# Safeguarding Lepcha and Limbu cultural values and worldviews for conservation and sustainable development in the Eastern Himalayas, India

## Case study for the project ‘Indigenous biocultural heritage for sustainable development’

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## About the Authors

This report was prepared by Elen Tshering Lepcha, Nawraj Gurung, and Ajay Rastogi, all at Lok Chetna Manch, India, and by Krystyna Swiderska at IIED.

## More on this case study

This report is one of a set of four case studies from the project 'Indigenous biocultural heritage for sustainable development'. Other case studies in the series include:

Indigenous Naxi-Moso cultural values and worldviews for sustainable development: Four Village Biocultural Heritage Coalition, Yunnan, China

Towards a Biocultural Heritage Territory in Rabai Cultural Landscape: Exploring Mijikenda cultural values and practices for sustainable development

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# Acronyms and abbreviations

| | |
|---|---|
| BCHT | Biocultural heritage territory |
| DM | District Magistrate |
| FGD | Focus group discussion |
| FPIC | Free and prior informed consent |
| GIAHS | Globally important agriculture heritage system |
| GP | Gram panchayat |
| GPDP | Gram Panchayat Development Plan |
| GTA | Gorkhaland Territorial Administration |
| ha | Hectare |
| HH | Household |
| IAS | Indian Administrative Service |
| IFS | Indian Forest Service |
| IIED | International Institute for Environment and Development |
| ILTA | Indigenous Lepcha Tribal Association |
| LCM | Lok Chetna Manch |
| MGNREGA | Mahatma Gandhi National Rural Employment Guarantee Act |
| NGO | Nongovernmental organisation |
| PAR | Participatory action research |
| PDS | Public Distribution System |
| PVTG | particularly vulnerable tribal groups |
| RQ | Research question |
| SDG | Sustainable Development Goal [of the United Nations] |
| SIFOR | Smallholder Innovation for Resilience project |
| WBCS | West Bengal Civil Service |

# Executive summary

Biocultural heritage territories (BCHTs) are mosaics of land uses, deeply linked to knowledge systems embedded in cultural traditions. The Potato Park in Cusco, Peru is perhaps the best-known example of a BCHT, where Indigenous knowledge and practices effectively combine food production with sustainable development, biodiversity conservation and ecosystem protection.

This study was conducted as part of the 'Indigenous Biocultural Heritage for Sustainable Development' (2018–2021) project, funded by the Sustainable Development Programme of the British Academy. The project explored how Indigenous Peoples' worldviews, wellbeing concepts, cultural values and norms promote or hinder biodiversity conservation and sustainable development. Focusing on the Lepcha and Limbu communities in Lingsey-Lingseykha, Kalimpong District, North Bengal, India, this case study explored the interconnections between culture and biodiversity, and how biocultural heritage contributes to Sustainable Development Goal 2 'Zero Hunger'. It explored the feasibility of establishing a community-managed BCHT, and used the Potato Park's decolonising action research approach where research is co-designed and facilitated by Indigenous community researchers.

It found the communities' religious beliefs and identities are closely tied to the Khangchendzonga mountain range, which the Lepcha believe is their brother. Values of solidarity, equilibrium and reciprocity in society and with the natural world, spiritual beliefs relating to nature, and sustainable harvesting practices support biodiversity conservation. Whenever the Lepcha and Limbu intend to use any natural resources, they will first offer prayers and make conditions that they will reciprocate to nature, showing their cultural values and practices are an asset for biodiversity conservation rather than a threat. The Lepcha and Limbu worldview identifies the natural, cultural and spiritual realms as integral in human life, emphasising wholism and the wellbeing of all these elements (similar to the Andean worldview). Human actions are accountable to the natural world and the world of the ancestors and spirits. The Lepcha and Limbu believe that all plants, animals and rocks have spirits and some of these are sacred, for example those in the sacred mountains and forests. They have deep-seated values of equity and sharing of resources in the community.

The study found no evidence of Indigenous values or practices that hinder biodiversity conservation and sustainable and equitable development. However, Indigenous values and norms are weakening among the younger generation, largely due to education systems which do not integrate traditional knowledge, outmigration and the media. Outmigration for education and employment (particularly by men) is creating a younger generation that is distancing itself from a day-to-day traditional life in the landscape. Elders and women play key roles in maintaining traditional crop varieties and kitchen gardens.

State restrictions on customary forest use in a forest reserve and Neora Valley National Park has impacted livelihoods, led to a decline in forests quality and promoted a shift towards cash crops. The influx of cheap foods through the Public Distribution System is contributing to a decline in farming. The rising cost of traditional festivities and ceremonies is also an issue. The findings highlight the importance of Indigenous food and farming systems to address Sustainable Development Goal 2 'End Hunger', ensuring food security through self-sufficiency of diverse and nutritious crops. Not a single case of COVID-19 has been reported in the communities.

To protect and revitalise the biological and cultural heritage of Lingsey and Lingseykha, this study recommends ensuring local biodiversity management committees include Indigenous representatives to allow them to establish rules for collective resource management, building on their customary laws and values. The District Administration should support traditional crops and festivals, and influence homestay schemes to support the building of traditional houses for ecotourism and cultural tourism. It is also vital that biocultural concerns are integrated into the region's Development Plan by working closely with the communities at village level, while recognising the proposed BCHT as an FAO Globally Important Agricultural Heritage System (GIAHS) should proceed with the full and active participation of the Indigenous Peoples. Finally, to enhance conservation and livelihoods and to stem the loss of traditional ecological knowledge, restrictions on forest access should be removed. Traditional rules and customary rights and responsibilities of Lepcha, Limbu and other Indigenous communities should be recognised under the Forest Rights Act. A BCHT or GIAHS is unlikely to succeed and be sustained by communities unless Indigenous Peoples' rights are fully recognised.

# 1. Introduction and project objectives

Although Indigenous Peoples have been living sustainably for generations, few studies have explored the role of different elements of cultural heritage, and their links with biodiversity in promoting sustainable development. This study was conducted as part of the project 'Indigenous biocultural heritage for sustainable development' (2018–2021), funded by the Sustainable Development Programme of the British Academy. The project involved case studies in China, India, Peru and Kenya, and had two main objectives:

- To catalyse the establishment of collectively managed biocultural heritage territories (BCHTs) for sustainable development, and
- To enhance understanding of the role of biocultural heritage in addressing the Sustainable Development Goals (SDGs) among policymakers, researchers and practitioners.

The project explored how Indigenous Peoples' worldviews, well-being concepts, cultural values and customary laws promote or hinder sustainable development, and how these are perceived by different actors within communities. Using case studies of the Mijikenda in Kenya, Quechua in Peru, Naxi in China, and Lepcha and Limbu in India, the project examined how different elements of biological and cultural heritage are interconnected in landscapes, and how this contributes to sustainable development, including Sustainable Development Goal 2 'Zero Hunger'.. Through decolonising action research, the project sought to contribute to community-led processes to establish BCHTs, building on the Quechua Potato Park in Peru.

The study in India focused on the Lingsey and Lingseykha communities in Kalimpong District, North Bengal (northern West Bengal), to build on previous action research conducted through the Smallholder Innovation for Resilience (SIFOR) project.

Meeting with local community members. Credit: Lok Chetna Manch

# 2. Community context and biocultural heritage

## 2.1 Community context

Kalimpong district and Kalimpong town lie to the east of Darjeeling district. The district is bordered by Sikkim to the northwest and Bhutan to the east. Kalimpong district comes under Gorkhaland Territorial Administration, which is an autonomous governing body within the state of West Bengal. Lingsey-Lingseykha gram panchayats [1] (GPs) comprise an important watershed and border the Neora Valley National Park to the north, which itself borders Bhutan. Perennial water streams originate in this watershed and surround the landscape with streams from all sides, including the Simanakhola River to the west, bordering Sikkim, and the Raman River to the south and east. Lingsey-Lingseykha is inhabited by five major mountain tribes: the Indigenous Lepcha, and migrant Limbu, Rai, Sherpa and Bhutia, as well as traditional caste Hindu communities, mainly Brahmins and Chettries (but about eight different ethnic groups in total).

The study focused on the two main Indigenous communities in Lingsey-Lingseykha, the Lepchas and the Limbus. The connection of the Lepchas and Limbus with the Khangchendzonga [2] landscape starts with the story of 'creation'. *Teusey Namthar* is the mythological narrative of the Lepcha. They believe that the earth was created by supreme Goddess *Itbu Mu, who* created Mount Khangchendzonga, a sacred mountain, as her first son and the Lepcha as their second child. So, Mount Khangchendzonga and the Lepchas are brothers. In Lepcha language, Khangchendzonga is 'Kongchen Kongchlo', the 'Big Stone'. In their stories, Kongchen is the eldest brother, the first creation by their Creator. By virtue of the above, they call themselves the 'Mutanchi Rong Kup Rum Kup' (Beloved Children of Snowy Peak, Children of God).

The Limbus migrated from Eastern Nepal to Darjeeling and Kalimpong districts and before that they are believed to have come from Tibet (Debnath, 2020). The mythological narrative of the Limbu is *Mundhum*; and they believe that their supreme Goddess, *Tagera Ningwaphuma,* created the earth. According to the Limbu faith — *Yuma Samyu* — Mother Goddess *Tagera Ningwaphuma* is the single almighty, who not only created the earth, universe and all life on it, but also the other gods and goddesses who are her manifestations and assist her in the business of maintaining the balance on earth. Limbus in particular associate the creation of the human race and many significant events in their myths and legends with Mount Phoktanglungma, now known as Kumbhkarna (or Jannu), a huge mountain in eastern Nepal, in the western arm of the Khangchendzonga range.

Ecologically, the entire habitat of the Lepchas and Limbus falls in the eastern Himalayan region, east of the Arun river in Nepal. Due to a wide altitudinal variation from tropical to alpine regions, habitats and vegetation types, the Khangchendzonga range is listed among the world's ten most critical centres for biodiversity and endemism, a 'biodiversity hotspot'. Mount Khangchendzonga is the third highest mountain in the world, at 8,585 metres above sea level. The region is a source of glacial meltwater with high annual rainfall of more than 3,600 millimetres, giving rise to many rivers that feed the plains of India and Bangladesh. The Lingsey-Lingseykha landscape largely lies in the sub-tropical zone, between 900 and 1,800m high and is extremely rich biologically with a large diversity of orchids, rhododendrons, red pandas and other spectacular flora and fauna.

The Lepcha and Limbu believe in spiritual deities that are attached to nature and dwell around nature's significant aspects, which they consider sacred places. They identify several sacred places of nature wherever they go, which they worship, conserve and protect to this date. Their history of existence from the creation of the earth to the present day — and their cultural, sociopolitical and economic journey from the time of hunter-gatherers to the development of their script, food system, worldview and beliefs in the spiritual/ancestors' world — all revolve around their deep ecological relationship with the Khangchendzonga mountain range.

[1] Gram panchayat (GP) is the first tier of democratic leadership for local governance at the village level

[2] Internationally accepted spelling of the mountain is Khangchendzonga. In India officially its spelt as Kanchenjunga. Sikkim has decided to spell their guardian deity as Khangchendzonga which is nearer to Sikkimish pronunciation. The mountain range extends to Nepal.

"The Lepchas are, probably, the only race in this part of the world who have a vision and thought to pray for the wellbeing of the animals, insect and vegetation world also. In Rum Fat (ceremonies), the usefulness and values of the animals, insect and vegetation world for the human beings have repeatedly been mentioned and the need to protect and save them from being indiscriminately destroyed from Mayel Lyang [the land of the Lepcha people]." (Tamsang, 2007).

According to Wangchuk and Zulca (2007), the Khangchendzonga range with its bountiful resources has been the home of the Lepchas since time immemorial. The Lepchas have probably lived in the shadow of the Khangchendzonga mountain longer than any other group, maintaining the most direct and intimate connection with the mountain (Wangchuk and Zulca, 2007). Being hunter-gatherers and slash-and-burn agriculturists, traditionally Lepchas rarely stayed in one place for longer than three to four years. Their knowledge about the landscape and natural resources is greater than that of any other tribe in the region. There is a saying in the region's folklore that "If a famine occurs, a monkey may die because of hunger but a Lepcha will never die because of hunger". The Limbus migrated from the western part of Khangchendzonga and settled in the Lingsey-Lingseykha area in the early 1800s. [3] They brought their own wisdom, expertise and connections with the natural elements and largely reared cattle with some settled agriculture, particularly rice.

Lepcha and Limbu traditional livelihoods are highly dependent on forest areas and both their dominant practices (shifting cultivation and cattle rearing) require unhindered access to forests, which were sustainably managed through traditional resource management systems. However, in around 1865, the British government started heavily restricting access to forest areas and introduced laws and rules to enforce restrictions. They also brought in workers from other Indigenous communities within and outside the region to work in the forests as loggers and in the tea plantations. Access to forest and other common areas continued to shrink, leading to the adoption of settled agriculture by both the Lepcha and Limbu communities.

In the Lingsey-Lingseykha area, mixed farming is practised including rainfed (dryland) agriculture, irrigated paddy terrace fields and home gardens. Around 30 different types of crops and 60 crop varieties are cultivated (Mukerjee et al., 2018). Bean and pulse diversity is high with almost 20 Indigenous varieties and ten introduced varieties. New cash crop varieties have been introduced, such as large cardamom, which has been adopted widely due to its high yield, drought tolerance and disease resistance properties. Cultivation of traditional crops like buckwheat and millets has declined. Semi-wild landraces of maize (Birmakai), millet (Kaguni) and proso millet (Junelo) are still found in the landscape. These are considered important for use in ceremonies and offerings. Occasionally new high-yielding varieties of maize and rice are introduced by government agencies. Farmers store them for a few years as a trial and discontinue them because of poor storage quality, poor taste and degeneration in seed production vitality. Seeds of most traditional landraces, including three maize landraces and three to five varieties of rice are continuously stored by most farmers. There are around 15–20 introduced vegetable crop species, including potato, for which seeds are also largely stored by farmers.

Lepcha and Limbu cultures and livelihoods are rooted in the landscape. All elements in the landscape are connected to their ancestors and here in the Himalayas is where their ancestors' spirits have settled eternally. The Lepchas believe that each clan has its own *Chyoo* (peak), *Da* (lake) and *Lep* (gate to their ancestor's world). They practise shamanism and have priests and priestesses called *Bongthing* and *Mun*. Mun may be female or male. They exorcise evil spirits that mediate between the human, supernatural and natural worlds. The Bongthing also facilitate the spirit/soul of deceased people to travel to their ancestors' place in the Khangchendzonga range where they settle for eternity. Similarly, the Limbu faith — Yuma Samyu religion — draws its belief from Mother Goddess *Tagera Ningwaphuma*. The faith is sustained to date in the Limbu holy scriptures *Mundhums*. The priest is called *Phedangba*, whose authority is unquestionable and who mediates their relationships with the natural elements in the landscape.

[3] As narrated by Retired Captain Lal Sing Limbu, resident of Lingsey Gram Panchayat.

### Historical context and traditional governance

Historically, Lepchas and Limbus became natural allies due to political and religious necessity. Politically, they had to protect themselves from Tibetans in the north, Bhutanese in the east and Gorkhas in the west. They also had to safeguard their spiritual faith from the increasing influences of Buddhism from the north, Hinduism from the west and Christianity from the British Missionaries in the south. When the first Chogyal (king) of Sikkim was crowned in 1642, the Lepchas, Limbus and Bhutias living in Sikkim came together under the Treaty of Lho-Men Tsong-Sum. The three tribes share very close sociohistorical ties (see Box 1) and the Treaty brought them further together.

## Box 1: Lepcha, Limbu and Bhutia socio-cultural ties

According to Chemjong (1948) "Lho-Men-Tsong-Sum [the agreement]: A king is like a father. The Lepchas being the original inhabitants of Sikkim and the Bhutias who first came in contact with them and established a blood relationship, they are like a mother. Later on knowing the Limbus were also inhabitants of Sikkim, the Limbus are like sons. Hence, now onwards the Bhutias, the Lepchas and Limbus although they are of three different races, will constitute a single family like a father, a mother and a son respectively and will have a single administration in Sikkim. We will not fight each other and will not keep enmity. If someone creates ill-feeling he will be punished by the Gods and Goddesses."

