

Protecting What's Ours: Indigenous Peoples' Initiatives To Biodiversity Conservation In Nepal

(A case Study of Lapcha Community from Ilam District of East Nepal)



Faces of Lapcha with traditional dress.

Submitted to

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FOREWORD

Nepal is considered to be a treasure-trove of cultural plurality and globally significant biological diversity. Of the 59 communities, officially recognized as indigenous peoples of Nepal, almost all live close with nature and depend on natural resources for their survival. Their cultural practices and socio-political organizations are instrumental to the protection and management of biodiversity. But the recent development practices, population pressure, the discriminatory policies of the state government and encroachment of the dominant Hindu people and their culture have posed great threats to both the culture and nature of indigenous peoples. Indigenous peoples have been displaced from their traditional lands and territories. They no longer enjoy customary rights over their natural resources. The discrimination and marginalization of indigenous peoples have resulted in their impoverishment. As a result, many indigenous peoples have already lost their cultures and their natural environments have been destroyed. Despite this, indigenous peoples do have their own bio-diversity conservation practices. Therefore, it is a must to study and document their traditional bio-diversity conservation practices before they are lost from these communities. For this purpose, Nepal Federation of Indigenous Nationalities (NEFIN) has initiated a pilot project with Lapcha of east Nepal and Raji of West Nepal to study and document such practices.

This project was made possible by a grant from Nederlands Centrum voor Inheemse Volken (NCIV), supporting our research study and documentation. On behalf of NEFIN, I therefore sincerely thank NCIV for their generous support. I hope to have continuous relations with NCIV in the future. I thank Dr. Sumitra Manandhar, Dr. Tirtha Bahadur Shrestha and Balkrishna Mabuhang for providing their feedbacks to this research work. Rabindra Roy, Chandra Shris and their local research partners deserve my thanks for their hard works and strong commitments even though the present political situation in Nepal is very critical. Such research works are essential among other indigenous communities of Nepal and NEFIN is fully committed to undertake such research works through the mobilization of financial resources from various organizations. I also thank IUCN for providing a partial support to NEFIN for organizing a dissemination seminar of the research findings for scholars, researchers, students and indigenous peoples from many ethnic organizations in Kathmandu. Finally, let me thank Lapcha and Raji communities for their cooperation and hospitality they extended to our researchers during their fieldworks in Ilam and Surkhet.

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Last but not least, our sincere thanks go to NEFIN for giving us this opportunity to conduct this study, which will be useful to all Nepalese Indigenous Nationalities. In this connection, this study would be a reference material for non-governmental organisations, governmental organisations, donor agencies and others who are sincerely working for Nepalese Indigenous Nationalities in days to come.

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Executive Summary

Nepal is the home of 59 indigenous nationalities distributed in four physiographic regions of Nepal viz. mountain (himalaya), hilly, inner terai and terai. Among them, the Lapcha people live in the Hilly region of Eastern Nepal in the Ilam district. On March 31, 2004, Nepal Federation of Indigenous Nationalities (NEFIN) has classified indigenous nationalities into five major categories i.e. endangered, highly marginalized, marginalized, disadvantaged and advanced group/s. Accordingly, Lapcha community is the endangered one. The total population of the community is 2589 (53 percent male and 47 percent female) distributed over 15 VDCs. They are rich in biodiversity although they are economically poor. Their indigenous knowledge over natural resources is remarkable. The Lapcha of Ilam district prefers to call themselves "Lapcha" rather than "Lepcha" as has been customary in Nepal. Such information is incorporated in chapter one as the introduction.

Chapter two explains study area, methods of the data collection. The study was carried out in three VDCs of Ilam district namely, Shree Antu, Kolbong and Fikkal. They cover 33 percent of the total 499 households. The major objective of the study is to document indigenous knowledge on biodiversity of Lapcha community and further to make them aware of their knowledge and encourage them to preserve it for future generation and the humanity at large. Moreover, it also seeks to capacity building of Lapcha people through local research. Social research methods especially participant observation, semi-structure interview, focus group discussion and so on have been adopted for field study. Findings of the study were subjected to verify the information with local research partner/s as well as with key informant/s through a repeat visit.

The chapter three describes the findings of the study. The study documented indigenous foods items; they included: 12 species of wild edible foods (*Giththa*, *Bhyakur*, *Tarul*); 11 species of unconventional food grains (*Kaguni*, *Sama*, *Ghaiya*, *Junelo*, *Tite Fapar* etc); 17 species of wild vegetables (*Patle Sisnu*, *Rani Sag*, *Kali Nigro*, *Tite karela* etc.); and 11 species of mushroom (*Chyau*) have been documented (*Gobre*, *Jhhari*, *Bagale* etc.). A list of scientific name and "rong" name (Lapcha language) with English name of plants has been provided in Annex four. In addition, 50 varieties of medicinal plant species have been recorded for 14 diseases such as diarrhea and dysentery, rheumatic pain, jaundice and so on. In the same way, indigenous knowledge in agriculture and livestock and in making natural dye has also been documented. Further, Lapcha people believed that they originated together with *Choya* Bans (Bamboo) on this earth. Seven different species of Bamboo have been documented, which are directly linked with Lapcha's livelihood and culture. Lapcha people make use of bird's behavior such as singing and calling to interpret nature and environment. They even alter their agricultural practices with reference to bird's singing and calling. They take it as a good or bad omen as per specific sound and its timing. Ten bird species

have been recorded in this matter. Six case studies are presented to elucidate specific indigenous knowledge.

The chapter four draws the conclusions and prescribes recommendations of the study. It is concluded that degradation of forests and practice of monoculture such as tea plantation accelerated in disappearing the indigenous foods items and medicinal plants. Chemical used for fertilizer, insecticide and pesticide further enhanced the same trends. Therefore, existing forest should be preserved to make enriched and revived the biodiversity. Likewise, organic farming has to be mandatory in the farming system.

Indigenous knowledge can be converted into monetary benefits by establishing their intellectual property rights (IPR) in the long run. Documentation of these knowledge plays crucial role in this regards as Nepal has already entered into the WTO treaty. Therefore, it is recommended that this useful knowledge should be further researched and tested scientifically, which will be useful to all human beings in days to come. Finally, Lapcha community will be able to establish patent rights over their knowledge. This will definitely bring economic benefits to the community and the entire nation in future.

Indigenous nationalities have to be made self-aware of their precious assets that have been passed down from generations. For this, local indigenous nationalities institution i.e. *Rong Sejum Thi* (Lapcha Uththan Manch) should play definitive role to create awareness among all Lapcha community. In addition, institutions working to uplift Nepalese indigenous nationalities like Nepal Federation of Indigenous Nationalities (NEFIN), National Foundation for Development of Indigenous Nationalities (NFDIN) and other agencies should develop strategies to work through concerned indigenous institution in these regards.

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Chapter one

1 Introduction

1.1 Lapcha: Indigenous Nationalities of Nepal

Nepal is the home of 59 indigenous nationalities. These nationalities are distributed in different regions of Nepal; 18 in the Mountain (Himalaya) region, 24 in the Hilly region, 6 in the Inner Terai region and 11 in the Terai region (NFDIN 2003). Among them, the Lapcha people are largely distributed in the Hilly region of Eastern Nepal i.e. Ilam district.

The district of Ilam lies between the Mahabharat and the Singhalia Ranges. It is surrounded by the Panchthar district to the North; Jhapa district to the South; Dhankuta and Morang districts to the West and Darjeeling, West Bangal, India to the East. Its major rivers from east to west are: Mechi Mai, Jog Mai, Pua Mai (also known as Kankai) and Dew Mai. The region between these four Mai rivers is called *Char Khola* (four rivers) since time immemorial.

As stated in the National Foundation for Development of Indigenous Nationalities Act, 2058 BS (2002), clause (a) of Section 2; '*Indigenous Nationalities*' means *a tribe or community as mentioned in the schedule having its own mother language and traditional rites and customs, distinct cultural identity, distinct social structure and written or unwritten history*'.

In addition, each indigenous nationality (*Adhibasi Janajati*) has the following characteristics: a distinct collective identity; own language, religion, tradition, culture and civilization; own traditional egalitarian social structures; traditional homeland or geographical area; written or oral history; having 'we' feeling; has had no decisive role in the politics and government of modern Nepal; who are the indigenous or native people of Nepal; and who declares itself as '*Janajati*'.

In this connection, Nepal Federation of Indigenous Nationalities (NEFIN) has recently classified all Nepalese Indigenous Nationalities into five major groups in 2060 Chaitra 18 BS (March 31, 2004 AD). The groups are Endangered, Highly Marginalized, Marginalized, Disadvantaged and Advanced group/s. Among them, Lapcha community has been classified into the Endangered Group.

The ancient Lapchas are believed to have originated from the foothills of Mount Kanchanjunga, which they revere as their deity. Lapchas presently live in the Ilam and Jhapa Districts of Nepal. They consider themselves of royal stock. In Lapcha society, alcohol is considered "clean". There is no animosity and caste system among the

Lapchas. The dead are taken out through the broken wall of the house and are buried as their ritual (Ukyab and Adhikari, 2000).

Lapcha language is a derivation from the Tibeto-Burman family. They have their own script and known as *Chhyo-ming* (Annex five). The vowel sound consists 10 letters; known as *Aakap-ming* in *Rong* Language and the consonant sound has 28 letters, known as *Aamu-ming*. Every Lapcha does not speak the Lapcha language, especially young generation of this community. This is due to the influence of the modernization and the educational system of the country i.e. teaching in either the Nepali or English language in schools rather than their mother tongue. However, elder generations of this community can fluently speak the language but few can write the Lapcha script.

The religion of the Lapcha is even more difficult to describe. They practice a form of shamanism and consult with a shaman (*Mun, Bong-Thing, Yaba-Yama*) for their ritual functions. In addition, they say that Buddhism is also their religion. Buddhism prohibits the sacrificing of animals whereas in shamanism it is imperative in many rituals. Yet in practice, they use both religions intermixing them as per their requirement. Few Lapchas now adhere to Christianity as well.

It is important to note that the Lapcha call themselves *Rong*. *Rong-Kup* is the word used when Lapcha are talking about their own people. Outsiders give all other names to them. They find most of these names derogative and condescending. The Lapcha of Ilam district does prefer to be called "*Lapcha*". The word "*Lepcha*", "*Lapché*" and "*Lapcho*" abhor them (Schwerzel et. al., 2000). Therefore, in this report, the word "*Lapcha*" has been adopted to assist them to recognize with their own identity and preference, which can be used uniformly in days to come.

Moreover, most Nepalese call Lapcha as "*Lapché*". This is not very flattering: in Nepali any name ending with the e-sound is derogative. It is believed that "*Lepcha*" is the name given to them by the English colonizers. This name stuck and in most writings it has been used to denote the Lapcha (Schwerzel et. al., 2000).

Generally the Lapcha live in a village where their community built the houses in a cluster. They do not like to live in an isolated condition from their community. As the Lapchas are introvert in nature they like to maintain less interaction with other communities. They are accommodative and always ready to pardon any wrongdoing. However, their neighbors are encroaching in the Lapcha village and gradually snatching a great deal of Lapcha land pushing them towards marginally productive land. They always keep the eyes on the productive piece of land of the Lapcha. There are many instances in which the Lapcha have exchanged their plots of land with their neighbors for a simple present of liquor (Rai, 2000).

The Lapcha community has its government-registered social-institution, which is known as *Rong Sejum Thi* (Lapcha Utthan Manch); this institution is affiliated with the Nepal

Federation of Indigenous Nationalities (NEFIN) and with the National Foundation for Development of Indigenous Nationalities (NFDIN).

The population of the Lapcha community is 3,660 i.e. 0.02% of Nepal's population (CBS, 2003). The Lapcha community is spread over 15 Village Development Committees (VDCs) of the Ilam district, which accounts for 2520 of the population (CBS, 2002). Likewise, *Rong Sejum Thi* has also conducted a population survey in 1999 to know the exact number of their population and distribution. This survey showed the total population of Lapcha is 2710 (Male: 1431 and Female 1279) that are spread over 14 VDCs of the Ilam district. It showed that there are total 486 households in the Lapcha community.

However to minimize these contradictions on population, a study was carried out during March 2004 with assistance from the *Rong Sejum Thi* to find out the exact population of Lapcha community (Annex six). It found that total population is 2589 (Male: 1373 and Female: 1216) those are distributed 15 VDCs of the Ilam district. It accounts 499 households (Roy, 2004). A summary of this study is described further in section 1.2.

1.2 Facts and Figures of the Lapcha community

(a) Distribution of the Lapcha Community

Among 2589 population Male and Female consist of 53 and 47 percent respectively. The smallest population found in the Laxmipur VDC is 10 whereas the largest population size exists in the Fikkal VDC i.e. 368. Correspondingly, married population covers 42 percent of the total population. In the same way, unmarried and widows consist of 55.9 percent and 2.1 percent respectively.

