maud Muchuweti, a lecturer of Biochemistry at the University of Zimbabwe confirmed that edible species from the wilderness are often dismissed by many

Zimbabweans as “poor man’s food” (*ibid: 2018:48*). Although in reality, the contribution of wild edible plants to food, health, nutrition and culture should not be doubted as these plants have shaped the dietary patterns and ways of life of many communities since thousands of years ago. The wild edible plants are uncultivated and yet it holds as equal importance as their cultivated counterpart. “They provide immense dietary diversity to the people who use them” (Sylvester et al. 2016). They contain important nutrients, which are missing from usual diet of the people. The role that the wild edible plants play in our life is never-ending as we have always stayed connected to these plants in all stages of evolution as we moved further towards development.

Literature Review

Kallas (2010) in his book *Edible Wild Plants* mentions that the wild edible plants have secrets which needs to be revealed. These secrets can only be revealed when the “life story” (*ibid: 2010:25*) of the wild edible plants are understood by the humans. He goes on mentioning that the concept of edibility should be very clear when we study the wild edible plants. A single wild plant may have both edible and poisonous parts. Thus, it depends on the number of edible parts that a wild plant consists, which makes them edible or poisonous plants. “Edible wild plants are endowed with one or more parts that can be used for food if gathered at the appropriate stage of growth and properly prepared” (*ibid: 2010:35*). Wild edible plants add tremendous diversity to the diet in terms of flavors, nutritional value and health benefits (*ibid: 2010: 352*). He further mentions that the wild edible plants might also be more nutritious than the cultivated plants.

Linford (2010) in her book *A Concise Guide to Herbs* talks about the folklores, myths legends and cultural values that are attached to a wild plant. She mentions that the oral stories attached to a plant might be one of a reasons that the use of a particular plant has remained continues in a community since a very long time. “With so many herbs used by man since the earliest times, it is not surprising that a number of them feature in myths and legends have much folklores associated with them” (Linford, 2010: 16).

Palit and Banerjee (2016) in their article *Traditional Uses and Conservative Lifestyle of Lepcha Tribe Through Sustainable Bioresource Utilization - Case Studies from Darjeeling and North Sikkim, India*, have mentioned that “The diet of Lepchas is supplemented with plants, mushrooms, tubers, all gathered from the wild” (*ibid: 2016: 736*) along with the other edible food they grow in their kitchen garden. They have also discussed about legends and folktales attached to a plant in the community. “The earliest mention of the medicinal use of plants is found in the traditional tale of Tamsangthing” (*ibid: 2016: 736*). The Lepchas mostly uses the parts of wild plants in making medicines like “flowers, roots, bark, leave, seeds etc” (*ibid: 2016: 739*). They also mentioned that the community holds a “magico-religious” (*ibid: 2016: 739*) believes about the plants as a sacrificial plant, as adornment and during sacred rituals. There are many plants being mentioned in most of the folk songs, dances, stories and proverbs of the community. This can be an “indicative of the deep insight, common sense and practical wisdom of the common folk” (*ibid: 2016: 746*).

Khan et al. (2017) talks about benefits and importance of the wild edible plants in their article *Wild edible plants as a food Resource: Traditional Knowledge*. The wild edible plants have played an important role in ensuing food, livelihood and nutrition to communities across the globe. They are one of the major food and nutrition resource, mostly in the rural areas. “Wild resources of food provide additional food

supplements and also execute the food needs of the rural communities especially during the periods of food crises” (Khan et al. 2017).

Chakravarty et al. (2016) in their article *A Review on Diversity, Conservation and Nutrition of Wild Edible Fruits* have mentioned that the “traditional or folk knowledge on plants is relationship between a society and its environment developed by the community variedly from region to region based on their real world experience and empirical testing”(ibid:2016:2347). A wild edible plant may have different values and different uses in different regions and communities. This may be “because communities and individuals may have different objectives, interests, perceptions, beliefs and access to information and resources” (ibid: 2016: 2347). The traditional knowledge of wild edible plants also varies within the community as well in terms of age and gender. The “senior women folks were reported to be more knowledgeable in describing these plants as compared to their male counterparts” (ibid: 2016: 2347).

Thakur et al. (2017) in their article *Why they eat, what they eat: patterns of wild edible plants consumption in a tribal area of Western Himalaya*, explains that the wild edible plants “represent species that are collected from the surrounding ecosystems for human consumption but are not cultivated”. People have been always depended on the wild edible plants since very long time. “Prior to coming up of agriculture, some 10,000 years ago, they formed a prime component of human food” (ibid: 2017: 1).

Murcott (1982) in her article *Symposium on ‘Food Habits and Culture in the UK’ The Cultural Significance of Food and Eating*, talks about food being a cultural affair having different ranges of cultural meanings. Food is not just a source of nutrition but is imbedded in peoples’ culture as well. The table manner, food appropriations, the

way food is presented etc. tells a lot about culture to where they belong, not only that but food gives information on social status, ethnicity and wealth too.

Anjum and Tripathi (2013) in their article *Wild Edible for Nutrition and Health*, has mentioned about the nutritional and cultural valued of the wild edible plants. The wild edible plants have sustained humans and have always been a source of food security for the local communities in the rural areas. Not only a food resource but the wild edible plants provide necessary nutrients for growth and good health for the local communities. They further mentioned that wild edible plants as food has social and cultural values attached to them and they are consumed during special occasions. The wild edible plants as food are “always guided by cultural perception, attitudes and beliefs” (*ibid*: 2013: 6).

Sylvester et al. (2016) in their article *Wild Food harvesting and Access by Household and Generation in the Talamanca Bribri Indigenous Territory, Costa Rica*, discusses about the nutritional and cultural importance of wild edible plants and animals. They have mentioned that the wild edible plants provide dietary diversity to the people and are high in nutritional values. At the same time, people have attached cultural and social significance to the wild edible plants. They have further mentioned that the practice of collecting the wild edible plants in the forest encourages the growth of family bond and community networks.

Duri (2018) in his article *Foraging to Survive: Poverty and Shifting Consumer Dynamics in Rural Zimbabwe between 2000 and 2008*, talks about the important role wild edible plants plays in times of food scarcities. It is mentioned in the article that how collecting wild edible plants from the forest is considered poorly in many food systems but the role these plants plays in different communities should not be

doubted. The article discusses about how Zimbabwe suffered food crises between 2000-2008 due to unemployment and poverty, which lead their dietary patterns to change from agricultural crops to wild edible plants and meats.

Bhatia et al. (2018) in their article *Traditionally Used Wild Edible Plants of District Udhampur, J&K, India*, have defined the wild edible plants as “plant species that are not cultivated or domesticated but are accessible from various natural habitations and used as food” (*ibid: 2018:1*). They go on writing that a huge number of populations in developing countries rely on the wild edible plants for their subsistence. They have also mentioned that the wild edible plants have a very important place in people’s culture, religion and health in India. Even after the rural population of the country is practicing agriculture, the practice of collecting the wild edible plants has not vanished completely.

Fan et al. (2016) in their article *The Use of Edible Wild Plants and Fungi in Korean-Chinese Village* has discussed about the use of edible wild plant and fungi among Korean-Chinese, one of the ethnic minorities settled in China. The wild edible plants and fungi have been a part of the community culture in various ways. These plants and fungi are part of their food culture, economy and their cultural identity. The authors have mentioned about “*doenjang jjigae*” (Fan et al. 2016), a traditional stew made with the wild edible plants and fungi found in the region. They have also talked about the medicated rice, the ingredients of which include pine nuts, other types of nuts and honey cooked with rice. This traditional cuisine is usually cooked and taken during traditional festival. The wild edible plants and fungi have also been the ingredients for *Kimchi*, one of the traditional dishes of Korean culture for more than 300 years. The authors have drawn light on the cultural values that these plants have in the community.

The article *Wild Edible Plants used by the Ethnic Communities in Kalimpong District of West Bengal, India* by Bhujel et al. (2018) talks about the uses of the wild edible plants by the ethnic community groups in Kalimpong. The wild edible plants are widely used by the ethnic communities and these plants are connected to every aspect of their socio-cultural, health as well as spiritual life. According to the article, “while considering single tribe ‘Lepcha’ from the study site they depended mostly on wild plants for medicine” (*ibid: 2018: 315*). The wild edible plant acted as a nutritional supplier to the communities residing in Kalimpong. The authors also talk about the cultural significance of the wild edible plants used by the people. For instance, the “traditional practices like boiled tubers *Manihot esculenta* (*Simal Tarul*), *Colocasia esculenta* (*Pindalu*), *Ipomoea batatas* (*Sakarkhanda*) etc. are consumed in *Maghey Sankrati* or *Makar Sankrati* during the month of January by Nepali community and small pieces of raw *Dioscorea hamiltonii* (*Bantarul*) is pasted on forehead before taking the boiled tubers to celebrate the occasion” (*ibid:2018:316*).

The article *Factors Affecting Traditional Medicinal Plant Knowledge of the Waorani, Ecuador* by Weckmuller et al. (2019) mentions that the acquisition of the traditional knowledge about the wild edible plants among various generations might not be “explained by the greater life experiences of the elders, but by other socio-economic factors” (*ibid:2019:1*). There are many examples that the authors have discussed in their article, which has directly or indirectly affected the traditional indigenous knowledge on the wild plant resources. For instance, western schooling which although “promotes conceptual learning of traditional ecological knowledge, the absence of direct contact with the nature can change the traditional transmission and acquisition ways” (*ibid: 2019:1-2*). Other socio-economic factors discussed in the article are modernization of the rural areas, proximity to the urban areas, accessibility

of health facilities, etc, which may lead to the less utility of the wild edible plants, eventually leading to the lost of traditional knowledge of these plants.

Statement of Problem

The wild edible plants have forever maintained their significant role in peoples' life since a very long time as various indigenous communities have used them for food, health and cultural purposes. However, the contexts in which people look into the practice of consuming the wild edible plants have always varied across culture and communities. As these plants played a very crucial role in the lives of indigenous communities, the same practice on the other hand was not considered desirable in many other societies. The practice of collecting and consuming the wild edible plants was considered the practise of ancient people. This was one of the reasons, which made some indigenous communities to leave their aged old custom of taking wild edible plants and adapt to agriculture.

The Lepcha community is one such community who have been making use of the wild edible plants since time immemorial. But, since the community has adapted to agriculture, the wild edible plants have lost their utility and importance in the community. This has a direct effect on the traditional knowledge on wild resources that the community elders have tried to preserve all their lives. With every upcoming new generation, the cultural use of the wild edible plants is disappearing as very few community members today are aware of it. On the other hand, the growing generational gaps are not contributing to the preservation of indigenous knowledge of the community either as their knowledge is hardly being transferred to the younger generation.

The Lepchas are recognised for their close relationship with the nature and their excellent utilization of the natural resources in their surroundings. Their traditional methods and techniques to identify and modify the wild edible plants for their cultural usages are deeply imbedded in their culture. However, the community members today are rarely engaged in their traditional ways of using the wild edible plants as they are completely depended on agriculture. This will ultimately lead the community members to completely forget their indigenous knowledge on the natural resources.

The wild edible plants carry a great cultural significance and are attached with various cultural meanings by the community. These plants are used during various rituals and sacred ceremonies. The wild edible plants are also used as spices and are cooked into various traditional cuisines and also used by the local healers to cure different illness. The cultural importance of wild edible plants in the community is reflected in the oral stories of the Lepchas. As the community shares a close relation with the nature, the plants and trees also connect the community with their land in which they have lived for years. The wild edible plants are also highly recognised for their nutritional values and health benefit properties. They provide dietary diversity to the community and are used in various traditional health practices as well. The community holds a very vast knowledge on the medicinal benefits of wild edible plants and use them in their day-to-day life in the villages. With the loss of the traditional knowledge of the wild edible plants, these plants will lose its significance in the community and the community will lose an important aspect of their life.

There are several other contributing factors, which are directly and indirectly affecting the traditional knowledge of the community. Environmental changes such as change in temperature, less/heavy/untimely rainfall etc. are disrupting the growth of the wild edible plants. Commercialization of the wild edible plants is another example. The

natural habitat of the wild edible plants are being over explored by people and the dependence of the people on the wild edible plants for economy is causing pressure on the natural plant resources. This is also leading to the exploitation of certain plant species. Over grazing of cattle, wild fire caused by humans, deforestation for more settlements or construction of roads in villages etc. are disturbing the natural habitat of the wild edible plants causing the wild plants to extinct. This ultimately leads to the low availability of the wild edible plants, which is going to decrease their traditional use by the community members. The community members will completely lose their indigenous knowledge on the wild plant resources and the future generation will not get a chance to acquire this knowledge as it is not even recorded or documented and is gradually fading away. This is exactly why the documentation of this indigenous knowledge of the community is an urgent requirement.

“The dietary pattern of the wild edible plants of a community is a cultural expression. The loss of this traditional knowledge of wild edible plants would mean loss of cultural identity” (Shin et al. 2018). This research work is conducted to understand the Lepchas indigenous knowledge on the wild edible plants. The study is not only a compilation of wild edible plants used by the community, but it also focuses on understanding the cultural usages and meanings attached to them by the community members. It also tries to understand and record the unique techniques and methods of preparing the wild edible plants for consumption in addition to understanding the health beneficial properties known and practised by the Lepchas from cultural perspective. The study intends to preserve the traditional knowledge of the Lepchas on the wild edible plants by making use of the platform by conducting an intensive study on the community.

Objectives of the Study

- To understand the cultural meanings the community attach to the wild edible plant.
- To explore the dietary pattern of Lepchas of eating wild edible plants and their techniques of preparing the wild edible plants.
- To study the health benefits of the wild edible plants used by the Lepcha community.

Research Methodology

The study was conducted in *Pakang* and *Yang*, which are the two rural areas in Kalimpong, a hill district in northern part of West Bengal, India. As the study is on the dietary patterns of consuming wild edible plants among Lepcha community, the above areas were chosen as the above areas are surrounded by forests and there is a better access to the wild edible plants in addition to the majority of the Lepchas settled in these areas. The study is a qualitative research work including both primary as well secondary methods of data collection to understand the dietary patterns of the Lepcha community focusing on the wild edible plants.

Before going to the field, prior informations on the research topic were assembled from resources such as previous research works and books on similar topics. A pilot study was also conducted for a week in each village, which helped to build a good rapport with the villagers that further contributed to a better access to the information on the research topic.

The Lepchas are settled in a scattered manner all over Kalimpong. Due to time constrain, it was not possible to take every village as the research field area. Sampling

method was used where the above two Lepcha dominant villages were taken as field areas for the study, which would represent the whole Lepcha community residing in Kalimpong. Schedules were prepared with open ended questions to gather the data from the villagers in the two villages. This method was chosen considering the informants who mostly consisted of elderly members of the community; for it would not be easy for them to fill the questionnaire by themselves, also looking into the availability of technologies in the villages, distribution of the questionnaires via email was not possible.

Interviews were conducted focusing on the people who were often engaged with the wild edible resources. The main informants include the elderly people of the community as they were the most well-informed people and are responsible in transmitting the knowledge to the younger generation. Secondly, *Bongthing* and *Mun*, the Lepcha shamans in the community who are local healers as well. They often use the wild edible plants as medicines. For example, *Selek* (Lepcha name)/ and *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) are wild edible plants used by *Bongthing* and *Mun* to cure various illnesses. Thirdly, the informants included the people who usually visit the nearby forest areas for herding cattle or to collect firewood. They are the people who mostly engage themselves in foraging the wild edible plants. Data were also collected from younger members of the community to understand the changes in the traditional knowledge of the community people about the wild edible plants. Last but not the least, the community members who usually engage or used to engage in preparing the wild edible plants for consumption was included in the interview. In the field, the informants were mainly chosen through random sampling and snowball sampling.

To get a better understanding of the community knowledge on the wild edible plants, participant observation was used. During the fieldwork it was mainly during the foraging of the wild edible plants and the cooking processes of the wild edible plants that the participant observation was mainly applied. Some of the examples are during foraging of *Sakyu Poath* (Lepcha name)/ *Elaeocarpus lanceafolius* (Botanical name), *Kasor* (Lepcha name)/ *Dioscorea deltoidea* (Botanical name), *Kerching* (Lepcha name)/ *Dioscorea bulbbifera* (Botanical name) and preparation of *Puzok Book* (Lepcha name)/ *Dioscorea villosa* (Botanical name).

Photography played a main role in this research as this study also aims at documentation and compilation of the wild edible plants used and consumed by the Lepcha community. Mobile phone was used to take picture of the wild edible plants found in nearby areas. Most of the wild edible plants were only available in deep forest areas or they grew on stiff cliffs regions. Some of the examples are *Rong Poth* (Lepcha name)/ *Calamus erectus* (Botanical name), which usually grows in steep areas in the forest, *Pook- Zeek* (Lepcha name)/ *Cyathea spinulosa* (Botanical name) and *Ruu* (Lepcha name)/ *Beth Gerra* (Nepali name), which were found on the bank of a river in deep forest, etc. In such cases, the use of camera was a great help as this helped in capturing the plant species that were very difficult to capture with the mobile phone alone.

Online measures were also used to gather the data from the field. Few informants from the field remained in contact with me and datas were transferred via online procedures such as some of the pictures of the wild edible plants and their informations were sent via Whatsapp. This method was truly helpful during the pandemic as the informations were being provided all the time by the informants from the field areas. Last but the not the least, the secondary datas were collected from

resources such as books, journals, articles, documentaries, research works on similar topics, etc. This was truly a great help as they formed the foundation for this entire research study.