In 1706, the King of Bhutan won part of the region from the Sikkimese monarch and renamed it as Kalimpong. After the Anglo-Bhutan war in 1864, the Treaty of Sinchula was signed and the Bhutanese-held territory east of Teesta river was ceded to the British East India Company. Kalimpong thus became a part of India's territory and fell within the State of West Bengal after independence.

### Traditional institutions

Amidst all the migrations, political turmoil and instability mentioned above, the Limbus and Lepchas were able to maintain strong social organisation and traditional institutions: Yakthum Chumpho and Sheezoom respectively. The Lepcha Sheezoom is organised at three levels: the Kyong at the village level, several Kyongs coming together to form a Thoom and several Thooms federating to form a Poom at the district level. See Figure 1.

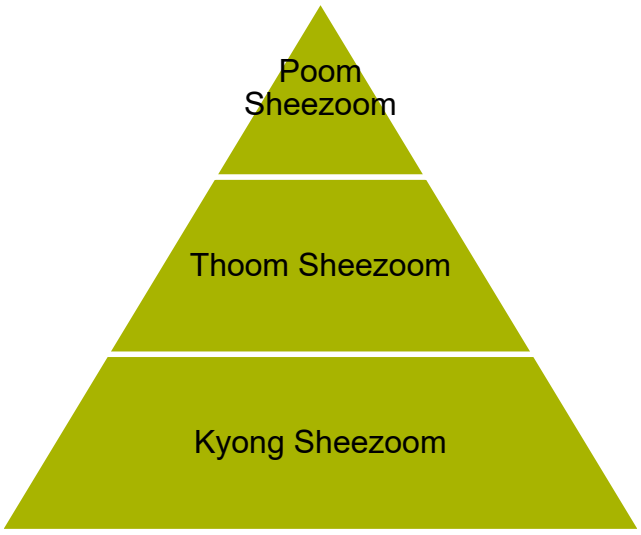



Figure 1: The pyramid structure of Lepcha organisation (Sheezoom)

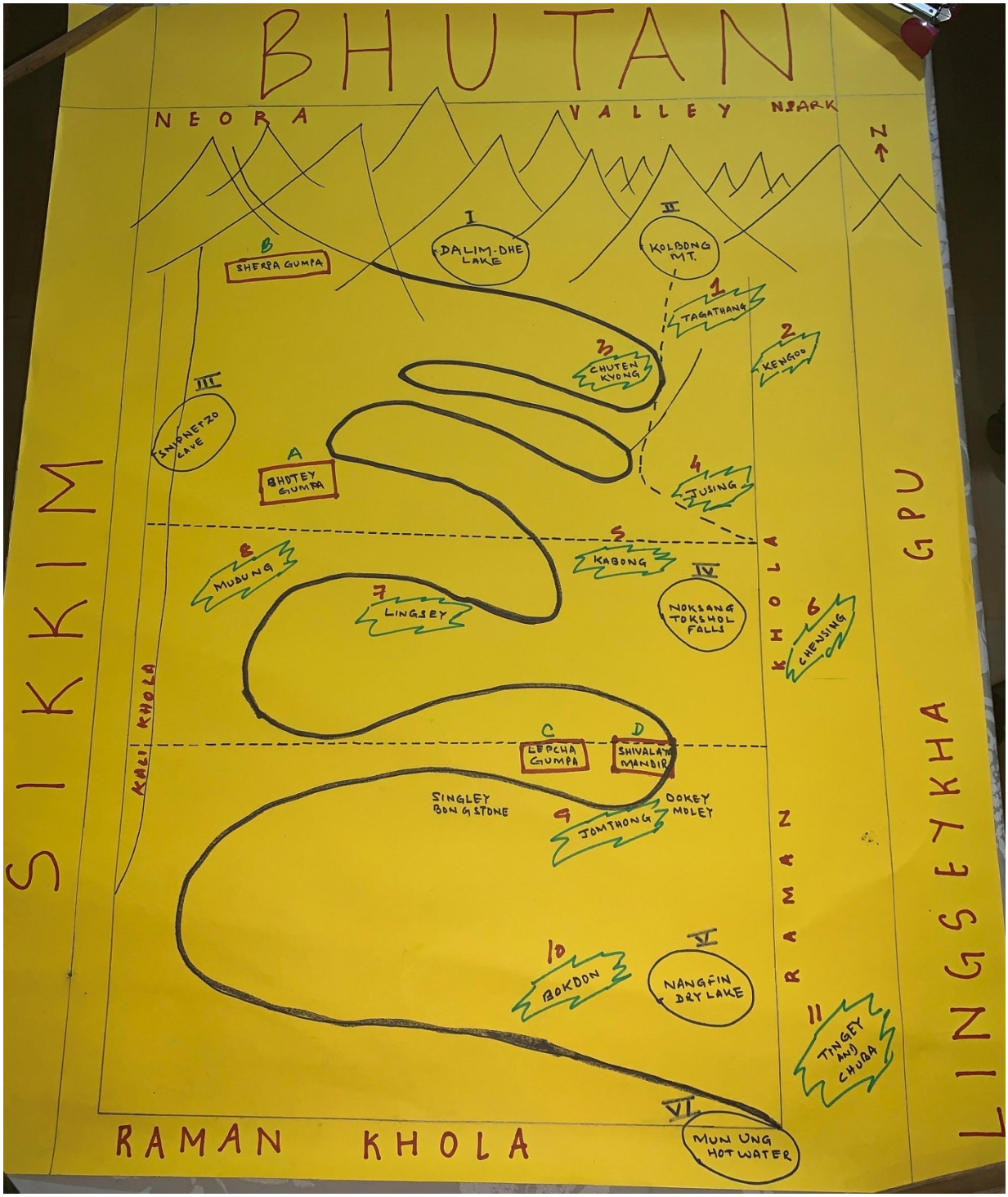
Due to the enactment of the Constitution of India in 1950, there has been a gradual erosion in the authority of these traditional institutions in terms of administrative controls and dispensation of justice. However, they are still active in resolving day-to-day conflicts through customary norms in many Lepcha and Limbu communities. These traditional institutions also play a critical role in maintaining core biocultural values. The values of reciprocity, solidarity, equilibrium and collectivity are still strong and play a key role in everyday life of the community, but are becoming weaker, particularly among the youth.

Of late, traditional institutions have also been involved in identifying beneficiaries for various government schemes, particularly since the formation of tribal development boards. The Mayel Lang Lepcha Development Board was formed in 2013 and the Limbu Development Board was constituted in 2016 by the West Bengal government, in order to provide a certain level of autonomy in the planning and implementation of the various government schemes. These tribal boards are chaired and constituted entirely by community representatives, empowering them to take culturally sensitive decisions in the best interest of the most vulnerable in their community. Traditional institutions have played a major role in assisting these boards at the village level. Though in principle the boards are a pioneering step to enable greater autonomy, politically they have led to a rise in divisive identity politics, creating competition and jealousy amongst the different tribes who had been living together harmoniously since time immemorial.

## 2.2 Biocultural heritage — Threats and challenges

Lepcha and Limbu biocultural heritage faces many threats and challenges. The most important drivers of change are government development schemes that promote mainstream development as ‘progress’. These programmes influence every part of physical and social life. A recent example is the support provided by the government for homestay tourism in Lingsey-Lingseykha. While tourism provides a key opportunity to generate income from maintaining biocultural heritage, the subsidies for this programme are linked to the use of modern materials (brick, iron, cement and so on) and the disbursing bank pays the supplier directly. Even if someone who is eligible for this scheme wants to create a traditional dwelling as an attractive offer for tourists, the scheme guidelines do not allow the granting of subsidies in such a case. The architectural designs envisaged by the government are not aligned with the ethnic culture and value system. Other drivers of change include an education system that does not give due recognition to Indigenous knowledge systems or provide hands-on skills to enable young people to continue traditional livelihoods within the landscape. Such policies, along with heavy restrictions on forest use, are contributing to agricultural transformation towards cash crops and to forest degradation (Dawa Lepcha, online workshop, ‘Indigenous Food Systems’, March 2021). Denial of access to forests is another major threat to the pursuance of traditional livelihoods. The new system of dispensation of justice and uniform constitutional provisions introduced by the British and post-independence are eroding the value attached to customary norms, as well as the authority of traditional institutions.

**Map of Lingsey and Lingseykha communities***

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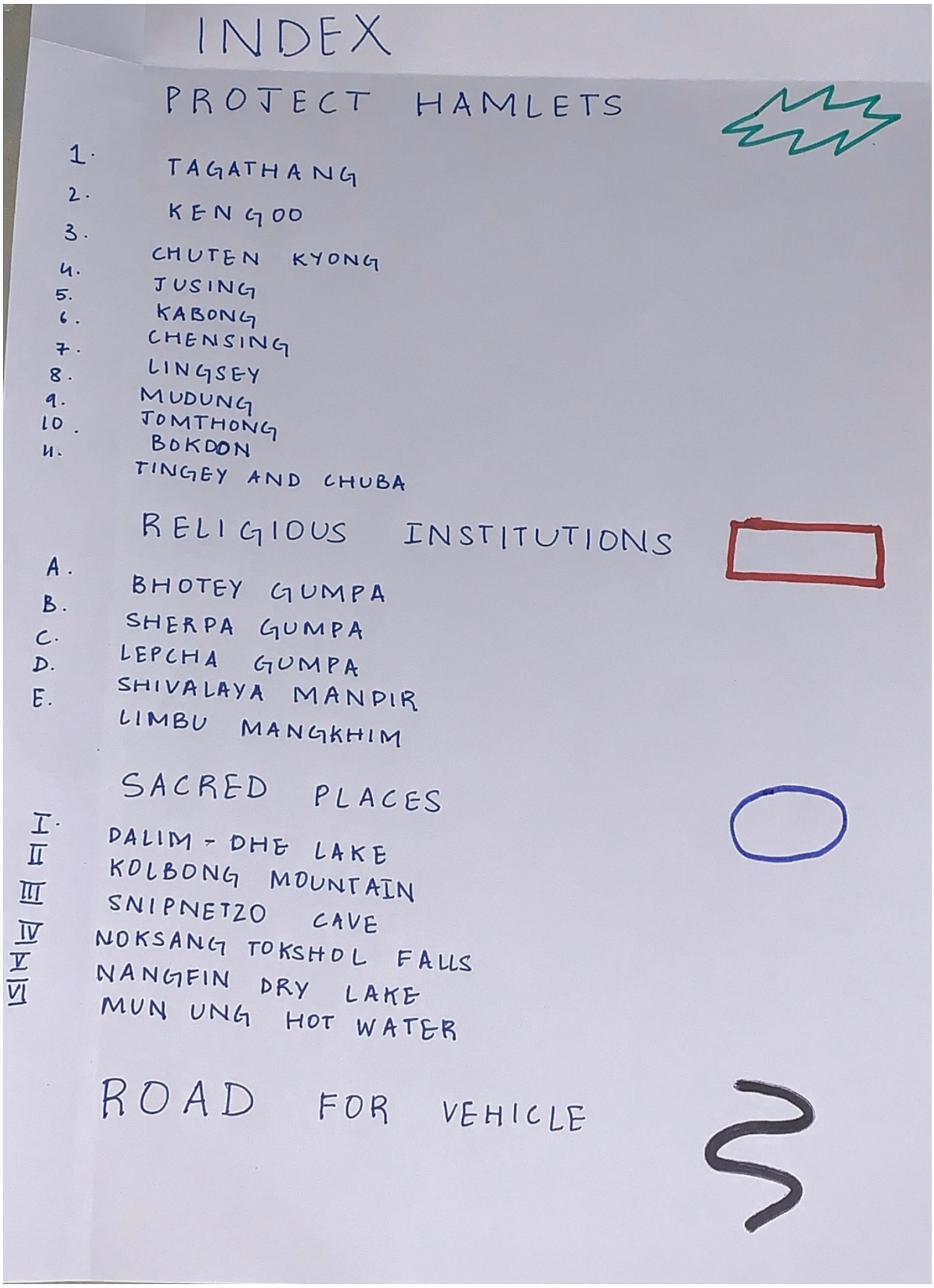
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# 3. Objectives and approach of the India study

The specific objectives of the Eastern Himalayan study that contribute towards the project-level goals (see section 1) were:

- To understand the physical, social and spiritual relationship of the Lepcha and the Limbu communities with the landscape, both historically and currently
- To understand the worldviews of well-being and cultural values of different generations, religious and economic groups and the drivers of change
- To understand the livelihood activities and dependence of the Lepcha and the Limbu communities on different types of land use
- To enhance awareness and understanding of young community researchers of the importance of Lepcha and Limbu biocultural heritage and how a more balanced development approach could take shape
- To understand Indigenous food systems, sovereignty and security in order to evaluate how biocultural heritage contributes to Sustainable Development Goal 2 'End Hunger' (SDG 2)
- To reinterpret SDG 2 through the concept of holistic well-being of the Lepchas and the Limbus
- To enhance awareness and understanding of policymakers on the significance of biocultural heritage systems, and
- To support the establishment of a community-led biocultural heritage territory (BCHT) managed collectively by Lepcha and Limbu communities.

The Lepcha leader Dawa Lepcha was inspired to establish a BCHT in his ancestral homeland following a visit to the Quechua Potato Park BCHT in Peru. The Lepcha and Limbu communities hope that by establishing a BCHT they may continue their deep relationship with the landscape, and have the autonomy to sustain their values, well-being and their interlinked biological and cultural heritage, as required by their Indigenous norms and beliefs. However, modern economic pressures mean that this vision is not universally shared by younger generations, and will need to be linked to economic development to engage the youth, who are increasingly migrating to urban areas. The project explored Lepcha and Limbu concepts that link nature, culture and human well-being (ie development) that could provide the guiding vision for a BCHT (similar to the Andean *Ayllu* concept where the human, natural and sacred worlds must be in balance to achieve well-being or '*Buen Vivir*'). It adapted the Peruvian Potato Park's decolonising research approach (Swiderska and Stenner, 2020), which was developed with Association ANDES (Peru) and has been critical to the Park's success and self-sustainability, to the local context in Lingsey-Lingseykha. Key to this approach was working with Lepcha and Limbu community researchers (mainly youth) and building their capacity to co-design and facilitate the research at the local level (using participatory methods and survey tools), and fostering a strong community-led research approach. The project worked with Lepcha and Limbu communities to define a tentative area for the BCHT and gather baseline information on its ten villages, including on ethnicity, livelihood patterns, sacred sites, seasonality and the significance of agriculture and natural resource-related ceremonies and festivals. It undertook participatory transect walks to broadly understand traditional land uses linked to biocultural heritage in the landscape, and to foster their revitalisation through intergenerational knowledge transmission.

The project built on previous action research conducted in Lingsey and Lingseykha by the communities themselves, their associations and traditional institutions, their respective development boards and by Lok Chetna Manch and the Centre for Mountain Dynamics through the Smallholder Innovation for Resilience (SIFOR) project (2012—2017). This includes work to revive Indigenous language and literature; an inventory of 60 cultivated crops, mainly landraces; documentation of traditional knowledge-based innovations for resilience to climate change; exploring factors that affect community innovation and networking; and raising awareness of other stakeholders, especially government officers and policymakers, through regular interaction and workshops. SIFOR explored farming and food systems,

including the level of self-reliance and dependence on markets or government supplies; subsidised rations; and food security at the household level and for vulnerable sections within the family. It also documented traditional recipes and organised mountain food festivals to enhance markets for the more nutritious local foods.

# 4. Research approach, methods and tools

There are 4,986 households in the two gram panchayats of Lingsey and Lingseykha, of which 239 are Lepcha households, 382 are Limbu and the rest are other communities. The project identified 11 hamlets, based on discussions with the community where the aims and vision of the project were shared; within these there were 143 Lepcha households and 95 Limbu households. The study selected these hamlets because they are the main hamlets with both Lepcha and Limbu households, and because they represent the overall landscape. The study involved all the Lepcha and Limbu households in the 11 hamlets.