Among total households 499, only two households have been residing in the Laxmipur VDC and Fikkal VDC has 71 families of Lapcha Community (Roy, 2004).

(b) Occupation

The major occupation of this community is agriculture, which covers 59.9 percent of the population. Beside this, school-going population accounts 26.8 percent and the children below 6 years who have potential to join the school are also considered for the study. This population includes 11.9 percent of the total population. There is less than 1 percent of the population engaged in other occupations like driver, foreign employment, services, business, lama (priest in Buddhism) and teacher. Only 0.2 percent of the population takes their profession as teacher, business and driver.

(c) Education

The literate percentage is moderate in this community. It accounts 33.76 percent of the total population. This data also covers the people who are dropped out their schooling. The people who never attend formal education in schools assess 27.54 percent. In this connection, the children below 6 years who have potential to join the school were also included for the study. This population includes 11.9 percent of the total population. Remaining 26.8 percent of the total population attains formal education in school, in higher secondary school and university. Among them, about 4 percent of the population attend the grade 1 to 4 and 3.1 percent in the grade 5. Likewise, less than 2 percent of the total population goes to school at grade 6 to 8 and less than 1 percent of the total population studies at grade 9, 10, 11 and 12. The School Leaving Certificate, Bachelor's Degree and Master's Degree graduates are only 17, 4 and 2 respectively.

(d) Religion

The main religion of the Lapcha community is Buddhism and 99 percent people follow this religion. Remaining 1 percent of the total population converted into the Christianity.

(e) Family Type

Lapcha people prefer to stay in nuclear family rather than in the Joint family. Usually, they convert their family size as nuclear after they get married from the parent family, which is easy to manage. Nuclear and joint family consists of 84 and 16 percent respectively.

(f) Rong Language

64 percent of the total population can speak Rong language fluently but 36 percent cannot. Generally young generation represents this group. Likewise, 99 percent people cannot read and write the language. Hence, to preserve the Lapcha's culture and ritual, promotion of Lapcha language is must (Roy, 2004).

1.3 Lapcha, Biodiversity and Indigenous Knowledge (IK)

The Lapcha are a nature loving people that respect their natural surroundings. There are many places in the Ilam district where Lapcha people have been residing since their ancestor were named after trees, plants and bamboo. Samal Bong, for example, is derived from the Lapcha word for Tuni tree (*Toona ciliata*). The timber of this plant is used for construction of houses and buildings. Therefore, any place where the samal Bong is found, is a good place to live. In Ilam district, one VDC is named after this tree as Samal Bong VDC. One can find *Tuni* tree in this VDC. Likewise, Kol bong VDC is

named after the Okhar trees (*Juglans regia*). This can be taken as vivid evidence that illustrates the relationship between the Lapcha people and their environment. In addition, this is proof that Lapcha are the indigenous people of the Ilam district.

Nepal has been a party to the UN Convention on Biological Diversity (CBD). The main objective of the convention is to ensure conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising from the use of genetic resources. Included in the CBD is the recognition of "the close and traditional dependence of many indigenous and local communities" on biological resources, and the outstanding knowledge about biodiversity that these communities hold. Despite the governments commitment to the CBD so far there has not been a systematic approach to document and inventory Indigenous Knowledge on Biodiversity in Nepal.

Article 8 (j) of the CBD particularly provides the need to guarantee the rights of indigenous people to protect and preserve their knowledge and resource themselves. Therefore, it is relevant to mention the Article here which notes:

Each Contracting Party shall, as far as possible and as appropriate:

In-Situ CBD describes Subject to its national legislation countries should, respect, preserve and maintain knowledge, innovation and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices (CBD, 1994). This study aims at addressing above article of the CBD.

Although Nepal covers about 0.03% of the earth's land mass, it's rich and diverse ecosystem gives it more than 6 per cent of Bryophytes, 3 per cent of flowering plants, 8 per cent of all birds and 4 per cent of mammals in the world (Parajuli, 1999).

The rich biological and social diversity of Nepal are integrally linked in a relationship between the livelihood of the Indigenous Nationalities and their surrounding ecosystems and natural resources. Biodiversity is an important part of the sustainable livelihoods of the Nepalese nationalities due to its socio-economic and cultural importance as many species have religious values and are the source of food, fiber, shelter and medicine (Parajuli 1999). Stemming from this relationship is the biodiversity knowledge and skills of Indigenous peoples and the wisdom related to its conservation that is known as Indigenous Knowledge (IK). IK is crucial to the survival and subsistence of Nepal's Indigenous Nationalities as it provides a basis for food security, human and animal health, education and natural resource management (Subba *et. al.* 2002).

Perhaps there is no other country in the world where one can find such a tremendous amount of biological and socio-cultural diversity in as small a space as Nepal. The different Indigenous Nationalities have their own mother tongue, folk culture, beliefs and practices, dance and music, art and artifacts, tools, games, food, clothing and housing, fairs and festivals, life cycle rituals, and traditional healing practices (Bhattachan, 2000).

As IK is transmitted orally, it is vulnerable to rapid change especially where people are displaced or when young people acquire different lifestyles and values from those of their ancestors. Nepal is currently under a period of rapid change due to globalization and political uncertainty. The loss of IK cannot be recovered and will eventually lead to unsustainable natural resource uses and practices then along with it will go the cultural diversity it supports. The documentation of IK is therefore of crucial importance for the conservation of both the cultural and biological diversity in Nepal. Other advantages to IK documentation include:

- opportunity to equitable sharing of benefits from the use of biological resources and knowledge;
- preserving genetic variety is pointless unless the IK that supported the traditional farming systems is also preserved;
- development efforts that ignore local circumstances, technologies and systems of knowledge have wasted enormous amounts of time and resources (Grenier 1998);
- increased protection of the Intellectual property of Indigenous nationalities from exploitation including pharmaceutical companies and other multinational companies; and
- can adapt modern technological practices with IK to advance people's quality of life but ensure this standard for generations to come.

This pilot study on Lapcha community is an effort to initiate the crucial first step of documenting the IK of the Indigenous Nationalities of Nepal to fill the current Gap.

1.2. Objective

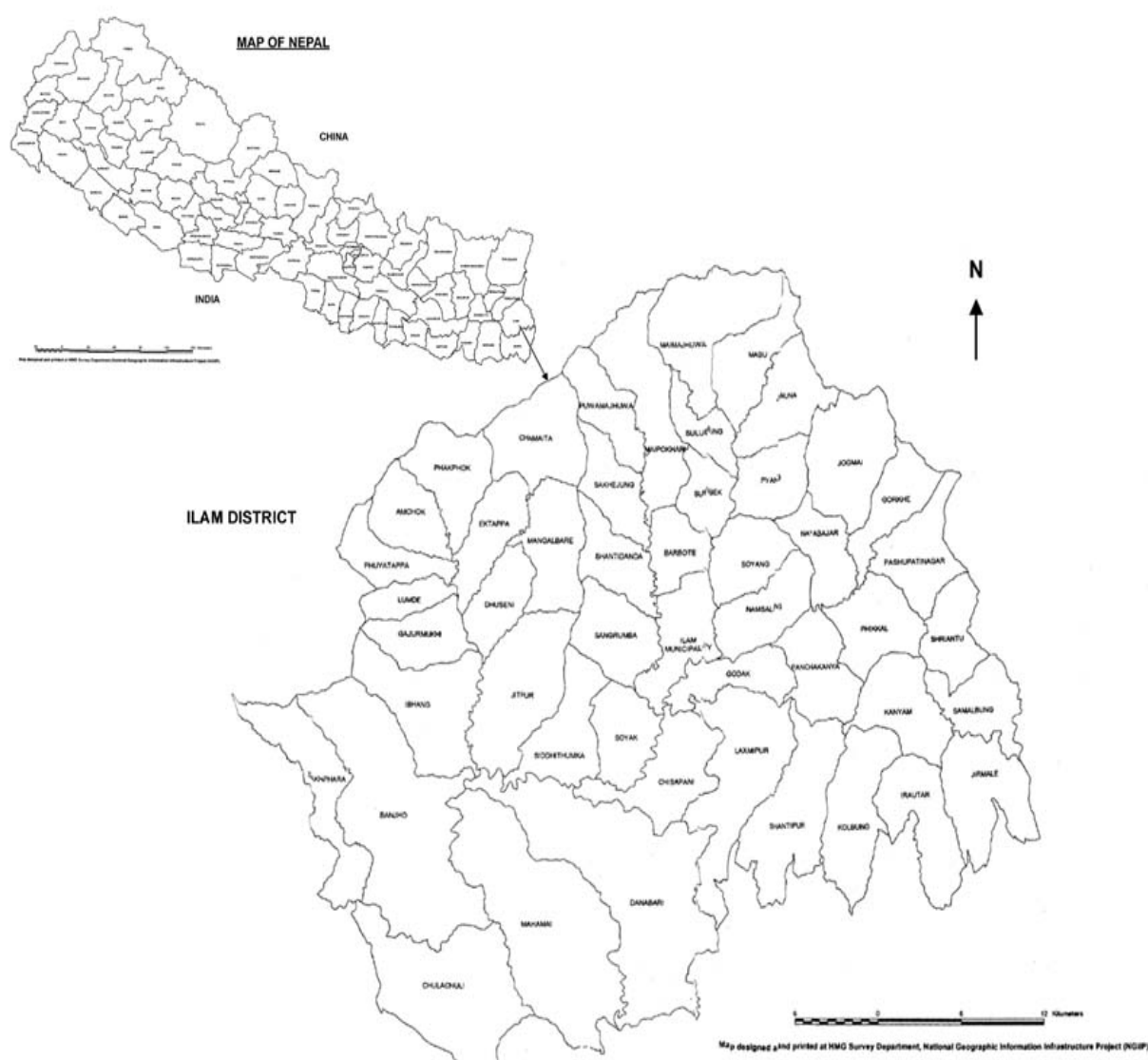
The overall objective of the study is to conserve the cultural and biological biodiversity of Nepal by giving the responsibility of the task to indigenous peoples who are the true custodians of the nature.

Specific Objectives include:

1. Strengthening the institutional capability of the Lapcha Indigenous people's institution including NEFIN for effective networking;
2. Building a database and inventory of plant species and fauna as intellectual property;
3. Maintaining IK for future generations;
4. Engendering a sense of pride and value in traditional knowledge within the communities and a desire to protect and maintain this knowledge; and
5. Empowering members of the communities, particularly women, to continue to document their own IK.

1.3 Study Area

This study was conducted in the Ilam district, Eastern Development Region of Nepal. The district is home to more than 70 per cent of the Lapcha population of Nepal and they are the indigenous people of that area. The population of the Lapcha is spread over 15 Village Development Committees (VDCs) of this district. For the purpose of this study, Kolbong, Fikkal and Shree Antu VDCs were selected because of their accessibility under the present security climate i.e. the counter-insurgency between the Government of Nepal and Nepal Communist Party (Maoist). However, those cover 33 percent of the total households i.e. 499 households. The map below shows the location of study area:



Chapter two

2 Methods of Data Collection

2.1 Primary Sources of Information

The following social methodologies have been administered to acquire first hand information during the field visit (Annex one).

2.1.1 Selection of local research partners

The *Rong Sejum Thi* played a crucial role in the selection of one female and one male local research partner who assisted the principle researcher from NEFIN in conducting the field study. In order to optimise the study results these local research partners had to be motivated, enthusiastic, have a high level of curiosity and analytical capacity and a good understanding of their own culture. Additionally, they must also have the respect and trust of the community members they will be interviewing. After long discussions and brainstorming, two people from the Lapcha community were selected for this that met these criteria.

After the selection of the local research partners, the principle researcher organized a half-day workshop to discuss the objectives, methodology and implication of the study with the them. In addition, they were briefed on each and every relevant component of biodiversity i.e. flora and fauna those have been directly and/or indirectly related with the livelihoods and culture of the Lapcha community. These endeavors were necessary in order to optimize the information collected during the field visits.

Miss Kumari Lapcha aged 22 resident of Bhalujhhoda; Kolbong VDC-9 had been selected as a female local research partner. She is presently studying at a Bachelor level in Education faculty in Mahendra Ratna Multiple Campus, Ilam. As an educated girl, she can understand the Lapcha language but can speak it very little. She was selected to assist her in becoming familiar with her own community's indigenous knowledge and practices during the field visit as an insider (emic) and party outsider (etic) of the community. This also provided her with an opportunity to be exposed to knowledge and practices of her community, which she may not have previously been aware of. Indigenous knowledge and practices can be transferred to the young generation in the future and will help to build ownership feeling among this generation. In this connection, it makes help to preserve these Indigenous knowledge and practices. At the end of the field study, she realized and felt proud of her community's indigenous knowledge and practices.