CHAPTER-II
LAND AND PEOPLE

Mayel Lyang, meaning hidden paradise, is a land that comprised of today's entire Sikkim and parts of Nepal, Bhutan, West Bengal and Bangladesh, the homeland of the Lepchas. The land stretched from Himalayas in the north to Tittiliya (which is in Bangladesh today) in the south and Gipmochi in the east which is situated at Sikkim, Bhutan and Tibet border in the north to the Arun River to the west in Nepal back in time (Mulvasi Lepcha Tribal Sanstha, 2005).

The Lepchas claims to be the first settlers of the region since time immemorial. The names of the ancient rivers, mountains, hills and places provide the evidences of their presence in this land from a very ancient time. Some of the famous examples are *River Rongnyu/ Thee-Satha* and *River Rongheet*, famously known today as river *Teesta* and *Rongheet*. The rivers have a very beautiful love story attached to them in the Lepcha community. The names of the rivers also have a Lepcha origin. The term *Thee-Satha* literally means, "when did you arrive?" and the term *Rongheet*; if we break the word is actually *Rong-sa-eet* meaning "the origination of the Lepchas". Similarly, the name *Mount Kingchumzongbu* (Mount Kanchenjunga) means auspicious forehead. The name was given to the mountain as the first as well as the last ray of the sun at the dawn and dusk always hits the peak of the mountain.

Today, the community is divided into four sub groups based on places they have currently residing. The Lepchas who resided in Sikkim, Keorsyong and Silliguri before 1835 are known as *Renjyongmoo*. The Lepchas residing in east Nepal in Illam are called *Illamoo*. Thirdly, the Lepchas residing in Kalimpong is known as *Damsangmoo* and lastly, *Promoo* are the Lepchas who are settled in parts of Bhutan (*ibid: 2005: 3*).

It is not a very new thing that a community has always been seen and represented by others in a way they hold their own views on the community and similar was the case with the Lepchas. The community identify themselves as *Rongs*. They have their own language known as *Rongring* and their own Lepcha script. “They call themselves as “*Mutanchi Rong kup Rum Kup* or in short *Rong*” (Roy, 2012), meaning beloved children of mother creator or *Itboo-Debu Rum* or God.

The title Lepcha, which is used today was a title given to the community by the Nepalese. Gorer writes that “Lepcha is said to be a derogatory Nepali term –*Lap-che* meaning, though the philology is doubtful, “nonsense talkers” (Gorer, 1987). It can be assumed that when the Nepalese they came to *Mayel Lyang* might not have understood the language of *Rongs*, which was alien to them or the *Rongs* may have tried to speak in Nepali with Nepalese which naturally was not easy and was not clear. After the British invasion in India, the Britishers started pronouncing the term *Lap-che* as Lepchas. Since then, the term Lepcha is widely used to identify the *Rong* people. Another theory regarding the title Lepcha is that when the Nepalese first migrated to *Mayel Lyang*, they encountered the *Rongs* and wanted to know their identity. Not understanding what the Nepalese were asking about, the *Rong* answered *Lapcho*, meaning resting place or it could even mean pile of stones to give travelers directions. The Nepalese on the other hand misunderstood what the *Rongs* said and assumed that is what they were called. Later with the British invasion, they started pronouncing the word *Lapcho* as Lepcha (Mulvasi Lepcha tribal Sanstha, 2005).

Religion

The Lepchas are nature worshipers and their traditional religion is known as *Mun-Bongthimism*. The community has shamans who are called *Bongthing* (male) and *Mun*

(female). They are believed to be the mediator between the common people and the *Rum* (God). Their role in the community is very important, as they are believed to hold immense wisdom and play a vital role in every sacred rituals and events.

Nature indeed holds immense power that controls every life in the world and naturally there should not be a question as to why the community worships Mother Nature. A Lepcha *Mun* or *Bongthing* will always appear praying or bowing before stones, mountains, rivers, etc, which might put some into surprise, but their beliefs and gestures holds much deeper meanings than what is usually assumed. As said by a Lepcha man himself that “we take every natural element to have a soul and very much living. We worship the mountains for its power to be mighty; for they provide us with fresh water through rivers and streams; they protect us from the harsh cold winds and from enemies from beyond. The rivers we pray to holds life beneath its water and keep the land fertile that grows trees and keeps the ecosystem healthy. Trees and the forests we worship hold the soil and contain life within itself. We simply cherish nature and its power to sustain life”. In the eighteen and nineteen century, the community was exposed to the two religions they were Buddhism and Christianity. Fair numbers of the community members then converted themselves into the two religions but their traditional religion also exists side by side in the current days.

Lepcha Sacred Rituals and Festivals

Rum Faat is the most important sacred rituals performed by the Lepchas every year, which is basically performed to thank the deities or benevolent spirits around for their blessings and protection. There are various kinds of *Rum Faats* that are performed by the community members in different ways. The most important of them are mentioned briefly below:

Lee Rum Faat: The first one that is to be performed before any other *Rum Faats* is the *Lee Rum Faat*. The term *Lee* in Lepcha language means house and *Rum* means god. So, basically it is a sacred ritual performed in each Lepcha house to thank the house deity for its protection and blessings. This ritual is always observed before any other *Rum Faats* and is performed asking the house deity to grant them blessings and support to perform other rituals. Every event in a Lepcha family such as marriage rituals, travel and even during sickness of a family member, etc, is to be carried on only after a family has performed the *Lee Rum Faat*.

Chu Rum Faat is another sacred ritual performed by the community members in the name of *Mount Kingchumzongbu* (Mt. Kanchenjunga). It is a strong belief of the community that their origination was from the virgin snow of *Mount Kingchumzongbu*. *Itboo-Debu-Rum*, the Mother Creator took the virgin snow of the *Mount Kingchumzongbu* and originated the first ancestors of the Lepchas i.e. *Fudongthing* (man) and *Nazongnyu* (woman). The ritual is performed to worship the *Mount Kingchumzongbu*; their guardian deity for its gift of life and its protection to the Lepchas.

The community does not have the concept of hell or heaven. Each clan in the community has their respective *Da* (lake) and *Chu* (peak) which is considered very important in the community as it is believed to aid the departed soul to cross the *Ljep* (entry point) and rest in eternity with their ancestors in afterlife. During *Chu Rum Faat*, the respective *Chu* (peak) of the family clans are worshipped as well. The ritual traditionally takes place during the autumn season.

Muk Jyik Ding Rum Faat is the sacred ritual performed as a gesture to thank *Itboo-Debu-Rum* (Mother Creator) for the greenery. This ritual is usually observed during

the spring season that may be in April or March of every year. The community prays for the timely rainfall for green and clean environment all year round.

Sakyu Rum Faat is a ritual for prosperity. According to an oral story of the community, the crops they cultivate were brought from *Mayel Kyong* (a hidden pristine village) by a hunter who lost his way and accidentally reached the mysterious village. He then met seven immortal couples who gave him the seeds of various crops, fruits and vegetable as a gift. The hunter then brought the seeds to *Mayel Lyang* and that is how the Lepchas began to cultivate crops in their land. The fruits of every harvest are offered to those seven immortal couples by every Lepcha family as a gesture to show their thankfulness towards them.

Muut Rum Faat is observed during the months of March or April of each year. Back in the time the community was dependent on the wild resources for sustenance. Since the Lepchas are nature worshippers, it is a common belief that every element in the nature is protected by a benevolent spirit or a deity. This *Rum Faat* was performed as a gesture for permission from the deity to hunt in the forest and for their protection. A part of the hunt that was brought from the forest was to be offered to the deities by the community members to show their gratefulness towards the deities for their protection during the hunt.

Talik Rum Faat is usually performed outside the house in an open space. This ritual is performed by every Lepcha family where prayers are offered to the deities to provide their protection towards their land, crops, territories, etc. from any outsider, insects or wild animals.

Tongrong/ Tendong Lho Rum Faat is observed on 7th and 8th of August every year in Sikkim and usually on 26th of August in Kalimpong. This ritual is observed by the

community in honor of *Tendong/ Tungrong Hill* to express the community gratefulness towards the hill for its protection. The ritual is attached with a story when the Lepchas faced the great flood. The famous love tale of the two river spirits *Rongnyu/ Thee-Satha* or *Teesta* and *Rongeet* is linked with the celebration of this auspicious day. The story goes that one day the two rivers decided to meet at *Puzok* (now known as Peshok) and flow towards the plains as one. *Rongnyu* (female) guided by *Paril Buu* (snake) reached the destination earlier. *Rongeet* (male), on the other hand was led by *Tut-Fo* (bird) who got distracted on its way in search of food. When he failed to reach the destination on time like he had promised, he returned with grief, embarrassment and anger drowning everything that came in his way. Everything came under his water. The Lepchas ran for their lives and climbed the *Tendong Hill* as it was the only hill that remained above the rising water. The Lepchas prayed on the top of the *Tendong Hill* to *Itboo Debu Rum* (Mother Creator or god) who then came in the form of *Kuhum Fo* a partridge bird and performed a sacred ritual. Only after then, *Rongeet* calmed down and the two rivers headed towards the plains as one. The *Tendong Hill* is taken as a guardian who protected the Lepchas during the great flood and the community believes that the hill still continues to protect them.

Rongnyu Rongeet Samsa/Rum Faat Daar Faat is the ritual which takes place in Tribeni, where the two rivers *Rongnyu* and *Rongeet* confluences. The ritual is actually to offer gratitude towards the two rivers as they were the source of life for the Lepchas in the past and even in the present. The rivers are worshiped for their power to hold the life under water and also for making the land fertile. Every year, the Lepchas gather at Tribeni and offer prayers and offering to the two rivers to thank them for their gifts to the Lepcha people. The additional belief of the community is that the rivers are the example of true love and companionship to each other. In every

Lepcha marriage, the married couples seek blessings from the two river spirits for long married life filled with love and togetherness.

Lyang Rum Faat the last but not the least; is the ritual performed to the land deities for their protection towards the land, soil and fertility. This ritual is often performed by villagers all together.

All the above mentioned *Rum Faats* shows the deep relation that the Lepchas share with the nature as all their traditional rituals are nature oriented. The *Mun* and *Bongthing* play a very vital role during all the traditional rituals, as they are the mediator between Lepchas, *Rum* (god) and deities. Prayers and offering are offered to the deities during the *Rum Faat*, the offering includes mostly hen sacrifices, eggs, fruits, paddy, water, etc., but the most important of all offerings is *Chi*, the traditional fermented drink of the Lepchas. *Chi* is used in every ritual and is mandatory in every occasion. Every Lepcha family ferments *Chi* and keeps them reserved for them to use during the various *Rum Faat* and other sacred rituals. Many times a replica of the *Mount Kingchumzongbu* and other important peaks are made with cooked rice. Even stones are erected and they are placed signifying *Mount Kingchumzongbu* and other important peaks. Banana leaves are kept beneath the offerings and its shoots are used to contain the burning fire. Bamboos play important role as it is used to keep the *Chi* and also it is used as oil lamps during the rituals. All the equipments used in the rituals by the community are extracted from the nature itself. This is a clear example that shows their deep relation with the nature.

One of important festivals of the Lepcha community is *Nambun*, the new year of the Lepchas. It starts in the first seven days of the *Karnit Lavo* (a month in Lepcha calendar) according to the Lepcha Lunar calendar, which usually falls at late

December or sometimes during early January. According to the traditional believes of the community, the Lepcha New Year is celebrated on the victory of the Lepchas over the demon king *Laso Mung Pano*. The Lepchas of Kalimpong also celebrate the birth anniversary of *Pano Gayboo Achyok*, the last Lepcha king of *Damang Lyang* (Kalimpong) every year on 20th December. The day starts with a sacred ritual performed by *Mun* and *Bongthing* at Damsang fort and then followed by a huge event accompanied by dances and singing competitions, archery, etc. The Lepchas from every part of Kalimpong as well as neighboring regions joins the occasion on this day in honor and love for the deceased king.

Traditional Attire

Attire is very important part of culture because they are not just accessories but they add values to peoples' culture. The traditional attire of Lepchas men is known as *Dumpra*, although there are sources, which have mentioned many sub categories of *Dumpra* based on materials and patterns used to make the cloth. D.C. Roy (2017) explains how L.S. Tamsang (1998) describes about six different types of *Dumpra* based on the patterns and materials used in the cloth. They are “(1) *Tagaap*, the oldest design and is woven with floral design, (2) *Khemchu*, a scissor design is inverted and upright V's and (3) *Tamblyoak*, a butterfly pattern. On the basis of material used, there are three other types of *Dum-praa*: (1) *Koojoo Vaadoah*, the oldest dress made from *Kajoo*, a nettle plant. It is light, soft and natural plain dark cream color without any type of dying or embroidery. It is costly, scare in supply and thus is rarely used. (2) *Thakroah*, a stripe on thin and soft fiber with black color without any embroidery. It is multicolored with typical Lepcha pattern. (3) *Menchhyo*, a multi-colored dress with a lavish splash of embroidery at the top, where the *Dum-praa* drops down. The

typical Lepcha pattern has vertical lines of varying lines of varying thickness and colour” (Roy, 2017).

Dumpra is worn with other pieces of cloths; they are *Tago* (shirt) and a *Tomoo* (quarter pants) which are worn underneath the *Dumpra*. The *Dumpra* is pinned only on the left shoulder with a pin traditionally made of bamboo known as *Zet* and a *Nyamreck*, a belt tied around the waist to hold the dress together. Other accessories worn by Lepcha men are hats of three kinds. They are *Thyaktuk* (hat made with cloth), *Samoak* (hat made with cane) and *Pabri* (this hat is also made with cane but is slightly rounder in shape as compared to *Samoak* and was worn only during hunting). They usually wore neck beads that usually consisted of three beads and a bracelet made of cane known as *Kagyer*. Lepcha men traditionally carried *Tangeep* (bag), *Baan or Kasaok Baan* (a short knife) or *Baan-Phok* (a long knife that is more like a sword in length with flat and blunt tip) or *Slee-Chong* (bow and arrow).

The traditional attire of Lepcha women is known as *Dumvoon*, an ankle length single long piece of cloth, which is pinned on both the shoulders with *Zet* (a sharp pin traditionally made with bamboo). Multiple long folded plates together sits on the front of the dress tied with a waist belt called *Nyamreck*. The upper portion of the plates usually falls down from the waist where the belt is tied. It is told that the Lepcha women used this portion of the dress to gather wild fruits, nuts, flowers and various other edible things from the jungle. A loose shirt/blouse is worn by the women underneath the *Dumvoon* known as *Tago*. Married women wears a loose knee length black outer like cloth over the *Dumvoon* known as *Jyer Dong Tago*. The women are usually seen with a piece of cloth tied over their head, which is called *Taro*. Traditionally, women also carried *Khurmi* (a small sickle like weapon) held with the *Namreck* on the backside of their waist. Jewelleries famously worn by Lepcha women

were *Kagyer* (silver bangle), *Lyaak* (a long neck piece made with silver coins), *Nyoor-Kyup* (silver earrings) and *Ka-Kyup* (silver finger ring).

The Lepchas were initially hunter and gatherers. Their diet consisted of wild foods such as wild yams, tubers, leaves and fruits of wild edible plants and hunted wild animals. After adopting agriculture, the mostly cultivated crops are paddy, millet, wheat, cardamom, vegetables, fruits, etc. Today, Lepcha diet consists of both agricultural crops as well as some wild edible plants, which they take with mild modification. The wild edible plants are mainly taken as vegetables, pickles, medicines, spices for flavoring etc. To quote Gorer, he writes that they “eat great variety of wild forest produce, chiefly tubers of different wild yams, and various leaves which are used as seasoning; both meat and vegetation are supplementary dishes which adds a relish to the cultivated cereals” (Gorer, 1987). Lepcha life today is different from what it used to be years ago. Most of the community members in today’s generation are educated; they work and live in urban cities. Although number of Lepchas mostly the elder generations lives in rural regions and have continued their traditional way of living but in a small scale.

The Study Places

Kalimpong

Ka-Len-Pung means a place of gathering in Lepcha language. The place has an interesting story of its history and how it got its name. Back in the past, Kalimpong was with Sikkim as a part of *Mayel Lyang* and the place was formerly known as *Damsang Lyang*, the literal meaning would be fortified or protected. When Bhutan attacked Sikkim while it was under the Chogyal rule, Kalimpong was the most to suffer as it was located at the border region. It was then *Damsang Lyang* was made a

self claimed independent kingdom ruled by the last Lepcha king *Pano Gayboo Achyok* to save his people from the tyranny and harassment of the war between Sikkim and Bhutan and named it *Damsang Lyang*. During the period of war, the people of *Damsang Lyang* with their king used to gather at Durpin Dara (which is now a tourist spot which was then known as *Ka-Len-Pung*) to conduct meetings for plans against the enemies and it was much later that people started calling the whole kingdom under *Pano Gayboo Achyok* by the name *Ka-Len-Pung*. The last Lepcha King *Pano Gayboo Achyok* was killed by the Bhutanese king; it was then *Damsang Lyang* was taken away by Bhutan in 1781 which was then included in British India in 1865 after Bhutan later lost war with British India (Mulvasi Lepcha tribal Sanstha, 2005). When India got independence in 1947, it came under West Bengal provinces and the term Kalimpong used today is a corrupted version of *Ka-Len-Pung* which was formally known as *Damsang Lyang*.

Today, Kalimpong as a hill district in West Bengal is a place rich in diversity of communities and culture, famous for its beautiful valleys, tourism spots, local foods, schools built by the Britishers etc. However, the rural areas of Kalimpong mostly fall under dim lights; many young people do not even know the names of rural areas of Kalimpong which is just a few kilometers away from the town. Among those rural areas in Kalimpong, I have chosen two villages as my study field areas. They are *Pakang* and *Yang*.