The study addressed six key research questions (addressed by all four case studies):

1. **Ethnicity**: How are particular ethnic groups connected to the landscape historically?
2. **Worldviews, cultural values, well-being**:
    a. How do Indigenous worldviews about well-being, cultural values and customary laws promote or hinder sustainable and equitable development?
    b. To what extent are these recognised or applied by different generations and genders, or ethnic, religious, class/caste and economic groups? Which drivers are influencing cultural change?
3. **Governance**: What kind of traditional governance system exists? How can it be strengthened for sustainable management of the local landscape?
4. **Biocultural systems**: What are the main elements of the biocultural system and how are they inter-connected and inter-related?
5. **Livelihoods**: How does the biocultural system influence the local livelihoods system? How does it shape/strengthen a biocultural economy?
6. **Biocultural heritage and SDG 2**: How does the biocultural system contribute to achieving the SDG 2 targets — maintaining genetic diversity, ensuring sustainability and resilience, ending hunger and malnutrition, and doubling productivity?

The study involved the following key steps:

Inception workshop: The workshop was held from January 15–17 2019 at IIED in London and brought together the principal investigator (PI) from IIED and the co-investigators from India, Peru, China and Kenya, as well as a few academics from the UK. The co-researcher from India joined online for the India sessions. This workshop helped the team reach a consensus on the overall project approach, objectives and methodology. The co-investigator from ANDES Peru presented details on the participatory action research (PAR) methodology used by ANDES and the Potato Park in Peru. An enlightening discussion took place on well-being (Buen Vivir) concepts, such as the Andean Sumaq Kausay and 'Ayllu' concepts, which guide the Potato Park BCHT in Peru.

Free and prior informed consent (FPIC): The context, aims, methodology and other aspects of the project were set out in a written note and translated into Nepali — the lingua franca in the region, which both Lepchas and Limbu speak — and discussed in detail with the community. The three briefing sessions with the community followed the procedure as described by the International Society for Ethnobiology: they used the local language, fully informed the community about the project (including all community leaders and community researchers), the community was allowed to place conditions and deny consent, and finally, the project obtained signed consent on 9 March 2019.

Adapting the Potato Park PAR methodology: The project adapted the participatory and decolonising action research methodology developed by ANDES (Peru) and the Potato Park communities to the field situation in India. It identified 11 Lepcha and Limbu community researchers, one from each hamlet/village in the project area, based on suggestions from the community leaders. They were engaged on a modest honorarium to facilitate the research in each village. The research team held five

orientation sessions with community researchers to co-design the research methodology, and strengthen capacity and understanding to enable them to facilitate the research in each hamlet. They shared the methodologies for participatory transect walks, semi-structured interviews, focus groups, and participant observation with the community researchers in these sessions. Together with the community researchers, they then prepared a list of key research questions to guide the research process.

Local stakeholder workshops: In late June 2019, the PI from IIED and the Indian co-investigator and co-researcher held meetings with Lepcha and Limbu communities in Lingsey-Lingseykha (separately and together). In these meetings they further explained the proposed project and the benefits that establishing a BCHT could bring, and shared and discussed the Potato Park community-led approach and Ayllu concept. The communities noted that they have the same key elements in their community, as enshrined in the 'Ayllu', but don't have a specific term for it. To engage local policymakers, the research team organised a small workshop in Kalimpong on 1 July 2019 with local representatives from the Ministry of Environment, Forests and Climate Change, the Department of Forests, the Department of Animal Husbandry & Veterinary Science, the Kalimpong Block Development Office and the Indigenous Lepcha Tribal Association, as well as project staff (the PI from IIED, co-investigator, co-researcher and research assistant). The meeting highlighted some scepticism regarding the forest stewardship capacity of Indigenous communities, but enhanced awareness and the commitment of the Block Development Officer to promote supportive schemes in the project area. [4]

Household survey: The project conducted a household survey with a sample of 30% of Lepcha and Limbu households to collect basic information such as main annual income sources, main expenditure heads and important cereal crop cultivation. As well as providing basic data on participating households, the aim was to build the community researchers' capacity and self-esteem as researchers.

Literature review: The project team undertook a thorough review of published sources. At the same time, it held interviews with the President and Secretary of the Indigenous Lepcha Tribal Association (ILTA) to enquire about the information available in traditional texts. The researchers consulted a leading anthropologist from the Limbu community who has authored several books on the region, Dr JR Subba. They organised a visit to his home in Sikkim involving several community researchers from Lingsey-Lingseykha, for direct interaction. An analysis from the relevant literature is provided in each section.

Semi-structured interviews and transect walks: These were carried out to solicit information on the twin objectives of the project related to catalysing the establishment of a BCHT, as well as exploring the role of biocultural heritage in addressing SDG 2. In addition, the project undertook four focus group discussions with 50% women participants to triangulate the information collected (including on trends in cultural heritage, traditional crops, dependency on forest and present-day livelihood practices). The project team and community researchers also conducted a transect walk to the periphery of the Neora Valley National Park.

Storytelling and participant observation: Stories relating to the origin of the Lepcha and Limbu communities, cultural context, settlement history and connection with the landscape were shared by elders and incorporated in the findings and analysis.

Addressing the research questions: Communities tend not to treat the questions within strict boundaries and there is often a larger explanation connecting and interpreting several aspects together. It is a challenge to keep the conversations limited to a certain area and an even bigger challenge to interpret them strictly by following which part of the answer should fit in where. It is best not to restrict the flow of the conversation for the sake of getting a specific answer, since the Lepcha and Limbu take an integrated view on life, including all elements in the landscape. This issue had already arisen at the time of the initial planning and inception workshop in London when the research questions were helpfully reduced to six key questions, revised and re-organised to reflect the key components of BCHTs. Despite this, we had to allow a broader focus in the conversations with the communities. The six

[4] See workshop report: https://pubs.iied.org/g04439

questions were therefore grouped into three broad themes and the methodology used to explore each theme was as follows:

*Cultural heritage and sustainable development (RQ1 and 2)*

- December 2018: Field visit to prepare for the project planning workshop in London. The co-investigator and co-researcher interacted with communities in several proposed project villages, NGO associates in the Centre for Mountain Dynamics who work closely with the Lepcha Development Board, the president of ILTA and others.
- March, April and June 2019: Semi-structured interviews (SSIs) with 12–15 key informants per village, including elders, community leaders, youth, women, traditional farmers, local elites and/or unsustainable resource users.
- June 2019: The research questions were reviewed and revisited with Lepcha and Limbu communities. The co-researcher, co-investigator and community researchers developed semi-structured questionnaires.
- August to September 2019: Mixed focus group discussions (FGD) in each village to validate and triangulate the interview findings and further explore the research questions with a wider set of participants (50% women).
- Participant observation and storytelling was conducted in practically all interactions with communities
- Conducted an anthropological literature review of the Lepcha and Limbu (February to July 2020).

*Biocultural heritage, landscapes and sustainable development (RQs 3, 4, 5)*

- August to September 2019 and January 2020: SSIs with 12–15 key informants in each village, including elders, women and community leaders; FGDs in each village. Participant observation, storytelling.
- September 2019: Transect walk to National Park, and participatory mapping with five to six people from each village, including elders, women and youth from different groups.
- December 2019: Mapping BCHT boundaries, shared or contested heritage and threats to natural and cultural heritage.

*Biocultural heritage and the SDGs (RQ 6)*

- January to March 2020: SSIs and FGDs involving elders, farmers and women in each village — including mixed and modern farmers for comparison. This research was mainly qualitative but included some quantitative questions (on crop yields/productivity; income) and built on the SIFOR qualitative and quantitative surveys (on genetic diversity, incomes, productivity and resilience). The community researchers (CRs) were trained to conduct the quantitative household survey. Out of 110 questionnaires, 70 were completed and analysed.
- April, May and August 2019, and February and July 2020: Meetings were held with mainstream agriculture actors in the government to gain further insights on RQ 6 and appraise them of the project, including representatives from regional agriculture research stations, the Kalimpong District and Block II Agriculture Officer, and the District Information and Culture Officer. The latter deals only with performing arts and costumes and not agricultural heritage — but suggested that we might contact the director of the culture department in Kolkata to sensitise them on the importance of conserving agricultural heritage; and the District Magistrate of Kalimpong, thus a meeting was held with him too.

- Review of literature and comparative studies on the contribution of traditional and modern agriculture to SDG 2 objectives.

**Challenges and constraints**

Group discussions with Agriculture Officers to engage them in the project, fixed for March 2020, had to be cancelled due to the COVID-19 lockdown. Soon after February 2020, almost a whole year went by without much contact with the community, due to the COVID-19 pandemic and travel restrictions. The lockdown also hindered the work of the community researchers. This meant that it was not possible to fully address RQ 3 on governance. This is not an easy question as there is tremendous diversity of ethnic communities in the study area. While the proposed BCHT area had been primarily inhabited by the Lepcha community until early 1800, followed by the Limbu, the region is now a melting pot of eight Indigenous communities including dominant mainstream Hindu caste groups. Secondly, the state as well as the national government has a presence down to the village panchayat level, through the process of decentralised governance. So, any policies and programmes that the government promotes affect the grassroots. Against this backdrop, in designing a collective governance institution for a BCHT, it is important to study the views of all communities present in the BCHT area, and also to take into account the formal democratic governance processes.

Consultations with senior policymakers and other stakeholders were also delayed due to COVID-19. However, it was possible to visit the State Secretariat of West Bengal and meet agriculture and forestry officials and others in December 2020. These meetings were followed up with meetings with District level officers, and with field visits to brief and consult the study communities in January 2021. The officers were interviewed in their offices mostly through one-to-one meetings as gatherings were not allowed during the pandemic.

# 5. Results

## RQ 1: Ethnicity: stories of origin and community connection to the landscape

The Lepchas and Limbus both trace their origin and the origin of life on earth to the Khangchendzonga landscape. The divine deity of the Limbus, *Sigera Yabhundin Mang Porokmi Wambhami Mang* was advised by *Tagera Ningwaphuma*, who collected bamboo ash, bird droppings, rainwater and resin from lower hills. With these items he returned to a spot identified as 'Mangjirima Manglodama in Phoktandlungma' (called Kumbhakarna or Jannu peak) lying at the western edge of the Khangchendzonga mountain range. Here he crafted two idols — *Laikkangsa* the male and *Simbummasa* the female, who are the original ancestral couple of the Limbus.

The Lepcha story of origin states that the first Lepcha couple *Tukbothing* and *Nazong Nyu* was crafted from the fresh snow of Khangchendzonga (*Kingchumzaongboo Chyoo*) by *Itbu Mu*, the creator. The Lepchas call themselves 'Mutanchi Rong Kup Rum Kup', which translates as 'Mother's Loved Ones, Children of Snowy Peaks, Children of God'. Thus not only is Khangchendzonga the eldest brother to the Lepchas, it is also a father figure; its sight inspires them and its presence gives them faith. It not only provides the Lepchas with a tangible shape for the Lepcha conception of God, it also provides meaning for life itself. It is the place from where the river flows down, where Lepchas collect their food, such as fish and other creatures. It gives rain for crops and forests to grow from where they get fruits, roots, creepers and other food, including animal foods, that sustain them. This is the reason why in all stages of life, the mountain is referred to, worshipped and revered. The word Khangchendzonga in Lepcha means "The Great Snowy Repository of five treasures like Salt, Gold and Turquoise, Holy texts, Weapons and Grains and Seeds" (Wangchuk and Zulka, 2007).

According to Lepcha folklores documented by Acharya (2017), there is a hidden valley somewhere deep within the Khangchendzonga range, called 'Mayel Kyong' (hidden village land of Rongs — heaven on earth). The folklore adds that Rongs (ie Lepchas) live there eternally (are immortal) and often their 'Rum' (ie God) visits them in this hidden valley. Rongs living in the Khangchendzonga landscape believe that they are the progenies of people living in the hidden valley and are blessed with nature's gift of biodiversity. They believe that biodiversity originates from this hidden valley, either brought by birds or by floating down the river from Mt. Khangchendzonga.

Similarly, according to Limbu mythological narratives called 'Mundhum', Phoktanglungma's summit is the place where God and deities meet, as they did when their divine deity *Wambhami Mang* began creating humans, after populating the earth with water, soil, plants and animals and seasons. The word 'Mundhum' means 'the poet of great strength' and the Kirat people of east Nepal take it to be a true, holy and powerful scripture.

The Mundhum mythological narratives are divided into two parts:

1. Thungsap Mundhum is the original narrative that was passed on by word of mouth until the art of writing was introduced, and is referred to as the 'oral Mundhum' in books. It was an epic recited in song by priests called Sambas (where 'Sam' means the song and 'Ba' means that the singer (male) knows the song).
2. Peysap Mundhum is a written book about religion. It is divided into four parts: the Soksok Mundhum, Yehang Mundhum, Sapji Mundhum and Sap Mundhum. The Soksok Mundhum contains the stories of the creation of the universe, the beginning of mankind, the cause and effect of sins, the creation of evil spirits (such as the evil spirits of envy, jealousy and anger) and the cause and effect of death and childhood. The Yehang Mundhum contains the story of the first leader of mankind, who made laws for the sake of the improvement of human beings, from the stage of animal life to enlightened life, and ways to control them by giving philosophy on spiritualism. "In this book, leader has made rules for the marriage, arbitration, purification and religion. The story of destruction of human beings by deluge and the cause of existence of many languages among the Kirat people, the social customs of seasonal worship of God, the rules of purification at childbirth and death are mentioned in the Lepmuhang Mundhum." Chemjong (1966).

**Colonial and post-Indian independence history**

Lepchas and Limbus are amicably settled in close proximity of each other in the present day Sikkim, Darjeeling and Kalimpong districts of West Bengal, as well as parts of eastern Nepal and western Bhutan, together with other communities. Awasty (1999) considers that Lepcha migration took place from Sikkim to Pedong, near Kalimpong, in the 17th and early 18th centuries under pressure from the Lamaistic form of Buddhism. In Lingsey-Lingseykha, the Lepchas were the original inhabitants and the Limbus settled there during the early 1800s. After Kalimpong was taken away from Bhutan by the British in 1864, they merged it with Darjeeling administration. The Darjeeling region previously belonged to the Kingdom of Nepal and the British took it over through the Treaty of Sugauli in 1815, and established complete control in 1835. Following India's independence in 1947 when the reorganisation of states and kingdoms took place, the region was placed in the state of West Bengal.

The Darjeeling hills region, initially a part of Sikkim and later under the kingdoms of Nepal and Bhutan until the British took over, was never considered a part of Bengal by its inhabitants. The Indigenous communities as well as caste Hindus residing in this region never accepted themselves to be a part of Bengal, which had a distinct culture, demography, geography and language. So, a struggle for a separate state ensued, which continues in some form even today. However, the Indian government and that of West Bengal State have given some autonomy of administration to the region. The Darjeeling Gorkha Hill Council (DGHC) was formed in 1998 and functioned until 2012, mainly steering the development programmes, while the police, border security and other important affairs were directly taken care of by the central and state governments. In 2011, another body called the Gorkhaland Territorial Administration (GTA) was formed, which took over from the DGHC in August 2012.

Unstable politics and government as well as long and often violent civil agitations led to a steady decline in planned infrastructure development and primary services such as water supply, road networks, education and health. The Kalimpong region suffered more neglect from the state as well as local administration, since the seat of administration was in Darjeeling, which also had a higher population density and hence a higher number of voters. Its residents continued to demand a separate district within the state of West Bengal so that some autonomy in district-level expenditure and implementation of government schemes could be achieved. Eventually in 2017, Kalimpong was declared a district by separating it from the District of Darjeeling, but the struggle for a separate state continues.

## RQ 2: Indigenous worldviews and values of well-being for sustainable development

According to the Lepcha and Limbu worldview, the natural, cultural and spiritual realms are integral in human life. This is evident in special ceremonies, such as 'Mukzekding Rumfaat' (Environment Day), 'Lee Rumfaat' (annual house purification) 'Chyoo Rumfaat' (thanksgiving to mountains) 'Tunghong Lhorumfaat' (thanksgiving to Tendong Hill) and so on. In addition, some of the Rumfaat (ie ceremonies) performed in Lingsey-Lingseykha are: 'Kolbong (Hill) Rumfaat' (worship of Kolbong Hill for the protection and prosperity of the village), 'Laso lame' (young boys and girls visit neighbours and wish them happiness and well-being), 'Lunzilunongsa' (worshipping water sources), 'Negolunzinfaat' (worshiping in the cave) and 'Uquerumfaat' (worshiping for prosperity and well-being of family).