A male local research partner named Mr. Bhuban Singh Lapcha age 55 resident of Lapcha Gaun, Fikkal VDC-6 agreed to assist for the study. This literate who attended up

to grade 5 at school, matured and elder researcher partner can fluently speak Lapcha language and is very familiar with people in the local community. His part-time profession is *Kaliya* (marriage bureau at individual and local level) and *Bung-Thing* that helped to explore and to assess the relationship between Lapcha livelihoods, culture and biodiversity. Moreover, his profession prevailed to make a good rapport in a short span of time, which was essential to conducting this type of study in an efficient and an effective manners. In addition, as an insider (emic) of the Lapcha community he played a vital role to facilitate many interviews and to dig out the required information. During the interviews, he explained the objectives of the study and benefits of it to the community in the Lapcha language. He answered many questions and doubts raised by the local respondents regarding the study. At the same time, he coordinated with the principle researcher for any critical questions that were hard to answer by him i.e. questions on biodiversity. All conversations and interviews were held in Lapcha language except with the principle researcher. This took 10 to 30 minutes to prepare the local respondents for final discussion and interview on their indigenous knowledge and practices. Generally, it took one to three hours or more to finish this task for a single group and individual as well. This depends upon local respondents interest and knowledge on the topics and their willingness to share their indigenous knowledge and practices with others.

2.1.2 The setting for discussion and interview

Interviews were conducted in a place where the respondents/informants felt most comfortable, usually in a familiar setting relevant to the topic. This enabled informants to remember specific details. For this, the research team first asked the informants for their convenient time. As they preferred, the team usually interviewed in the mornings and evenings till 11:00 PM, sometimes. The interviews were held in a very familiar way i.e. taking *Chi* (local beer) and *Arok* (local liquor) and interacting with them on the relevant topics. These tasks were carried out in the kitchen, drawing room and courtyard of the houses as per the conditions existing during the interviews. Moreover, the team preferred to stay the night at respondent's houses to strengthen rapports. These types of setting are very useful to get information in a comfortable manner as well as in informal situations from both sides i.e. interviewees and interviewer.

2.1.3 Using different Participatory Rural Appraisal (PRA) Tools

PRA is a "people-centered" development model that focuses on processes whereby individuals and societies build their capacity to meet their own needs and improve the quality of their own lives" (Durning 1989, cited in Grenier 1998). This model is beneficial to this study as it helps to meet the objectives of study. PRA techniques that were utilized in this study were:

1. Participant Observation;

2. Semi-structured interviews;
3. Focus Group Discussion; and
4. Informal Interviews and interaction with key informants

2.1.3.1 Participant Observation

This method involves direct field observations of the Lapcha community's indigenous practices on biodiversity with reference to the topics covered in the semi-structured interviews and tries to understand and perceive their indigenous knowledge. The technique of 5Wh and H for asking questions was administered during field visits i.e. What? When? Where? Who? Why? and How's?, which were incorporated with participant observations. This observation of Indigenous practices enhanced, strengthened and clarified IK collected in the semi-structured interviews.

This technique helps to explore the present life style of Lapcha community and their association with biodiversity in daily life. This became a road map to assess details on their indigenous knowledge and practices in biodiversity. For example, many bamboo artifacts were noticed while discussing at kitchen.

2.1.3.2 Semi-structured interviews

This tool was administered to list the flora and fauna species, which have been part of the Lapcha's livelihoods in their indigenous knowledge and practices. Further, it focused on exploring indigenous foods, medicines, artifacts, rituals and culture with reference to biodiversity. This explorative technique helped to go into the topics in detail during focus group discussions, informal interviews and interactions with key informants (Annex two).

2.1.3.3 Focus Group Discussion

After collecting information from semi-structured interviews, the team attempted to dig out further information on the study topics using this technique. Using this method, homogenous groups were identified for different topics of the study such as women groups, elder people groups, young people groups.

Discussion was held on foods, ritual and culture and medicine with women group. Information on mushrooms, medicine, usage of bamboo crafts and various Lapcha culture and rituals were collected from this group. Likewise, elder people group were instrumental to deliver the information on ritual and culture those are significantly importance with biodiversity perspectives, composition of various plants and their parts to make medicine, usage of bamboo crafts and information on birds. Further young

people groups discussed on their preference over indigenous knowledge and practices on foods and medicine. All collected information were inter linked with each other groups.

During this process, identified groups were useful in acquiring information however it was realized that delineation of indigenous knowledge and practices among these groups was a difficult tasks. Therefore, mixing of these groups was useful for this study when participatory discussion were held. Further, it also helped to triangulate the collected information. For this, women were encouraged to raise their voice on their indigenous knowledge.

2.1.3.4 Informal Interviews and interaction with key informants

During the focus group discussion, key informants were identified such as traditional healers for information on indigenous medicine; elder persons for uses of Bamboo and meaning of bird's calling and singing in the Lapcha community; and so on. These informants were interviewed individually either at their home or in a place that they preferred.

While administrating the above-mentioned techniques, open-ended questions were asked that gave emphasis on topics of discussion among the respondents. These processes were carried out in an informal and a friendly way in which everybody could take part without any hesitation.

2.1.4 Audio Recording and Photographs

During the field visit, the principle researcher captured many photographs in slides to document the existing indigenous practices i.e. indigenous foods, medicinal plants, indigenous artefacts etc (Annex seven). In addition, audio tape recorders were used to record discussions that were later transcribed into field notes. These techniques were used with the permission of the respondents.

2.2 Secondary Sources of Information

For the study, various papers, workshop proceedings, journals and books have been searched and collected on the topic i.e. Indigenous Knowledge and biodiversity. But, It has been difficult to collect specific information on the Lapcha communities as very little has been published or studies on these communities are not easily accessed. This is therefore a pioneer study on the Lapcha community with reference to indigenous knowledge on biodiversity.

2.3 Verification of the collected information

After preparing working draft of this study on February 2004, the principal researcher went to the field to verify and to share the collected information on March 2004. Firstly, Lapcha people got very happy to see their indigenous knowledge and practices in a documented form as a report. Secondly, they realized that this sort of work has to be done themselves in days to come for their future generation because such type of much information has already lost due to the lack of the proper documentation.

The principal researcher went through line-by-line and word-by-word of the document and translated them into Nepali Language with local research partners. During this period, he shared all information and verified them whether they have been described properly or not. This gave an opportunity to edit and to rewrite the collected information on working draft. This process took two days to complete. After that, the principal researcher went to field to discuss on the topics with selected key informants for the same purpose. Local research partners accompanied him.

During March 2004, the principal researcher went to field with two assignments. One was to verify and to confirm the collected information on indigenous knowledge on biodiversity and another was to collect population, socio-economic condition of Lapcha community which has been describe in section 1.2. The National Foundation for Development of Indigenous Nationalities (NFDIN) had partly supported the second task.

2.3 Lesson Learnt from the methodology

The research team learnt the following lessons on PRA methodology that may be useful for future studies:

- documentation of IK should include observations of indigenous practices;
- discussion groups should take place in a setting relevant to the topic of questioning;
- discussion groups should be well briefed on the purpose of the research;
- questions should be split into various components and asked after a full narrative from the interviewees;
- preferably discussion groups should be of 6-12 in size to manage the group efficiently for discussions;
- women should be in discussion groups with other women;
- specific questions such as indigenous knowledge and practices on pregnancy and delivery should be asked by the women interviewer because they do not want to share this sort of information with male interviewers;
- discussion groups should be conducted at a time when it is most convenient for the participants;

- focus groups should be identified with relevant topics and their usages;
- there should be a cross sectional representation of the community in the discussion groups;
- members of the discussion groups should be comfortable in the interview settings;
- members of the discussion groups should be made not feel compelled to express views they think the interviewer wants to hear; and
- terminology of the interview questions should be made compatible with the local community and their level of understanding.

2.4 Limitations

The following limitations have been realized for the study:

- since the end of the ceasefire between the Maoists and the Government of Nepal the current security situation limited the study because the research team was unable to go to remote areas where the Lapcha community resides;
- the sustainability of the study is questionable due to funding restrictions. As a result; local researcher partners may not continue to document their Indigenous Knowledge beyond this study; they must be supported with some financial incentives regularly through *Rong Sejum Thi*;
- this type of study is incomplete with only one period of field research; it is a limiting factors that will disallow the documentation of the whole indigenous knowledge on biodiversity of the Lapcha community;
- as a pilot study, the results of this are non-conclusive but are simply a small building block and insight into the Lapcha community in Nepal; and
- the methodology adopted in this study may or may not be applicable to other indigenous nationalities in due to the diversity of culture and geography of Nepal.

Despite these limitations this study can provide a valuable example and starting point to other studies or organisations that intend to document Indigenous Knowledge on biodiversity.

Chapter three

3 Findings

3.1 Findings

3.1.1 Indigenous Foods of Lapcha Community

After the field study, it is found that Lapcha people have been happy to eat whatever they found in the forests. Their indigenous foods have been categorized as wild edible foods, food grains, vegetable and mushrooms. Moreover 12 species of wild edible foods; 11 species of food grains; 17 species of vegetables and 11 species of mushroom have been documented during the field study that are directly related with the indigenous feeding behavior of Lapcha community. The study does not assess to explore their present feeding behavior. A list of all floral and faunal species, which are documented during the field study, has been given to the Annex four with their Local, English, Rong-Ring and Scientific names.

3.1.1.1 Wild Edible Foods

The following are the wild edible foods of the Lapcha community that have been used for many generations. They have nutritional and medicinal values. They are:

Table 1: List of Wild Edible Foods

<i>Giththa</i>	<i>Tarul</i> (Yam)	<i>Bhyakur</i>	<i>Others</i>
<i>Ghar Giththa</i> (domestic)	Ban Tarul (roots grow vertically)	<i>Rani Bhyakur</i>	Bamboo shoot
<i>Ban Giththa</i> (wild; found at forestland; contains more roots and root hairs than <i>Ghar Giththa</i> and is yellowish in color)	Ghar Tarul (roots grow vertically)	Khasre Bhyakur	<i>Pidalu</i> (Colocasia)
	Simal Tarul (roots grow horizontally)		<i>Sakharkhanda</i> (Sweet Potato)
	<i>Jate Tarul</i> (blue in color)		
	<i>Kukoor Tarul</i>		

3.1.1.2 Food processing technique of Giththa

Giththa, as a wild edible food, has a specific procedure to preparation for eating. It has a bitter taste and has to be boiled with ash to neutralize its bitterness. After that, it has to be left under running water to further reduce its bitterness i.e. in a stream or tap to

make it ready for eating. It taste like boiled potato. It tastes more delicious with milk and sour milk.

These Giththa germinate during the month of Baisakh (mid April to mid May) in the forested areas and roots of them are ready to harvest in the month of Magha and Falgun (mid January to mid March).

3.1.1.3 Kukoor Tarul: Sterilization and Simal Tarul: poison

In past, Lapcha people used to eat *Kukoor Tarul* regularly. They realized that it contained chemical elements that prevented Lapcha people to give birth babies. Therefore, there population has been decreased and that is why there is small number of population existing. However, a scientific test has to be carried out to justify this fact, which is beyond the scope of this study.

Simal Tarul has to be debarked first before its use otherwise it is poisonous. Cattle will die immediately when it eat them. In addition, it may also affect human health if it is consumed without debarking. Therefore the precautions need to be taken while using this *Tarul*. The debarked *Tarul* is simply boil and eat. In this way, the Lapcha people possesses the technique to eat wild edible foods even though they have poisonous properties.

3.1.1.4 Food processing technique of Bhyakur

Bhyakur can simply be boiled and eaten. They are also roasted in *agena* or in *chulho* (oven) for eating. It contains high fibers so that it helps to wash out any unnecessary foodstuff in the small and large intestines and cleans the bowel. The human excreta seem like *Sunpat* (a fibrous plant used for making ropes).

In addition, *Khasre Bhyakur* is used as a medicine for cattle when they suffer from the disease of Diphtheria (*Bhyagute* disease). The paste of Bhyakur is administered onto the cattle's tongue. Before it, an effected part need to be washed out and cleaned by rubbing with the maize cobs.

3.1.2 Food Grains

This is the list of food grains those are used by the Lapcha community.

Table 2: Food Grains

<i>Kaguni</i> , (extincted at present),	<i>Junelo</i>	<i>Ghaiya</i>	<i>Pangdur</i>
<i>Sama</i> (extincted at present)	<i>Kodo</i> (Millet)	<i>Makai</i> (Maize)	<i>Jau</i> (Barley)
<i>Gahun</i> (Wheat)	<i>Mithe Fapar</i>	<i>Tite Fapar</i>	

3.1.2.1 Farming of *Kaguni* and *Sama*; a wild rice

The process of farming *Kaguni* in ancient times was very interesting. Firstly, the Lapcha people destroyed the forests with fire in order to cultivate it. They usually cultivated these crops on the slopes of the forestland. They rolled the stone boulders on the land in order to eradicate weeds. Then they spread *Kaguni* seeds for sowing during the months of *Chaitra* and *Baisakh* (mid March to mid May) and harvested on *Asoj* and *Kartik* (mid September to mid November). It has a single stalk and looks like the tail of a cat. Rice from this plant is white in color and has very delicious taste. They practiced this cultivation for few years in the same patches of the forestland until it possessed the fertility. After then, they shifted to another patches of forestland for cultivation. This is a part of the shifting cultivation practices that Lapcha community is historically known for.