Pakang

Few kilometers away from the main town of Kalimpong is a village named *Pakang*. The name of the place *Pakang* comes from a Lepcha word *Po* meaning bamboo and *Kang* meaning branch. It is said that the place had lots of bamboos which used to split

into two branches at the top, so the name *Pokang* was given to the place. But, later people started pronouncing the name as *Pakang*. Its altitude is quite high compared to rest of the places in Kalimpong, so the temperature of the place is colder as compared to the rest. The first thing that one will remember of this place is pine trees since the forest regions are all covered with thick blanket of pine trees and its cold weather. The village is mainly surrounded by thick forest and occasionally the local villagers encounter wild bear, wild boar, porcupine or deer. Lots of varieties of birds too can be seen in the forest areas from time to time. The region is also getting famous as a tourist spot and for bird watching among the outsiders and locals as well.

The part of the village, which is a part of my research study was a Lepcha dominant village, where most of the villagers are from same lineage and most of the houses belonged to brothers or cousins. There are almost equal numbers of Lepchas following Buddhism and Christianity in the village, although they also practice their traditional religion as well. There is a school, which was visible from the village but was quite far if one has to go by walking. So, the young generations were all out either in the main town area of Kalimpong or in other parts of the country for education or for jobs. Most of the time, it is only the older generation who is staying back in the village. The people in the village still practice agriculture. The most famous crops that are cultivated by the people in the village today are cardamom, corn, rice, wheat etc. Alongside with agricultural crops, the people also rely on the wild edible plants that are seasonally found in the nearby forest areas such as varieties of ferns, mushrooms, nettle plants, etc. The people also kept cattle for agricultural purposes or as a source of side income. Nearly, everyone produces dairy products such as *Chu* (in Lepcha) and locally in Nepali it is called *Churpi* or cottage cheese and

Moar (in Lepcha) or butter for their own consumption as well as for seeling them outside in the main town.

The house pattern that was common seen in the village was a simple single or double stored cemented house. With the help of MMLDB (Mayel Lyang Lepcha Development Board), each Lepcha family was provided with a small cemented hut from the government. Few *Do-Kee-Moo-Lees*, the traditional Lepcha houses could be seen on the way to the village but that did not fall in the village premises.

Yang

The name *Yang* has a Lepcha origin, meaning an open land; which is a Lepcha dominant village. There is no huge difference that can be seen among the Lepchas living in different parts of Kalimpong. So, the Lepchas in *Yang* are no different than the Lepchas living in *Pakang*. The only difference that can be observed is the location, weather and the surroundings of the two places. *Yang* is situated a bit closer toward the plain areas, so the temperature of the place remains quite hot during the summer season. There are differences in the type of trees and plants that are found in the two regions; even the plants of the same species appear different due to different environment of the two places. Wild animals like monkeys, porcupines, bores, jackals, rabbits, mongoose, moles, etc. are frequently seen in peoples' fields. Varieties of birds such as peacock, drongoes, owls, parrots, robins, hornbills, cranes, etc. are commonly seen in the rice fields and the forest areas.

There are two rivers that flow in the village. They are River *Rong-Nyot*, *Rong* meaning the Lepchas and *Nyot* meaning land and River *Singpong*, which refers to small garden or space in front of houses or a kitchen garden. Similar to *Pakang*, the younger generation are either studying or working outside the village and only the

older generation stays in the village. The people in the village practice agriculture and keep cattle. The major cultivated crops are paddy, corn, cardamom, tiger grass, etc. People also grow radish, leafy vegetables like *saag*, tapioca, potatoes, etc. Oranges used to be one of the famous item people used to harvest and sell outside the village but it is practiced very less today. Similar to the Lepchas of *Pakang*, occasionally, the villagers also get seasonal wild edible plants from the forests. They practice this when they go to collect firewoods or to graze the cattle in the nearby forest areas.

The house pattern is quite simple in the village; the lower part of the house is usually cemented because most of the houses are newly renovated, while the upper part remains wooden and the kitchen is always separate from the main house in most of the cases. Similar to the other parts of the district, MLLDB (Mayel Lyang Lepcha Developmental Board) has provided each Lepcha family with a small cemented hut with the help of the government.

The way of life of people in these two villages are very different in compared to the people living in the main town area of Kalimpong, although these areas are not so far away from the town. The life of the older generation in these villages revolves around their fields and cattles. About just few years back, a very little number of villagers were engaged in other government services such as teachers in government schools in the village itself. Today, all the younger generation work outside the village in government as well as private sectors and return to the village during vacations and help their family in their home or in the fields. The way of life the people live in these villages is very simple and beautiful.

CHAPTER-III
CULTURAL SIGNIFICANCE OF THE WILD EDIBLE
PLANTS IN LEPCHA COMMUNITY

Wild edible plants as food

A significant and primary role that the wild edible plants have played in the community is as food. The Lepchas hold a very vast knowledge on the wild plant resources that can be consumed with or without any preparations. The most important of all wild edible plants, which served as main traditional Lepcha food in the past were the wild yams and tubers as these were staple foods for the community. The commonly found and consumed wild yams and tubers were *Puzok Book* (Lepcha name)/ *Dioscorea villosa* (Botanical name), *Kusor* (Lepcha name)/ *Dioscorea deltoid* (Botanical name), *Kerching* (Lepcha name)/ *Dioscorea bulbifera* (Botanical name), *Su-um Book* (Lepcha name)/ *Dioscorea alata* (Botanical name), *Sangol Book* (Lepcha name)/ *Dioscorea hamiltonii* (Botanical name) and *Rakle* (Lepcha name)/ *Dioscorea hispida* (Botanical name). Among the above, only few wild yams are occasionally consumed by the community in the current days.



Fig. III. 01: *Kerching* (Lepcha name)/ *Gittha* (Nepali name)/ *Dioscorea bulbifera* (Botanical name)



Fig.III.02: Shoot and edible nodule of *Kerching* (Lepcha name)/ *Gittha* (Nepali name)/ *Dioscorea bulbifera* (Botanical name)



Fig. III. 03: *Kusor* (Lepcha name)/ *Bhyagur* (Nepali name)/ *Dioscorea deltoidea* (Botanical name)



Fig. III. 04: Shoot of *Kusor* (Lepcha name)/ *Bhyagur* (Nepali name)/ *Dioscorea deltoidea* (Botanical name)



Fig. III. 05: Shoot and edible nodule of *Puzok Book* (Lepcha name)/ *Baan Tarul* (Nepali name)/ *Dioscorea villosa* (Botanical name)



Fig. III. 06: Tubers of *Puzok Book* (Lepcha name)/ *Baan Tarul* (Nepali name)/ *Dioscorea villosa* (Botanical name)



Fig. III. 07: *Rakle* (Lepcha name)/ *Dioscorea hispida* (Botanical name).



Fig. III. 08: *Sangol Book* (Lepcha name)/ *Pani Tarul* (Nepali name)/ *Dioscorea hamiltonii* (Botanical name)



Fig. III. 09: Tubers of *Sangol Book* (Lepcha name)/ *Pani Tarul* (Nepali name)/ *Dioscorea hamiltonii* (Botanical name)



Fig. III. 10: *Su-um Book* (Lepcha name)/ *Panglang* (Nepali name)/ *Dioscorea alata* (Botanical name)



Fig. III. 11: Tuber of *Su-um Book* (Lepcha name)/ *Panglang* (Nepali name)/ *Dioscorea alata* (Botanical name)

The wild yams and tubers are not just taken in the form of staple foods by the community members but the other varieties of wild yams and tubers are also used as special ingredients for preparing local traditional liquors. *Patang Book* (Lepcha name), a wild tuber is chopped and mixed with millet or wheat and is fermented for several days to prepare traditional liquors. Some other types of wild edible yams which are known to the community are *Ku-zyu Book* (Lepcha name)/ *Dioscorea prazeri* (Botanical name), *Pari Book* (Lepcha name) and *Sa-dee Book* (Lepcha name) which the community used in different forms.



Fig. III. 12: Shoot of *Patang Book* (Lepcha name)/ *Soon Tikki* (Nepali name) - a bug known as *Soon Kira* is always found on the plant that is why the plant has the Nepali name *Soon Tikki*



Fig. III. 13: Edible parts of *Patang Book* (Lepcha name)/ *Soon Tikki* (Nepali name)

Sangkree (Lepcha name)/ *Colocasia esalenta* (Botanical name), a wild edible plant belonging to the family of *Arum* with large leaves is easily found in the nearby areas. The plant has other varieties such as *Saa-ar Thyak* (Lepcha name)/*Bakhra Tawke* (Nepali name). The term *Sa-ar* meaning goat and *Thyak* meaning head in Lepcha language, the plant got its name as its tubers and bulbs grew as large as the size of a goat head. *Aduum Sangkree* (Lepcha name)/ *Dudh Mane* (Nepali name) is the other variety of *Sangkree* known to the community. The edible parts of the plants are the tuberous roots, tender shoots and leaves. The tender leaves and shoots are cooked and are eaten as side dishes while the tuberous roots are boiled which makes a great staple food for the community. The tubers are also cut and cooked into *Bee-Ung* meaning vegetable soup.



Fig. III. 14: *Sangkree* (Lepcha name)/ *Pindalu* (Nepali name)/*Colocasia esalenta* (Botanical name)



Fig. III. 15: Tubers of *Sangkree* (Lepcha name)/ *Pindalu* (Nepali name)/ *Colocasia esalenta* (Botanical name)

Ferns are one of the famous wild edible plants that are collected and even sold outside villages in the market. The Lepcha term for fern is *Kanul Karyak Tankrock* or *Tankrok* and currently they are also called *Tangkol*. There are several types of ferns large as well as small available in the regions. The smaller size ferns are mostly eaten

as side dishes. They are *Tunkrok Krim* (Lepcha name) which has bitter tastes and *Tuktyaol Tunkrok* (Lepcha name)/ *Syzygium cumini* (Botanical name) has a tint of black on the tender shoots while they are sprouting. The tender shoots and leaves are edible parts of the smaller varieties of ferns. The large size ferns such as *Pook-Zeek* (Lepcha name)/ *Cyathea spinulosa* (Botanical name) and *Pak-Paa* (Lepcha name) are tree ferns and are quite huge in size. Similar to the smaller size ferns, the tender shoots are edible and are taken as side dishes and also made into traditional hot sauce by making a paste out of them with chilies and tomatoes. The most important part of the edible tree ferns is the inner white tender parts of the trunk, which are fleshy and soft. The softer parts inside the trunk are taken out and fermented. They are then processed and transformed into flour and are taken as staple food.



Fig. III. 16: *Pook-Zeek* (Lepcha name)/ *Bhalu Unew* (Nepali name)/*Cyathea spinulosa* (Botanical name)



Fig. III. 17: Tender shoots of *Pook- Zeek* (Lepcha name)/ *Bhalu Unew* (Nepali name)/ *Cyathea spinulosa* (Botanical name)



Fig. III. 18: Tender shoots of *Tunkrok Krim* (Lepcha name)/ *Titea Nungro* (Nepali name)



Fig. III. 19: Tender shoots of *Tuktyaol Tunkrok* (Lepcha name)/ *Kaleey Nungro*, *Uttano* (Nepali name)/ *Syzygium cumini* (Botanical name)



Fig. III. 20: *Pak-Paa/ Tokpa* (Lepcha name)/ *Gai Khurea* (Nepali name)



Fig. III. 21 and 22: Edible parts of *Pak-Paa/ Tokpa* (Lepcha name)/ *Gai Khurea* (Nepali name)

Different varieties of wild mushroom are one of the famous wild edibles that make delicious side dishes for the Lepchas. The community members are very fond of eating wild edible mushrooms during monsoon season. The Lepcha term for mushroom is *Dor* or *Dor Bee*. There are different varieties of wild edible mushrooms that are collected and consumed by the community members. *Door Chyor* (Lepcha name) has a slightly yellow tint and grow on dry pieces of wood or trees. *Kashyo Door* (Lepcha name) grows on the tree named *Kashyo Kung* (Lepcha name) i.e. Chestnut trees. *Be-Et Door* (Lepcha name) is slightly purple in color and grows on cow dung. *Tamsaak Door* (Lepcha name)/ *Termitomyces microcarpus* (Botanical name) grows abundantly on the ground. *Teertong Door* (Lepcha name)/ *Agaricus silvaticus* (Botanical name) are large in size and grow in a very less number i.e. only one or two in few areas. All the above mushrooms are one of the favorite wild edibles for the Lepchas.



Fig. III. 23 and 24: *Teertong Door* (Lepcha name)/ *Kalingay Chyo* (Nepali name)/ *Agaricus silvaticus* (Botanical name)



Fig. III.25 and 26: *Tamsaak Door* (Lepcha name)/ *Jhari Chyo* (Nepali name)/ *Termitomyces microcarpus* (Botanical name)



Fig. III.27: *Be-Et Door* (Lepcha name)/ *Gobarea Chyo* (Nepali name)



Fig. III. 28: *Kashyo Door* (Lepcha name)/ *Katusea Chyo* (Nepali name)



Fig. III. 29: *Door Chyor* (Lepcha name)/ *Amilchey Chyo* (Nepali name)

There are varieties of other wild edible plants that are taken as food; bamboo being another wild edible plant commonly eaten in the community. The tender shoots of bamboo known as *Poo-Ruk* (Lepcha name)/*Dendrocalamus hamiltonii* (Botanical name) is the edible parts of the plant. They are taken as side dishes and sometimes they are also mixed with other side dishes such as fermented cottage cheese or else they are dried and preserved as pickles with chili. There are several varieties of bamboos such as *Akhlem* (sweet), *Akhrim* (bitter) and *Bongshing* (printed). Since the types of bamboos vary according to the location and altitudes of the areas, there are many more varieties of bamboos whose tender shoots are consumed by the community members residing in different regions.



Fig. III. 30: *Poo-Ruk* (Lepcha name)/ *Tamba* (Nepali name)/ *Dendrocalamus hamiltonii* (Botanical name)

Nettle plants are also one of the famous wild edible plants that are regularly consumed by the community members. The Lepcha term for Nettle plants is *Guzeu* and the general Nepali term is *Sisnu*. There are different types of nettle plants that are known to the community. Some of them are *Gazyu* (Lepcha name)/ *Utrica diocia* (Botanical name), *Khanjyang* (Lepcha name)/ *Girardinia diversifolia* (Botanical name) and *Gazyang* (Lepcha name)/ *Seto Sisnu* (Nepali name). The edible parts of the nettle plant are tender shoots, leaves and buds. Some of the other wild edible plants, which serve as food that are known to the community are *Chyongheng* (Lepcha name). There are different kinds, but the one, which is not edible has a flower which resembles snake in appearance when they bloom. Oil must be applied on hands while preparing the plant and the preparation process should be fast as the plant leaves stinging sensations on hands if played with it for a longer time. *Bushika* (Lepcha name)/ *Adhatoda vasica* (Botanical name) is a wild edible plant whose flowers are

white in color, which is a great side dish. Similar to *Bushika* (Lepcha name) is *Phagorip* (Lepcha name)/*Oroxylum indicum* (Botanical name) whose flowers are taken as side dishes as well. The flowers are very popular in the regions and even sold in the market. They are slightly yellow in color and tastes extremely bitter. Similar to *Phagorip* (Lepcha name), there is another wild flower i.e. *Chyungbur* (Lepcha name)/*Phlogacanthus thyrsiformis* (Botanical name) which are taken as side dishes by the community members. These flowers are mostly eaten with rice or any other staples. *Raa* (Lepcha name)/ *Bauhinia variegata* (Botanical name) is also taken as side dish. The edible parts of the plant are tender leaves, shoots and flowers. The plant has different varieties. They look similar; the only thing differentiating them is the color of their flowers which are pink and white. Tender core of the trunk of wild bananas known as *Kuldung* (Lepcha name)/ *Musa balbisiana* or *Musa brachycarpa* (Botanical name) also serves as food. They are boiled and eaten or can also be taken raw. *Tungkung Rik* (Lepcha name)/ *Trichosanthes tricuspidata* (Botanical name) is a creeper whose seeds are eaten baked or fried and tender shoots and leaves are consumed as side dish.