The values of wellbeing of both the Lepcha and Limbu are rooted in the concept of the influence of good and evil spirits. In the Lepcha worldview and religious beliefs the words 'sacred' and 'secular' are interpreted in a different sense, like 'good' and 'evil'. The words good and evil also carry different connotations. 'Good' depicts prosperity, happiness, good health and anything which brings wellbeing in their life, whereas evil means illness, natural calamities or all suffering. They call good or benevolent spirits 'Sukyo Rum' and evil spirits 'Aami Moong' (Lepcha, 2019).

Ceremony in a sacred cave. Credit: Lok Chetna Manch.

The priests of the Lepcha Indigenous belief system are the *Bongthing* (mainly male priests) and the *Munism*. They mediate with the benevolent and the evil spirits for the wellbeing of the individual, the family, the community and the landscape (including plants and animals). It is also important to note that the word *Bongthing* is derived from the two Lepcha words, *Abong* meaning 'mouth' and *Athing* meaning 'a good orator or speaker'. *Bongthings* and *Munisms* perform different rituals and ceremonies. *Bongthings* perform the sacred activities like *Lee Rum Faat, Chyu Rum Faat* and various other household services, and have the power to stop evil spirits from doing harm. They acquire these supernatural powers through constant prayer and deep meditation. In the case of the *Munism,* both male and female can be incarnate in any Lepcha clan — the Lepcha believe that it was the *Rum* [5] who sent the *Munism* to the Lepcha tribe to save them from evils and other unwanted circumstances like illness, plague and unnatural death. After the death of a *Bongthing* or *Munism*, their corpse is buried in the ground up to the neck. The head lies on the surface of the ground, and is fenced off with stones erected round the head. They believe that by doing this, the disciple will inherit their power.

The Limbus believe that the supreme Goddess *Teagra Ningwaphuma*, a benevolent deity, only does good for the people irrespective of whether she is worshipped or not. They believe that evil spirits hover around and are responsible for diseases, accidents and so on, and need to be regularly appeased so that they may not cause harm to the people. Whenever there is any disease, accident or any indication of a bad omen, the particular evil spirits responsible for these are traced out by the Shamanistic priests by performing particular rituals and appeasing them to avoid any harm. These priests are called *Phedangma, Samba, Yeba, Yema* and *Sattey Hangma*. They invoke the ancestors and spirits for welfare and prosperity of the individual and the village. Subba (2011) has identified the following divinities that are invoked:

*"Theba Sammangs*, the grandfather or primogenitor, a divinity of power, energy and vigour,
*Khamjiri Khambongba Lungjiri Lungbongbamangs*, lords of the mother-earth,
*Magui Thallunghang*, primordial ancestor who initiated agriculture,
*Yabhungen Yabhungrekma*, female divinity of seeds,
*Madenhang Lungumhang*, primeval ancestors who taught to remove weeds,

[5] *It-bu de-bu Rum* means 'both the creator and the destroyer'.

*Nugohang,* primeval ancestor who taught better techniques of working, storage, and *Hayuhang,* an ancestor that saves farmers from accidents, natural calamities and helps for good harvest, avoiding the interventions of evil spirits. All these divinities form a group of divinities which is known as *'Ingmang'* or '*Yumang'*." (Subba, 2011)

The belief in customs and rituals associated with invoking so many divinities and ancestral spirits speaks of holistic worldviews. Socially, the whole community who live around the location of the ceremony not only gather to participate but every village household must share in the offering. "Indigenous biological and ecological knowledge and skills play a vital role in the livelihood of Limbu community. Limbus are very rich in culture as they have their own mother tongue, folk culture, including folk literature, folk beliefs and practices, folk games, folk music, folk food, clothing and housing, fair and festivals, life cycle rituals, and traditional healing practices. They possess very precious tangible and intangible cultural heritage that has been passed from one generation to another.

"The Limbu tangible cultural heritage refers to the totality of all material culture elements that makes the Limbu community distinct, eg costumes, food item and liquor, musical instrument for rituals and performances, traditional weapons and instruments or tools, artistic design in various constructions and their decorations, traditional Limbu specific wooden products, bamboo-products, and many more. While Limbu intangible cultural heritage refers to a body of many categories: first, Mundhums, proverbs, folklore, riddles, folk narratives etc, secondly, Chyabrung dance (a kind of Limbu Drum); and thirdly, social practices, rituals and festivals; and fourthly, knowledge and practices concerning nature and the universe (traditional ecological knowledge, ethno-biology, ethno-botany, ethno-zoology, traditional healing system etc)." (Wangchuk and Zulca, 2007). This separate categorisation of tangible and intangible components likely reflects the researcher's perspective, since the Indigenous holistic worldview tends not to separate these (for example knowledge and beliefs on the one hand, and food, biodiversity, landscapes on the other).

The wisdom of the community, of both the Lepcha and the Limbu, rests on the basis of a 'wholeness' where human actions are accountable to a much larger subset of the society including the natural world and the world of the ancestors and spirits. Ganesharajah (2009) explores wellbeing from the Australian aboriginal perspective: "Generally speaking, the idea of wellbeing is broader and more inclusive than conceptions of health. Arguably, however, the Indigenous conception of health is actually a holistic understanding of wellbeing. Health is defined as: not just the physical wellbeing of the individual but the social, emotional and cultural wellbeing of the whole community. This is a whole-of-life view and it includes the cyclical concept of life-death-life."

The Lepcha and Limbu believe that all plants, animals and rocks have spirits and some of these are sacred, for example those in the sacred mountains and forests. These cultural and spiritual values promote ecological stewardship and hence sustainable development. There are deep-seated values of equity and sharing of resources in the community. In cooperation with the IIED biocultural heritage network over the last few decades, the Andean core values of reciprocity, collectivity, solidarity and equilibrium have also been observed amongst the Limbus and the Lepchas. This study explored how these core values are represented in the Lingsey-Lingseykha biocultural landscape, based on discussions with people of different age groups, gender, economic class and education level within the Lepcha and Limbu communities. It found that the Lepcha and Limbu share very similar core cultural values.

**Reciprocity with nature, in seed exchange and with deities**

Reciprocity enhances biodiversity and resilience (ecological resilience and food and nutrition security). Reciprocating with nature — by planting trees, releasing fingerlings (baby fish) in the river, offering traditional cereal crops to respective deities in different seasons — not only provides food to migrating birds, animals and fish, but spreads seeds through them to other places. This practice supports biodiversity conservation. Planting new species and varieties of plants and food crops in kitchen gardens and maintaining diversity at household level is essentially a natural instinct, allowing reciprocation with the ecosystem — mostly for the Lepcha but this is also a general practice in the mountain region (though it is declining).

Solidarity and reciprocity with nature and in society is expressed through sharing and exchanging seeds within the village and between the villages, and has been practised for a long time in the mountains. In Lingsey-Lingseykha, potato seed from villages at higher altitudes is exchanged with maize from lower altitudes. At higher altitudes it is easier to store the potato seed for the next season. Other reasons for exchanging seeds are: the loss of variety due to natural calamities, the introduction of new varieties from outside and their poor response in adaptability, to enhance productivity of self-saved traditional seeds through replacement from other sources by exchange, and preference in taste for certain varieties (Mukerjee, 2018). It is also a tradition among the Indigenous people here to carry or exchange seeds of new or good varieties of crops or plants as gifts when they visit their in-laws' house.

Solidarity and reciprocity with the sacred world are expressed through various rituals, for example, as part of the Limbu *Nwagee* ritual which forms part of the harvesting process. It is a kind of ritual practised by most of the mountain farmers. When crops reach maturity and to determine the time of harvest, especially for major cereal crops like maize and paddy, the farmers do a preliminary sample harvest. Food is cooked from the fresh harvest by the mother of the household. They then offer cooked food, fermented millet and other ingredients to the respective deity as a thanksgiving ceremony. Different natural resources like crops, rivers, forests, trees, mountains, water sources, houses, wellbeing (human health) and so on each have respective deities. They also clean storage areas and all agricultural equipment on this day. After offering to their deities, the mother will first test the cooked food to determine whether the crop is ready for harvest or how much more time is required for its maturity and accordingly, they will plan crop harvesting. For fruit and vegetables they also follow *Nwagee* by offering the first sample harvest to their respective deities. Before performing *Nwagee*, produce is not allowed to be harvested or consumed. This practice not only helps to determine the right time to harvest but prevents untimely, irregular and unauthorised harvesting by any members of the family.

**Collectivity in society and with nature**

Most of the mountain communities follow *Perma* or *Hurri*, a kind of labour exchange/sharing practice, where representatives from several households form a group and perform major agriculture works such as ploughing, planting, harvesting and post-harvest operations collectively. They take turns in each other's fields. During the process, they make the occasion enjoyable by singing, dancing, drinking and so on. These practices not only enable them to complete the work quickly, but also allow them to regulate the use of resources like water for irrigation and human resources in a wise and fair manner. The Lepcha traditional dance 'Zo-Mal Lok' and the Limbu paddy dance 'Yialangma', are performed during collective activities. 'Zo-Mal-Lok' is a famous folk dance of the Lepcha community which narrates everyday chores such as sowing, reaping and the harvesting of paddy. In case of any calamity, all the members of the community share the burden of the affected family by means of service, cash and in-kind, and this still occurs today most of the time. However, *Perma* is on the decline, and some hamlets no longer practise it.

The Limbu traditional paddy dance, which is popularly called 'Dhannach' (paddy dance), evolved in association with birds. It is actually a post-harvest activity for thrashing dried paddy plants to separate the grains from the plants. According to an elderly Limbu lady (Biren's mother), the paddy dance evolved as follows. A bird, white-rumped munia, is believed to have first brought paddy seed for humans to cultivate and so is considered very auspicious. However, large numbers of this bird visited their fields at the time of sowing and they eat the seeds. As the people did not want to harm the birds, they used to scare them away by making polite, mild and melodious sounds and waving their hands simultaneously. This started as a group activity and the same gestures in synchronicity to scare away the birds appeared like a dance. This gradually became the paddy dance, which is traditionally performed at all major operations in paddy cultivation from planting to harvesting. These days it is practised more on different cultural occasions than in farming activities. According to Subba (2008) this dance has become an important event in ceremonies and festivals, especially among youths seeking matrimonial relationships. This dance also binds the Limbu community culturally, strengthens solidarity and has become a big symbol of cultural identity. The 'Dhannach' can be performed for a few minutes on stage at cultural events or can continue for three to four days on special occasions like the Limbu New Year festival 'Maghay Sankrati', which usually falls on 14 January. At times this dance is also

performed on the last day of death rites as a symbol of happiness and to mark the end of the mourning period.

### Equilibrium with nature and related rituals

Indigenous communities of the Eastern Himalayas believe that human beings are also one of the creations of God, therefore maintaining harmony and showing solidarity with other creations such as plants and animals is part of their culture. Indigenous mythological narratives like the *Mundhum* of Limbu and the *Namthar* of Lepchas have designated various deities specific to different aspects of their ecosystems. These deities are responsible for maintaining harmony with nature. Based on this belief and respect, they perform rituals and maintain equilibrium in ecosystems by engaging in livelihood activities at appropriate seasons and stages of plant and animal life, regulating when, how, and how much to harvest or collect from nature, and returning the favour.

Sustainable traditional practices of the Lepchas, which are also generally practised by all the mountain tribes, include:

- Planting trees in the rainy season
- Leaving some branches while collecting fodder from trees
- Dropping spores by tapping the stems of wild mushrooms while harvesting
- Avoiding hunting and fishing at breeding times
- Optimum collection of fruits and vegetables from the wild.

The practice of trying out and maintaining new species and varieties in home gardens is not only in their interest for food supply but for plant conservation and to avoid their extinction. They are proud of maintaining different species and varieties of crops and vegetation in their field for collection and to avoid extinction from the village or the region (although the practice is declining). They respect nature as the gift created by their supreme God, guarded and monitored by other respective deities, assigned by the supreme creator and passed on to them by their ancestors. Most of the mountain Indigenous tribes perform rituals to show their gratitude to the deities relating to nature (mountains, rivers, crops) and offer respect and promises for the protection of nature in lieu of its utilisation for their livelihoods. Therefore, it is the custom of Indigenous tribes not to disrupt the harmony of nature and to use the resources in a sustainable manner, in order to pass them on to the next generation like their ancestors have done.

*Uvawlee* (Upstream) and *Udhawlee* (Downstream) are rituals performed mostly by Limbus, Lepchas and Rais along the rivers and streams, based on changes in weather conditions and the migration of animals, fish and birds. These rituals are performed by religious priests like Lepcha Bongthings and Limbu Phedangbas, who offer cereals, fermented millet, flowers, eggs, fish and so on to their respective deities and pray for protection, wellbeing and good weather for production. They are believed to be rituals for feeding migrating animals, birds and fish. At the time when *Uvawlee* is performed, seeds are sown in the field and during *Udawlee*, crops ripen in the field. Therefore these rituals also divert the migrating birds away from the agricultural field. Since most of the migrating animals and birds travel along the river and rivulets, this is where these rituals are performed, either at household or hamlet level.

### Drivers of change affecting cultural heritage and biodiversity

As the aspirations of the youth change, some are questioning the communitarian ways in favour of concern for immediate family members (nuclearisation). Their faith in the priests, who are the custodians of culture, tradition and ancestral knowledge (including values and beliefs) and act as traditional messengers from generation to generation, is also changing under the influence of so-called

'scientific education'. It is not only the youth but also the Lepcha and Limbu people in general who have migrated out of the region for work.

Both boys and girls are encouraged to go to school. However, the communities prefer to send boys for higher education outside the community, often depending on the economic situation of the household. Those who can afford it mostly send their children (boys or girls) away to town for education. Male members have more tendency to out-migrate for work and women tend to stay back in the village to look after children and agriculture. Recently, more and more women have been participating in the social and political meetings inside and outside the villages. Women have mixed reactions to this change, going out and participating in social and political meetings is okay with them to some extent, but if it becomes a regular practice it increases their workload. We explore the key drivers of change affecting biocultural heritage below.

Religion: Though a significant section of the Indigenous population is influenced by mainstream religion, modern ways of life and globalisation, when it comes to rituals, ceremonies and festivals, they seem to enjoy and participate and prove their solidarity towards the tribe and duality of worldviews.
In the 17$^{th}$ century, the successful propagation of Buddhism was initiated in the region with the arrival of three monks from Tibet, who each unlocked a gate of the 'Hidden Land', and ordained Phuntsok (*Dharmaraja*) as King of Sikkim in 1642 (Wangchuk and Zulca, 2007). It was a gradual imposition by Tibetan migrant-rulers from the north, who translated many Buddhist texts into the Lepcha language to bring the Lepchas under the Buddhist fold. The Lepchas accepted Buddhism without much opposition but also continued with their traditional shamanist/animist religion. However, the introduction of a more exclusivist religion such as Christianity had more impact. "Christianity made its mark when Reverend William Start, former Church of England clergyman turned independent Baptist started a school for Lepchas in 1841." (Dewan,1991). He learned the local vernacular, translated a few books of the Bible from English to Lepcha, and published Matthew in 1845 followed by Genesis, Exodus, and John in 1849. External interest in their mother tongue also nurtured the identity of the tribe and translating the Bible into their language was a huge step (Oommen, 2009). The Lepchas were influenced by Hinduism from the early 19th century onwards as it was India's dominant religion. "Lepchas never professed Hinduism as their religion but the Hindu-tribal contact played an important role in the transmission of cultural elements from the dominant religion" (Lepcha, 2013).

At present, Lepcha faith is divided into Shamanism, Buddhism and Christianity. Arora (2006) observes that "Buddhist priests and Shamans do not contradict each other but co-exist as religious specialists due to a division of labour in their roles towards the individual, the family, the community and the polity. The local spirits are appeased and offered sacrifices by the Shaman while the Lama offers prayers to the Buddhist divinities and propitiates the protective deities of the land". Most Lepcha people in Lingsey-Lingseykha practise dual religions, maintaining Lepcha traditional beliefs, but the adoption of other religions has contributed to a weakening of Indigenous spiritual practices, beliefs and values, to some extent. The Lepchas believe in *Itbu Mu* or *Itbu Debu* (the Creator) as their supreme God, and the rituals performed by Shamans are called 'Rumfaat', a ceremony to appease God (Rum). The ILTA is campaigning to change the concept of Rumfaat (worshipping) to Aasong (thanksgiving ceremony), because they argue that by virtue of goodness, God can do no harm and one need not do appeasing ceremonies for God, but one can thank him for his creations for the human civilisation. This reflects influences from other religions.