During the field visit and discussion with key informants, the *Kaguni*, was separated into two types on the basis of its color; I) White: this has short stalk; and II) Yellow: this has long stalk that is black in color.

Cultivation and harvesting of *Sama* were same as *Kaguni*.

3.1.2.2 Farming of *Ghaiya*; a wild rice

Farming of *Ghaiya* was same as farming of wheat. Agricultural land was prepared by digging and turning over soil and then dry agricultural residue and weeds were burnt over the soil. This process enriched the soil fertility. In this way, agricultural land especially terrace land was prepared for plantation of *Ghaiya* and broadcasted the seeds in the field. The seed sowing months were *Falgun* and *Chaitra* (mid February to mid April) and harvesting months were during *Shrawan* and *Bhadra* (mid July to mid September).

The remaining food grains have been cultivated at present with normal agricultural practices.

Case I: Tite Fapar

Tite Fapar: Curse to Agricultural Land

In past, if agricultural land did not give satisfactory production, Lapcha people used to curse to that land; saying that "*Tite Fapar Chharer Chhodidinchhu*" that means I will remain you (agricultural land) barren by sowing *Tite Fapar* and they did not usually harvest that crops. Finally, that land became unproductive. This case illustrated that Lapcha people can behave with nature and communicate with her accordingly.

(Source: Field Survey, 2004)

3.1.3 Vegetables

The vegetables which were used in the past has been documented as follows:

Table 3: List of Vegetables

Sisnu	Sag	Nigro	Others
<i>Patle Sisnu</i> <i>Sisnu</i> <i>Bhangre Sisnu</i>	<i>Rani Sag</i> (from <i>Sipali</i> tree) <i>Chauri Sag</i> <i>Thotne Sag</i> <i>Boke Sag</i> (from shrub) <i>Chinde Sag</i> (from tree)	<i>Kali Nigro</i> <i>Seti Nigro</i> <i>Saune Nigro</i>	<i>Tite karela</i> <i>Totala ko Ful</i> (from tree) tender leaves of <i>Tanki</i> <i>Jaringo</i> <i>Bethu</i> <i>Ban Mula</i> (wild radish)

These vegetables are prepared for eating by being boiled and fried and are eaten with salt, chilly and other spices. In addition, they are also used for medicinal purposes, which are discussed in the following chapter.

Spices: Lapcha people do not prefer spicy food. They simply used *Noon* (salt), *Khursani* (chilly) and *Lasun* (Garlic) to make vegetables tasty in ancient times. They preferred curry without salt and vegetable with salt. On this, there is folklore that goes:

" *Dal khanu alino; Sag khanu nunino*"

Oil and fat: The Lapcha usually use bone marrow of domestic animals. In ancient times, they used to go hunting with their bow and arrows made from bamboo. They also use dead bull bone marrow to supplement the oil and fat when making vegetable.

3.1.3.1 Food processing techniques of Sisnu

Firstly, tender leaves of *Sisnu* are picked and put into the loosely knitted bamboo basket. Maize flour is spread over these leaves. This is used as an ingredient to separate the insect from the leaves and this process takes around 30 minutes but it depends on the quantity of the leaves. After removing insects in the leaves, they are put into the boiled water and are mixed with again maize flour to make *sinsu* curry gravy. In addition, simply salt and chilly are used to make it tasty.

Case II: Tatelo

Tatelo: significant ritually, culturally and medicinally

This tree is found in sub tropical areas of Nepal and Lapcha people call it *Totala*. The months of Asar and Shrawan (mid June to mid August) are the flowering season of this tree. The flowers of this tree are used as vegetable. It has a yellow color. In addition, the buds sprout at night and fall on the ground at the same time. So that people cannot see this flower sprouting on the tree. Lapcha people take this as mysterious. Further, they believe that this flower is very pure as bees and other insects are not able to extract its nectar as it falls in the night. The pods contain seeds with white wings. Moreover, the Lapcha community uses these seeds in every ritual and cultural function as it signifies good omen. They make a garland with these seeds that is used in their marriage ceremonies; it has equal significant in *Sindur* (vermillion), *Pote* (garland of glass beads) in *Bhramin*, *Chhetri* and other ethnic groups. It is also mixed with ghee and used as a *tika* on the forehead.

The flower of the *Tatelo* tree has a bitter taste. Therefore, it is boiled in water to remove or reduce its bitterness. This is also useful as a medicine for curing fever.

(Source: Field study, 2004)

3.1.4 Chyau (Mushroom)

There are a number of varieties of wild mushroom that have been used by the Lapcha community. They are:

Table 4: List of *Chyau* (Mushroom)

<i>Gobre,</i> <i>Kanya</i>	<i>Jhhari</i> <i>Dewale</i>	<i>Bagale</i> <i>Gidhdhe</i>	<i>Ande</i> <i>Thunche</i>	<i>Kane</i>	<i>Chamre</i>	<i>Kalinge</i>
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These *Chyaues* are found during the months of the rainy season i.e. from *Jestha* to *Asoj* (mid May to mid October) in the forests, *Khet* (irrigated land) and *Bari* (non-irrigated land). These wild foods are dried and stored for periods of food shortages. Lapcha people believe that these foods contain as much protein as in animal meat and use it as a substitution for animal meat or flesh. Moreover, they present these *Chyau/s* to the *Ringboche/s* (Buddhist Priest) as souvenir because they are vegetarians. They usually eat fry *Chyau* with soup. But they take only soup of *Chamre Chyau* and throw its solid parts away as wastage.

3.1.4.1 Identification of non-edible Chyau (poisonous Chyau)

The non-edible *Chyau* contains black and dark blue colored rings beneath the head of the *Chyau* and color of head is orange and black. These *Chyau* are very poisonous. Likewise, *Chyau* found in the bamboo clumps is also non-edible *Chyau*. Further, *Chyau* growing in the stumps of Chilaune (*Schima wallichii*) is known to be non-edible.

3.1.4.2 Identification of Edible Chyau

Chyau grown in the stumps of the Khanyu (*Ficus semicordata*), Katus (*Castanopsis spp*), Mauwa (*Engelhardtia spicata*), JhHINGANE (*Eurya accuminata*), Kyamun, Uttis (*Alnus nepalensis*) and Mel (*Pyrus pashia*) trees were documented as edible *Chyau* during the field visit. It grows on two to three years old and rotten stumps of these trees. In addition, when these stumps are cut for firewood and used for cooking or heating, they give off the smell of *Chyau*.

Kanya Chyau is found on the stumps of Khanyu (*Ficus semicordata*), Katus (*Castanopsis spp*), Dudhilo (*Ficus neriifolia*), Gogan (*Saurauria nepaulensis*), JhHINGANE (*Eurya accuminata*) and Mauwa (*Engelhardtia spicata*) trees. Similarly, *Gidhdhe Chyau* is grown on the stumps of Katus (*Castanopsis spp*) and Mel (*Pyrus pashia*) trees. Likewise, *Thunche Chyau* is found in the Naspati (*Pyrus communis*) and Katus (*Castanopsis spp*) trees. In addition, the stumps of Uttis (*Alnus nepalensis*) and Mauwa (*Engelhardtia spicata*) trees possess the *Chamre Chyau*. However, *Jhhari Chyau*, *Kalinge Chyau*, *Gobre Chyau* and *Ande Chyau* are collected from maize farms.

3.1.5 Indigenous Knowledge on Medicinal Plants for different Diseases

There are tremendous amounts of indigenous knowledge on medicines within the Lapcha community. A 79 years old Mr. Pasang Chhiring Lapcha of Lapcha Gaun, Fikkal VDC-6 told us that he has not yet seen the health post and hospital when he gets sick. Instead he uses different parts of plant species i.e. roots, bark, stem, leave, fruit and flower to make treatments for different diseases. However, his knowledge on this sector will

become extinct, as the new generation of Lapcha does not learn about indigenous medicines preferring rather to use allopathic medicines.

The medicinal plant species have been categorized on the basis of disease because a single medicinal plant species by itself does not cure a single disease; it needs a composition of various medicinal plant species. 50 varieties of medicinal plant species have been recorded for 14 different human diseases. In addition, two more insecticides for agricultural crops are also documented.

Not all medicinal plant species used by the Lapcha people have been recorded in this report. This is an area, which requires further documentation.

Table 5: List of Medicinal Plants/Insects

Tite Fapar	Bojho	Siltimur	Gawara	Ban ukhu
Sisnu (domestic)	Ban Bihe	Abijal	Hadchur	Pahelo lahara
Rani Sag	Rato unyu	Bhainsi Singe	Bhuichampa	Majeto
Chauri Sag	Ghurpis	Gurjo	Chiple Jhhar	Basak
Kali Nigro	Titepati	Gobre Kanda	Chousur	Surti
Tite karela	Buki Jhhar	Arimoth	Mauwa	Gahat
Tatelo	Fachyang	Limbuni Ful	Akhle Jhhar	Manpaha
Bethu	Amba	Babari Phool	Rato Akhle	Sim Sag
Ban Mula	Mel	Haledo	Bakhra Kane	Kalo Ukhu
Amala	Guyala	Chiraito	Pani Amala	Gope Bans

Table 6: List of Diseases

Appetizers and Digestive system	Headache	Small Pox	Pinas
Internal Pimple and Fever	Toothache	Eye Problem	Jaundice
Ear Problem	Blood Pressure	Rheumatic pain	Fever
Diarrhea and dysentery	Wound and cuts		

Appetizers and Digestive system

Ban Bihe is a very small plant with thorns that makes it very hard to harvest. It grows in bunches. It has medicinal value. It is simply prepared by boiling the plant and then pickling it. It is used as an appetizer when someone becomes ill and does not wish to have more food. When taken it helps in making the digestive system strong and also assists in curing tongue rashes. Further, it is also used as a medicine for small babies that are suffering from the common cold or fever. Similarly, seeds of this plant are useful to cure headache. For this, seeds have to be ground to make paste and administered onto the forehead. Likewise, dusts of roots are used to cure pneumonia and administered orally. At present, this plant is hard to find. It becomes endangered due to the harmful insects.

Wound and cuts

A composition of leaves of *Rato unyu* (red fern), *Ghurpis* (fodder tree), *Titepati* and *Buki Jhhar* are ground and made into a paste that is administered onto the effected area.

Diarrhea and dysentery

Fresh roots of *Kali Nigro* are firstly ground and mixed with hot water, which are then administered orally. Color of this solution seems purple. It can also be chewed as beetle nut. The tender leaves of this plant can also be used as a vegetable. This plant is used to cure diarrhea and dysentery.

Kali Nigro is found in the warm and moist areas, usually stream and riverside, rocky area and sloppy land.

Fachyang, looks like a zinger but is yellowish in color, is also used to cure diarrhea.

Roots, barks and tender leaves of Guava (*Psidium guajava*) are ground to make a juice and administered orally to help stop diarrhea and dysentery. It tastes bitter. In addition, bark and tender leaves of this tree is used to cure common cold, throat problem and coughing.

Bark of Mel (*Pyrus pashia*), Guyala and Amala (*Phyllanthus emblica*) are ground to make syrup and administered orally.

Manapaha, a toad, green in color, is boiled and ground and made into a soup that is then administered orally.

Sinusitis (Pinas)

Leaves of *Abijal* (grass; creeper) are crushed into small pieces and filled into a bamboo pipe and steamed over a fire at the chulho or at the *agena*. When it produces smoke-vapor; inhale it strongly as one puffs the *Gaza* (True Hemp). Bananas' leaves are also used as a substitute of the bamboo pipe.

Headache

The roots of *Bojho* are ground and wrapped in thin cloth and are then wrapped onto the effected part.

Body pain (Jiu Dukheko), Sprain (Markeko)-Rheumatic pain

Roots of *Bhaisi Singe* (a climber that looks like buffalo's horns) firstly are ground and mixed with honey and fresh egg to make a paste. The paste is administered orally. In

addition, *Bhaisi Singe* is also effective for fracture of hands and legs. For this, paste of *Bhaisi singe* is administered and wrapped in the effected part of the body.

Toothache

A seed of *Bobre Kanda* is firstly roasted into the *Diyo* (a traditional lamp lit with mustard oil) and when it produces smoke-vapor; it is then inhaled through mouth as one puff the *Tambaku*. It is very effective to cure the tooth germs.

Similarly, roots and seeds of *Arimoth* (Shrub) are firstly ground and then the paste is administered to the effected area.

Eye Problem

Chewed roots of *Limbuni Ful* (shrub) are blown before the effected eye (human being as well as cattle) but thin a cloth or handkerchief is placed over the eyes in order to avoid the direct effects of the medicine. In addition, nodules in the roots of this plant are used to make a garland, which gives off a pleasant smell.