Fig. III. 31: *Gazyu* (Lepcha name)/ *Patle Sisnu* (Nepali name)/ *Utrica diocia* (Botanical name)



Fig. III. 32: *Ganjyang* (Lepcha name)/ *Bhangrea Sisnu* (Nepali name)/ *Girardinia diversifolia* (Botanical name)



Fig. III. 33: *Chyongheng* (Lepcha name)/ *Gurbo* (Nepali name)



Fig. III. 34: *Bushika* (Lepcha name)/ *Seto Chua* (Nepali name)/ *Adhatoda vasica* (Botanical name)



Fig. III. 35: *Phagorip* (Lepcha name)/ *Totola* (Nepali name)/ *Oroxylum indicum* (Botanical name)



Fig. III. 36: *Chyungbur* (Lepcha name)/ *Rato Chua, Titea, Asur* (Nepali name)/ *Phlogacanthus thyriformis* (Botanical name)



Fig. III. 37: *Kaa-Ung Bee* (Lepcha name)/ *Boke saag* (Nepali name)/ *Clerodendrum trichotomum* (Botanical name)



Fig . III. 38: *Raa* (Lepcha name)/ *Koiralo* (Nepali name)/ *Bauhinia variegata*
(Botanical name)



Fig. III. 39: *Tung-Beup Bee* (Lepcha name)/ *Dhobini* (Nepali name)/ *Mussaenda roxburghii* (Botanical name)



Fig. III. 40: *Kuldung* (Lepcha name)/ *Jungali Kera* (Nepali name)/ *Musa balbisiana* or *Musa brachycarpa* (Botanical name)

Traditional believes and cultural usages of the wild edible plants

Over period of time the wild edible plants have gained cultural values in the community. *Phogorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name) is one of the important examples of wild edible plants that hold an immense cultural values and is considered as the purest plant in Lepcha community. The flower of this tree is taken as vegetable, which is popularly known to treat diabetes. Their seeds are eaten to cure sore throat and pneumonia and the seeds are also made into garlands and used in other sacred ceremonies and rituals. The plant is attached with an interesting traditional story explaining the reason behind the community belief of the plant being the purest of all in the land. According to a Lepcha oral stories long time ago, all the bumble bees in land went to the *Rum* (god) asking *Rum* (god) to save their lives from a tree, which according to the bumble bees was killing them. As the *Rum* (god) came down on earth to investigate, he found that flowers of the *Phagorip* (Lepcha name)/

Oroxylum indicum (Botanical name) tree would lure the bumble bees attracting them by its appearance. When the bumble bees would sit on its flowers the tree would close its flower petals and kill and eat the bumble bees. Many bumble bees had lost their lives in the similar way. So, the *Rum* (god) cursed *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name) that it would bloom only during the night and its flowers would fall off at the very dawn. The *Rum* (god) then transformed all the dead bumble bees into *Sugoor Boor* (Lepcha name)/ *Kaatar Champpa* (Nepali term), another plant species with the sweetest scented flowers; the flower bud of this plant are brown and has a hairy texture which resembles the bumble bees in appearance. According to the community belief this is the reason why bumble bees do not sit on the flowers of this plant as they think of the flower buds of this plant to be their dead friends. The cursed *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name) was then extremely unhappy as it thought that it had now lost the purpose of its life. The *Rum* (god) seeing this went down to the earth over again and blessed the tree that even though the the tree would no longer bloom during the day it shall be the purest plant used by the Lepchas in all sacred ceremonies and rituals. Therefore, according the oral story since the very day, *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name) is being used by the community in every sacred ceremony.



Fig. III. 41: Seeds of *Phagorip* (Lepcha name)/ *Totola* (Nepali name)/ *Oroxylum indicum* (Botanical name)



Fig. III. 42: Flowers and buds of *Sugoor Boor* (Lepcha name)/ *Kaatar Champpa* (Nepali term)

Along with oral stories and other traditional believes the wild edible plants are also associated with various cultural practices which are mandatorily performed by the community members. The cultural practices related with the wild edible plants were strictly followed by the Lepchas as they truly believed in the consequences that would

follow if they tried to avoid them. As for instance, (Gorer, 1987) in his book “The Lepchas of Sikkim” has mentioned that “Alliums must be dug up with sharpened sticks; if knives are used the supernatural *Jamfi moong* will be angry and throw sticks at the collectors and cause hail and thunder”. Similarly there is a belief among the community members that when they go into the jungle to look for wild yams, the upper part of the tuber or yams should be sliced and then should be buried back in the ground. This was the saying that was told by elders to children in the community. According to the stories told by the community elders, long time back there were two siblings, a boy and a girl who were orphans and lived by themselves. They usually looked for wild yams and fruits in the jungle to eat. One day, they found a *Kusor Book* (Lepcha name)/ *Dioscorea deltoidea* (Botanical name) deep in the jungle. They brought the wild yam back home without slicing the yam and burying the upper part of the yam under the ground. The boy wanted to eat the yam the same day but his sister insisted otherwise and kept it for the next day. The night came by and they covered the wild yam with a cloth and kept it in the corner of their room. Everything seemed fine until it was midnight and the boy heard a noise that woke him up. As his eyes adjusted to the darkness in the surrounding, his vision became clear only to feel terror by what he saw next. They had left the fire burning throughout the night and through the ray of the burning fire, he saw the yam moving by itself in the corner of the room. As the fire would get weak, the wild yam would get bigger and as the fire caught flame, it would shrink and get smaller. Terrified by what he saw, he tried waking his sister from her sleep who lay right next to him. He gave his best to wake her up but she lay still like a corpse. Realizing that the yam had already killed his sister, he prayed and remained still until the last firewood burned out. Seeing the wild yam now growing limbs and dancing around to kill and eat him next, he made his

move and ran for his life into the jungle. As he ran to save himself, he tried looking back only to see that the yam chasing after him getting closer by every minute. As he looked at it, he saw its red mouth after which he confirmed himself that it had already eaten his sister. The boy came across the place where he and his sister had found the yam where they had dug up the ground and left a huge pit while taking out the yam. He tried hiding inside the pit for some time but he did not feel safe as he could hear the wild yam in close distance. The boy then ran as fast as he could praying hard for the sun to rise as the yam would then fall lifeless in the sunlight. He was left with no choice other than running towards his uncle's place that was on the other side of the forest. After running for hours, he finally reached his uncle house in the dawn. He banged hard on their door making his uncle open the door as fast as he could. As the man came out of his house, he saw the boy vomit blood and fall dead on the ground. So, every time when people look for the wild yam, they never fail to slice them and follow that has been taught by elders in the community. The cultural beliefs of the people may seem superstitious to the listeners but there is always rational reasoning behind them. All the wild yams including the non-poisonous wild yams tend to be poisonous in the sprouting season i.e. spring. So the upper part of any wild yam or tuber (the part close to the newly growing stem) is sliced and buried in the same spot from where the wild yams and tubers are dug out. When people do that the part containing poison is cut off. Another reason for the people to follow this traditional belief was that the community was aware of the negative effects of humans on the wild life. They sliced the yam and buried a part under the ground to restore the wild species. The part of the yam would then grow a new plant in time and that way the species would never go endangered.



Fig. III. 43: *Kusor Book* (Lepcha name)/ *Bhyagur* (Nepali name)/ *Dioscorea deltoidea* (Botanical name)

Another important wild yam, which has played a very important role in the history of the community is *Rakle* (Lepcha name)/ *Dioscorea hispida* (Botanical name). This wild yam is very poisonous, although the community consumed it as a staple food by following traditional methods to extract the poison out of the plant. The toxic content in the yam is so high that it can kill a person if consumed without being processed. This particular plant was used during wars in the past by the Lepchas to kill the enemies. In the past, parts of this plant were grinded and made into paste, which was applied to the arrow tips. The Lepchas would then hide and shoot the poisoned arrows toward the enemies. The Lepchas has not only used this poisonous tuber as a food but also used it to protect themselves in the past.

The tender shoots and leaves of *Po* (Lepcha name)/ *Bambusa vulgaris* (Botanical name) or bamboo are eaten but they also have various other cultural usages in the community. Earlier, the Lepchas used bamboo shoots to cook their food. This practice is common among many communities especially among most of the Northeastern

communities but the processes vary to some extent. The Lepchas looked for hollow tender bamboo shoots (not as tender as the one taken as side dishes) and cut them into suitable size. They poured rice in the bamboo shoot and then closed the opening end with a lid made with bamboo piece itself and placed it on mild fire or hot burning charcoals. The water in the bamboo itself cooked the rice and gave it a good flavor. The fresh bamboo shoots since they contain water were also used as natural refrigerator by the Lepchas long time ago. They carried a hollow tender bamboo shoot whenever they went for hunt and kept meat and fish inside it. Since, these shoot are water contained whatever was kept in it would stay perfectly preserved for a longer period of time. Mature bamboo shoots are cut and used to make *Ka-chyu* a drink that is made by constantly shaking curd. Curd is poured in the bamboo and repeatedly shaken with up and down movement with a bamboo stick. This process is actually used to make butter and when they take the butter ball out, the remaining juice is called *Ka-chyu*. Small pieces of bamboo shoots are also used as oil lamps by *Bongthing* and *Mun* (Lepcha shamans) during sacred rituals. The traditional local liquor *Chi* is also served in bamboo shoots known as *Pothuth* with a bamboo straw. Small sized bamboo shoots were also used as *Pochung* and *Pathar* during *Chu Rum* (sacred ceremony performed to worship Mount *Kingchumzongbu* and various peaks of particular Lepcha clan). Parts of small sized bamboo shoots are cut and used to hold *Chi* and water when they are offered to *Rum* (god). *Pochung* is cut in a blunt shape and used to keep water whereas, *Pathar* is cut in a slanting manner giving them a sharp tip to hold *Chi*. Various kitchen item were also traditionally made up of bamboo shoots. For examples *Tafull*, a long bamboo pipe used to blow fire while cooking, *Tali* or ladle, *Tafoi* (measuring cup for 1kg), *Tungfri* (measuring cup for 4kg), *Tangaar* (woven basket used to measure 40 kg) were all traditional kitchen

items made with bamboos. As bamboo plays a vital role in the Lepcha culture, there is a famous saying among the community members that if bamboo goes extinct then the community will get extinct as well. The saying clearly expresses the importance of bamboo in the community.



Fig. III. 44: Bamboo shoots being used as *Pochung* and *Pathar* during *Chu rum* (sacred ceremony of the Lepchas worshipping Mount. *Kingchumzongbu* and respective mountain peaks of clan).



Fig. III. 45 and 46: Banana leaves being used in sacred ceremonies (The leaves of both wild as well as domesticated banana leaves can be used considering the availability of this plant).



Fig. III. 47. *Ruu* (Lepcha name)/ *Beth* (Nepali name)



Fig. III. 48: Root of *Salek* (Lepcha name)/ *Fachyang* (Nepali name)



Fig. III. 49: Plant of *Salek* (Lepcha name)/ *Fachyang* (Nepali name)



Fig. III. 50: Root of *Ghising* (Lepcha name)/ *Haledo* (Nepali name)/ *Cuucura caesia* (Botanical name)



Fig. III. 51: Plant of *Ghising* (Lepcha name) / *Haledo* (Nepali name)/ *Cuucura caesia* (Botanical name)

Other examples of wild edible plants which fulfill additional cultural purposes is *Ruu* (Lepcha name)/ or Cane, a wild edible plant whose fruits are edible and traditionally parts of this plant was used in making the traditional Lepcha hat which still continues till today. In historical period, strains from *Ruu* were used to make traditional bridges to cross rivers. The nettle plant is another wild edible plant that was used as a raw material to make *Dumdem/ Dumvoon* and *Dumpra*, the traditional Lepcha dresses. The dress made with nettle plants were very thick suitable to wear in regions with high altitudes. *Selek* (Lepcha name)/ *Fachyang* (Nepali name) and *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) are the two wild medicinal plants whose roots are taken as medicine by the Lepchas. These plants are also used during sacred ceremonies and are used to cure people who are believed to be harmed by evil spirits. Whenever a person feels nauseous and weak usually it is believed that the person has been harmed by evil spirits. A tiny bite of the roots of *Salek* (Lepcha name)/

Fachyang (Nepali name) and *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) is enough to cure a sick person. The Lepcha shamans always keep roots of these plants with them, as they are believed to be holy and hold sacred values. All the above examples of wild edible plants clearly explain their significance in the lives of the Lepchas. It is evidently clear that the wild edible plants as a part of peoples' life played various important cultural roles apart from being just a source of food in the Lepcha community.

CHAPTER-IV
DIETARY PATTERNS OF CONSUMING WILD EDIBLE
PLANTS AMONG THE LEPCHAS

Traditional ways of foraging and preparing the wild edible plants for consumption

Since ages, various cultural groups have been living in close geographical proximities. In such circumstance, the key factors that differentiate the various groups of people are their unique cultural ways. The traditional techniques and methods of Lepchas to identify, collect and prepare the wild edible plants for consumption are indeed very interesting which made them unique from the other groups.

The diets of the community consisted of various species of wild plants. These wild plants ranged from non-poisonous plants to poisonous plants as well. As mentioned before, the wild yams were the first and foremost wild plants, which were an important part of the Lepcha diet. They were taken as staples and they were also used to ferment the traditional liquors by the community members. However, to forage different types of wild yams was not an easy task. The perfect time to collect the wild yams is the dry season i.e. during winters, but the challenge faced while looking for the yams in the jungle is that during the winters the creeper plants are all dried out and hardly visible among the other plants. This further delays the collection of the wild yams in the jungle. A trick the community members used for the easy collection of the wild edible yams was that they visited the forest during monsoon or sprouting seasons. After reaching the forest, they looked for the yams and marked the areas where wild yams have sprouted. In the dry seasons, they visited the forest again and dug up the marked areas, and collected the wild yams for consumption.

The community was also a great observer, which helped them to survive in the past. The Lepchas would know the right time to look for the wild tubers and wild yams by looking and observing a particular tree i.e. *Sanglok Kung* (Lepcha name)/ *Panisas* (Nepali name). This particular tree blooms during early autumn i.e. during late

September. The flowers of the tree are greenish or yellow in the beginning and then they turn red in early winters. According to the community knowledge, when the flower of this tree turns red, it is the right time to look for the wild tubers and yams in the jungle. The Lepchas in the past would observe the tree and when the flowers would change its color into red, they would start looking for wild yams and tubers in the jungle.



Fig. IV. 01: Yellow flower of *Sanglok Kung* (Lepcha name)/ *Panisas* (Nepali name) during early autumn



Fig.IV.02: Red flowers of *Sanglok Kung* (Lepcha name)/ *Panisas* (Nepali name) during early winters

The non-poisonous wild yams did not require any special preparation techniques. They were peeled if required and boiled, but on the other hand, the community used special traditional methods to process the poisonous wild yams in order to make them edible. For example, as mentioned before that *Rukle* (Lepcha name)/ *Dioscorea hispida* (Botanical name) is a highly poisonous wild yam. People even avoided touching the plant if they had minor cuts in their hands. In spite of the toxic content of the wild plant, this wild yam was included in the community diet, but only after processing them in a proper manner. If this wild yam is consumed without processing, it is said to be very painful even leading to hallucination or in extreme cases leading to death. The special way to prepare this wild yam is to boil them with wood ashes in a container. The container then has to be taken to a river and kept under a waterfall for several days. A belief that the community members have attached to this wild plant is that the person who take the yam to the river has to lie to it saying that he/she will be back on the 7th day to get it back but instead has to get it on the 8th day. The purpose that lies behind this is a belief of Lepchas that the yam has to be tricked as it is going to hold its poison till the day mentioned by the person to kill the one who eats them. Finally, on the 8th day, they are brought back and are processed further. In some regions, *Kerching* (Lepcha Name)/ *Dioscorea bulbbifera* (Botanical name) was also processed using wood ashes while in some places they are simply boiled and then consumed. *Patang Book* (Lepcha name) is another kind of poisonous wild plant whose tuberous roots are eaten by the community. The parts of the plant if eaten without proper knowledge about their preparation methods causes pain in the body. The tuber should be boiled thoroughly with wood ashes and should be soaked in river for 4-5 days. This is done so that their poison is washed away by the river water. The tuberous roots are then brought back and chopped finely into pieces and mixed with

millets or wheat and *Buthwet* (Lepcha name)/ *Marchaa* (Nepali name) or yeast cake, and the mixture is fermented for days. The non-poisonous wild yams and tubers such as *Puzok Book* (Lepcha name)/ *Dioscorea villosa* (Botanical name), *Kusor* (Lepcha name)/*Dioscorea deltoida* (Botanical name), *Su-um Book* (Lepcha name)/ *Dioscorea altata* (Botanical name) are peeled, washed and then simply boiled. An interesting fact about wild yams is that the level of toxic in wild yams also depends on various seasons. Almost all the varieties including non-poisonous wild yams turn poisonous during the spring season. This is the time when new baby shoots sprout from the tubers of the wild yams. Usually, during this time, all the yams and tubers should be sliced and upper part of it should be left on the spot where they were found.



Fig.IV.03: Tuber of *Rukle* (Lepcha name)/ *Dioscorea hispida* (Botanical name)



Fig. IV. 04: Tuberous root of *Kerching* (Lepcha name)/ *Gittha* (Nepali name)/
Dioscorea bulbifera (Botanical name)



Fig. IV.05: Tuberous root of *Kusor* (Lepcha name)/ *Bhyagur* (Nepali name)/
Dioscorea deltoid (Botanical name)



Fig. IV. 06 and 07: Root and shoot of *Patang Book* (Lepcha name)/ *Soon Tikki* (Nepali name)



Fig. IV. 08: Tuberous root of *Puzok Book* (Lepcha name)/ *Baan Tarul* (Nepali name)/ *Dioscorea villosa* (Botanical name)



Fig. IV. 09: Preparing *Puzok Book* (Lepcha name)/ *Baan Tarul* (Nepali name)/ *Dioscorea villosa* (Botanical name) for consumption by boiling them in water.

Kullu-Poth (Lepcha name)/*Entada rheedii* (Botanical name) is large wild bean like fruit with huge seed of a creeper plant. The fruiting season of this plant is during autumn and when the fruit is fully mature the seeds fall off the plant on the ground. In some cases the birds are also observed to know the location of this wild plant. This wild seed attracts wild birds like Hornbills. This is the only bird that can swallow the whole seed at once due to their huge beaks. When this bird are seen in the nearby forest areas provided that it is the fruiting season of *Kullu-Poth* (Lepcha name)/ *Entada rheedii* (Botanical name). The community members get the idea of the location of this plant. Today, people in the villages usually collect the seeds of the plant because they are used to cure cattle when they get infected by diseases. In the past, the seeds of this wild plant were taken as staple foods by the community members. The outer cover of the seeds is very hard. It is the inner part of the seeds that is edible. But, this plant also requires special preparations or else they can end up poisoning the

person who eats them. The seeds need to be boiled with wood ashes after which they are taken to rivers and kept under a waterfall for a day or two. The seeds release foams when they are kept under the water, which is washed away by the river water. After the seeds has been soaked for required amount of days their hard exterior becomes soft and delicate. They are then cracked open after which the inner parts of the seeds which are white in color with buttery texture are taken out after which they can be fried and eaten.