The Limbus resisted religious suppression to a great extent because of Sirijonga Teyongsi, who arrived in Sikkim in 1734 and revived the Limbu script and Yuma Samyo (Limbu faith) and effectively inculcated a sense of tribal 'nationalism' among the Limbus. The Limbus have effectively sustained their Yuma Samyo (Limbu faith/religion) by secretly continuing their practices in the dark corner of individual households. Therefore, Limbus are not influenced by Buddhism and Christianity as much as Lepchas.

Agriculture and food subsidies: The extent and diversity of crop cultivation is declining. The community researchers conducted a sample survey of 30% of the 238 Lepcha and Limbu households spread across the 11 villages to understand land use under agriculture. The survey revealed that out of 70 households with a total of 74.0095 hectares of landholdings, only 16% of households cultivate their entire landholdings, 44% cultivate three quarters, 29% cultivate half, and 11% of households cultivate

only a quarter of their total landholdings. Almost 31% of earning from agriculture is from cardamom alone. A focus group discussion was carried out with about 15 Limbu youth (at the Sankranti New Year festival) to assess interest in agriculture. It is clear that they want agriculture to be a market-linked, economically viable enterprise. At the same time, mechanisation in agricultural processes is needed. The largely manual methods requiring livestock to be reared for ploughing are found too tedious and do not match current lifestyle aspirations. Lower interest in the continuation of traditional food systems among youth (compared to elders) is also partly explained by the government's large, highly subsidised public food distribution programme that mainly supplies rice and wheat. This has contributed to changing food preferences and dietary patterns.
The diversity and extent of millet cultivation has reduced and only finger millet continues to be cultivated primarily to make the local traditional brew, both for self-consumption (including rituals) as well as for sale. There are signs of revival of millet cultivation in the rest of the country through government programmes but the reach of any programme in Lingsey-Lingseykha region is poor due to its remoteness. This has favoured agricultural diversity and traditional farming systems in the region as the penetration of schemes meant to promote Green Revolution agriculture has also been limited.

Employment Guarantee Act: The household survey revealed that almost 17% of household income is from pensions, salaries and jobs generated under MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act). The scheme generates employment in the village (for example in construction, path laying) and can provide up to 100 days of work for every eligible household member, which means it generates more income than traditional agrarian livelihoods. This is an important driver for loss of traditional agriculture. However, there are provisions in MGNREGA that can be utilised for community agrarian activities such as soil conservation measures and water harvesting measures, which could be utilised to support traditional agriculture, for example through community seed banks, processing activities and making traditional foods more accessible and popular.

Education: The importance of education can be seen from the fact that 37% of all household expenditure is incurred for educating children and youth, according to the survey. Even children as young as seven or eight are sent out of the village for higher and better education. Local government schools, such as the one in Lingsey-Lingseykha, are considered to have poor education facilities compared to private schools. The sending away of children takes away opportunities that they might have growing up at home — connecting and engaging more deeply in tasks such as gardening, tending to livestock and assisting in harvesting/thrashing of food grains, for example. This lack of connection with land-related tasks at an early age is partly responsible for declining agriculture and there is no integration of traditional knowledge in the school curriculum.

Economic drivers: Observing many rituals is becoming difficult for a number of reasons: the high cost of obtaining different plants, fruits and flowers from the forest and other places, which are scarce these days; obtaining animals or poultry required by some rituals; providing food to community members participating, and bringing priests, if not available locally, as there is a scarcity of priests who perform rituals. The survey revealed that the cost of festivities and ceremonies constitutes around 5–6% of household expenses. "Besides food-grains, fermented millet and other several items, various types of animals including pig, chicken, pigeon, duck, un-castrated male goat, bull-buffalo, fishes etc were offered to the various divinities in the earlier times. This is fast changing and often reduced to some chicken sacrifices now." (Subba, 2011).

The rapid change under the influence of education and economic aspirations is also seen in many other aspects such as housing. The oldest Lepcha house (more than 200 years old) in the proposed BCHT area is in Zomthang village. One of the brothers who inherited the house migrated out and became a government civil servant in the adjoining state of Sikkim. The brother who continued to live in the village practised traditional ways of livelihood. The richer brother used to support the maintenance of the house as the thatched roof needs to be replaced every 10–15 years and some wooden poles need to be repaired. He retired from the service in 2019. In 2020, they had already started building a new modern

house in the compound and when we asked them if they would continue to maintain the old house, the answer was 'no'. It is too expensive to maintain the traditional house because of reduced access to the forest and high labour costs (with the decline of traditional labour exchange practices). They suggested that if the government is interested they can pay for the upkeep of the house or maintain it as a museum.

Access to forests: The Khangchendzonga landscape is home to the Lepcha and Limbu Indigenous Peoples. They traditionally regulate access to forests and different land uses through customary laws. The Limbus previously had a sophisticated system of sustainable resource management called the Kipat system. As the Limbus migrated from Nepal around the time that the British colonial government in India was exercising powers and making laws to control natural resources, references to the Kipat system are available from Nepal. Although today they don't have control over forest conservation through customary norms, they still protect common property resources like water sources and sacred places through customary norms. Common places like footpaths, streams and fragile spots are normally governed by village societies.
"Prior to the nationalization of the forests by the government of Nepal, Limbu had their own system of management. This used to be known as kipat system. It was a communal form of resource management. Under the kipat system a certain area consisting of land, forests, rivers, streams were held under the communal holding of the Limbu community. They would communally manage all of these resources. As per Regmi (1976) the kipat system may have been a customary form of land control by the mongoloid or autochthonous tribal communities, in areas occupied by them before the immigration of racial groups of Indo-Aryan origin. He further explains the rights in regard to the kipat tenure which emerged not because of a royal grant, but belonging as a member to a particular ethnic community. The kipat system also prevented the government from establishing its administrative control over the whole of its territory. They had a Jimmawal (the Limbu Chief) who acted as the headmen of the village and who was also responsible for collecting tax and looking over the resources." (Limbu, 2011)

The Lepcha used to follow the 'Bukchung' system. According to Pal and Palit (2011) this Lepcha regulation for forest conservation required that one should grow eight tree saplings in exchange for cutting one tree. Other practices in the 'Bukchung' system included that in collection of yams from the forest, people are required to always leave part of the yam and roots behind and fill the holes with leaves and litter, to encourage regeneration and provide food materials for the next time. Arora (2006) observes in relation to the Lepchas that "sacred groves and landscapes are often perceived as an example of Indigenous forest management practices and the antithesis of the sanctuary rationally managed by the forest department of the government."

Inhabiting a biodiversity hotspot means that increasing government controls have affected the communities, their knowledge systems and practices. The current system of state protected areas builds on a history of government control of forests initiated by the British colonial government. When Bhutanese kings ruled Kalimpong and Choygyals (Kings) ruled Sikkim, there was no tax on lands under community management or on paddy lands. Taxation was only on the homesteads (Regmi, 1976). So, Limbus practised the kipat system and Lepchas followed Bukchung and other methods. In the late 1800s the British administration started to exercise control of the forests. Indian forests were declared as Crown land. In 1855, Lord Dalhousie issued the historic Forest Charter establishing unquestionable supremacy over forests in India. In 1865 and subsequently in 1878, the Forest Acts rejected the rights and practices of the Indigenous Peoples (Palit and Banerjee, 2016). By the early 1900s, large tracts of land had started to be cleared for tea and cinchona plantations. Displacements from these cleared forest regions as well as general migration into the tea and cinchona plantations from other areas affected the whole region, although there is no record of how this affected Lingsey-Lingseykha specifically.

"The most serious consequence of colonial forestry was the diminution of customary rights as well as the decline in traditional conservation and management systems. The curtailment of communitarian ownership of forests of Darjeeling by the colonial state had severely undermined the subsistence economy of the Indigenous Lepchas. Collection of bamboos, wax and lac from the forest was prohibited by issuance of licenses. Jhuming or shifting cultivation was discouraged without providing appropriate

alternative arrangement or land to the Lepchas for settled agriculture. As a consequence, there had been displacement of Lepchas from their natural forest land habitats. Restrictions on collection of forest produce, imposition of prohibitionary norms on grazing and gradual dwindling of grazing grounds of different seasons affected badly the Indigenous people of Darjeeling hills. Moreover, the British forest policy or in the colonial Acts, had not ensured the rights of the indigenous population." (Sarkar, 2014).

In post-colonial independent India many of the same policies continued. However, communities could use reserve and protected forests in non-destructive traditional ways. For example, they could grow cardamom in the moisture-rich understorey and selectively remove trees to plant nitrogen-fixing *Alnus nepalensis* trees for cardamon, extract specific bamboos for certain ceremonies or uses, collect thatch grass for roofing material and even cultivate potatoes at higher altitudes that would provide seeds for lower altitude cultivation. In an interview with elderly women and men including a Lepcha bongthing they mentioned that wild relatives of crops, such as finger millet, and naturalised crops such as birmakai (maize) harvested from the wild are considered more auspicious offerings in the ceremonies. The millets such as proso millet were only cultivated in the forests. Lepcha, Limbu and other communities could even continue hunting in the forest until 1972, when a very stringent wildlife conservation act was passed with extremely severe punishments and fines in case of any violation.

Gradually, over the last four decades, a large part of these reserve forests in the Kalimpong, Sikkim and Darjeeling regions have been designated as national parks and sanctuaries. Pangolakha Sanctuary in Sikkim on the northwestern boundary of the proposed BCHT and Neora Valley National Park on the northeastern side are most critical for the communities in the study area. In the Khangchendzonga transboundary global biodiversity hotspot across Nepal, India and Bhutan, there are as many as nine global 'eco-regions', 19 protected areas, 11 important plant areas and 22 important bird areas (ICIMOD, 2018). This protected area network has severely curtailed the informal customary rights and access of the communities, not only in the core areas but also in the fringe areas. Such restrictions on access to biological resources has impacted sustainable utilisation and depleted traditional livelihoods systems, leading to the loss of traditional ecological knowledge and cultural practices.

Governance: This region has seen some political turmoil since 1986, including two armed revolutions to demand a separate state. As a solution to this problem, the government tried having two different administrative systems. It constituted the Darjeeling Gorkha Hill Council and the Gorkhaland Territorial Administration. In the process, democratic processes were paralysed and decentralised self-governance institutions like the Panchayati Raj system became defunct. No panchayat elections have been held since 2005. Formal institutions of local self-governance are non-existent today, whereas traditional institutions continue to play a role in promoting cultural heritage and language, development assistance activities, and conflict resolution through dispensation of justice in their purview (that is, relating to community affairs to a great extent). The Lepcha and Limbu come under the Scheduled Tribe communities of India and have their own community organisations: the Sezom and Yak-Thung-Sung Chumfo respectively.

There are two layers of governance system, one that is run by the government administration, and the other being the authority of the traditional priests and institutions. Infrastructure development and programmes that encompass almost every sphere of life (agriculture, forests, health, education, employment and so on) are under the purview of the government. Under the decentralised governance system, if the local elected body at the level of the village (panchayat) had existed, it could have played a key role. Constitutional provisions under decentralised governance allow panchayats to prepare participatory village level micro-plans, which could have played a key role in deciding the nature of projects to be undertaken.

## RQ 4: Biocultural systems: Main elements and inter-connections

**Indigenous knowledge and wildlife indicators for farming**

The Lingsey-Lingseykha landscape is interspersed with bamboo and forest groves (small areas of wild bamboo and forest), mixed farming areas, dryland paddy terraces, wet/irrigated paddy lands, and commons areas such as community forests and slopes adjacent to streams and riverbanks. This diversity of habitats makes it a highly biodiverse area and the rich cultural traditions practised there are integral to ensuring harmony with the natural world. The Lepcha and Limbu communities — in their intimate connection and experience with the natural world — are specialists and experts in their own right, and have accumulated a large body of knowledge over generations. Many scientific expeditions at the time of colonisation used their support to learn about the flora and fauna of the area.

Soon after the British colonisation began, a well-known explorer, Sir Joseph D Hooker, came to Sikkim. His Sikkim expedition (1848–49) is well known for the description of the flora of the region. It is said that he relied mostly on Lepchas for plant collection and associated knowledge since he found the information provided by Lepchas to be the most authentic. More recently, in the early 1980s, the Lepcha KP Tamsang compiled *Trees, Shrubs and Large climbers found in the Darjeeling District, West Bengal and Sikkim*. This manuscript remained unpublished even after his death in 1985, until ILTA published it in 2010. Mr Tamsang documented around 394 species of plants with their botanical, Lepcha and Nepali names. The Lepchas seem to have a name for almost every plant found in their homeland.

The Lepcha and Limbu tribes are experts in recognising the language of the birds. They plan forthcoming agricultural activities according to the arrival of migratory birds and their chirping. Even today, elderly Lepcha and Limbu people follow these indications from birds for their activities in the field. According to an elderly local Lepcha bongthing, the arrival of the bird *Bim Peyul* (in Lepcha. *Nya Frang* in Limbu or *Beaw Char* in Nepali) denotes that the season is right for sowing seed. Its chirping sounds like 'Bim Peyul', which means to sow seed in Lepcha. Another way of judging the sowing time is by dipping a finger inside the soil for few minutes; if sweat or water condensation appear on the nail, the field is ready for sowing seeds.

*Chichin Kotay* is the name of a bird in Limbu language which makes a sound like 'fing-fing' indicating the time to clear the agricultural fields. After the clearing of the agricultural fields, it again arrives to say that all the cleared bushes have to be burnt in the fields. It provides a timeline for agricultural activities like clearing fields, sowing, weeding and harvesting. It makes different sounds for different agricultural activities. The arrival of the bird *Chakdung* indicates that the sowing time for maize is over and it's the time to sow dryland paddy (*Zomal Zo* in Lepcha language or *Ghaiya Dhan* in Nepali). When the *Chakdung* returns with some straw under its wings it indicates that wheat and naked wheat are ready for harvest. It is believed that after giving the signal to harvest, the bird migrates across the mountains for nesting and breeding.

The arrival of the *Kaku* bird indicates the time to begin weeding in dry paddy fields. The arrival of the *Dyang flang* bird denotes accumulation of cloud in the sky, the beginning of the rainy season and an increase in volume of water in the rivers and rivulets. When this bird comes upstream, this signals an increase in water volume in the river and rivulets. When it returns downstream, it signals the end of the rainy season and a decrease in water in the streams and rivers. When *Dangdang* (*Pik Pikay*) appears on the riverside towards the south it shows that water levels in the river are rising or the rainy season is approaching. This bird can be seen from May or mid-May onwards.

The crested serpent eagle, a raptor called *Karang Kurung* in Nepali and *Kurmok* in Lepcha, migrates through the region towards Tibet. When these birds cross over this region during mid-March to mid-May, the mountain people traditionally sow maize, pumpkin, cucumber and so on. They believe that seeds sown during this time grow well and give good production. Elderly Lepcha believe that these birds reach a lake in Tibet after several days of flying. Since after a long flight the migrating birds are too tired to move, villagers of surrounding areas tie up their dogs to keep the birds safe, thus allowing them to proceed for breeding. Interestingly, people involved in this study in Lingsey-Linseykha mentioned that although they see the birds moving north towards Tibet, they have never seen these birds returning. They believe that after breeding, these birds travel back to their community through

rivers and rivulets, which takes about six months. However, it has become rare to see these birds passing through the sky, perhaps because the breeding place is no longer safe or because they can no longer travel through the rivers and rivulets due to the construction of several hydro-electric power plants in the region.

In Lepcha tradition it is believed that before the arrival of the bird *pink-fik* they have to accumulate forest products like Gittha-Vyajur wild fruits and Ban Tarul roots, because after the arrival of this bird one may not be able to locate Ban Tarul (yam) in the forest. These forest products used to be main food items during the hunter-gathering period and continue to be essential ingredients for New Year celebrations. In the recently held ceremony of *Kak Phekwa La-Gaenge* or *Maghe Sankranti*, Limbu New Year celebrations for 2021, the whole community gathered and the main food served was many kinds of taruls, wild as well as from the fields. It is believed that in the cold season these root crops provide the required nutrition, warmth and energy.