Ear Problem

The solution made from the leaves of *Babari* is used as medicine for ear problems. Few drops of it have to be administered into the effected parts.

Fever

Haledo, looks like zinger but is blue-black and yellow in color, is used for fever control. It is firstly ground and made syrup for the oral administration. Further, it is also used for stomach problem.

Similarly, *Chiraito* is also useful for curing fever. It is firstly cooked for half an hour to make syrup (coffee color) and administered orally. Further, it is also useful medicine for headache, body pain and sprain.

Chauri Sag, vegetable, is used to cure fevers. This sag, creeper, grows from Falgun to Jestha (mid February to mid June) and has a blue colored flower. Its habitat is forestland and pastureland and is not found in wetlands. It has bitter taste. It is simply fried with rice and eaten for curing the fever. It is also useful medicine for body-pain and sprain as well.

Small Pox (*Dhadura*)

A combination of *Gahat* (a kind of pulse) and *Manpaha* (a kind of toad) firstly are boiled and ground and finally made into a soup. This soup could be used to cure small Pox.

Similarly, insects found in the banana plants called *Gawara* (white borer) are cooked into a bamboo pipe or over banana's leaves and turmeric leaves and eaten in order to cure this disease. In addition, this insect can also be used freshly (without cooked and has to be ground) for the same disease.

Case III: A hand fracture

A hand Fracture: a real case study

Mrs. Chhatra Maya Lapcha (73), resident of Shree Antu VDC-3, had fractured her left hand three-four months ago. She went to hospital for treatment and had plaster put on it. But she had pain regularly and was unable to get complete treatment. After that, she used local medicines to cure this ailment, which took only one and a half months. These days, she is working again and her hand is healed. The study team interviewed her about this medicine and its composition.

The following combination of medicines was used: Hadchur (leave), Bhuichampa (tuber, roots), Rato Mato (red soil), Chiple Jhhar (root), Simrik (red rock), Chousur (vegetable, leaf and seed), Mauwa (tree, bark) and Bhaisi Kande (root). These medicines were firstly ground to make a paste. This medicinal paste was further mixed with cooked and semi liquid millet flour. This combination can then be used as a plaster. That covers the portion of fractured bone that was then covered with hand-made Nepali paper (Lokta Paper). In addition, a piece of Mal Bans was used to make the fractured portion immovable.

(Source: Field study, 2004)

Blood Pressure (BP)

Fresh *Ban Mula* (wild radish) is used for this disease. It has yellowish roots.

Similarly, *Sim Sag*, which is found in the wetland, is useful for Blood Pressure patients. This *sag* should simply be boiled and made soup then eaten to help prevent blood pressure problems.

Internal Pimple and Fever

A composition of leaves and roots of *Abijal* (grass; creeper), roots of *Akhle Jhhar*, roots of *Rato Akhle* and leaves of *Bakhra Kane* are firstly ground and mixed with lukewarm water it is then filtered and administered orally. It is used to cure the internal pimple and wound and internal fever as well.

Jaundice

Fruits of *Pani Amala* (grown beneath the ground with root parts) are used for this disease. Similarly, black sugarcane (*kalo ukhu*) is useful for the same disease.

A composition of *Pahelo lahara* (climber), *Misri* (further processed sugar) and tender leaves of *Titepati* are firstly boiled and made into syrup. A spoonful of syrup in water can be given to a jaundice patient before breakfast.

3.1.6 Indigenous Knowledge in Agriculture and Livestock

Insecticide

The Lapcha's indigenous knowledge in making insecticide to prevent *Lai kira* (Aphid) in agricultural crops such as *Iskus* (chayoti) was documented during the field visits. For this, fresh and matured tobacco leaves (*Nicotiana tabacum*) firstly ground into the *Okhali* (a wooden grinder) in order to extract juice from them. Practices show that steamed leaves are more effective and easy to make juice from. This juice is then made into a solution with water at a ratio of 1:2 (tobacco: water). This solution is sprayed over infected plants.

In addition, this solution is also useful to medicate cattle for parasites like leeches and lice. The Lapcha community believes that other communities have adopted this knowledge from them.

Seeds storage and preservation

The dust powder of *Bojho* can help to preserve the seeds of wheat, maize and beans. The root of *Bojho* is firstly dried either by the sun or in an oven (place on the *Bhar*, a bamboo tray usually placed over the traditional oven; *chulho*). After that, these dried *Bojho* are then ground into dust powder. The dust powder is packed into thin cloth and placed into the center of the storage seeds. The smell of this *Bojho* powder prevents the storage seeds from the *Ghun kira* (grain borer). 50 grams of this powder is necessary for 1 *pathi* of seeds (1 *pathi* equals to about 4.5 litres).

Case IV: Day of Medicinal Plants Collection

Lapcha people believe that Medicinal Plants should be collected on Saturday and Tuesday only as it has better effects on the respective ailments and diseases. Usually, *Yaba-Yama*, *Bongthing* and *Mun* (traditional healers) revive these medicinal plants with *Mantras* to get good effects of the medicine. Likewise, first Tuesday after the *Tij* (a hindu festival) festival is known as the day of collection of medicinal plants. Similarly, days of Sun eclipse and Moon eclipse are the best period for collecting medicinal plants. On these days, they believe that rays of solar and lunar have beneficial effects on the medicinal plants. In addition, the plants collected in theses days does not need to be revived by the traditional healers.

(Source: Field Survey, 2004)

3.1.7 Lapcha Indigenous Knowledge on Natural Dye

Red color

There are two types of *Majeto* (climber), I) Small leaf *Majeto* (roots and leaf) and II) Large leaf *Majeto* (roots). Roots and leaves of these two *Majeto* are firstly ground and mixed with cold water to make a solution. This gives a red and permanent color. One can dye cloth with this solution to make it red. However, one should avoid washing this dyed cloth in hot water because this makes it fade.

Black ink

Maize is roasted till it gives a black color, and then it is ground to make a powder. This powder is mixed with cold water with solution of tender leaves of *Titepati* to make a black solution. This can be used as black ink. In the past, Lapcha people used to write with this ink and old documents are still found which is written with this ink.

Blue color

Ground matured seeds of *Basak* (shrub) are mixed with cold water to give blue color, which can be used to dye cloth.

3.1.8 Lapcha Indigenous Knowledge on usage of Bamboo

3.1.8.1 Uses of Bamboos (*Bans*) in the Lapcha community

At 75 years of age Mr. Jagat Bahadur Lapcha resident of Bhalujhhoda, Kolbong VDC-9 explained that Lapcha people were originated together with *Bans* on this earth. Therefore, different species of *Bans* have been used for their livelihood; from birth to death and other cultural and ritual ceremony. *Bans* fulfill all their necessities to make livelihood comfortable such as for kitchenware, agricultural appliances, construction materials, and weapons for hunting.

In this study seven different species of Bamboo have been documented as described below:

Table 7: List of *Bans* (Bamboo)

Bhalu Bans	Chille Bans	Mal Bans	Paryang Bans
Choya Bans	Gope Bans	Nibha Bans	

Bhalu Bans

This bamboo has had many uses in the Lapcha community ever since the time of their ancestors. A bamboo container made from three nodes is used to fetch water. A single node has the capacity to hold about four liters of water. In this way, a single bamboo water container can carry up to 12 liters of water.

Likewise, this is used to keep milk for the processing of sour-milk, butter and ghee. For this, a single node bamboo is used.

Moreover, a single node bamboo is also used for drinking of *Tumba*, a fermented drink made by millet. Drinking of *Tumba* is very common in the Lapcha community and is mandatory for cultural, ritual and religious ceremony.

It is also useful for the storage of salt, food grains i.e. paddy, wheat, maize, rice etc. Hence, this container is commonly used for domestic chores.

This bamboo is also used as a construction material for building wood huts and houses. It is basically used as pillars and beams; planks for flooring, trusses to support a roof and roofing the houses especially kitchen.

Green *Bhalu Bans* is also useful to cook rice, fish and meat. It functions like pressure cooker as we use these days.

If this bamboo is cared for and preserved properly, it can be used for one generation (more than 50 years).

Choya Bans

Lapcha people believe that they are originated with this *Bans*. They said that it could survive up to one thousand years. They usually compare this *Bans* with Sal (*Shorea robusta*) for its longevity and strengths.

This Bamboo is taken as soft. The bark of one to two-year-old bamboo is used to make threads and ropes. Various Bamboo crafts are made with this Bamboo such as *Namlo* (used to carry loads on head) and *Damlo* (use to tighten cattle to sheds). Other household appliances are also crafted from this *Bans* including: *Doko* and *Thunche* (use as a backpack to carry loads of *Namlo*), *Tokari* and *Dalo* (use to keep food grains and others), *Jhhak* (use to store Potatoes), *Kakro* (used to keep small baby as baby sitter), *Pecha* (used traditionally to extract the oil of mustard and other oily grains), *Chhapani* (used to filter millet *Janda*), Pipe for drinking *Tumba*, fermented millet, *Mandro* (used as storage for food grains), *Nanglo*. In addition, it is also used to make *Ghum* (used to prevent from the rain as Raincoat and umbrella) and *Dhadiya* (used to catch fishes in the river).

The fresh shoots of this Bamboo are also used as a vegetable that is known as *Tama* (fermented bamboo shoots). Roasting in *Chulho* or in *Agena* can simply eat this *Tama*. Only this *Bans* is used to make *Tama*.

This *Bans* is further useful to make the frame to support 108 lanterns for all ritual purposes. The light is made of flower of *Khar* and oil.

Chille Bans

This Bamboo has various usages as a construction material i.e. pillar, to make partition walls etc. but this has only two to three year life. In addition, this is a good bamboo to make pots for drinking of *Tumba*. This is also useful for making mechan to support chayote plants and give mechanical support to other vegetable plants that are climbers. To sum up, this Bamboo is used as alternative Bamboo when other species of Bamboo is not available.

Gope Bans

Gope has a special use in the delivery of human babies. It is used as a blade to cut the umbilical chord adjoining a mother and her baby.

It is also used to make musical instruments such as *Basuri* and *Jor Murali* (flute). Lapcha people use flutes with five holes in *Murali*. They make these holes with the help of fire. Generally, *Murali* has seven holes.

Case V: Belief on *Bans* (Bamboo)

Lapcha belief and practices on *Bans*

Bamboo Grass

Lapcha people do not give Bamboo grass to cattle during the rainy season i.e. Shrawan to Asoj (mid July to mid October). They believe this is not good for cattle's health. They usually use Bamboo grass during the dry season i.e. Kartik to Falgun (mid October to mid March). This grass is warmer than other grass.

Bamboo Plantation

There is a belief in the Lapcha community that Bamboo and wild Banana should not be planted as they grow naturally.

Usage of Bamboo

Lapcha people invert bamboo for daily uses (i.e. the bottom of the bamboo is turned upward and the top of the plant is placed downward). Conversely, they use the same position as naturally growing bamboo for funeral processions and other ritual ceremonies i.e. *Dhami-Jhhakri*.

Day of Bamboo harvesting

Lapcha people believe that Bamboo should not be harvested on Tuesday and Saturday for any purposes. It may decrease the durability of the Bamboo due to the effects of insect-borers.

It is also believed that Bamboo should not be harvested during the *Sharan* period as shown in the *Patra* (eastern calendar mentioning *Nachchetra* and *Tithi-Miti*)

Bamboo and Pneumonia

Buds of Choya Bans are used as a medicine for Pneumonia. There is a special technique to cut this bud. Firstly, it should be cut bottom-up with sharp knife then top-down. It must be cut with these two actions otherwise it will not have medicinal an effect. After this then ground and administered orally.

(Source: Field study, 2004)

Mal Bans

This is the strongest and straight Bamboo that the Lapcha use. It is therefore used as a construction material i.e. pillars, beam and other load bearing structure such as household ladders. This Bamboo is useful for making local bridges as well as *killa* (nail), *Siyo* (niddle) and *Sinka*. *Sinkas* were traditionally used for weaving material. Kitchenware is made of this Bamboo as well, such as *Panyu* (spatula) to make rice and *Dhido* (indigenous foods made of millet flour).

Mal Bans are useful for making *Danush-Ban* (Bow and Arrow) and *Guleli* (catapult); a traditional weapon for hunting.

It is also used to make the handles of agricultural implements such as spades. This Bamboo is also used for making walking sticks.

Nibha Bans

Namlo, Damlo, Doko and *Dalo* are made from this Bamboo. Low quality *Basuri* and *Jor Murali* can also be made with this Bamboo.

Paryang Bans

Chitra (bamboo mat) is made from this Bans, which is used for partitions between rooms and as a boundary wall houses. It is also used to make roofing of houses.

3.1.9 Birds and their language with the Lapcha's life style

The study team also noticed the inter-relationship between local Bird's activities and the Lapcha's lifestyle. Lapcha people agree that they change their behavior and daily lifestyle as per the behavior of various birds i.e. singing and calling. They even alter their agricultural practices with reference to birds singing and calling, taking it as a good or bad omen as per their specific sound and its timing. Every birds change their sound of singing and calling during the summer and winter season.