Fig. IV. 10: Creeper plant of *Kullu Poth* (Lepcha name)/ *Pangra* (Nepali name)/ *Entada rheedii* (Botanical name)



Fig. IV.11: Seed of *Kullu Poth* (Lepcha name)/ *Pangra* (Nepali name)/ *Entada rheedi* (Botanical name)

In the olden days, the large varieties of ferns also known as tree ferns were also staples for the community. *Pook-Zeek* (Lepcha name)/ *Cyathea spinulosa* (Botanical name) and *Pak-Pa* (Lepcha name) were two types of large ferns taken by the community. The edible parts of *Pook-Zeek* (Lepcha name)/ *Cyathea spinulosa* (Botanical name) are the inner parts of the trunk, tender leaves and shoots. The tender leaves and shoots of this fern were chopped and fried or prepared in any other ways as preferred and consumed as side dishes with other staple foods. The inner parts of the trunk were also taken as staples by the Lepchas. The bark of the fern was shaved and the inner part of the trunk which is fleshy and soft is taken out. They are then cleaned, chopped and dried in the sun. After they have been properly sun dried, they were grinded and transformed into flour. The parts of the plant were also boiled, chopped and mixed with wheat, millet and *Buthwet* (Lepcha name)/ *Marcha* (Nepali name) or yeast cakes, which were then fermented and processed into local liquor. *Tokpa, Pak-Pa* (Lepcha name) is another variety of tree fern. The edible parts of this plant are

similar as *Pook-Zeek* (Lepcha name)/ *Cyathea spinulosa* (Botanical name) i.e. their tender shoots, leaves and inner soft and fleshy parts of the tree trunk. The inner parts of the trunk were cut and boiled with wood ashes after which it had to be kept under running water for days. They are then fermented and then dried after which they are processed into flours or mixed with local liquors. This fern also grows fleshy scale like parts attached to the lower parts of the plant above the ground. This part of the plant is also edible. They are also used to make flour by the community members. *Sangkree- Pro* (Lepcha name) also belong to fern species but is a parasitic plant that grows on other trees. The edible parts of this plant are their roots which are hairy and resemble caterpillars in appearance. Sometimes, they also look like snakes from far distance. The hairy roots of the plant are firstly peeled and then boiled after which they can be eaten as a side dish.

The other varieties of ferns are smaller in size. Unlike the tree ferns, the smaller varieties of fiddle heads like *Tungkrok krim* (Lepcha name), *Tuktyaol Tungkrok* (Lepcha name)/ *Syzygium cumini* (Botanical name), *Kancha Tangcrok/Loopdamoo Tangcrock* (Lepcha name) are commonly found and consumed by the community even today. These ferns sprout during late spring and early monsoons, which is the perfect time to forage these ferns. The tender shoots are plucked and cleaned after which they are chopped and fried. They are also mixed with other items such as potatoes, cottage cheese, etc. Differentiating different types of ferns always give hard time to some. However, to ones who always use them, they are well aware of the differences of these plants. *Tungkrok Krim* (Lepcha name) has smaller blade segments on their leaves and has spores behind their leaves, whereas *Tuktyaol Tungkrok* (Lepcha name)/ *Syzygium cumini* (Botanical name) have broader leaf segments with slightly hairy texture. *Kancha Tangcrok/ Loopdamoo Tangcrock* (Lepcha name) look

similar to *Pani Amalo* (Lepcha name)/ *Nephrolepis exaltata* (Botanical name) but their leaves have more segments and the shape varies a little.



Fig. IV. 12 and 13: Tree and tender shoots of *Pook- Zeek* (Lepcha name)/ *Bhalu Unew* (Nepali name)/ *Cyathea spinulosa* (Botanical name)



Fig. IV. 14: Edible parts of *Pak-Paa* (Lepcha name)/ *Gai Khurea* (Nepali name)



Fig. IV. 15: *Kancha Tangcrok/ Loopdamoo Tangcrock* (Lepcha name)/ *Kancha Nyungro* (Nepali name)

Wild edible flowers also play an important role in the diets of the Lepchas. Wild flowers like *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name), *Bushika* (Lepcha name)/ *Adhatoda vasica* (Botanical name), *Chongbur* (Lepcha name)/ *Phlogacanthus thyriformis* (Botanical name), *Raa* (Lepcha name), *Bauhinia variegata* (Botanical name) are taken as side dishes by the community. The flowering season of *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name) is during monsoon but this flower only bloom during the night and falls off the tree early in the dawn. These flowers are collected early in the morning from the ground and then further prepared for consumption. The flower tastes extremely bitter, which is why they have to be boiled thoroughly before they are cooked and further processed. The boiled water is then drained and the flowers are soaked in salt. After about few minutes, the salt water is drained as well and then the flowers should be squeezed. This process removes the bitterness from the flowers to some extent after which they can be fried with onions, garlic and tomatoes or for more added flavors, they are also mixed with cottage cheese. Similar to *Phagorip* (Lepcha name)/ *Oroxylum indicu*

(Botanical name), other flowers like *Chongbur* (Lepcha name)/ *Phlogacanthus thyrsiformis* (Botanical name), *Bhushika* (Lepcha name)/ *Adhatoda vasica* (Botanical name) also have extremely bitter taste and have to be processed in similar manner. The flowering season of these flowers is during late winters but this also varies according to different regions. After the flowers are boiled and drained, they are fried or prepared in any other ways as preferred by the community members. *Raa* (Lepcha name)/*Bauhinia variegata* (Botanical name) is a wild flower which also tastes extremely bitter. Its tender shoots, leaves and flowers are boiled and the water is drained after which they can be fried. The fruits of the *Tungkung Rik* (Lepcha name)/ *Trichosanthes tricuspidata* (Botanical name), creeper plant are red in color and are called *Tungkung Rik Poth*. It is the seeds inside them which are consumed by the Lepchas but some mandatory techniques should be followed as they are poisonous in nature. The seeds should be taken out of the fruit carefully after which they are rubbed using sand. If they are touched directly then they can react with skin and cause itchy bumps. After properly rubbing them using sand, they are washed and then fried or baked.



Fig. IV. 16: *Phagorip* (Lepcha name)/ *Totola* (Nepali name)/ *Oroxylum indicum* (Botanical name)



Fig. IV. 17: *Bhushika* (Lepcha name)/ *Seto Chua* (Nepali name)/ *Adhatoda vasica* (Botanical name)



Fig. IV. 19: *Chungbur* (Lepcha name)/ *Titea* (Nepali name)/ *Phlogacanthus thyrsiformis* (Botanical name)



Fig. IV. 20: *Raa* (Lepcha name)/ *Koiralo* (Nepali name)/ *Bauhinia variegata* (Botanical name)



Fig. IV. 21 and 22: *Tungkung Rik* (Lepcha name)/ *Indreni* (Nepali name)/ *Trichosanthes tricuspidata* (Botanical name)

Wild mushrooms are one of the favorite wild edibles of the Lepchas. However, people are afraid of taking mushrooms unless they are the cultivated ones and sold in markets. One should be very careful while identifying wild edible mushrooms or it

can be life risking. But, sometimes even edible wild mushrooms are capable of transforming themselves into a poisonous type and could take lives if eaten without proper knowledge. There are several cases of people dying after eating wild edible mushrooms. Maybe, this is the reason why most of the time people are scared to eat them. However, in the Lepcha community, it was found that the members closely observed and studied the kind of wild edible mushrooms that later turned itself into poisonous type. The ones that grew on trees and dried logs were the ones that mostly became poisonous over time; but only the ones that grew on poisonous trees. There is another saying as well that the mushrooms that are touched by poisonous snakes turns poisonous itself. On a side note, though the source does not belong to the community, a local healer from Rai community shared that dog feces can be used to cure people poisoned with mushrooms.

The wild fruits and nuts were perfect snacks for the community when they visited forest for grazing cattle or to collect fire woods. The wild fruits known to the community are *Rong Poth* (Lepcha name)/ *Calamus erectus* (Botanical name), *Salim Poth* (Lepcha name)/*Terminalia chebula* (Botanical name), *Sakyu Poath* (Lepcha name)/ *Elaeocarpus lanceafolius* (Botanical name), *Narook poth* (Lepcha name), *Ka-Shyom Poth* (Lepcha name)/*Rubus ellipticus* (Botanical name), *Kurdung* (Lepcha name)/ *Musa balbisiana* or *Musa brachycarpa* (Botanical name), *Tungdong* (Lepcha name)/ *Ficus Roxburghii* (Botanical name), *Tamee* (Lepcha name)/ *Phullanthus Emblica* (Botanical name) and *Kasyo Poth* (Lepcha name)/ *Castanopsis tribuloides* (Botanical name), *Puyong Poth* (Lepcha name)/ *Ardisia Crenata* (Botanical name), etc. Almost all the fruits are eaten raw straight after they are foraged from the forest; while some fruits are consumed after being processed. Fruits such as *Rong Poth* (Lepcha name)/ *Calamus erectus* (Botanical name) have bitter taste; to extract the

bitterness out of the fruit they are boiled using water or milk without being peeled. After boiling them, they are hanged above cooking hearth so that they are dried properly. This process reduces the bitterness of the fruit to some extent. The fruit are also eaten raw but a small part of the fruit is taken out before they are consumed after their scaly skins are peeled. This small part of the fruit looks tiny and round and is located at bottom of the fruit. This part is usually taken out before consuming the fruit raw, as it is believed to make the fruit taste bitterer and in some cases give intoxicated feelings. Similar to *Rong Poth* (Lepcha name)/*Calamus erectus* (Botanical name), there is another look alike wild edible fruit known by the name *Ruu* (Lepcha name). This fruit also have scale like skin but as compared to *Rong Poth* (Lepcha name)/*Calamus erectus* (Botanical name) they are smaller in size and rounder in shape.

Wild nut like *Kasyo Poth* (Lepcha name)/ *Castanopsis tribuloides* (Botanical name) is eaten raw as well as roasted. They are famously known as chest nuts and are common in both the regions. The fruiting season of this fruit is during late autumn and winter. After the fruits are matured, they turn brown in color and falls off the tree on the ground. This is the time they are foraged. Initially the fruit is coved in spines, which are removed and after that they are roasted. Although, the fruit is also eaten raw, they are preferred roasted as the process adds more smoky flavor to the fruit and also because they can be kept for longer period of time.

The fruit as well as the inner tender part of *Sakyu Poath* (Lepcha name)/*Elaeocarpus lanceaefolius* (Botanical name) are eaten by the community members. The fruits have huge trees and their fruiting season is during autumn and winter. When the fruits fall off the trees, their seeds are collected and consumed like nuts. Similar to this fruit, the inner parts of seeds of *Narook Poth* (Lepcha name) are edible. During winters, these fruits fall off their trees and are already dried up. They were foraged and consumed by

the community members in the past. *Tungdong* (Lepcha name)/ *Ficus Roxburghii* (Botanical name), *Salot Poth* (Lepcha name)/ *Choerospondias axillaris* (Botanical name) and *Puyong Poth* (Lepcha name)/*Ardisia crenata* (Botanical name) are some of the other wild edible fruits recorded in the two villages that were consumed by Lepchas.



Fig.IV.23: Seeds of *Sakyu Poth* (Lepcha name)/ *Bhadrasae* (Nepali name)/ *Elaeocarpus lanceafolius* (Botanical name)



Fig.IV.24: *Ka-Shyom Poth* (Lepcha name)/ *Aishilo* (Nepali name)/ *Rubus ellipticus* (Botanical name)



Fig.IV.25: *Narook poth* (Lepcha name)/ *Kalo Gokul* (Nepali name)



Fig.IV.26: *Tamee* (Lepcha name)/ *Pani Amala* (Nepali name)/ *Phyllanthus Emblica* (Botanical name)



Fig.IV.27: *Kasyo Poth* (Lepcha name)/ *Katus* (Nepali name)/ *Castanopsis tribuloides*
(Botanical name)



Fig.IV.28. *Salim Poth* (Lepcha name)/ *Harra* (Nepali name)/ *Terminalia chebula*
(Botanical name)



Fig.IV.29: *Puyong Poth* (Lepcha name)/ *Damai Gera* (Nepali name)/ *Ardisia Crenata*
(Botanical name)

CHAPTER-V

HEALTH BENEFITS AND MEDICINAL PROPERTIES

OF THE WILD EDIBLE PLANTS IN LEPCHA

COMMUNITY

Medicinal wild edible plants used by the Lepchas

The Lepchas have been using the wild edible plants since a very long time now. These plants play a vital role in the community not just because they are a reliable food resource but also because of the important nutrition and health benefits they provide to the community members. Apart from being taken as food, the wild edible plants also satisfy the medicinal needs of the community in various ways and forms. These wild edible plants have indeed made a big contribution to the health of the community particularly in the rural populations.

The diets of the community consisted of both non-poisonous as well as poisonous wild plants. Although the community kept knowledge on the techniques to process them, yet there were cases of people getting poisoned by various wild plants. In a situation like that the Lepchas made use of wild herbs to cure a sick person poisoned by wild poisonous plants. For an example, *Rukle* (Lepcha name)/ *Dioscorea hispida* (Botanical name) is a highly poisonous wild yam. The plant is extremely toxic to the point that it is believed in olden days Lepchas used to apply its paste on the tip of arrows and used them to kill their enemies during wars. Despite of the toxic content of this wild yam, their tubers are consumed by the Lepchas. The community used a special technique to extract the poison out of this wild yam. The traditional technique of the community to do so was to boil the tuber with wood ashes and keep it under a waterfall for several days. The parts of the plant if eaten without being processed causes immense body pain, hallucination and can even turn fatal if taken in higher dosage. If a person happened to get intoxicated by this wild yam, the community used the bark of a special tree to cure the sick person. The name of the special tree which has the ability to cut the poison of such deadly wild yam is *Nambong Kung* (Lepcha name)/ *Gruelina arborea* (Botanical name). The Lepchas crushed the bark of

Nambong Kung (Lepcha name)/ *Gruelina arborea* (Botanical name) and drank its juice. This wild plant is very effective as it can cure a person poisoned by such deadly unprocessed wild yam. This medicinal herb is also taken if any person gets poisoned by any other type of poisonous plants including wild poisonous mushrooms. The community members also feed the leaves of this plant to cattle if they happened to consume any toxic plants.



Fig. V. 01: Dried Shoot of *Rukle* (Lepcha name)/ *Gruelina arborea* (Botanical name)



Fig. V. 02: Poisonous tuber of *Rakle* (Lepcha name)/ *Dioscorea hispida* (Botanical name)



Fig. V. 03: *Nambong Kung* (Lepcha name)/ *Khamaree* (Nepali name) *Gruelina arborea* (Botanical name)

The wild herbs have a worldwide history of being used for various therapies. The rural communities across the world have practiced making use of the wild edible plants and have always relied on the wild resources in time of need. Likewise, the Lepchas as well have a huge history with the wild edible plants. Other than being taken as food, the community used the wild edible plants for their medicinal properties to cure several illnesses like jaundice, pneumonia, viral fever, sinusitis, cough and cold, diabetes, high blood pressure, sprains, etc. To treat minor cough and cold, the Lepchas took wild herbs like *Sag-Greak Dok Moan* (Lepcha name)/ *Ghati Dukhne ko Dabai* (Nepali name). This plant does not grow big in size and can be found in nearby areas. The community members crushed the roots of this wild edible plant and mixed its paste with water in a glass. The diluted solution is then given to a

sick person suffering from cough and cold. The roots of this herb are also chewed raw, which is equally effective in treating sore throats over night.



Fig. V. 04: *Sag- Greak Dok Moan* (Lepcha name)/ *Ghati Dukhne Ko Dabai* (Nepali name)



Fig. V. 05: Roots of *Sag-Greak Dok Moan* (Lepcha name)/ *Ghati Dukhne Ko Dabai* (Nepali name)

Rom Chillim Poth (Lepcha name)/ *Spondias mombin* (Botanical name), a wild edible fruit also known as “Hog Plum” (Smith, 2018) are used to treat cough, cold and sore

throats. The fruiting season of this wild edible fruit is from October to December. They fruit on huge trees and people usually collect this wild edible fruit from the ground when they fall off from their trees and eat them raw. *Rom Chillim Poth* (Lepcha name)/ *Spondias mombin* (Botanical name) tastes unusual like the mixture of bitter, sweet and sour. “This wild fruit is rich in essential vitamins and nutrients such as vitamin C and iron and also keeps the heart and skin healthy” (Smith, 2018). This fruit and their flowers are also made into pickle and eaten by the community members.



Fig. V. 06: *Rom Chillim Poth* (Lepcha name)/ *Amara* (Nepali name)/ *Spondias mombin* (Botanical name)



Fig. V. 07: *Rom Chillim Kung* (Lepcha name)/ *Amara ko rukh* (Nepali name)/ *Spondias mombin* (Botanical name)

Mik-Tthum-Rik (Lepcha name)/ *Ampelocissus barbata* (Botanical name) is a wild creeper used by the community to cure several infections along with cough, cold and sore throats. This creeper grows big in size and their stems are woody in nature. The plant contains juice inside its stem which is used by the community members to treat several health issues. The smaller stems of the plant are cut into small pieces; the technique is to blow air from one end of the stem in order to take its juice out from the other end. The juice of this plant is drunk to cure cough, pneumonia and even applied on mouth sores. Its juice is also used to cure eye infections. Few drops of the plant juice have to be applied into the infected eye following similar process as mentioned above.