Limbu priest performing a new year ceremony. Credit: Lok Chetna Manch.

**Agri-food system beliefs, rituals and ceremonies**

In all project villages, the main food crops grown are maize, rice, millet, wheat, cassava, soybean, pulses, potato and many types of vegetable. The villages also grow buckwheat in very small quantities, mostly for rituals. Besides food crops, they also grow cash crops like cardamom, ginger and broomstick grass. A survey in the study communities and wider area found a particularly rich diversity of pulses, lentils and beans with more than 30 types being cultivated (Mukerjee et al., 2018). Almost all of these crops are local landraces, except for a few introductions including two modern soybean varieties, one hybrid maize and some vegetables.

Interestingly, a Limbu elder of Jhusing village mentioned that anything which is growing very fast and in larger amounts is out of rhythm with the natural world, and is definitely not good for human consumption as it will not give the required amount of nutrition. This deep connection with and understanding of the

natural world is reflected in another observation related to processing. The food that will be offered in sacred rituals should not be stepped upon in processing operations such as thrashing and winnowing. There are many Limbu festivities and religious ceremonies that are intimately connected to the natural world; and many festivals associated with crops such as 'Chasok-Thisok' (Harvest Festival). This is either celebrated individually or collectively during the 'low season' when there are fewer farming tasks, marked by 'cherry bloom' (Phunchhing). The Supreme Goddess *Yuma* is worshiped/appeased in her various forms/divinities like *Mundenhang*, *Thungdangmang*, *Theba* or *Kappoba Sammang,* in thanksgiving for their roles, by offering newly harvested food grains and fruits. *Taffeng* the divinity of nature is also appeased simultaneously during the ceremony.

'Yokwa' or 'Yumang' is the ceremony to appease or worship the ancestors before people get involved in agricultural activities. Examples of the ancestors worshiped include: *Magui Thallunghang*, the ancestor who initiated cultivation; *Hayuhang*, the ancestor who saves farmers from accidents, natural calamities and helps in good harvest; the lord of the land, *Khamjiri Khambongba Lingbongba*, and the female divinity of seed, *Yabhungen Yabhungrekma*, as well as other nature-related divinities. It is usually conducted during 'high season' or when the peach trees (Phanngrek) are blooming in spring. To undertake this ceremony, villagers gather at the top of the hills where they can have a view over the agricultural fields, and pray or appease the deities for rain, favourable weather, good crops and avoidance of natural calamities, and accidents and wounds while working in the field. For this ceremony they offer food grains, fermented millet, and sacrifice animals like pigs, chickens, pigeons, ducks, uncastrated goats, bull-buffalos and fish. Every household shares these offerings and together they feast on the sacrificed meat and drink liquor.

One of the reasons that finger millet is still being cultivated is because of the cultural significance of the fermented millet brew that is made from it, a kind of beer called *Chi* in Lepcha, *Thi* in Limbu, *Chyang* in Bhutia and called *Jhanr* or *Tumbha* by other communities. In almost all rituals, ceremonies and festivals this is an integral item without which the event is incomplete. When people sit together to enjoy this in a relaxed environment, there is a lot of knowledge sharing and networking for mutual support. It makes a very strong contribution to socialising and agricultural work.

The Limbu festival 'Sieskpa-La Garnge' (or 'Sawaney' — seventh month of the year) is celebrated in July to mark the end of the hardworking and difficult summer season when there is scarcity of food. During this period there are plenty of vegetables and fruits in the field, maize is ripe and the hard work of planting paddy is over. Everyone in the community celebrates this day by decorating their doors and windows with freshly harvested cucumber, pumpkin, squash and maize cobs. They believe that in this ceremony their *Yuma Samyo* (Supreme God) is appeased.

## RQ 5: Livelihoods and opportunities for strengthening biocultural economy

The total population of Lingsey is 2,708 people residing in 522 households and that of Lingseykha is 2,278 people residing in 431 houses. Of these 953 households, 382 are Limbu and 239 are Lepcha households. The rest are other communities such as Sherpas, Rai, Bhutia, Brahmins, Kami (scheduled lower caste Hindus) and so on. Given their predominantly Lepcha and Limbu households, 11 villages were shortlisted for the study, together with surrounding areas traditionally used and conserved by the communities that form part of the Lepcha ancestral territory and constitute the proposed BCHT area. A 30% sample survey of Limbu and Lepcha households was conducted to understand the socioeconomic profile of these groups (see Table 1).

Table 1: Number of focus tribe households (HH) in project villages/hamlets identified for study

| Sl. no | Name of the Hamlet | Major Tribe | No. Of HHs | Total HHs |
|---|---|---|---|---|
| 1 | Mudung | Limbu | 25 | 25 |
| 2 | Lingsey | Limbu | 50 | 136 |
| | | Lepcha | 15 | |
| 3 | Jusing | Limbu | 22 | 22 |
| 4 | Kabung | Lepcha | 12 | 12 |

| Sl. no | Name of the Hamlet | Major Tribe | No. Of HHs | Total HHs |
|---|---|---|---|---|
| 5 | Jomthong | Lepcha | 16 | 66 |
| 6 | Chutenkyong | Lepcha | 20 | 44 |
| 7 | Tagathang | Lepcha | 8 | 21 |
| 8 | Bukdung | Lepcha | 11 | 14 |
| 9 | Kengoo | Lepcha | 18 | 23 |
| 10 | Chengsing | Lepcha | 20 | 25 |
| 11 | Tingey and Chuba | Lepcha | 23 | 44 |
| | | **Total study HHs** | **240** | 432 |
| | | **Total Limbu HHs** | **97** | |
| | | **Total Lepcha HHs** | **143** | |

The age composition of the above households is shown in Figure 2 below.

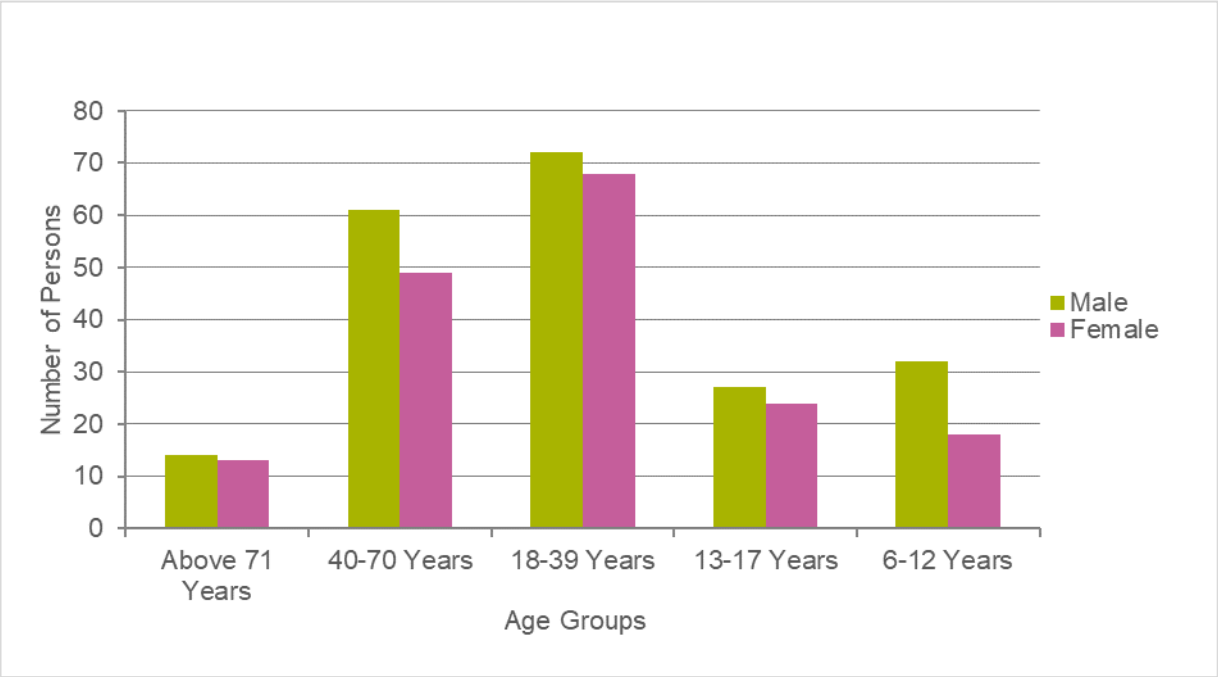


Figure 2: Age and gender composition of households

Agriculture remains the primary occupation in the Lingsey and Lingseykha, including the cultivation of commercial crops such as cardamom, but mainly using traditional agroecological methods. The cultivated area in Lingsey and Lingseykha is 485 and 457 acres respectively and in 90% of cases land is owned by the farming family. However, the extent of average landholding is small with 0.1 hectares of irrigated and 0.4ha of dryland/unirrigated. The major cereal crops grown (in overall production volume) are maize (39%), paddy (29%), finger millet (28%) and the rest (4%) constitutes mainly lentils, pulses, beans and buckwheat.

Most of these cereals are for self-consumption; cash is mostly generated by the cultivation and sale of cardamom which amounts to an average of 31% of household income. The second major source of household income is salary/pension/employment guarantee wage, accounting for 17%. Sale of paddy contributes 11%, while 8% is generated from livestock and non-farm income, 5% each from milk and daily wages, and the rest of cash income is from ginger, vegetables, agricultural labour and so on.

Figure 3 below shows percentage annual income from different agricultural products in surveyed households.

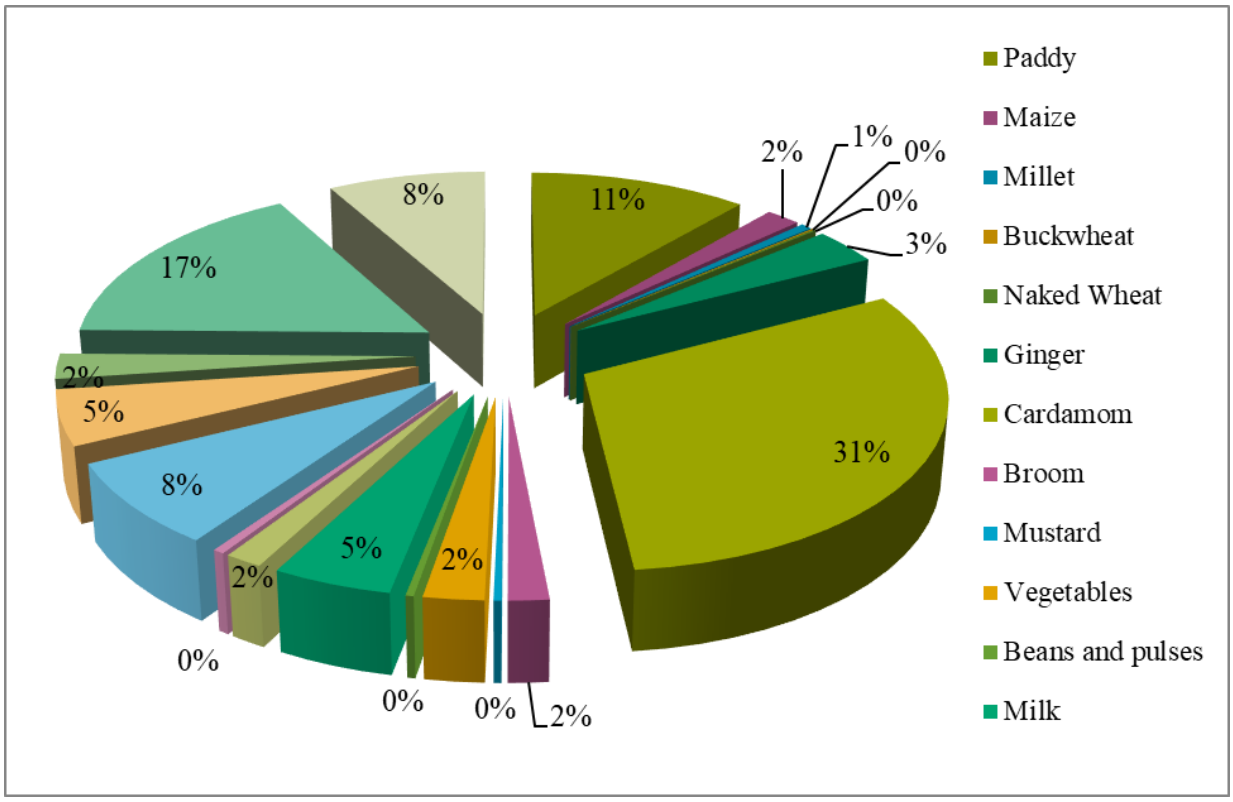


Figure 3: Annual income percentage from different agricultural sources of surveyed households

Annual expenditure

Interestingly, on average each household is spending as much as 37% of their annual expenditure on education, because private English-medium schools are preferred and many children are sent to boarding schools in nearby towns at an early age. Despite being an agrarian community and beneficiary of subsidised rations from the government, 30% of the income is spent on food. Kitchen expenses are high because the villagers observe many festivals and rituals. They also spend a good amount of money on the local brew which they make but also buy, as it's customary to serve local brew to guests at most social events. In addition, this expense does not include individual farm production used for self-consumption. 14% is spent on transport as people need to travel to town to procure household goods, do administrative work and go to schools. Five to six percent is spent each on festivals and funerals, including contributions to affected households to share expenses. They spend around 5% each on labour wages and seeds. Use of chemical fertilisers is almost nil.

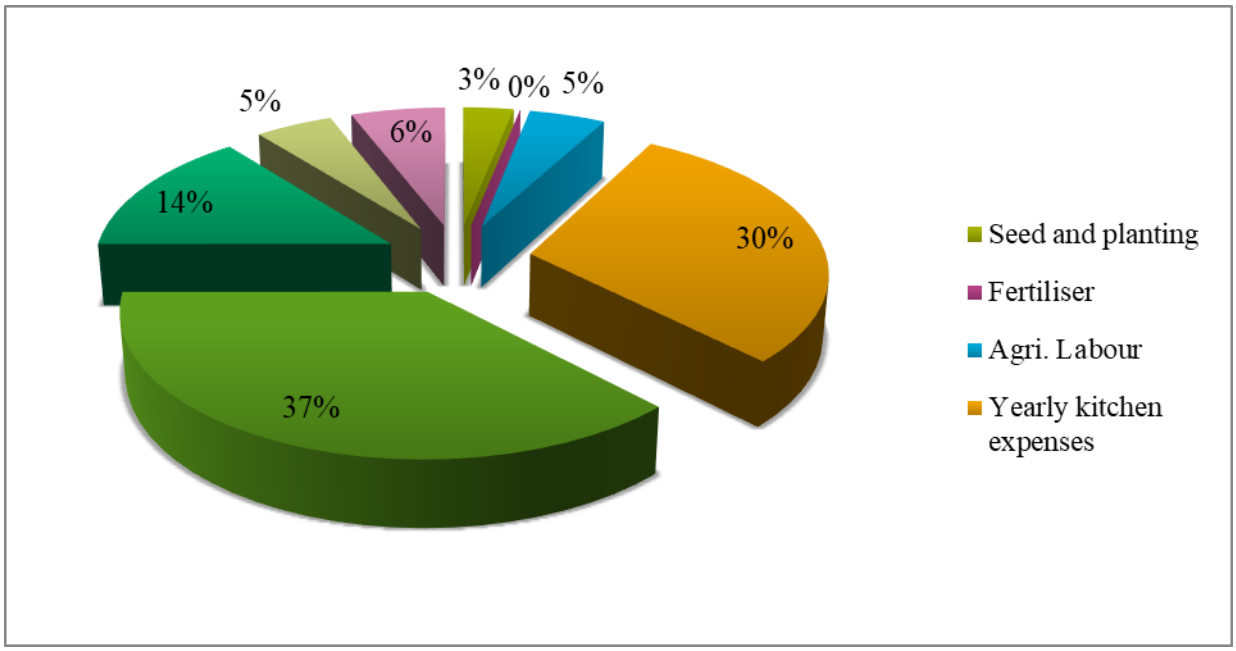


Figure 4: Annual expenses of surveyed households

The livelihood aspirations of the youth as well as their parents and society at large are pretty clear, considering the investment being made in education. In a meeting with the youth, they said they travel in the early morning to go to school in the towns and return late in the evening carrying homework and assignments. It's not possible for them to create time to engage in the daily traditional tasks associated with the land. It is only in holidays around festival time that the youth become engaged. So, the transfer of traditional skills from the older generation to the youth is limited to fewer and fewer households.