Ten bird species have been documented, which are directly and indirectly related with the Lapcha people's lifestyle. They are explained below:

Table 8: List of Birds

Karyang-kurung Chichinnakote	Lato kosero Bingpiyur	Cuckoo Kalchuda	Kurle Dhukoor Tabe Dhukoor	Koeli Nyauli chara
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Karyang-Kurung

These are migratory birds. They migrate to the Himalayan during the month of *Magha* and *Falgun* (mid January to mid March) from west-southern part. They fly in groups of 50 to 60 individual birds. Lapcha people believe that when they see these birds flying to the Himalayan, it is time to sow the seeds of pumpkin (*pharsi*) and cucumber (*kakro*). There is folk tale about it i.e. *karyang kurung ayo; kakro, pharsi rop* . If the group of these birds is large, then they believe that the yield of pumpkin and cucumber will be high for that season. This is taken as a good sign. These birds fly back in the months of *Bhadra* and *Asoj* (mid August to mid October) with their newly born chicks. They usually take route through the river. If someone sees them flying back *Karyang kurung*, it is taken as a bad omen.

Lato kosero

This bird makes a sound like *pak pak puk puk koo loo...* from 15th of *Magha* (beginning of February) onwards until *Chaitra* to *Baisakh* (mid March to mid May). This sound signifies to human beings be alert it is time for agricultural practices. Therefore, the Lapcha community gets ready for summer cultivation (*Barkhe Kheti*) on their agricultural land. They start to plant summer seasonal crops like those from the *Cucubeteceae* family (cucumber, pumpkin etc), beans, pulses and seasonal green leafy vegetables.

This bird does not make the same sound in the remaining months of the year.

Chichinnakote

This bird starts to sing during the month of *Chaitra* and *Baisakh* (mid March to mid May) like *mi gyom*; this means take care of the fire in Rong (Lapcha) language. This is rational as this period is during the dry season and has a higher threat of forest fires. If this bird makes sound for a long period of time, it signifies that drought season is ahead.

Cuckoo

The Cuckoo starts to sing from the month of *Falgun* (mid February to mid March) to the month of *Jestha* (mid May to mid June). During the *Jestha*, this bird reminds the Lapcha community to do weeding in the Maize plantations.

This bird is taken as the reincarnation of the Lapcha people. For this, there is a folklore that the Lapcha people who ate barley flour; s/he had choked to death with barley panicles then s/he was reincarnated as a Cuckoo bird. Therefore, it sounds like *Kukkoo...Kha...Khya...*, that is similar with the Rong spoken language and its pronunciation.

Bingpiyur

The bird starts making sound from the months of *Chaitra* to *Jestha* (mid March to mid June). It firstly sings slowly and then accelerates in loudness and intensity. When this bird stops to sing, it signifies the dry season i.e. scarcity of water begins and makes the Lapcha people unhappy.

It sings like *Riu... Riu...*; this means live happily in the Rong language.

Kalchuda

These birds are found in two types; I) Small *Kalchuda* and II) Big *Kalchuda*. Big *Kalchuda* sounds louder than the smaller one although they have same rhythm of sound.

It starts making sound from the month of *Paush* to *Falgun* and *Chaitra* (mid December to mid April). It starts singing before sunrise and alerts the Lapcha people to wake up in the early morning. In addition, it also sings in the evening like *Chheng...Chheng...* and calling its friends and family to come to the habitat i.e. nest. It means in Rong language that "where are you? and this time is for resting in the nest". If another bird does not respond to the first bird's calling then it starts sound like *chhya...* this means "oh no".

In the morning it sounds like *Kai, Koo, kee...*; the sound familiar with the Tibetan language.

These birds do not give any message for agricultural practice as it sings in the winter season.

Dhukoor

Two types of this birds are found; I) *Kurle Dhukoor* and II) *Tabe Dhukoor*. *Tabe Dhukoor* has a louder sound than *Kurle Dhukoor*.

Kurle Dhukoor

The *Kurle Dhukoor* starts making sound from *Falgun* to the end of *Jestha* (mid February to mid June). In *Baisakh* (mid April to mid May), it gives the message to establish the nursery of millet. But it eats millet seeds and destroys them. So that Lapcha people take it as a cunning bird. Because, it firstly invites the Lapcha people to establish the millet nursery and then destroys its seeds and seedlings. In addition, it also destroys the newly germinated seedlings of beans and pulses.

It sounds like *Kur...kur...kur...*; this means take rest, relax and do roaming in the Rong language. It encourages the Lapcha people to get relaxed during the drought and dry season, which exists during the month of *Chaitra* and *Baisakh* (mid March to mid May).

Tabe Dhukoor

This bird also starts making sound in the same month as *Kurle Dhukoor*. But it has a different sound. It sounds like *Mong li lok tho bu thabu gudu gu gudu gu...*; in Rong language, this means "I am only an eater of seeds and seedlings of millet and paddy nursery".

These birds do not make any sounds in the remaining months and Lapcha people do not notice them about.

Koeli

The tail of this bird is useful for the priest of the Lapcha community (i.e. *Yaba-Yama, Bungthing*). The priest usually weaves the feathers of its tail in the white cloth and puts on his/her head and dances during ritual ceremonies. If this bird comes and sings near anybody's home, it signifies a bad omen and one should pray with *Dhup* (incense) to avoid this. And, it sings like *koo...koo...* regularly with monotonous sounds, this indicates someone will soon get ill in the village.

In addition, there is another interesting thing with this bird; if it sings in the afternoon (say 10:00 to 16:00 hours), it denotes that someone will elope in the Lapcha community in the near future.

It sounds like *Akoo...akoo...*; this means uncle in Rong language.

Nyauli chara

This bird makes sound from 15th of *Magha* (beginning of February) onwards till *Baisakh* (mid April to mid May). During these dry and months of boredom; it gives entertainment to the Lapcha people by singing.

If it calls like *Nyau...Nyau...*, Lapcha people understands that sources of spring water will be decreasing and in the same time it signifies the drought will be occurring. This is not good for agricultural practices.

Similarly, when male *Nyauli chara* calls like *Ayu...Ayu...*, (means wife in Lapcha language) it is calling for its female partner. And the female responds like *Kyu...Kyu...* (which means we in Lapcha language), this means we will be together even during these dry and boring months.

4. Conclusions and Recommendations

4.1 Conclusions and Recommendations

There is no doubt, Lapcha community has tremendous indigenous knowledge on biodiversity such as knowledge on wild edible foods, food grains, vegetables and mushroom, medicinal plants for different diseases, usage of Bamboos and so on. This study is able to capture some of them and yet to be explored remaining knowledge in future by the Lapcha community itself. The study draws the following conclusions and recommendations.

a) Degradation of Forests and Practice of Monoculture

Lapcha people used to eat wild edible foods, vegetables and mushrooms to supply nutrition and to maintain their health. They used to eat these foods as seasonal foods when they were available in the forests and on farmland/agricultural lands. This helps them to store their food grains for remaining months, when the production of food grains remains at a deficit through out the rest of the year. Due to the degradation of local forests, these wild edible foods, vegetables and mushrooms are not as easily available at present as in the past. Further, the availability of these foods are low at present due to forest degradation and an increase in monoculture for high cash crops such as tea plantation, cardamom, zinger, *Amriso* (Broom grass), potato and other plantation. The chemical used for fertilizer, insecticide, weedicide and pesticide in these cash crops is also another reason for disappearing wild edible foods and medicinal plants.

The production and cultivation of these cash crops cannot be overlooked to uplift Lapcha people's economic condition. However, it is recommended that Lapcha community itself should take initiation to stop further degradation of the forest areas. In this connection, usage of chemical should be minimized and should rather start organic farming.

b) Marketing and Modernization on Feeding Behaviors

At present, these wild edible foods are not in use because of the market access (accessibility of highway road). Lapcha people (especially young generation) prefer modern food even though they are not hygienic and nutritious i.e. noodles, biscuits and so on. In addition, processing of these wild edible foods; to make ready for eating; is very labor intensive and time consuming compared to modern foods. However, they are still mandatory for Lapcha's cultural and religious ceremony.

c) Influenced from other ethnic/caste community

At present, the composition with other ethnic groups (i.e. *Bhramins*, *Chhetri* and others castes) as Lapcha's neighbors has also discouraged them to carry on with their indigenous knowledge and practices on bio-diversity. They have been influenced by their neighbor's culture and lifestyle. Therefore, They have also adopted an easier and more modern lifestyle themselves resulting rapid decreased in their indigenous practices.

If this trend is continued, a day will come when Lapcha people will forget all their cultural norms and values. Finally, they will loose their identity as Lapcha. Hence, it is recommended that Lapcha people should be self-aware on their precious indigenous knowledge and practices and should try to transfer them to coming generation.

d) Create Awareness and education

It is concluded that the Lapcha community possesses precious indigenous knowledge on biodiversity, as they are a nature-loving people that are directly and/or indirectly dependent on biodiversity. During the field study, the team was able to enhance awareness to them on their own rich indigenous knowledge. This knowledge is their natural asset that has to be handed over to the new generation to prevent further degradation of their natural resources.

So that it is recommended that preserving their indigenous knowledge should be their own responsibility rather than that of outsiders. This enables the Lapcha community to become owners of the intellectual property rights over their Indigenous knowledge on Biodiversity. This could be enhanced through formal and informal education.

e) Frequencies of Field Visits

It is concluded that in order to make effective document, the indigenous knowledge of the Lapcha a once off field study is not sufficient. Firstly, the informants are able to understand the objective and required information on the topic. Secondly, it gives opportunity to verify the documented information during the first field visit and rectify it. Finally, it gives chance to both researcher and informants to incorporate missing information.

However, this is not good idea to stop collecting the information within given time frame. It is a continuous process so that it must be revised and updated frequently as higher the frequencies of field visits; higher will be the accuracy of the collected information. Therefore it is recommended that at least three time field visit is necessary.

f) Time Consuming

It is concluded that the documentation of the indigenous knowledge on biodiversity is very time consuming process. One needs to give plenty of time to the informants in memorizing his/her knowledge on the subject. Sometimes, the particular knowledge is not being in practiced during the field study; at the same time there may be chances to miss the knowledge to be documented.

Hence, it is recommended that the study should be carried out through out the year i.e. all seasons for agricultural practices, all cultural and ritual ceremony and all festivals.

g) Capacity Building of the Local Indigenous Nationalities Institutions

Indigenous Knowledge on biodiversity is crucial to the survival and subsistence of Nepal's Indigenous Nationalities as it provides the basis for food security, human and animal health and natural resource management. Therefore this precious knowledge has to be documented before it becomes extinct.

It is recommended that all Nepalese Indigenous Nationalities have to be made self-aware of them about these assets that has been passed down from previous generations. For this, local Indigenous Nationalities Institution i.e. *Rong Sejum Thi* should have to play catalytic role to create awareness among all Lapcha community. In addition, institutions working to uplift Nepalese Indigenous Nationalities like Nepal Federation of Indigenous Nationalities (NEFIN), National Foundation for Development of Indigenous Nationalities (NFDIN) and other donor/development agencies should develop strategies to work through local Indigenous Nationalities Institution in this regard.

h) Scientific Research

It is concluded that this study has documented many indigenous knowledge and practices of Lapcha community on biodiversity those are useful to all human beings. For example: a composition of different medicinal plants for curing fracture, *Kukoor Tarul* for sterilization, Tite Fapar; a curse to agricultural land and so on. However, they do not have any scientific evidence to justify them yet.

Therefore, it is recommended that this useful knowledge should be further researched and tested scientifically in Laboratory, which will be useful to all human beings in days to come. Finally, Lapcha community will be able to claim patent rights over their knowledge.

i) Ownership over Indigenous Knowledge

It is realized that all these Lapcha's indigenous knowledge on Biodiversity has to be verified with other ethnic group/s. As Nepal possesses cultural diversity, some indigenous knowledge are resemble to other ethnic community as well. In this connection, it is difficult to delineate a particular indigenous knowledge, which is originated from Lapcha community.

Therefore, it is strongly recommended that this type of study should have to be conducted in other remaining indigenous nationalities of Nepal and it helps to segregate specific indigenous knowledge on biodiversity indigenous nationalities-wise. Moreover, one could say this indigenous nationality owns this indigenous knowledge on biodiversity.