Fig. V. 08: *Mik-Tthum-Rik* (Lepcha name)/ *Jarelo* (Nepali name)/ *Ampelocissus barbata* (Botanical name)

Kuntim (Lepcha name)/ *Piper Longum* (Botanical name), commonly known as “Long pepper” (Basu, 2020) is a very effective medicinal wild herb taken by the community to treat cough and cold. This plant is a creeper and is believed to have two categories

i.e. a male and a female plant. The community members identify the plant type by the kind of fruits they bare. Male *Kuntim* (Lepcha name)/ *Piper Longum* (Botanical name) trees have long fruits. On the other hand, the female trees bare smaller and rounder fruits. Out of two, fruits of the female trees are consumed raw to treat cough and cold.

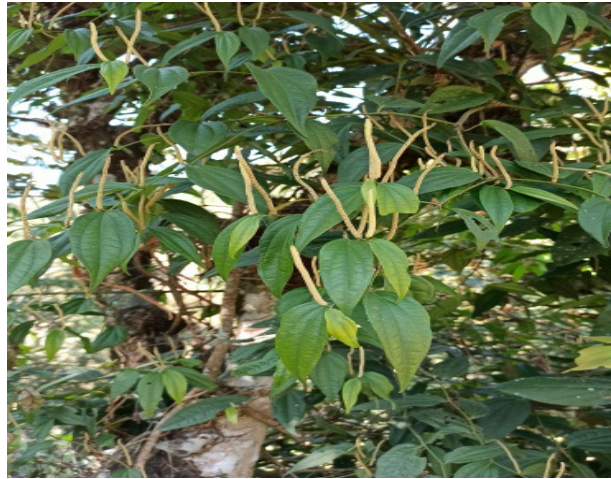


Fig. V. 09: Male *Kuntim* (Lepcha name)/ *Pipla* (Nepali name)/ *Piper Longum* (Botanical name)



Fig. V. 10: Female *Kuntim* (Lepcha name)/ *Pipla* (Nepali name)/ *Piper Longum* (Botanical name)

Ka-Syom Poth (Lepcha name)/ *Rubus ellipticus* (Botanical name), also known by many other names such as “Golden Evergreen Raspberry” and “Yellow Himalayan

Raspberry” is a wild herb which is consumed to cure sore throat during cough and cold. The plant has giant bushes with hairy stems, leaves and has yellow berries. The tender shoots and leaves are plucked and their hairy skins are peeled off after which they are eaten raw. Their yellow fruits are also edible and people usually collect them for consumption.



Fig. V. 11: *Ka-Shyom Abong/bong* (Lepcha name)/ *Aishilo* (Nepali name)/ *Rubus ellipticus* (Botanical name)



Fig. V. 12: *Ka-Shyom Poth* (Lepcha name)/ *Aishilo* (Nepali name)/ *Rubus ellipticus* (Botanical name)

Salim Poth (Lepcha name)/ *Terminalia chebula* (Botanical name) is a wild edible fruit that are chewed to cure cough, cold and sore throat. The fruits are small in size, which tastes bitter. This wild edible fruit cannot be chewed like any other types of fruits due to the bitter, sour taste they have. They are kept inside the mouth for longer time and they are chewed softly, gently and gradually drinking the bitter juice from the fruit. People also collect this wild fruit during its fruiting season and dry them either under the sun or over the cooking hearth. This process is done to preserve these wild edible fruit for future usages. This fruit is one of the very effective wild resources that are used in time of sickness.



Fig. V. 13: *Salim Kung* (Lepcha name)/ *Harra* (Nepali name)/ *Terminalia chebula* (Botanical name)



Fig. V. 14: *Salim Poth* (Lepcha name)/ *Harra* (Nepali name)/ *Terminalia chebula* (Botanical name)

Songrip (Lepcha name)/ *Menha australis* (Botanical name) is a wild medicinal herb with a very pleasant smell. The leaves of the plant when plucked and crushed leave a very refreshing and aromatic fragrance. The pleasant fragrance of *Songrip* (Lepcha name)/ *Menha australis* (Botanical name) is what makes it easier to identify them. The leaves of this plant is often crushed and inhaled to treat sinusitis and also consumed to cure cough and cold. Because of the pleasant aroma and medicinal properties of the plant, the community members inhale the scent of the leaves of this plant to detoxify their body from within which leaves the body feeling refreshed.



Fig. V. 15: *Songrip* (Lepcha name)/*Attar Ful* (Nepali name)/ *Menha australis* (Botanical name)

The community also takes variety of other wild edible plants to treat pneumonia. Some of the wild medicinal herbs that the community holds the knowledge of are *Mahi Rong/ Maon-Krim* (Lepcha names)/ *Ultea Kara* (Nepali name). The roots of this creeper plant are crushed and then soaked in water, which is taken by the sick person. An unusual feature of this wild medicinal plant, which makes it easier to identify them in the jungle are their thorns. The thorns of this plant are curved facing upwards. This is an unique feature among plants found in the region, which makes them different from the others and easier for people to distinguish them in the jungle.



Fig. V. 16: Curved thorns of *Mahi Rong/ Maon-Krim* (Lepcha name)/ *Ultea Kara* (Nepali name)



Fig. V. 17: *Mahi Rong/ Maon –Krim* (Lepcha name)/ *Ultea Kara* (Nepali name)

Another important and effective medicine consumed to treat pneumonia is *Tareak-Buu* (Lepcha name)/ *Kera ko Gadewla* (Nepali name)/ *Lumbricus terrestris* (Scientific name); i.e. earthworms that are found inside *Kurdung Bong* (Lepcha name)/ *Musa balbisiana* or *Musa brachycarpa* (Botanical name) commonly known as banana tree. This traditional medicine is controversial as the question arises whether it is the worms or the bananas that holds the medicinal properties. Hence the question arises whether this traditional medicine belongs to herbal medicine or not. The bananas both domesticated as well as wild provide many health benefits. On the other hand, the earthworms also provide various health benefits and are traditionally used as folk medicine in different parts of the world. Reynolds and Reynolds (2017) in their article “Earthworms in Medicine” talks about the different medicinal uses of earthworms in different parts of the world. They have discussed about how the worms are used to treat symptoms of “pyorrhoea” (*ibid: 1972: 1273*) in Burma. The earthworms are also used to treat “postpartal weakness” (*ibid: 1972: 1273*) in women, “small pox in Burma and Laos” (*ibid: 1972: 1273*). The earthworms were “baked and eaten with bread to reduce the size of a stone in the bladder and they were dried and eaten to cure the yellowness of a jaundiced patient” (*ibid: 1972: 1273*). Since, the Lepchas use only

those earthworms that are found inside banana trunks, perhaps this traditional medicine may have been effective due to the medicinal properties provided by both the resources.

The worms are found in all types (both domesticated as well as wild varieties) of banana trunks. They are found in high number in a mature trunk. They are collected and crushed and made into a fine paste which is then consumed by the person suffering from pneumonia. The paste made from the earthworms can also be mixed with several other wild medicinal herbs like *Ayok Pandyam* (Lepcha name)/ *Drymaria cordata* (Botanical name) and *Muk Takvak* (Lepcha name)/ *Centella asiatica* (Botanical name) which enhances the effectiveness of this traditional medicine.



Fig. V. 18: *Tarek-Buu* (Lepcha name)/ *Kera Ko Gadewla* (Nepali name)/ *Lumbricus terrestris* (Scientific name)

Tang-Bap Rip (Lepcha name)/ *Mussaenda roxburghii* (Botanical name) is also consumed to cure pneumonia. This wild edible plant is commonly seen in the surrounding areas but not many people are aware of its usages. The roots of this plant are crushed and soaked in water, which is taken as medicine by a person suffering

from pneumonia. The crushed roots of this wild edible plant mixed with a glass of water gives a cool and chill sensation after drinking, which cools down the body during high fever. The tender shoots of *Tang-Bap-Rip* (Lepcha name)/ *Mussaenda roxburghii* (Botanical name) are also collected and cooked which are taken as side dishes.



Fig. V. 19: *Tang-Bap Rip* (Lepcha name)/ *Dhobini* (Nepali name)/ *Mussaenda roxburghii* (Botanical name)

Mukh Takvak (Lepcha name)/ *Centella asiatica* (Botanical name) and *Ayok Pandyam* (Lepcha name)/ *Drymaria cordata* (Botanical name) are two wild herbs, which are taken to cure fever, cough and sore throats. These two plants are taken independently, but they are also mixed together to enhance their effectiveness. Often time, they are also mixed with other wild herbs to treat pneumonia. Another wild herb that is occasionally used along with the two plants is *Pong Muk* (Lepcha name)/ *Cynodon dactylon* (Botanical name). This wild plant alone is boiled and its juice is taken to cure pneumonia. The three wild herbs are mixed together and then eaten to cure cough, fever and sore throats.



Fig. V. 20: *Mukh Takvak* (Lepcha name)/ *Gol Patta* (Nepali name)/ *Centella asiatica*
(Botanical name)



Fig. V. 21: *Ayok Pandyam* (Lepcha name)/ *Abijal* (Nepali name)/ *Drymaria cordata*
(Botanical name)



Fig. V. 22: *Pong Mukh* (Lepcha name)/ *Dubo* (Nepali name)/ *Cynodon dactylon* (Botanical name)

The community also holds knowledge on the wild medicinal herbs for food poisoning, famously known as *Kapat* in Nepali and *Nyung* in Lepcha language. *Cham-Chat Kung* (Lepcha name)/ *Bajra Dandi* (Nepali name) is the famous medicinal herb that is used to treat food poisoning in the community. The person who gets *Nyung* (Lepcha name) is known to be always treated by *Bongthing* and *Mun* (Lepcha shamans). Small stems of *Cham Chat Kung* (Lepcha name) are given to the sick person that is supposed to be chewed by the patient. The *Bongthing* or *Mun* (Lepcha shamans) explains the dosages of this wild herbal medicine to the sick person. Normally, small pieces of the stems are taken once a week until the patient is fully recovered. Apart from therapeutic use of the plant to treat *Nyung* (Lepcha name), people also keep long sticks of *Cham-Chat Kung* (Lepcha name)/ *Bajra Dandi* (Nepali name) inside their houses, as it is believed that it will avoid snakes from coming into their houses. The collection of sticks requires special process i.e. the stick has to be collected only on a

full moon night which has to fall on Monday. The stick is then brought back and kept inside the houses to avoid snakes.



Fig. V. 23: *Cham-Chat Kung* (Lepcha name)/ *Bajra Dandi* (Nepali name)



Fig. V. 24: Stick made up of *Cham-Chat Kung* (Lepcha name)/ *Bajra Dandi* (Nepali name)

The Lepchas are also familiar with the wild herbs, which are used to treat several other illnesses like jaundice, diabetes, diarrhea, high blood pressure, gastric problems, etc. *Faat Amalo* (Lepcha name)/ *Nephrolepis exaltata* (Botanical name) is a wild edible plant, which grows in small bushes. The leaves of this plant are long and are mostly used for decoration purposes. The roots of the plant grow fleshy nodules, which are high in water content. The root nodules of this plant are consumed to treat jaundice, diabetes and also kidney related problems.



Fig. V. 25 and 26: *Faat Amalo* (Lepcha name)/ *Pani Amala* (Nepali name)/ *Nephrolepis exaltata* (Botanical name)

As mentioned before, the tender shoots and leaves of *Tuktyaol Tungkrock* (Lepcha name)/ *Kaleey Ningro* (Nepali name) are taken as side dishes by the community members but the plant also have great medicinal properties. The plant is a great medication for diarrhea and other stomach problems like gastric. The roots of *Tuktyaol Tungkrock* (Lepcha name)/ *Kaleey Ningro* (Nepali name) are crushed and made into a fine paste. The paste is then mixed with water and honey in a glass, which is then taken to control diarrhea. Eating this plant as side dishes as well helps in avoiding stomach related problems.



Fig. V. 27: *Tuktyaol Tungkrock* (Lepcha name)/ *Kaleey Ningro* (Nepali name)

Eet-Peet-Rik (Lepcha name)/ *Paederia foetida* (Botanical name) is a wild edible plant, which is also used as a medication for gastric and other stomach problems. The plant is a creeper and has a very strong odour making it almost impossible to consume them. The tender leaves are collected and wrapped in a banana leaf and kept inside hot ashes or coal for a while. After taking the leaves out from the hot ashes, they are consumed to treat gastric. Some other methods to take this medicinal herb are to eat the tender leaves and its juice after boiling them or just normally cooking its leave as a side dish works well to treat stomach related problems.



Fig. V. 28: *Eet-Peet-Rik* (Lepcha name)/ *Pade Lahara* (Nepali name)/ *Paederia foetida* (Botanical name)

Parshyong Muk (Lepcha name)/ *Houttuynia cordata* (Botanical name) is usually grows in wetlands. They are mostly found around water springs and on the edge of rice fields in large number. This plant does not grow taller in size. The leaves of the plant are green with a pinkish boarder during summer and monsoon, but they develop red color all over their leaves during the winter season. They have a very particular kind of pungent smell, which makes it easier to identify them. The leaves are plucked and wrapped in a banana leaf and then kept inside hot ashes or burning coal. After taking the leaves out of the hot ashes, they are crushed with roasted tomatoes and chilies to make hot sauce, which is taken with rice and other dishes. They are also taken in many other ways as preferred by the community members. This medicinal plant helps to treat gastric and other stomach related issues. The leaves and roots of this plant are boiled in water after which the water is taken by the community members to cure gastric problems. The leaves are also collected in huge number and then cooked and taken as side dishes which aids at treating stomach problems. The most important parts of the plant, which has to be included in every medicinal mixture

are their roots. Their roots are believed to contain more medicinal properties as compared to the other parts of the plant. The roots are even crushed and given to children to get rid of stomach worms.



Fig. V. 29: *Parshyong Muk* (Lepcha name)/ *Gandea Jhar* (Nepali name) / *Houttuynia cordata* (Botanical name)



Fig. V. 30 and 31: Roots and flower of *Parshyong Muk* (Lepcha name)/ *Gandea Jhar* (Nepali name)/ *Houttuynia cordata* (Botanical name)

To control high blood sugar, there are number of wild edible fruits and plants that are used by the Lepchas. *Rong Poth* (Lepcha name)/ *Calamus erectus* (Botanical name) is a wild fruit, which has a unique look with its scaly skin cover. *Rong Poth* (Lepcha

name)/ *Calamus erectus* (Botanical name) fruits throughout autumn and winter. They have a bitter taste and are eaten to control high blood sugar. To reduce the bitterness of this fruit, they are boiled in water and dried by hanging them above cooking hearth. The fruits are also boiled in milk and then sun dried or kept above cooking hearth. The boiling process is also followed to preserve this wild fruit for future use by the community members.



Fig. V. 32: *Rong Poth* (Lepcha name)/ *Fyakrea* (Nepali name)/ *Calamus erectus* (Botanical name)



Fig. V. 33: *Rong Abong* (Lepcha name)/ *Fyakre* (Nepali name)/ *Calamus erectus* (Botanical name)

Phagorip (Lepcha name) is a flower of a sacred wild plant i.e. *Phago Kung* (Lepcha name)/ *Oroxylum indicum* (Botanical name) of the Lepchas. Along with sacred importance in the community, this plant also has great medicinal values. The flowers of *Phago Kung* (Lepcha name)/ *Oroxylum indicum* (Botanical name) are taken as side dishes. They taste extremely bitter, which is why they have to be boiled before they are chopped and fried. Consuming this flower in any form helps in lowering high blood sugar. They are one of the healthiest foods that can be included in the diet to avoid diabetes. Along with the flowers, even the seeds of *Phogorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name) are edible. People who are not very familiar with this plant often get confused in differentiating the flowers and the seeds of the plant. This is because the seeds of *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name) looks unusual than the seeds of other types of fruits. They are white, large and flat, and look like a fallen flower petals, when they fall on the ground. The outer covers of the seeds, which are white in color are peeled, the inner parts of the seeds are crushed and then eaten to cure sore throat, cough and even pneumonia.



Fig. V. 34: *Phagorip* (Lepcha name)/ *Totola* (Nepali name)/*Oroxylum indicum* (Botanical name)



Fig. V. 35: Seeds of *Phagorip* (Lepcha name)/ *Totola* (Nepali name)/ *Oroxylum indicum* (Botanical name)

Chungbur (Lepcha name)/ *Phlogacanthus thyriformis* (Botanical name) is a wild edible plant taken as delicacies among community members. The edible parts of the plant are their flowers, which are orange or red in color and flowers at the top of the stem. The flowering season for this wild edible plant is during winter. The tender flower buds are seen during late December and early January. They taste extremely bitter, which needs to be boiled after which they are fried or prepared. Eating this wild flower is believed to control high blood pressure as well as maintaining blood sugar level.



Fig. V. 36: *Chungbur* (Lepcha name)/ *Titea* (Nepali name)/ *Phlogacanthus thyrseiformis* (Botanical name)

Alyu Maon (Lepcha name)/ *Boksi Jhar* (Nepali name) is a wild plant that is used to treat a person who is believed to be harmed by witchcraft or sorcery. The belief in witchcraft and magic varies with the areas the community members are settled in. In some regions people fear witchcrafts that they believe are practiced in and outside the village. The symptoms that are believed one develops if they have been spoiled by witchcraft vary too. Some of the common symptoms are swollen gums, sudden massive hair loss, blue patches on the body that appear overnight, sudden weight loss, etc. In such situations, the *Alyu Maon* (Lepcha name)/ *Boksi Jhar* (Nepali name) is plucked, crushed and applied to the affected body parts. They were even kept inside the mouth in case of swollen gums.