The rich forests, Himalayan peaks, diverse culture and picturesque landscape mean there is much potential for eco-tourism. However, Lepcha and Limbu communities have not benefitted much from eco-tourism despite having largely lost their traditional livelihoods when forests were set aside as conservation areas. The need for cash earnings in a rapidly transforming transactional economy is on the rise. Tourism enterprises are perceived as a potential source of earnings, which could support efforts to maintain biocultural heritage and help reduce youth out-migration, for example through collective micro-enterprises for homestays, trekking and traditional foods. Some of the key tourism enterprises suggested by the community and by policymakers are agro- and food tourism, eco-tourism, nature and cultural tourism. There is a major thrust for tourism in the region and the government has rolled out grants and subsidised loans to improve infrastructure. At present, there is a big push by the government to support house owners to add accommodation to their existing houses to run as homestays. However, all the support is linked to the purchase of modern materials such as iron rods, bricks, cement and tin roofs. So, the structures being built in the villages are not aligned with any form of traditional dwelling. At the same time, training in making dishes and serving guests is taking place through the skills training programme of the Gorkhaland Territorial Administration (GTA). In the displayed menu cards there are almost no traditional recipes. In a meeting with the Kalimpong District Tourism Committee held on 15 January 2021 in the office of the District Magistrate, the co-investigator and co-researcher aired these concerns. They were informed that 50% of the grant funds for constructing homestay facilities are yet to be disbursed and that the programme would be reviewed to assess how to incorporate traditional designs and architecture. They also told the committee about the recipe book that was produced under the earlier SIFOR project, and it was suggested that food festivals may be held to promote local food enterprises that are related to traditional resources and skills. These can be linked to markets for a better economy that is based on biocultural heritage.

## RQ 6: Biocultural Heritage and Sustainable Development Goal 2 'End Hunger'

The SDG 2 objectives encompass maintaining genetic diversity, ensuring sustainability and resilience, ending hunger and malnutrition and doubling productivity. This section provides a brief review of these objectives in light of biocultural heritage-based agriculture being practised by the Lepcha and Limbu people in Lingsey-Lingseykha. These communities traditionally, and still today to some extent, consider the land to be sacred and the food produced as a gift. This goes far beyond the conventional SDG approach in India which is family-centric or concerned with food security of individual households. It is noteworthy that the BCH approach to sustainable farming and living in the landscape attempts to achieve aspects of SDG 1 (ending poverty) and SDG 3 on improving health and wellbeing, as well as SDG 15 (terrestrial biodiversity), and SDG 13 (climate action).

First, let us contextualise how the challenge of food security in India is dealt with. The entire state planning process, from collecting data on food availability per household in the census exercise, to creating schemes for incentivising production of key cereals, (eg wheat and rice) and subsidising distribution to families as per the number of persons in the household, is based on the mindset that food is just to fill the stomach. The economic cost of the food to the government-run Food Corporation of India is 27 rupees per kg of wheat and 37 rupees per kg of rice, while it is supplied in the Public Distribution System (PDS) at a price of two rupees per kg for wheat and three rupees per kg for rice. This amounts to 1.15 trillion rupees in food subsidies alone (Bera, 2021). Interestingly, government sources including those from agriculture and finance ministries, say that this is becoming unaffordable, and new laws are being introduced regarding assured farm prices, farm services and essential commodities. These are leading to agitation by those farmers and entrepreneurs who have benefitted from government subsidies for fertilisers [6] (amounting to 1.36 trillion rupees), (for power for irrigation, pesticides, agro-chemicals and so on). Most Indian farmers — more than 85% of whom are small and marginal — get hardly any benefit from this (apart from cheap food), as the bulk of subsidies go to medium- and large-scale farmers and in particular, to aggregators, transporters, processors and distributors. At the same time, the distributed food is often poor in quality and nutritional value, and could be laced with toxic chemicals (Balani, 2013). Kakar (2020) believes that these subsidies cause huge ecological damage in terms of depleting water tables and increasing soil salinity. Thus, the state strategy for achieving the SDG 2 objective of ending hunger affects the achievement of other SDG 2 objectives (on genetic diversity, sustainability, resilience and nutrition), and the achievement of other SDGs (eg SDGs 1, 3 and 15). At the same time, SDG 2 could play a critical role in eradicating poverty (Goal 1) and promoting health and wellbeing (Goal 3). A consortium of institutions under Vikalpa Sangam (Alternative India) has consistently promoted tribal agriculture. An article by Dogra and Mayaram (2016) has put forth consolidated views that while traditional farming systems routed in BCH may have lower productivity in terms of crop yields alone, they can deliver multiple outcomes for food security and self-sufficiency, nutrition, sustainability, biodiversity, resilience and long-term productivity, by sustaining the natural resource base and using diverse food sources sustainably, including wild resources.

India is a megadiverse country with rich food traditions. Across the length and breadth of the country in small-scale agrarian communities, this diversity in biocultural heritage is visible. Communities have evolved a life around biodiverse food production, land, seasonality and cultural festivities which are still in practice even today, particularly in smallholder farming areas.

For most Indigenous Peoples in India, the relationship with food goes beyond agriculture, as food does not just come from farmland but from wild bamboo groves, forests, streams and rivers and other elements of the natural world. This helps to ensure nutritious diets and to reaffirm spiritual connections with the land and nature. The Lepchas used to grow cereal crops such as millets in the forest and used to depend mostly on various types of wild vegetables and herbs. Hunting and fishing was popular as a livelihood activity and for enjoyment as well. Even after the settled agricultural practices had been in place for a while, Indigenous tribes of Lingsey-Lingseykha continued to cultivate traditional crops like

[6] See: https://economictimes.indiatimes.com/topic/Fertiliser-subsidy

Kaguni (Foxtail millet), Pangdure (Finger millet) millet, Bir Makai (wild maize), Junelo (Sorghum) in farm and forest areas, and also kept their cattle in the forest for grazing.

In the study communities, people's knowledge of plants, birds and animals, their sense of judgement of the weather through observing plants, birds and animal signs, and precise use of the landscape within limits of sustainability, forms the basis of traditional agriculture and other livelihood practices. By observing clouds and feeling the winds and temperature they can predict weather conditions and their likely impact on their agricultural systems. Accordingly they prepare themselves for field/agricultural activities.

A diverse cropping pattern in the mixed farming systems of the mountain region and use of local landraces are the fundamentals needed to conserve and maintain genetic diversity. Eighty to ninety percent of the seed is saved by households from one season to another, and is freely shared and exchanged within families, neighbours and even far-away relatives. Exchange of potato and maize seeds used to be a common practice between farmers from different altitudes in Lingsey-Lingseykha until 1986, when the higher reaches of the Neora forest where potato used to be grown was declared as Neora Valley National Park.

Local people, especially Lepchas and Limbus of Lingsey-Lingseykha lost considerable access to the forest, which adversely impacted their livelihoods, and food and nutrition security. They used to collect several wild vegetables, fruits and other minor forest products like bamboo, timber, fuel, fodder, medicines (a glossary is provided as Annex 2) and practised hunting and fishing as their traditional way of life. Despite substantial interaction with the forest and utilisation of its resources, the rich forest biodiversity was well maintained and sustained because of their traditional knowledge, sustainable practices (including sustainable harvesting rules), and spiritual and cultural attachment with the ecosystem. Disruption in cultural heritage ties with the forest and deprivation from their traditional source of forest resources has resulted in loss of traditional ecological knowledge and practices, and loss of agrobiodiversity from the landscape. These are important aspects of sustainable development.

According to the SIFOR study (Mukerjee et al., 2018), conducted in Lingsey-Lingseykha and other communities in the area, "Food self-production and sufficiency is very important as attested by 100 per cent of the respondents". However, the communities feel that being self-sufficient in food production is not a viable approach in the present socioeconomic conditions. Food production in the mountains makes less economic sense with decreased yields (due to climate change and other factors), increased cost of living, greater access to opportunities for better incomes, and cheaper food grain available from the market and the PDS. Livelihoods and food security in the Eastern Himalayas have shifted from being almost entirely self-sufficient to diversifying into cash crops such as cardamom, broomstick grass and ginger. In Lingsey, 21% of respondents mentioned market inflation and rising household expenditures as driving change by fuelling the need for cash crops. Peoples' food preferences have also been affected due to easy access to cheaper alternative food sources with improved connectivity to the market and the widespread government PDS. All these factors are contributing to shifting food dependence from self-production to the market. However, in the survey 82% of households responded that food production on one's own land is important.

The District Magistrate (DM) of Kalimpong, Ms R Vimala, an Officer from the Indian Administrative Service (IAS), proudly mentioned in the meeting held on 4 January 2021 that no case of COVID-19 had been reported from the gram panchayats of Lingsey and Lingseykha. She acknowledged that it was because of healthy food being grown in the community, which helps prevent disease and because of their food self-sufficiency (and low reliance on markets). They were least dependent on external food supplies during the pandemic time when transportation had become difficult, which meant they were able to maintain food security. So, how does one go about strengthening the Indigenous system rather than weakening it? This is a legitimate question that the administration is struggling with. One way is to establish BCHTs, and the DM was duly informed about the ongoing efforts in this direction.

**Impacts of the research process**

The research process began with gaining FPIC, which itself is an important aspect of awareness generation. As the community discussed the objectives and the methodology, considerable information sharing took place. In the process of FPIC, several people came forward from different villages who seemed more interested in the study. Some of them chose to work as community researchers (CRs) at a modest honorarium supported by the project. A total of 11 CRs represented one village/hamlet each: eight from the Lepcha community and three from the Limbu community. The study involved fewer Limbu households and CRs because the Limbu population is more scattered, and there are fewer Limbu households in the 11 study villages. The project selected households and CRs in consultation with community representatives.

The idea of engaging CRs was to enhance their capacity to conduct research and deepen understanding of the importance of biocultural heritage and traditional practices and knowledge in 'modern' times. The process also improved their communication and coordination skills within their community and externally. They also visited the agricultural research station in Kalimpong, and held discussion with scientists to help build links with the scientific community. The scientists were updated on the research progress periodically through group discussions and field visits.

This informal network of communication established within the Indigenous communities and between the Lepcha and Limbu tribes on the basis of traditional knowledge and practices helped develop a voice in interactions with government institutions. For example, demanding their inclusion in the biodiversity management committee at gram panchayat level. The project strengthened their sense of pride and respect and enhanced awareness on the significance and importance of biodiversity, heritage and local food systems. Rituals and ceremonies are now observed more seriously and with more enthusiasm. Above all, it enhanced people's self-esteem for belonging to Indigenous communities that practice sustainability, and rekindled a sense of connectedness to their own habitat (landscape), in a new light.

The project also raised the awareness of district administration officials regarding Indigenous knowledge systems as critical components in sustainability through various consultations and discussions. This realisation grew deeper as Indigenous food systems proved holistic, resilient and effective in ensuring food security during the COVID-19 pandemic. District officials visited the proposed BCHT site and discussions were held on how regular government programmes, such as the National Food Security Mission that is promoting millets, could be linked to the Employment Guarantee scheme. This raised the understanding of the lower-level officials at the gram panchayat level (village-level institutions appointed by the government). The fact that a Lepcha leader from Lingsey-Lingseykha, a Lepcha woman farmer from a nearby community and a few local NGO representatives from the Centre for Mountain Dynamics (as well as the co-investigator and co-researcher) had been to the Potato Park, Peru through earlier projects, added to community confidence and duly informed them about the Potato Park model.

# 6. Analysis of the findings

## 6.1 Similarities and differences between different groups and communities/villages

Although the Lepchas and Limbus have their own deities, rituals, religious beliefs and traditional institutions, they share similar cultural values and beliefs. They emphasise balance and reciprocity with nature, and the wellbeing of all living beings (not only humans), and have common natural sacred sites (for example, rivers and high-altitude lakes). The main difference between the Lepchas and Limbus in Lingsey-Lingseykha is that the Lepchas have a longer historical association with the landscape and more extensive traditional knowledge, as the original inhabitants, than the Limbus who settled there in the early 1800s. However, the Limbus have maintained stronger traditional religious beliefs. They resisted religious suppression to a great extent because of the arrival of the Limbu leader Sirijonga Teyongsi in Sikkim in 1734 who revived the Limbu script and Yuma Samyo (Limbu faith) and effectively inculcated a sense of ethnic 'nationalism' among the Limbus. Therefore, the Limbus have not been influenced by Buddhism and Christianity as much as the Lepchas.

In general, the Indigenous households in more remote hamlets at higher elevations have maintained stronger traditional knowledge, cultural values and traditional crop diversity, than those in lower hamlets closer to the roads and markets. Elders and some women farmers play key roles in maintaining less widely cultivated traditional crop varieties such as different kinds of millets and dryland paddy. Kitchen gardens still play a key role in sustaining agrobiodiversity and orchid diversity (used in rituals) in both Lepcha and Limbu households. There is no difference between Lepcha and Limbu kitchen gardens. Both communities have their respective deities to protect kitchen gardens. If any unauthorised person enters or picks anything, they believe they will get sick. However, generally people are investing less effort in kitchen gardens than previously.

## 6.2 Lessons for establishing BCHTs

Can and should the Potato Park biocultural heritage territory model be scaled out to Lingsey-Lingseykha? There are several similarities between the Potato Park and the proposed BCHT site in the Eastern Himalayas. Traditionally, but also today (particularly among elders) the Indigenous worldviews and belief systems influence the way of life of the Lepcha and the Limbu and the principles or values that shape livelihoods, which are evolved on the basis of their connections with the spiritual world, nature and its deities. The Lepcha and Limbu do not consider themselves the owners of any creations of nature or the earth, but rather as integral to other elements of God's creation as mentioned in the ethnicity section. In the diagram below depicting the Andean Ayllu concept that guides the Potato Park, certain core values of interdependence between humans, nature and the spiritual world are reflected in principles such as reciprocity, equilibrium and solidarity.

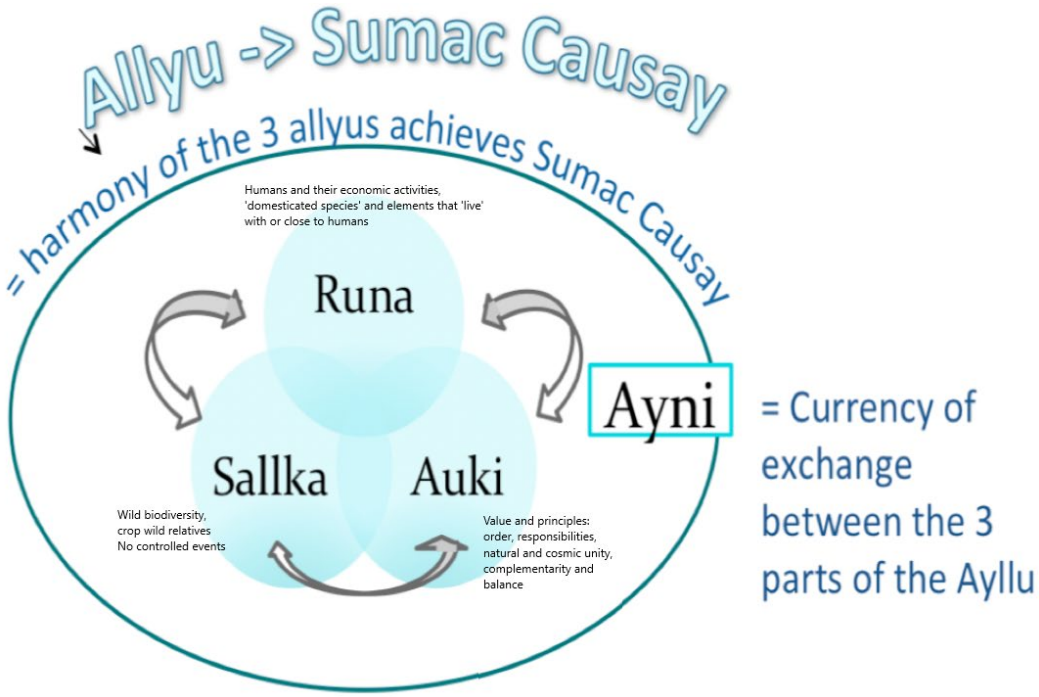


Figure 5: The Andean Ayllu concept. Alejandro Argumedo (ANDES, Peru)

The findings of this study show that the Lepcha and Limbu worldviews and core values of reciprocity, collectivity, solidarity and equilibrium with nature and in society, are similar to those of the Quechua communities in the Potato Park, Peru. However, cultural values are changing in Lingsey-Lingseykha, particularly among the youth — many of whom aspire to western lifestyles, and these values have probably been eroded to a greater extent than those of Andean communities in Peru. This aspirational heterogeneity, as well as the high cultural diversity and presence of non-Indigenous Brahmins (high caste Hindus who are very dominant in local decision making), make it more challenging to promote a common vision for establishing a BCHT and gain the support of all households. Thus the Potato Park model may have to be adapted — the main Indigenous Lepcha and Limbu groups could establish a collective governance institution in the first instance, and other groups may want to join when they see an emerging biocultural economy.