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Chapter five

5. Annexes

5.1 Annex one: Detail Itinerary of the field visits.

First Field Visit

Date	Day	From	To	Program
26 Dec. 2003	One	Kathmandu	Bhadrapur, Fikkal-6, Kanyam-2	Informal discussions with the executive members of <i>Rong Sejum Thi</i> (District and Central officials) at chairman's residence; briefing on study's objective and methodology
27 Dec. 2003	Two	Kanyam-2	Panchakanya-2	Formal Meeting with <i>Rong Sejum Thi</i> central committee at secretary's residence and selection of two local research partners; one male and one female
28 Dec. 2003	Three	Fikkal-6	Kolbong-1 & 9	Group discussion; informal interviews
29 Dec. 2003	Four	Kolbong-1	Field visits	Focus Group discussion, key informants interview
30 Dec. 2003	Five	Kolbong-1	Field Visit at Fikkal-6	Key informant interview
31 Dec. 2003	Six	Fikkal-6	Shree Antu-3	Key informant interview
01 Jan. 2004	Seven	Shree Antu-3	Fikkal-6	Household visit for interview
02 Jan. 2004	Eight	Fikkal-6	Fikkal-6	Debriefing on the information gathered during the field trip with local research partner
03 Jan. 2004	Nine	Lapcha Gaun, Fikkal-6	Fikkal-6	Attended General Assembly of <i>Rong Sejum Thi</i> but cancelled due to the Mechi-Koshi Bandha appealed by the CPN (Maoist)
04 Jan. 2004	Ten	Fikkal Bazaar, Fikkal-6	Badrapur and Kathmandu	Debriefing on the study to the executive members of the <i>Rong Sejum Thi</i> and wrap up of the study

Second Field Visit

Date	Day/s	From	To	Program
07 March, 2004	One	Kathmandu	Badrapur, Fikkal-6,	Reached at night
08 March, 2004	Two	Fikkal-6	Fikkal-6	Briefing on study's findings (i.e. first draft) with the executive members of <i>Rong Sejum Thi</i> (District and Central officials)
09-11 March, 2004	Three-Five	Fikkal-6	Fikkal-6	Sharing the findings of the study with local research partner/s with translation of it line-by-line and word-by-word in Nepalese Language and edited it.
12-13 March, 2004	Six-Seven	Fikkal-6	Field visits	Selection of 15 local Lapcha enumerators for census and conducted workshop for them on how to fill questionnaires
14-17 March, 2004	Eight-Eleven	Fikkal-6	Kolbong-1 and 9 and field visit	Sharing the information of first draft with key informant/s and supervised the census and collection of the questionnaires.
18-19 March, 2004	Twelve-Thirteen	Kolbong-1 and 9	Fikkal-6	Focus Group discussion (i.e. women) on the first draft and supervised census and collection of the questionnaires
20-21 March, 2004	Fourteen-Fifteen	Fikkal-6	Shree Antu-3 and field visit	Briefing and discussion with Key informant/s on the first draft and supervised the census and collection of completed questionnaires
22-23 March, 2004	Sixteen-Seventeen	Shree Antu-3	Fikkal-5	Debriefing of the field visits to the executive members of <i>Rong Sejum Thi</i> and collection of remaining VDC's completed census questionnaire.
24 March, 2004	Eighteen	Fikkal-5	Bhadrapur, Kathmandu	

5.2 Annex two: Name and Address of the local resource persons

S.N.	Name	Sex	Age	Address
01	Jagat Bahadur. Lapcha	M	75	Bhalujhhoda, Kolbong VDC-9
02	Panch Man Lapcha	M	74	Bhalujhhoda, Kolbong VDC-9
03	Hasta Bahadur Lapcha	M	73	Bhalujhhoda, Kolbong VDC-9
04	Ganga Maya Lapcha	F	67	Bhalujhhoda, Kolbong VDC-9
05	Sing Bir Lapcha	M	64	Bhalujhhoda, Kolbong VDC-9
06	Bir Bahadur Lapcha	M	49	Bhalujhhoda, Kolbong VDC-9
07	Purna Bahadur Lapcha	M	60	Bhalujhhoda, Kolbong VDC-9
08	Tul Bahadur Lapcha	M	58	Bhalujhhoda, Kolbong VDC-9
09	Song Bahadur Lapcha	M	42	Bhalujhhoda, Kolbong VDC-9
10	Mani Kumari Lapcha	F	42	Bhalujhhoda, Kolbong VDC-9
11	Nari Maya Lapcha	F	55	Bhalujhhoda, Kolbong VDC-9
12	Dil Maya Lapcha	F	50	Bhalujhhoda, Kolbong VDC-9
13	Raj Kumar Lapcha	M	25	Bhalujhhoda, Kolbong VDC-9
14	Dil Bahadur Lapcha	M	27	Bhalujhhoda, Kolbong VDC-9
15	Dan Bahadur Lapcha	M	31	Bhalujhhoda, Kolbong VDC-9
16	Bibaha Maya Lapcha	F	75	Bhalujhhoda, Kolbong VDC-9
17	Jas Maya Lapcha	F	50	Bhalujhhoda, Kolbong VDC-9
18	Aita Maya Lapcha	F	63	Bhalujhhoda, Kolbong VDC-9
19	Bhim Maya Lapcha	F	23	Bhalujhhoda, Kolbong VDC-9
20	Mana Maya Lapcha	F	27	Bhalujhhoda, Kolbong VDC-9
21	Harka Maya Lapcha	F	35	Bhalujhhoda, Kolbong VDC-9
22	Kul Man Lapcha	M	44	Bhalujhhoda, Kolbong VDC-9
23	Tul Bahadur Lapcha	M	51	Bhalujhhoda, Kolbong VDC-9
24	Mohan Bahadur Lapcha	M	46	Bhalujhhoda, Kolbong VDC-9
25	Menuka Lapcha	F	18	Bhalujhhoda, Kolbong VDC-9
26	Dawa Lapcha	M	38	Jilbong, Kolbong VDC-1
27	Jit Bahadur Lapcha	M	72	Jilbong, Kolbong VDC-1
28	Chitra Bir Lapcha	M	62	Jilbong, Kolbong VDC-1
29	Banja Bir Lapcha	M	62	Jilbong, Kolbong VDC-1
30	Harka Bir Lapcha	M	58	Jilbong, Kolbong VDC-1

31	Jagat Bir Lapcha	M	47	Jilbong, Kolbong VDC-1
32	Nima Chhiring Lapcha	M	26	Jilbong, Kolbong VDC-1
33	Ramit Lapcha	F	58	Jilbong, Kolbong VDC-1
34	Prem Bahadur Lapcha	M	58	Fikkal Bazaar, Fikkal VDC-6
35	Prem Kumari Lapcha	F	55	Fikkal Bazaar, Fikkal VDC-6
36	Somkit Lapcha	F	14	Fikkal Bazaar, Fikkal VDC-6
37	Suk Bahadur Lapcha	M	35	Fikkal Bazaar, Fikkal VDC-6
38	Jagat Bahadur Lapcha	M	74	Chhiruwa, Shree Antu VDC-3
39	Chhatra Maya Lapcha	F	73	Chhiruwa, Shree Antu VDC-3
40	Umesh Lapcha	M	25	Chhiruwa, Shree Antu VDC-3
41	Ras Bahadur Lapcha	M	73	Lapcha Gaun, Fikkal VDC-6
42	Pasang Chhiring Lapcha	M	79	Lapcha Gaun, Fikkal VDC-6
43	Ful Maya Lapcha	F	78	Lapcha Gaun, Fikkal VDC-6
44	Chhiring Lapcha	M	45	Lapcha Gaun, Fikkal VDC-6
45	Bhanu Lapcha	M	19	Lapcha Gaun, Fikkal VDC-6
46	Chhiring Lapcha	M	69	Lapcha Gaun, Fikkal VDC-6
47	Chhatra Bahadur Lapcha	M	36	Lapcha Gaun, Fikkal VDC-6
48	Ful Maya Lapcha	F	48	Lapcha Gaun, Fikkal VDC-6
49	Uma Devi Lapcha	F	53	Lapcha Gaun, Fikkal VDC-6
50	Ran Bahadur Lapcha	M	47	Lapcha Gaun, Fikkal VDC-6
51	Chandra Bahadur Lapcha	M	60	Lapcha Gaun, Fikkal VDC-6
52	Prem Kumar Lapcha	M	54	Lapcha Gaun, Fikkal VDC-6
53	Man Kumar Lapcha	M	61	Kanyam VDC-9
54	Tika Ram Lapcha	M	45	Pancha Kanya VDC- 9
55	Tikendra Lapcha	M	45	Santipur VDC
56	Chakra Bahadur Lapcha	M	60	Tarsing Gaun, Jogmai VDC-6

5.3 Annex three: Distribution of Lapcha Population

Field Survey, March 2004 *							Census 2001 **
S.N.	VDC	Ward no	Household	Male	Female	Total	Total
01	Fikkal	1,2,3,4,5&6	71	197	171	368	326
02	Samalbong	2,4&5	61	169	127	296	266
03	Erautar	1,2,3,4,5,7&8	61	142	131	273	338
04	Shree Antu	2,3&4	33	92	91	183	155
05	Kolbong	1,3&9	59	168	142	310	278
06	Jirmale	6&7	29	84	73	157	142
07	Namsaling	3&4	7	24	18	42	34
08	Shantipur	2,3,6&8	28	69	76	145	161
09	Godak	7&8	23	60	66	126	111
10	Pashupatinagar	6&8	13	33	40	73	77
11	Laxmipur	2	2	4	6	10	12
12	Jogmai	1,4&6	27	87	57	144	138
13	Panchakanya	7&9	40	114	110	224	271
14	Kanyam	2,7&9	42	122	100	222	197
15	Gorkhe	2	3	8	8	16	14
Sub Total			499	1373	1216	2589	2520

Sources:

* Roy, R (2004) A Real Picture of Lapcha Community in Ilam District: Facts and Figures. National Foundation for Development of Indigenous Nationalities (NFDIN), Kathmandu.

** Population of Nepal, Population Census 2001-Selected Tables on Caste/Ethnicity, Mother Tongue and Religion (2002). CBS, Kathmandu

5.4 Annex four: List of Floral and Faunal Species

S. N.	Local Name	Rong-Ring Name	English Name	Scientific Name
01	Ghar Giththa	Lee-Karchyo	Yam	<i>Dioscorea sp.</i>
02	Ban Giththa	Pajok- Karching	Yam	<i>Dioscorea sp.</i>
03	Ban Tarul	Pajok-Buk	Yam	<i>Dioscorea bulbiflora</i>
04	Ghar Tarul	Lee-Buk	Yam	<i>Dioscorea sp.</i>
05	Simal Tarul	Tunglu-Buk	Yam	<i>Manihot utilissima/M. esculenta</i>
06	Jate Tarul	Pom-Buk	Yam	<i>Alocasia macrorrhiza</i>
07	Kukur Tarul	Bong-Kulung	Bulb bearing Yam	<i>Dioscorea bubifera</i>
08	Rani Bhyakur	Kasokding	Deltoid yam	<i>Dioscorea kamoonensis</i>
09	Khasre Bhyakur	Kasokjyak		<i>Dioscorea sp.</i>
10	Pidalu	Sangkri		<i>Alocasia indicum</i>
11	Sakharkhanda	Sakhar-Buk	Sweet potatoes	<i>Impomea batatas</i>
12	Kaguni	Kandak		<i>Cetaria sp.</i>
13	Sama	Chungro		
14	Ghaiya	Jukop		
15	Pangdur	Mongbri	Millet ripen in a short period	
16	Junelo	Chungkong	Sorghum	<i>Sorghum bicolor</i>
17	Kodo	Mong	Millet	<i>Paspalum scrobiculatum</i>
18	Makai	Kuchung	Maize	<i>Zea mays</i>
19	Jau	Kacher	Barley	<i>Hordeum vulgare</i>
20	Gahun	Kyu	Wheat	<i>Triticum aestivum</i>
21	Tite Fapar	Kuru-krim		
22	Mithe Fapar	Kuru-clyem		
23	Patle Sisnu	Kulho-Bi		
24	Sisnu (domestic)	Kajyang	Stinging Nettle	<i>Urtica parviflora</i>
25	Bhangre Sisnu	Kujo		
26	Siris	Sangryung-Kung	Siris	<i>Albizia sp.</i>
27	Rani Sag	Sibli-Bi		