Fig. V. 37: *Alyu Maon* (Lepcha name)/ *Boksi Jhar* (Nepali name)

The community has a strong belief in spirits. It is believed that the malevolent spirits harm people by causing them sickness. The elder community members were always careful when they had to travel through forests and rivers as people were most vulnerable outside their houses. Feeling nauseous, vomiting, stomach aches are believed to be the common sicknesses that are caused by malevolent spirits to the people. In such situations, *Mun* and *Bongthing* (Lepcha shamans) used the roots of *Salek* (Lepcha name) and *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) to treat the sick person. These plants are very effective; only a bite of their roots helps a lot in releasing pain from the body. The dried roots of these plants are kept in each Lepcha house in case of such sickness. Small pieces of the roots of *Salek* (Lepcha name) and *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) are also carried by the community members wherever they travel just to be safe. Apart from being an effective medicine, these plants are also important to the community as the roots of these plants are used in various rituals by the Lepcha shamans.

The two plants look quite similar to each other, which can give a hard time in differentiating them. The basic and simple characteristics that marks the distinction between these two plants are firstly their leaves, the leaves of *Salek* (Lepcha name) are smaller and slender (similar to Tiger plant), whereas the leaves of *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) are bigger and more oval in shape (similar to a banana leaf). Secondly, the color of the roots of the plants is different. The roots of these two plants may look similar at first when they are freshly dug, but when they are sliced *Salek* (Lepcha name) will have a yellow color and *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) will appear blue in color. A point to remember is that the tender non-mature parts of the roots of *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) will appear yellow as well, which might again be confusing. It is only the mature parts of the roots that will show blue color when they are cut. Thirdly, it is the taste of the roots of two plants. Both the plants taste quite similar. The roots of the two plants have a slightly pungent flavor, which gives a tinkling feeling to the tongue almost similar to pepper. The only factor that differentiates the two plants is that *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) have a stronger flavor with a bitter taste.



Fig. V. 38: Roots of *Salek* (Lepcha name)/ *Fachyang* (Nepali name)



Fig. V. 39: Plant of *Salek* (Lepcha name)/ *Fachyang* (Nepali name)



Fig. V. 40: Roots of *Ghising* (Lepcha name)/ *Haledo* (Nepali name)/ *Cuucura caesia* (Botanical name)



Fig. V. 41: Plant of *Ghising* (Lepcha name)/ *Haledo* (Nepali name)/ *Cuucura caesia* (Botanical name)

There are several other wild edible plants with health benefits known to the Lepchas. The stems of *Sa-Ka Pa-Aam* (Lepcha name)/ *Costus speciosus* (Botanical name) are chewed raw to treat jaundice and urine infections. The fruits of *Sohor Poth* (Lepcha name)/ *Solanum indicum* (Botanical name) are extremely bitter which helps in maintaining blood pressure. These fruits are taken as side dishes or are crushed with chilies and roasted tomatoes. They are also taken in other forms in different regions. *Roklop* (Lepcha name)/ *Acorus calamus* (Botanical name) is wild edible plant found in wet lands. The roots of this plant are eaten to cure gastric and other related stomach problems. *Mukchyor* (Lepcha name)/ *Begonia tessaricarpa* (Botanical name) is eaten to control diarrhea. The tender shoots and leaves of *Ka-Aung Bee* (Lepcha name)/ *Clerodendrum trichotomum* (Botanical name) are boiled and then fried and taken as side dish. This is a controversial plant as people opinions in different parts of the world vary on the edibility of the plant. However, this plant is a delicacy for the community. They are boiled because they have a particular smell. In some regions, they are also fried without the boiling process. Taking this plant in any form helps in maintaining blood pressure. The tender shoots of *Pook-Zeek* (Lepcha name)/ *Cyathea spinulosa* (Botanical name) are boiled and its water is taken to cure measles. *Syok-Nok Poth* (Lepcha name) is a wild edible fruit which has huge trees. The fruit as well as the seeds of the fruit are eaten. The seeds are chewed like a beetle nut. The taste of the fruit and their seeds are slightly bitter when eaten raw. Eating the seeds of this wild fruit helps in maintaining blood pressure. The tender shoots of *Sanjee* (Lepcha name)/ *Ficus semicordata* (Botanical name) are taken by the community members to cure cough and sore throats. The stems of a creeper plant known as *Kangsang Rik* (Lepcha name)/ *Tinospora cordifolia* (Botanical name) are boiled and its juice is drunk. Drinking the juice of this plant has many health benefits. It helps in

maintaining blood pressure and it reduces body pains as well. It also helps in improving digestion and helps in reducing high blood sugar in the body. *Sonpak Maon* (Lepcha name) is a wild edible plant, which is consumed by the community members to treat stomach aches. The roots of the plant is crushed and soaked in lukewarm water. The mixture is then taken by the sick person.



Fig. V. 42: *Sa-Ka Pa-Aam* (Lepcha name) *Beth Lawrie* (Nepali name)/ *Costus speciosus* (Botanical name)



Fig. V. 43: *Sohor Poth* (Lepcha name)/ *Jangali Bee* or *Sanu Bee* (Nepali name),
Solanum indicum (Botanical name)



Fig. V. 44: Roots of *Roklop* (Lepcha name)/ *Bojo* (Nepali name)/ *Acorus calamus*
(Botanical name)



Fig. V. 45: *Roklop* (Lepcha name)/ *Bojo* (Nepali name)/ *Acorus calamus* (Botanical name)



Fig. V. 46: *Mukchyor* (Lepcha name)/ *AmiloJhar* (Nepali name)/ *Begonia tessaricarpa* (Botanical name)



Fig. V. 47: *Ka-Aung Bee* (Lepcha name)/ *Boke Sang* (Nepali name) *Clerodendrum trichotomum* (Botanical name)



Fig. V. 48: Tree and tender shoots of *Pook-Zeek* (Lepcha name)/ *Gamala, Dhnagrey Unew* (Nepali name)/ *Alsophila glauca* (Botanical name)



Fig. V. 49 and 50: Fruit and seeds of *Syok-Nok Poth* (Lepcha name)/ *Kalikat* (Nepali name)



Fig. V. 51: *Sanjee Kung* (Lepcha name)/ *Khanew* (Nepali name)/ *Ficus semicordata* (Botanical name)



Fig. V. 52: *Knagsang Rik* (Lepcha name)/ *Gurjo* (Nepali name)/ *Tinospora cordifolia*
(Botanical name)



Fig. V. 53: *Sonpak Maon* (Lepcha name)

Apart from being eaten as medicines to cure several illnesses, the wild edible plants are used in various other ways to treat different other kind of health issues. The white latex of wild edible fruits and plants such as *Tungdong* (Lepcha name)/ *Ficus roxburghii* (Botanical name), *Sanjee Kung* (Lepcha name)/ *Ficus semicordata* is applied around boils. When the latex that is applied on the boil begins to dry, it tightens the skin and ripens the boil making it easier to squeeze the pus out of them. Basically, the latex of every plant can be used to treat boils unless they are poisonous in nature. The roots of *Pashyor* (Lepcha name)/ *Thysanolaena latifolia* (Botanical name) as well are crushed and applied on boils. The large seeds of *Kullu Poth* (Lepcha name)/ *Entada rheedii* (Botanical name) were made into paste and were applied on mumps. The pastes of the seeds were applied on the swollen part below the ears. The technique was to repeatedly submerge the seeds in the water and rub them on a smooth rock and make a paste out of the seeds. The paste was then applied on the swollen glands below the ears. “*Long Klep Lop* (Lepcha name)/ *Bergenia ciliate* (Botanical name) are applied to fix loose teeth, the leaves are crushed and applied on cuts and wounds and the leaves are boiled and applied to treat piles as well” (Subba, 2018). *Kannu* (Lepcha name), a wild edible plant has two types i.e. a male and a female tree. The fruits of the female tree are eaten and the thorns of the male tree are used in times of blockage or clogging of breast milk. The thorns of the male tree are huge and round, which resembles human breast. The thorns are plucked and repeatedly dipped in water and then rubbed on a smooth stone. After making paste of the thorns, they are applied around the breast of the newly mother. The paste tightens when they dry, which helps in unclogging the breast milk.



Fig. V. 54: *Tungdong* (Lepcha name)/ *Nebara* (Nepali name)/ *Ficus Roxburghii*
(Botanical name)



Fig. V. 55: *KuluPoth* (Lepcha name)/ *Pangra* (Nepali name)/ *Entada rheedii*
(Botanical name)



Fig. V. 56: *Long- Klep- Lop* (Lepcha name)/ *Pakhanbeth* (Nepali name)/ *Bergenia ciliata* (Botanical name)



Fig. V. 57: Thorns of Male *Kannu* (Lepcha name)

Nutritional properties and health benefits of the wild edible plants used by the Lepchas

The wild edible plants included in the diets of the Lepchas are rich in essential vitamins and nutrition. The varieties of wild yams, which have been the main staple food for the Lepchas are used in many parts of the world not just as food but also for their health benefits. The wild yams are “used to treat the symptoms of menopause [...] some traditional medicinal practitioners believe that wild yam has anti-inflammatory properties and use it to treat rheumatoid arthritis” (Kandola, 2018). The wild yams have been reported to be “anti-fungal and anti-microbial” (Padhan and Panda, 2020). “The tubers of yams are reported to have good source of essential nutritional components such as starch, protein, lipid, vitamins and minerals, etc (*ibid*: 2020). “Traditionally the wild yams were used to help alleviate menstrual symptoms, it was specifically believed to be antispasmodic which means it helps eliminate or stop muscles spasm that can lead to intense cramping” (VitaJing Herbs, 2017). “Its prominent benefit is to promote the health of the female reproductive system, which is why it is commonly used to promote the health of female fertility, reproductive health and to alleviate any negative side effects associated with any poor reproductive health in the female hormonal system” (*ibid*: 2017).

The regular wild edible plants, which are commonly taken by the community are rich sources of vital nutrients and have many health beneficial properties. For instances, stinging nettles are “useful to cure rheumatism and arthritis along with treating allergies, anemia, asthma, bronchitis, burns, cold” (Pant and Sundriyal. 2016), etc. “The species has antioxidant role, it is considered to decrease cholesterol level and cure prostate problems, works as anti-inflammatory, anti-tumor, anti-viral and anti-microbial” (*ibid*: 2016: 1247).

The communities also consume varieties of wild mushrooms, which come in all shapes and sizes are “fat-free, low-sodium, low calorie and cholesterol free. They are also packed with fiber, vitamins, and minerals” (Goldman, 2017). “Mushrooms are rich in vitamin B, beta glucan, copper and potassium” (*ibid*: 2017), which are some of the vital nutrients important for good health.

The bitter flowers, which are taken as side dishes by the Lepchas for instance *Bushika* (Lepcha name)/ *Adhatoda vasica* (Botanical name) have “powerful properties like antitussive, a bronchodilator, anti-microbial, anti-inflammatory, anti-spasmodic, etc” (Basu, 2020). This plant is used in many parts of the world because of their health benefits. They are “used to cure cough and cold, bronchitis, stimulates healthy digestive system and also purifies blood. As this plant is antimicrobial, it prevents infections, tuberculosis, fungal infections, dengue, etc” (*ibid*: 2020). They also help in maintaining sugar level in the body. *Phagorip* (Lepcha name), the flowers of *Phago Kung* (Lepcha name)/ *Oroxylum indicum* (Botanical name) is found to possess “anti-inflammatory, diuretic, astringent, expectorant, anti-arthritic, antipyretic, aphrodisiac, antifungal and antibacterial activity and also believed to contain antitumor constituents, and is frequently used because of these properties” (Chauhan, 2019).

One of the important wild edible plant diversely used and eaten by the Lepchas is *Po* (Lepcha name)/ *Bambusa vulgaris* (Botanical name), commonly known as Bamboo. The tender shoots of the Bamboos are eaten by the community members. (Nongdam and Takendra. 2014) in their article *The Nutritional Facts of Bamboo Shoots and Their Usages as Important Traditional Foods of Northeast India* writes that “bamboo shoots have immense potential of being used as important health food as they contain high proteins, amino acids, carbohydrates, many important minerals and vitamins”. The lower parts of the tender leaves of *Bamboo* are eaten as well in the community.

The tender leaves and tuberous roots of *Sangkree* (Lepcha name)/ *Colcocalia esculenta* (Botanical name) are eaten by the community members. The roots of this plant are “a great source of fiber and other nutrients and offer a variety of potential health benefits, including improved blood sugar management, gut and heart health” (Julson, 2018). It also contains “manganese, vitamin B6, vitamin E, potassium, copper, vitamin C, phosphorus and magnesium” (*ibid*: 2018).

Kuntim (Lepcha name)/ *Piper Longum* (Botanical name) have properties like “antibacterial, antiallergic, antitumour” (Manoj et al. 2004) etc. The plant is used as traditional medicines. They are used in treating “bronchial disease, dyspepsia, worms, amoebiasis and aphrodisiac agent” (*ibid*: 2004:225). “It cures cough, leprosy, diabetes, piles, colic indigestion, anaemia, thirst and dispel cardiac and sleep disorders, chronic fever and loss of appetite”(*ibid*: 2004:225). *Ka-Shyom Abong/bong* (Lepcha name)/ *Rubus ellipticus* (Botanical name) have “antioxidant, anti-tumour and wound healing potential” (Georg et al. 2015). The plant is rich in “phytochemicals and is traditionally being used as a source of medicine. Every part of the plant is rich in one or more essential components which can be used in manufacturing drugs or the part itself can be used in various forms” (Sharma et al. 2019). “The complete plant is astringent in nature and is used to lower down the body temperature during fever, especially during typhoid” (*ibid*: 2019: 883). The fruit of *Ka-Shyom Abong/bong* (Lepcha name)/ *Rubus ellipticus* (Botanical name) is a rich source of natural antioxidant, which helps in reducing the oxidative stress and thereby protects the body against degenerative diseases including cancer upon the direct consumption” (*ibid*: 2019: 883).

Muk Takvak (Lepcha name)/ *Centella asiatica* (Botanical name) “apart from healing, the herb is recommended for the treatment of various skin conditions such as leprosy,

lupus, varicose ulcers, eczema, psoriasis, diarrhoea, fever, amenorrhoea, diseases of the female genitourinary tract and also for relieving anxiety and improving cognition” (Gohil et al. 2010). *Pong Muk* (Lepcha name)/ *Cynodon Dactylon* (Botanical name) is “rich in calcium, phosphorus, fiber, potassium and protein” (Chilukoti, 2015). It has been “used as a traditional herb in ayurvedic medicine, the clinical properties of this grass makes it a popular natural aid for better health” (*ibid*: 2015). The leaves of *Eet-Peet-Rik* (Lepcha name)/ *Paedaera foetida* (Botanical name) “has various therapeutic properties like anti-inflammatory, anti-oxidant, anti-bacterial, anti-helminthic and anti-hyperglycemic. Because of its different properties, it is used in treatment of different ailments like rheumatism, paralysis, gout, diarrhea, dysentery, infertility, colic and flatulence” (Chauhan, 2019). *Parshyong Muk* (Lepcha name)/ *Houttuynia cordata* (Botanical name) “possess a number of medicinally important activities such as anti-leukemia, anti- cancer, adjuvanticity, anti-oxidan” (Kumar et al. 2014), etc. “In the North-East region of India, whole plant of *H. cordata* is eaten raw as a medicinal salad for lowering blood sugar level and is commonly known by the *Jamyrdoh*. Moreover, leaf juice is taken for the treatment of cholera, dysentery, curing blood deficiency and purification of blood” (*ibid*: 2014). The plant is “used in Asia to treat pneumonia, hypertension, constipation, and hyperglycemia via detoxification” (Wang et al. 2018).

Various types of *Chongbur* (Lepcha name)/ *Phlogacanthus thyriformis* (Botanical name) are taken in different forms by many communities. A Study by (Ningombam and Singh, 2014) has mentioned that “the whole plant has multipurpose uses as folk-medicine. It is stimulant, astringent, asphrodisiac, diuretic, anti-dysenteric and antipyretic properties. Leaf juice is used in cough, asthma, rheumatism”. The roots of *Ghising* (Lepcha name)/ *Curcuma caesia* (Botanical name) is a very nutritional wild

herb used by the community. They are used to cure “piles, leprosy asthma, cancer, wounds, impotency, fertility, tooth ache, vomiting, and allergies [..].The rhizome is used for the treatment of cough, fever, dysentery, worm infection. The fresh rhizomes are used in leprosy, cancer, epilepsy, anti-helmenthic, aphrodisiac, gonorrhoreal discharge” (Das et al. 2013).

Roklop (Lepcha name)/ *Acorus calamus* (Botanical name) “relieves pains, eases bowels, releases gas, and expels worms” (Lyngdoh, 2019). “Investigations found that *Acorus calamus* has wide antimicrobial properties. It acts against many bacteria, yeasts and fungi inhibiting their growth. Its antioxidant properties are found to lower the incidence of paralysis in rats. It also has insecticidal properties, which inhibit the growth of parasitic worms” (*ibid*: 2019). The extract from *Clerodendrum* species which includes *Ka-Aung Bee* (Lepcha name)/ *Clerodendrum trichotomum* (Botanical name) have properties like “anti-obesity, anti-hypertensive, anti-cancer, etc which indicated that it can be developed into drugs” (Wang et al, 2017). *Kagsang Rik* (Lepcha name)/ *Tinospora cordifolia* (Botanical name) is rich in many nutrients like “carbohydrate, protein, fiber, iron, vitamin C and other essential nutrients” (Pandey et al. 2020). The plant is used in treating “fever, diabetes, dyspepsia, jaundice, urinary problems, skin diseases, chronic diarrhea, heart diseases, leprosy, helminthiasis, rheumatoid arthritis and dysentery” (*ibid*: 2020: 158).

Long Klep lop (Lepcha name)/ *Bergenia ciliate* (Botanical name) “was reported to possess high antifungal, antiviral, anti plasmodia and antibacterial activities. Pharmacological studies reported that it has good antioxidant, anti-inflammatory, anti-tussive, anti-ulcer and anti-neoplastic activities” (Ahmad et al. 2017) and “the leaf extract of *B. ciliata* possesses antimalarial property” (Koul et al. 2020). *Ayok Pandyam* (Lepcha name)/*Drymaria cordata* (Botanical name) “has been traditionally

been used in various parts of the world like Africa and Asia as folk medicine. In tropical Africa, its preparations are used for the treatment of diverse ailments including cold, headache, bronchitis, as poultice on sore [...], leprosy, tumors, as fumigant for eye troubles, as cerebral stimulant and antifebrile agent” (Nano et al. 2014).

The wild edible fruits such as *Rom Chillim Poth* (Lepcha name)/ *Spondias mombin* (Botanical name) also known as *Hog Apples*, which is used to cure cough and sore throats by the community members “has high levels of potassium, magnesium, phosphorus and copper when compared to other fruits. It also presents higher level of phenolic and antioxidant compounds than the majority of fruits” (Tiburski et al. 2011)

Salim Kung (Lepcha name)/ *Terminalia Chebula* (Botanical name) is used by the community to treat cough and sore throats is highly nutritious. “The fruit pulp is used for curing and cleaning ulcers and wounds. It is used by conjunctivitis patients for relieving the eyelids. They are used in the treatments of various vaginal discharges such as leucorrhea and urethral discharges such as spermatorrhea for their anti-inflammatory and astringents. These fruits are used for fighting many digestive disorders such as flatulence, ulcer, distention and parasitic infections (Bhattacharya, 2012).

Medicinal plant like *Ka-Shyom Abong/bong* (Lepcha name)/ *Rubus ellipticus* (Botanical name) is found abundant in colder region like *Pakang* and some wild medicinal plants are only found in warmer regions. The same variety of plants as well can be found in both types of regions, but there may be a vast difference in the appearance of the same species of plant. The identification of the plants is another challenge that will be faced once we enter the jungle. Even the medicinal plants we

grew up seeing our whole life will be difficult to identify when we step in the forest. This is because the wild medicinal plants in general and those used by the community have similar look alikes, which probably might be poisonous in nature. An important technique that helps to identify these plants is the detailed observation of the plants. For example, even though if two different plants look exactly the same, the color, size, smell, texture and every details of the plants helps in identifying the right plant to use. Nevertheless, the wild edible plants have always proved to be healthy, nutritious and dependable source of food and health care for the community since the very beginning. The greatest facts about wild medicinal plants are firstly, they are safe and hardly have any side effects like the artificial processed drugs. Secondly, they are free of cost, a gift provided by nature. These wild resources have beyond any doubt contributed to the Lepcha community not only in terms of food but also in terms of nutrition and health in various ways. They have been a dependable natural resource to the community in past as well as in present especially in the rural areas, where the access to any health centers are less or in some cases none. This probably is one of the reasons the traditional practices of using the wild edible plants is not completely disappeared and have managed to remain alive within the community in some rural parts.

CHAPTER-VI
DISCUSSION AND CONCLUSION

After the study was conducted in the two villages of Kalimpong i.e. *Yang* and *Pakang*, it was found that there were total eighty different species of wild edible plants that the Lepchas kept the knowledge of. Out of eighty different wild plant species, there were nine different types of plants whose leaves were consumed as side dishes. There were eight different varieties of wild yams and seventeen different types of wild edible fruits. There were four types of ferns that were recorded, which the community consumed as side dishes as well as staple foods. Four types of wild edible flowers were consumed by the community and five different types of wild edible mushrooms were recorded as well. Last, but not the least, there were thirty three different wild edible plants, which were used by the community for medicinal purposes. Among the total wild edible plants, which were recorded in the two field areas, only few plants were being consumed and used by the community in the current days. Some of the commonly used wild plants were *Po-ruk* (Lepcha name)/ *Bambusa vulgaris* (Botanical name), *Tuktyaol Tungkrok* (Lepcha name), *Tungkrok krim* (Lepcha name) etc. Most of the plants such as *Rakle* (Lepcha name)/ *Dioscorea hispida* (Botanical name), *Kullu Poth* (Lepcha name)/ *Entada rheedii* (Botanical name), *Patang book* (Lepcha name), *Kerching* (Lepcha name)/ *Dioscorea bulbbifera* (Botanical name) and *Kusok* (Lepcha name)/ *Dioscorea deltoidea* (Botanical name) were found to have long lost their uses in the community.

The two field areas (*Yang* and *Pakang*) are rural areas, where the Lepchas have resided in majority. These areas are surrounded by dense woodlands, which is why the Lepchas in these two areas have a deep connection with forest. The community members are dependent on the forest and are always exploring them for their daily chores. They visit the forests to collect firewood, to graze the cattle and for other various purposes. While they visit the jungle for their daily chores, foraging of some

of the wild edible plants is the common practice among the people especially among the elders of the community. However, the collection of wild edible plants is not just limited to their immediate consumption, but they also plant the wild plants in their kitchen gardens, which in some cases also lead to the cultivation of wild plant species in large number.

The reasons for the community members to collect the wild edible plants and plant them in their kitchen gardens are firstly the economic value of wild plants. Agriculture is the main means of subsistence among the Lepchas in the rural areas. Due to factors such as climate change, less agricultural lands, unsuitable quality of the soil, etc, the final agricultural product is sometimes not sufficient to support the financial needs of the people. One of the filed areas i.e., *Yang* was once a great supplier of oranges in the market, but today orange production in this region has completely swiped out. In such situations, the best alternative for the community members are the wild resources. The wild plants are brought but are not exactly planted on the agricultural lands. They are planted in other parts near the resident areas where they grow under peoples' care. The plants are then harvested when they are ready and sold in the market. The production of the wild plants with high economic value has even multiplied over past years. The best examples of wild plants, which are cultivated in large number in the rural areas are *Pushyor* (Lepcha name)/ *Amliso* (Nepali name) or *Thysanolaena latifolia* (Botanical name) and *Sumlyu poth* (Lepcha name)/ *Kussum* (Nepali name) or Burmese grapes. In the current days, the wild edible plants have a growing demand in the market probably because of their health and medicinal values. The cost of a wild edible plant is even higher than the other cultivated crops and vegetables. This is one of the reasons why the rural populations have started domesticating the wild edible plants in large number.

Cultural use of the wild plant is another reason why the community members plant wild edible plants in the surrounding areas. *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name), the sacred flower of Lepchas is wild but always seen in the nearby areas where the Lepchas reside. The seeds of the flower are used in every sacred ceremonies and rituals such as marriages, funerals, etc. *Salek* (Lepcha name)/ and *Ghising* (Lepcha name)/ *Cuucura caesia* (Botanical name) are examples of the two other sacred plants used by *Bongthing* and *Mun* (Lepcha shamans) as offerings during rituals, which are often planted in the kitchen gardens. The community members plant these plants so that they can have a better and easy access to these plants in times of needs. Wild plants with medicinal values such as *Long- Khlep- Lop* (Lepcha name)/ *Bergenia ciliate* (Botanical name)/ *Songrip* (Lepcha name)/ *Menha australis* (Botanical name) were also seen planted in small flowerpots to have an easy access to them in times of emergencies.

The wild edible plants are one of the great sources of economy in the rural areas. Seasonal wild flowers, fruits, ferns, yams, etc. such as *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name), *Roth Poth* (Lepcha name)/ *Calamus erectus* (Botanical name), *Chungbur* (Lepcha name)/ *Phlogacanthus thyriformis* (Botanical name) are sold in the market. These wild plants are rare and precious, which is why they have high market value and demand. The increasing demand of the wild edible plants has no doubt supported the economy of the rural population but on the other hand, this has led to over exploitation of the wild resources. To meet their market demands, people collect these plants in a very high amount. This has led to the mass slashing and cutting of the wild plant resources in the forest without leaving any for the future use. Mostly, it is the younger generations who are involve in selling the wild edible fruits and plants outside the village. The elder generation however tries to

preserve the wild resources by planting few in the surrounding areas where they can be protected. In some cases, the ancestors of a family planted rare wild edible plants in their garden in the past. They did this so that their descendents could see what the wild plant looked like, on which the community survived hundreds of years ago. This attempt to preserve the wild resources by the community elders have led to the domestication of the wild edible plants in the rural regions.

The community knowledge on the wild edible plants is gradually fading away. The practical use of the wild edible plants has almost stopped in the community. The community members who actually practice using the wild edible plants are very handful. For instance, *Bongthing* and *Mun* (Lepcha shamans) use them as local medicines and for various rituals. As the numbers of traditional shamans are reducing in the community, the number of the wild plants users is reducing as well. Other than traditional shamans, the older generations of the community are the ones to hold the traditional knowledge of wild edible plants. However, the practical use of the wild edible plants is absent among them as well. There are only few elders in the villages who occasionally practice making use of the wild edible plants. Overall, the community is lacking the exercise of their traditional knowledge in present time. This is one of the reasons why the community members are forgetting their traditional use of the wild resources.

In the past, the Lepcha diets also consisted of poisonous plants. The best example that can be taken is *Rakle* (Lepcha name)/ *Dioscorea hispida* (Botanical name), a poisonous wild yam, which had to be processed for several days. However, the community members used proper techniques to process them and consumed them safely. Today, as the knowledge on the traditional use of wild edible plants is vanishing away, there always lies fear among the people to use such poisonous plants.

In order to consume the poisonous plants, a person needs to hold proper idea on the plant and needs to be skilled. But, at present, the community members do not challenge to use such poisonous plants in fear of the consequences, which might turn fatal. This is one of the reasons why the community members are letting go of using such wild plants.

The traditional use of the wild edible plants by the community members also depends on the availability of the wild plants in the region. Seasonal wild edible plants like nettle leaves, ferns, mushrooms are common and easily found in the regions, and so they are commonly foraged and consumed by the Lepchas. These wild plants are also collected in large amount and sold outside the village. On the other hand, the wild edible plants, which are rarely seen around are not used by the community members anymore. For example, *Rukle* (Lepcha name)/*Dioscorea hispida* (Botanical name), *Kullu Poth* (Lepcha name)/ *Entada rheedii* (Botanical name), *Paak-Pa* (Lepcha name), etc. were once staples for the Lepchas. These plants lost their uses in the community because of their low availability in the nearby areas. Therefore, the community ended up discontinuing the usages of most of the wild edible plants.

The changing climate is another vital factor contributing to the change in traditional knowledge of the Lepchas. Due to various changes in the climate, some of the wild edible plants species are gradually decreasing in number. The low availability of the wild edible plants in the region has further enhanced the less utilization of plants, which were used in the past. This has resulted in loss of the traditional practice of using the wild edible plants by the Lepchas.

The changing lifestyles and food habits have also effects on the community's traditional knowledge on wild edible plants. The needs of today have made younger

generation in the rural areas to leave for cities and towns for better job opportunities and education; basically seeking for better lifestyle. This has led to the generational gap between generations to widen even more. The elder generation is left with no one to share their knowledge within villages resulting in gradual declining of the community's knowledge on the wild resources. In olden days, one of the ways to spend leisure time was also visiting the forest and spending time in nature. However, the busy life of today hardly allows people to do so in the current days. Although, common seasonal wild edible plants such as fiddle heads, *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name), nettle leaves are eaten by the community during their seasons, but these plants are among the very few common wild plants used by the Lepchas. There are uncountable species of wild edible plants that the community kept the knowledge of which are not used today by the Lepchas anymore.

In conclusion, by studying the uses of wild edible plants in Lepcha community, it seems that there is no particular definition to explain what a “wild edible plant” is. As per the definitions given for “wild edible plants” by famous botanists and organizations like FAO (Food and Agricultural Organization) that these plants are supposed to be “untamed” growing “without any human contact” (Thakur et al. 2017). However, contrary to those explanations provided, the wild plants have never been without human interferences. The community has used the wild edible plants all the times since ages, which mean the Lepchas have always been in contact with the wild plants. Probably, the concept of “wild” food never existed for the community who used them since a very long time. In addition, in the current days, the community in the rural areas has also started cultivating some of the wild edible plants. In that case, it becomes confusing to distinguish what “wild” and “domesticated” is as the line differentiating them becomes more and more unclear. Thus, similar to what Karen

Coats (2016) writes in her article “The Myth of Virgin Rainforest” that the “line differentiating the wild and domesticated is indeed very blur and overlapping” (*ibid*: 2016).

For many years, the community has been cultivating some varieties of wild edible plants for various reasons like preservation of the wild resources, commercial purposes and cultural values of the wild edible plants. However, the cultivation of wild plants is not the first time people have interfered with the wild resources as the community shares a very long history of their uses. The wild edible plants played a very significant role in the Lepcha community. Firstly, these plants played an important role as food for the community. Before the community members started practicing agriculture, their main staples consisted of wild plants, which were high in starch content. For examples, different types of wild yams, tree ferns and seeds were mostly consumed by the Lepchas. Leafy greens, wild mushrooms, varieties of wild nuts, flowers and fruits were also part of Lepcha diets. Even in time of famines and scarcity of foods, these wild plants helped in sustaining the community members in the rural parts of Kalimpong even after the community started practicing agriculture. However, the wild food is also attached with misconceptions and to some extent, they are stereotyped. The common misunderstanding attached with wild food is that they are only limited to tribal communities living in the rural areas. Often time, the communities are even looked down upon outside the community due to their diets, which consisted of wild foods. The fact is ignored that wild resources were the diets of all communities in the past. Only with the passing of time, some communities totally adapted new ways of eating while some groups retained their age old traditions of using the wild resources.

The wild edible plants were not just a part of Lepcha diets but they also held various cultural values in the community. The community has sacred plants such as *Phagorip* (Lepcha name)/ *Oroxylum indicum* (Botanical name), which are used during sacred ceremonies. Some other wild plants like for example *Po* (Lepcha name)/ *Dendrocalamus hamiltonii* (Botanical name) played an important role as material culture for the Lepchas. Some of the wild plants even played vital roles during wars back in time. Highly poisonous plants such as *Rakle* (Lepcha name)/ *Dioscorea hispida* (Botanical name) were applied to arrows to kill the enemies during wars in the past. This plant is also consumed by the Lepchas by following proper preparation methods. Various species of the wild edible plants were also attached with myths and folktales in the community. Interestingly, some of the oral traditions were attached to the wild plants to preserve the wild resources by the community members. These plants also played a vital role as traditional folk medicines for the community members.

Another important role that the wild edible plants played in the Lepcha community is that they have aided in enhancing the health of the community members in rural population. Since the wild edible plants grow without any assistance of fertilizers and pesticides, the wild plants are more healthy and nutritious than the cultivated agricultural crops. The wild edible plants, which the community consumed were all rich in nutrition and vital vitamins. This helped the community members to maintain good health. The community also used the wild edible plants for medicinal purposes. Every wild edible plant used by the community consisted of vital health beneficial properties. They were used by community shamans to cure various illnesses in the villages. Till the very recent time the rural populations did not have proper health centers. They had to cover great distance to reach the town to look for better health

services. This is the reason the community members firstly preferred the local health practices which were cheaper and more convenient where the wild edible plants had an essential role to play.

In olden days, the Lepchas held a very vast knowledge on the wild resources. They used various traditional methods to forage rare wild edible plants in the forest such as observing the colors of flowers and other trees and also marking the areas during sprouting seasons. The Lepchas were skilled at identifying and distinguishing the wild edible plants and preparing them for consumption. Since the geographical boundaries shared by different groups of people are very close, the wild resources are not just limited to a community. In a situation like that in the past, the traditional techniques of preparing the wild edible plants of the Lepchas truly distinguished them from the rest. The community's tricks such as using wood ashes to extract the toxics out of poisonous plants, fermenting processes, etc. of the community definitely became a part of their identity over time.

At present, the community members have become more dependent on agriculture and the traditional practices of using the wild edible plants have decreased to a great extent. The diets of the Lepchas were very diverse with varieties of wild yams, fruits, nuts, flowers and leaves. However, today, the community diets have become monotonous limiting to only few agricultural crops and just handful of wild edible plants. This has not only changed the dietary patterns of the community but also affected the health of the community members. The similar diets for every single day do not provide different types of health beneficial nutrients like the wild edible plants did many years before. Today, every village has at least more than one health centers and other facilities. The people having better access to the health care centers have reduced the custom of using wild edible plants in local folk healing practices in the

villages. The only people who hold the knowledge of the wild resources are the elderly people and few remaining traditional shamans of the community. The generational gap between the younger and older generations have increased a lot in the present days, which is why this traditional knowledge of the Lepchas is not transmitted to the younger members of the community. With the community gradually loosing shamans and elderly members, they are also losing their knowledge on wild edible plants.

The wild edible plants now have become more commercialized. Few varieties of wild edible plants are over exploited and foraged in a large number and sold outside the villages without leaving any source for the future. This has also become one of the factors, which affected the traditional knowledge of the community. This practice led the wild plant species to be endangered in many places. The low availability of the wild edible plants further limited the traditional knowledge and understanding of the community from transmitting to the younger generation.

The community can try to control such over exploitation of the wild resources as the extinction of a wild plant will not only affect the traditional knowledge of the community but also hamper the ecology. The younger and elder generation can try to cover the generational gap by spending more time with one another. This might help in easy transmission of the traditional knowledge in the community. The community can attempt to practice their knowledge considering that they do not hamper the environment. If the community follows similar methods, both the ecosystem as well as the community's' tradition might flourish more in the future. The few remaining wild edible plants users should be encouraged more to practice their knowledge so that the cultural tradition of using the wild edible plants remains alive. However, the most important of all methods to preserve this traditional knowledge is the

community's initiative itself. No amount of help from outside the community can help a community to save its cultural traditions unless the community develops an urge to save itself.

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