28	Chauri Sag	Vijer-Bi		
29	Thotne Sag	Kandem-Bi		<i>Polygonum molle</i>
30	Boke Sag	Kanwong-Bi		
31	Chinde Sag	Sangjam-Bi		
32	Kali Nigro	Tonggroknok-Bi		<i>Dryopteris sp.</i>
33	Seti Nigro	Tonggrokdum-Bi		<i>Dryopteris sp.</i>
34	Saune Nigro	Tongkrop-Bi		<i>Dryopteris sp.</i>
35	Tite karela	Khaktik-Bi	Bitter gourd	<i>Memordica muricata</i>
36	Tatelo (Karam kanda)	Pragorip		<i>Oroxylon indicum</i>
37	Tanki	Rabi-bi	Tanki	<i>Bauhinia purpuria</i>
38	Jaringo	Kunjong-Bi		<i>Phytolacca acinosa</i>
39	Bethu	Simbe-Bi		<i>Chenopodium album</i>
40	Ban Mula	Pajouk-Labuk	Wild radish	<i>Raphnus sativa</i>
41	Khursani	Sangkar	Chilly	<i>Capsicum annum</i>
42	Jangali Lasoon	Sunggu	Garlic	<i>Allium cardinianum</i>
43	Gobre Chyau	Biyit-Dorbi	Mushroom	<i>Agaricus campestris</i>
44	Jhhari Chyau	Samyang-Dorbi	Mushroom	<i>Laccaria laccata</i>
45	Bagale Chyau	Tarchi-Dorbi	Mushroom	
46	Ande Chyau	Hikti-Dorbi	Mushroom	<i>Amaniita kemiibapha</i>
47	Kanya Chyau	Tartong-Dorbi	Mushroom	<i>Pleurotus dryinus</i>
48	Dewale Chyau	Tarnyong-Dorbi	Mushroom	
49	Gidhdhe Chyau	Kung-Dorbi	Mushroom	
50	Thunche Chyau	Tangar-Dorbi	Mushroom	
51	Kane Chyau	Tarnyong-Dorbi	Mushroom	<i>Auricularia auricula-judae</i>
52	Chamre Chyau	Tarnying-Dorbi	Mushroom	
53	Kalinge Chyau	Tartang-Dorbi	Mushroom	
54	Lai kira	Nop-Thambik	Aphid	
55	Iskus	Iskus	Chayote	<i>Sechium edule</i>
56	Bojho	Rockrop	Calamus	<i>Acorus calamus</i>
57	Ghun kira	Thyap-Thambik	Grain borer	
58	Ban Bihe	Sahor-Pat		

59	Rato unyu	Aher-Tongrup	Red fern	
60	Ghurpis	Chyung-Kung		
61	Titepati	Takmel		<i>Artemesia dubia</i>
62	Buki Jhhar	Reepdum		<i>Anaphallis bhasua</i>
63	Fachyang	Salek		
64	Amba	Ambak	Guava	<i>Psidium guajava</i>
65	Mel	Maliu-Bong	Mel	<i>Pyrus pashia</i>
66	Guyala	Sangya-Kung		
67	Amala	Puom-Kung	Indian goose berry	<i>Embllica officinalis</i>
68	Siltimur	Tanrelchok-Kung		<i>Lindera neesiana</i>
69	Abijal	Tajyomyok		<i>Drymaria diandra</i>
70	Bhainsi Singe	Mahirongrik		<i>Rosa brunonii</i>
71	Gurjo		Guancha tinospora	<i>Tinospora cordifolia</i>
72	Gobre Kanda	Bijiu		
73	Arimoth	Jinjemuk		
74	Limbuni Ful	Ribirip		
75	Babari Phool	Ridhyongrip		<i>Ocimum basilicum</i>
76	Haledo	Gyasing		<i>Curcuma longa</i>
77	Chiraito	Rungkin		<i>Swertia chirayita</i>
78	Gahat	Kalahklep	Horse Bean	<i>Dolichos biflorus</i>
79	Manpaha	Lukpoktalok		
80	Gawara	Tarekbu	White borer	
81	Hadchur	Hadchur		<i>Viscum orticulatum</i>
82	Bhuichampa	Matli-Rip		<i>Spermadictyon suaveolens</i>
83	Chiple Jhhar	Klenbi		
84	Chousur	Chousur		
85	Mauwa	Sakbyok-Bong	Mauwa	<i>Engelhardtia spicata</i>
86	Akhle Jhhar	Aachyak-Muk		
87	Rato Akhle	Aaherbu-Muk		
88	Bakhra Kane	Klyan-Pe		<i>Inula cappade</i>
89	Pani Amala	Tongkrok-Mat		<i>Phyllanthus niruri</i>

90	Ban ukhu	Pamnok	Sugarcane	<i>Polygala arillata</i>
91	Pahelo lahara	Payork-Kungrik		<i>Senecio scandens</i>
92	Majeto	Syam-Rik		<i>Rubia manjith</i>
93	Basak	Gyabukhanak		<i>Dichroa febriguga</i>
94	Bhalu Bans	Pograng-Po	Bamboo	<i>Dendrocalamus hookeri</i>
95	Choya Bans	Poly-Po	Bamboo	<i>Dendrocalamus hamiltonii</i>
96	Chille Bans	Pachel-Po	Bamboo	<i>Dendrocalamus sp.</i>
97	Mal Bans	Matlu-Po	Bamboo	<i>Bambusa nutans</i>
98	Gope Bans	Pugrong-Po	Bamboo	<i>Cephalostachyum latifolium</i>
99	Nibha Bans	Pajyok-Po	Bamboo	<i>Ampelocalamus patellaris</i>
100	Paryang Bans	Prong-Po	Bamboo	<i>Arundinaria hookeriana</i>
101	Karyang-kurung	Karnwok-Pho	Demoiselle crane	<i>Anthropoides virgo</i>
102	Lato kosero	Tampum-Pho	Collared scops owl	<i>Otus baddamoena</i>
103	Chichinnakote	Namjit-Pho	Gray Tit	<i>Parus major</i>
104	Cuckoo	Kakoo-Pho	Large Cuckoo-Shrike	<i>Coracina novaehollandiae</i>
105	Bingpiyur	Bingpiyur-Pho		
106	Kalchuda	Chakmung-Pho	Large Long-billed Thrush	<i>Zoothera monticola</i>
107	Kurle Dhukoor	Kurlekaor-Pho	Rufous Turtle Dove	<i>Streptopelia orientalis</i>
108	Tabe Dhukoor	Tabekaor-Pho		<i>Streptopelia sp.</i>
109	Koeli	Sungku-Pho	Koel Cuckoo	<i>Eudyanmys scolopacea</i>
110	Nyanuli chara	Kanyu-Pho	Blue-throated Barbet	<i>Megalaima asiatica</i>
111	Surti	Tangkunyom	Tobacco	<i>Nicotiana tabacum</i>
112	Kakro	Saret	Cucumber	<i>Cucumis setivus</i>
113	Pharsi	Tongat	Pumkin	<i>Cucurbita maxima</i>
114	Lapcha Phal	Fampot		<i>Machilus edulis</i>

Source: Field Survey, 2004

5.5 Annex five: Rong Scripts (Chhyo-ming)

Vowel Sound (Aakap-ming)

ཨ(ཨ) ཨ(ཨ་མཐོང་པོང་། (Aakap Aaming Pong)			
ཨ A	ཨ(ཨ Aa	ཨ E	ཨ E
ཨ U	ཨ O	ཨ Ab	ཨ U
ཨ Ae	ཨ Am		

Consonant Sound (Aamu-ming)

ཨ(ཨ) ཨ(ཨ་མཐོང་པོང་། (Aamu Aaming Pong)			
ཨ Ka	ཨ Kha	ཨ Ga	ཨ Ng
ཨ chya	ཨ chhya	ཨ Jya	ཨ Nya
ཨ Ta	ཨ Tha	ཨ Da	ཨ Na
ཨ Pa	ཨ Pha	ཨ Fa	ཨ Ba
ཨ Cha	ཨ Chha	ཨ Ja	ཨ Ya
ཨ Ra	ཨ La	ཨ Ha	ཨ Wa
ཨ Sya	ཨ Sa	ཨ O	

Note: The pronunciation of the letters may differ from the native speaker.

5.6 Annex Six: The Population of the Lapcha Community

s.n.	Location				sex		m.status			occupation								
	VDCs	wd	hh	Pl	m	f	ma	um	w	ag	st	ust	dr	fe	em	bs	lm	tr
1	Gorkhe	2	3	16	8	8	11	5	0	8	4	2	0	0	0	2	0	0
2	Erautar	1,2,3,4,5,7&8	61	273	142	131	115	153	5	145	88	38	0	0	0	0	0	2
3	Fikkal	1,2,3,4,5&6	71	368	197	171	157	201	10	207	109	37	1	0	5	4	5	0
4	Godak	7&8	23	126	60	66	58	66	2	92	11	23	0	0	0	0	0	0
5	Jirmale	6&7	29	157	84	73	73	82	2	89	39	29	0	0	0	0	0	0
6	Jogmai	1,4&6	27	144	87	57	65	78	1	97	34	12	0	0	1	0	0	0
7	Kanyam	2,7&9	42	222	122	100	88	123	11	129	66	27	0	0	0	0	0	0
8	Kolbong	1,3&9	59	310	168	142	113	187	10	177	97	30	1	1	4	0	0	0
9	Laxmipur	2	2	10	4	6	4	6	0	6	2	2	0	0	0	0	0	0
10	Namsaling	3&4	7	42	24	18	14	26	2	26	10	4	0	0	0	0	2	0
11	Panchakanya	7&9	40	224	114	110	98	123	3	127	64	32	0	0	0	0	1	0
12	Pashupatinagar	6&8	13	73	33	40	32	39	2	47	19	7	0	0	0	0	0	0
13	Samalbong	2,4&5	61	296	169	127	115	178	3	203	60	29	0	1	1	0	0	2
14	Santipur	2,3,6&8	28	145	69	76	61	82	2	89	38	18	0	0	0	0	0	0
15	Shree Antu	2,3&4	33	183	92	91	83	98	2	109	52	18	2	0	1	0	0	1
		499	2589	1373	1216	1087	1447	55	1551	693	308	4	2	12	6	8	5	
		2589		2589		2589												

Abbreviation used in the Table 1

wd: ward no **hh:** households **pl:** population **m:** male **f:** female **ma:** married
um: unmarried **w:** widow **ag:** agriculture **st:** student **ust:** potential student **dr:** driver
Fe: foreign employment **em:** employment **bs:** business **lm:** lama **tr:** teacher

VDCs	Status of Educational level of Lapcha community																	
	l	ul	nul	1	2	3	4	5	6	7	8	9	10	slc	11	12	Ba	ma
Erautar	48	97	38	10	13	14	16	15	3	6	9	1	1	2	0	0	0	0
Fikkal	129	92	37	15	11	12	13	7	15	13	15	3	3	1	0	0	1	1
Godak	46	47	23	0	3	2	1	3	1	0	0	0	0	0	0	0	0	0
Gorkhe	5	5	2	0	0	0	2	0	0	1	1	0	0	0	0	0	0	0
Jirmale	54	35	29	10	6	12	3	4	1	2	0	0	1	0	0	0	0	0
Jogmai	62	36	12	4	6	6	6	5	2	2	0	0	3	0	0	0	0	0
Kanyam	87	42	27	13	8	12	19	7	0	2	0	0	1	2	0	2	0	0
Kolbong	106	65	30	13	11	8	11	21	9	5	10	6	8	6	0	0	1	0
Laxmipur	0	6	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Namsaling	17	11	4	2	1	1	0	1	0	0	1	1	1	0	1	1	0	0
Panchakanya	79	49	32	17	11	9	15	7	1	2	1	1	0	0	0	0	0	0
Pashupatinagar	41	6	7	1	4	4	5	2	1	2	0	0	0	0	0	0	0	0
Samalbong	100	103	29	13	10	10	11	3	3	3	3	1	3	0	0	2	1	1
Santipur	4	85	18	3	10	5	6	2	3	3	1	1	1	0	3	0	0	0
Shree Antu	96	19	18	10	1	5	5	3	5	2	1	5	2	6	0	4	1	0
	874	698	308	111	95	100	114	81	44	43	42	19	24	17	4	9	4	2

Abbreviation used in the Table 2:

l: literate **ul:** uneducated **nul:** potential student **grade:** 1 to 12
slc: School Leaving Certificate **ba:** Bachelor's Degree **ma:** Master's Degree

Source: Roy, 2004

5.7. Annex seven: Photographs of the Study Area



Plate 01: Informants for group discussion



Plate 02: Local research partners are busy on conducting Informal discussion



Plate 03: Bhalu Bans product to make sour milk and ghee.



Plate 04: Mrs. Ramit Lapcha in the Lapcha's kitchen



Plate 05: A Bhyakur Plant.



Plate 06: A plant of Ban Tarul



Plate 07: Tuber of Ghar Bhyakur.



Plate 08: A tuber of Ghar Giththa.



Plate 09: Finished product of Bhyakur and Giththa those are ready to eat.



Plate 10: Mr. Pasang Chhiring Lapcha (79) and Mrs. Ful Maya Lapcha (78): the oldest Lapcha met during the field study



Plate 11: Various medicinal plants collected during the field visit.



Plate 12: A plant of *Pangra Lahara*.



Plate 13: Five holes *Murali*, a musical instrument made from *Bans*.



Plate 14: Musical instrument made from *Bans*.



Plate 15: *Dhanush-Ban* (Bow and arrow) for hunting made from *Bans*.



Plate16: *Chhapani* use to filter *Jandha*.



Plate 17: Lapcha's modern house.



Plate 18: A cluster of Lapcha's settlement.



Plate 19: Various household appliances made from *Bans*.



Plate 20: Cups made from *Bans* used for drinking tea.