Another key challenge is that the rights of Indigenous Peoples are less well recognised in India than in Peru, which makes it difficult to promote a rights-based approach extending to Indigenous self-determination, territorial control and autonomy. The Constitution of India recognises that all citizens have equal rights. In addition, the Constitution provides for some safeguards once Indigenous Peoples are included under the Scheduled Tribes (STs) category. Both Lepcha and Limbu communities are scheduled tribes and enjoy the following privileges in various sections of the Constitution (Preethi, undated):

Art. 29: Protection of Interests of Minorities (it includes STs)
Art. 46: The State shall promote, with special care, the educational and economic interests of the weaker sections of the people, and in particular, of the Scheduled Castes, and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation
Art. 350: Right to conserve distinct Language, Script or Culture;
Art. 350: Instruction in Mother Tongue.

It can be noted that none of the above provisions are about sovereignty over natural resources or grant territorial control. Only one provision of the Constitution can be invoked to protect the land rights of Indigenous Peoples. Article 19(5) states that lands of Indigenous communities cannot be purchased by non-tribals. However, this provision is not yet implemented by the state in the Kalimpong region.

Customary land rights and rights to forests are critical to sustaining Indigenous Peoples' traditional livelihoods, biocultural heritage, identity and wellbeing. Although almost all families in Lingsey-Lingseykha legally own their homesteads and agricultural lands, access to forests is severely restricted by a Forest Reserve and Neora Valley National Park. After a long struggle initiated before independence, the Indian government finally introduced the Forest Rights Act (FRA, 2006). This recognises the rights of forest-dwelling tribal communities and other traditional forest dwellers to the forest resources on which these communities traditionally depend for a variety of needs, including livelihoods, habitation and other sociocultural needs. The Act encompasses rights of self-cultivation and habitation that are usually regarded as individual rights; community rights such as grazing, fishing and access to water bodies in forests; habitat rights for 'particularly vulnerable tribal groups' (PVTG); traditional seasonal resource access for nomadic and pastoral communities; and access to biodiversity. Both Lepcha and Limbu people are included in the total of 75 communities recognised as PVTGs in the country.

These legal provisions have been successfully implemented in various regions of the country, and are particularly relevant for communities inhabiting forest areas and with no land titles. The Act has also enabled certain communities to restore their dignity by not being treated as landless and left without any compensation when displaced by the state to accommodate large scale infrastructure projects. A larger issue remains as to whether the resident Indigenous Peoples can say 'no' to development projects such as mining as a part of their autonomous territorial control; such implications of the act are not yet settled. In the last 15 years, only 2% of all claims (nearly 1.6 million cases) filed under the Forest Rights Act have been settled (Sirohi, 2019). In February 2019, the Supreme Court of India ordered that all the claims that have been rejected should be implemented through enforced evacuation of the communities, but after much uproar in the country, this order was shelved.

The presence of other Indigenous and caste Hindu communities sharing the land and access to commons in the same landscape also complicates the attainment of territorial control in the proposed BCHT in Lingsey-Lingseykha. None of the Indigenous groups in the region including the Lepcha and Limbu have filed claims under the Forest Rights Act so far and it is unlikely that due representation will be made in the near future. The representatives of the Lepcha and Limbu Development Boards participating in project meetings have not shown any inclination towards this and believe that aligning with government policies is the best way forward and in the economic interest of the communities. However, at a workshop in March 2021, Lepcha and Limbu representatives from Lingsey-Lingseykha expressed concern regarding heavy restrictions on traditional forest use, which has created many hardships for livelihoods, contributed to forest quality decline, and is contributing to cultural erosion and a shift to cash crops.

Establishing a collective self-governance institution, as per the Potato Park model, is complicated not only because of multi-ethnicity but also because of administrative control by the national and state authorities. The autonomous tribal councils have very limited remits: mainly to plan and implement development schemes. Elections for the gram pradhans (representatives of panchayats), the first grassroot-level elected leadership in India's three-tier governance structure, have not been held since 2005 due to prevailing political uncertainties. An important factor is the region's close proximity to international borders, including with China, which shares a border with Kalimpong district and Sikkim. Autonomy of administrative governance can create situations that might be difficult to deal with when it comes to national security. There is already reasonable presence of armed forces in the region and tensions with China keep flaring up.

So the Potato Park model of Indigenous territorial control and autonomy for endogenous development, though a desirable goal, is unlikely to be possible given the sociopolitical situation. However, as this study shows, biocultural values and ritual culture are still strong in Lingsey-Lingseykha and traditional institutions and priests still play an important role in sociocultural and religious matters. At the same time, cash earnings have become increasingly important with increased household expenditure and changing aspirations of the youth. So, if economic activities that can strengthen biocultural relationships with the landscape can be encouraged, it is possible that customs and traditions that have shaped this landscape and created its richness can be sustained. When experts from the Indigenous NGO ANDES that has supported the Potato Park visited Lingsey-Lingseykha in November 2018, they recommended that ecotourism and allied activities are the best possible way forward. Drawing from their own

experience and based on several consultations with the Lepcha and Limbu communities, it was considered appropriate that the BCHT should be called an 'Orchid Park' due to the high orchid diversity in the area and appeal of this charismatic flora. Promotion of traditional crafts, homestays, food festivals and so on are some of the means that could be used to enhance economic revenues while sustaining the communities' biocultural heritage and promoting recognition of customary rights.

Community meeting. Credit: Lok Chetna Manch.

# 7. Conclusions and recommendations

The study clearly shows that Lepcha and Limbu worldviews and cultural values promote sustainable and equitable development. The Lepcha and Limbu worldview identifies the natural, cultural and spiritual realms as integral to human life, emphasising wholism and the wellbeing of all these elements (similar to the Andean worldview). This is evident in special ceremonies that mark various occasions, such as 'Mukzekding Rumfaat' (Environment day), 'Chyoo Rumfaat' (Thanksgiving to Mountains) 'Tunghong Lhorumfaat' (Thanksgiving to Tendong Hill). Their notion of wellbeing emphasises health rather than economic growth. Their values of solidarity, equilibrium and reciprocity in society and with the natural world, their spiritual beliefs relating to nature and their sustainable harvesting practices, all support biodiversity conservation and show a clear interdependence between nature and culture. The system of 'perma' where collective work is undertaken shows an emphasis on collective community values and solidarity, that fosters equity.

These all-encompassing holistic worldviews achieve much beyond what is conceived as sustainable and equitable development, as they do not depend on scientific measurement or guidelines but are embedded in core societal values and everyday practices. To this day, whenever they intend to use any of the natural resources for their advantage or wellbeing, the Lepcha and Limbu first offer prayers and make conditions that they will reciprocate to nature at the appropriate time. These findings clearly show that Lepcha and Limbu cultural values and practices are an asset for biodiversity conservation rather than a threat. "Ultimately, conservation strategies have to respond to local contexts and mobilise local cultural perceptions of nature by taking account of their appropriation, the use and the abuse of nature. The appropriateness of community-based conservation will depend on five factors: nature of community participation, objectives of conservation, incentives for conservation, community structures, historical and cultural linkages of the adopted conservation strategies." (Kothari et al., 1996; Singh et al., 2000)

The study found no evidence of Indigenous customary values or laws that hinder biodiversity conservation and sustainable and equitable development. However, Indigenous values and norms are becoming weaker among the younger generation, largely because of western education which does not integrate traditional knowledge, the media (TV, social media) and changing aspirations. These values are also becoming weaker among the Lepcha and Limbu because of state restrictions on customary forest use (which is promoting a shift towards cash crops), and to some extent due to the influence of external religions. Although more than 70% of Lepchas in the region are Buddhists and about 20% are Christians, the majority of Lepcha households follow dual religion and their Indigenous worldviews and traditions have not been affected by this (Joshua project, 2021). The Limbus are even less influenced by Buddhism and Christianity.

Religious differences have not affected the harmonious social relations in the Lingsey-Lingseykha landscape. The Lepcha and Limbu tribes are natural allies and have maintained historical, sociocultural and political kinship. To this day, they are often found settled adjacent to each other, living in harmony. Their sense of belonging to their cultural roots is so strong that irrespective of their different belief systems, exposure, education levels, professions and social status, many people still love to be a part of cultural ceremonies, rituals, collective and social activities. However of late, identity politics is influencing these harmonious threads of co-existence in Lingsey-Lingseykha and the wider region. Community festivals are increasingly seen as platforms for influencing public opinion in return for political favours. Senior politicians who are mostly from other castes and not Indigenous, are invited as guests of honour, but understand little about the deep cultural significance of these festivals and use them for political gain, sowing discontent in some cases.

Outmigration and aspirations towards a more materialistic and comfortable life driven by the conventional education system is creating a group that is distancing itself from a day-to-day traditional life in the landscape. Though the majority of these people are youth, almost all parents recognise and support their aspirations. More than a third of household expenditure is for education alone — a big commitment. The generation of grandparents have divided opinions. Many of them still say that hard physical work in raising crops and livestock made them strong and independent. They also had a lot of fun preparing for the many festivities, and singing and dancing occasions. In addition to community

ceremonies, even individual family events are celebrated as community functions where the whole village gathers and participates.

The rising costs of festivities and ceremonies is an issue, but a bigger issue is that many people — especially those who have more exposure to town and city life, education and western science, and those with a strong faith in mainstream religion — do not seem to have much faith in rituals. However, everyone agrees with the communitarian spirit, sense of belonging, strengthening of bonding and happiness that community occasions create, and thus despite these constraints, people in the community look forward and give due importance to these occasions. People come together and contribute with cash, in-kind and with services as per their capabilities in ceremonies like marriage, death ceremonies, festivals and rituals. This enhances mutual trust, solidarity, exchange of information and ideas, and collective plans for the future. Most ceremonies/rituals are observed jointly in common areas like the community meeting house, river and sacred places instead of individual houses. These 'sacred' and community spots in the landscape are protected and revered with a deep cultural significance by most people in all villages and ethnic groups, and in particular by Lepcha and Limbu, who take more responsibility to maintain them. This could enable the establishment of a collectively governed BCHT.

The findings also show the importance of Indigenous food and farming systems for addressing the multiple objectives encapsulated in SDG 2 and across the SDGs. SDG 2 aims to end hunger, double productivity and the incomes of small-scale producers, ensure sustainable and resilient agriculture and maintain genetic diversity. Although traditional farming systems in Lingsey-Lingseykha do not seek to double productivity, they ensure food security through a high degree of food self-sufficiency, with more than 60% of household food met from self-production. The diversity of crops grown (for example in home gardens) and use of wild foods ensures varied and nutritious diets, while local landraces such a dryland paddy contribute to resilience and often require fewer external inputs. The fact that in the whole of 2020, not even one case of COVID-19 was reported from Lingsey and Lingseykha panchayats suggests that self-sufficiency of nutritious food and good health are interrelated, and that the traditional food system also contributes to SDG 3 on health and wellbeing. In the Indigenous cultures of the region, food is not just viewed as a way to survive but a way to feel happy in ceremonies and festivals, which is an essential aspect of individual as well as collective life and wellbeing. But conventional measures of poverty conceived as earnings per day do not capture the wellbeing of a society leading a rich communitarian life, where cash transactions are reduced due to core biocultural values. Indigenous food systems far exceed the expectations set out in SDG 2 by also contributing significantly to health and wellbeing (SDG 3). However, rather than being supported, these Indigenous food systems are being undermined by food security policies that flood local markets with cheap subsidised foods, and conservation policies that heavily restrict customary sustainable use of forests.

**Recommendations for national and local policy makers**

As this study has shown, Indigenous cultures and traditional ways of life in Lingsey-Lingseykha are deeply connected with the earth and all elements of nature and society, with a proven track record of centuries of co-existence, providing solid foundations for sustainable and equitable development. It would be unwise to promote mainstream notions of 'development' for ending poverty, meeting food security and promoting health and wellbeing in Indigenous societies where these are not separate goals but are integrated and linked to nature in holistic Indigenous worldviews.

Indian policymakers are proud to say that India is a 'megadiverse' country. It is imperative to realise that biological and cultural diversity are implicitly interconnected. National laws and policies need to be implemented with the spirit of enhancing this fine local balance. 'Think global and act local' has been a befitting saying popular in inter-governmental meetings. The Biological Diversity Act 2002 recognises this aspect and contains provisions for establishing local biodiversity management committees (BMC) that could be used to support the establishment of BCHTs. The BMCs at the gram panchayat level are fairly autonomous in taking decisions relating to biodiversity conservation, unless this affects matters of national priority. For example, they can deny mining leases and the conversion of forest lands and charge royalties on the extraction of forest produce by outsiders and compensation for restoration of natural habitats.

The following policy recommendations have been identified to protect and revitalise the rich interlinked biological and cultural heritage of Lingsey-Lingseykha:

1. **BMCs should include Indigenous representatives as members and the role of the BMC in supporting the establishment of a BCHT should be explored**

A BMC has been formed in each of the two gram panchayats of Lingsey and Lingseykha, headed by the respective village secretaries and duly supported by other government line department officials as members. It was pointed out in meetings with the Biodiversity Board at the state level that only a few community representatives are involved. They say that as elections of gram panchayats have not been held since 2005, what has been done is appropriate. However, it is recommended that in the true spirit of the provisions of the Biodiversity Act, the government-appointed Village Secretary should only serve as a member of the BMC. The BMC should include representatives from the diversity of ethnic groups in each of the gram panchayats, including Indigenous communities who play a key role in biodiversity conservation.

Since several communities inhabit the landscape, the idea of territorial sovereignty of one community is not possible. The BMC, if reconstituted to be fully representative of Indigenous Peoples, could in theory act as a collective governance institution for a BCHT. However, it would need to allow Indigenous Peoples to establish the rules for collective resource management, building on their customary laws and values, and its design would need to build on traditional governance institutions and norms. This would require capacity building for BMC members and non-Indigenous representatives to understand the need for and agree to support endogenous development led by Indigenous Peoples. The BMC is a constitutional body that can overrule several schemes and programmes that it sees as detrimental to the natural world. It would need to redefine what is considered sustainable development through the lens of the Indigenous communities where nature, culture and wellbeing are integrated. The Village Secretary reports to the Block Development Officer (who heads the second tier of the BMC) and s/he in-turn reports to the District Magistrate's office at Kalimpong where the third tier of the BMC is located. These second and third tiers would also need to support empowerment of the local BMC and a highly decentralised approach.

2. **The District Administration should promote the use of MGNREGA to support traditional crops and festivals**

The District Magistrate of Kalimpong district, with her team of the heads of line departments duly coordinated by a Chief Development Officer (CDO), is a key decision maker for the Lingsey-Lingseykha gram panchayats. In the visit of the CDO to the BCHT in January 2021, he instructed that employment days under the MGNREGA should be used to revitalise traditional crops that are being lost. So, it's possible that in the next cycle of decisions, ie FY 2022–23, it would be incorporated, provided there is sustained interest at the district level as well as the community level. Enhancing biodiversity is a key function of a BMC, and as it is integrated all along from the village to the district level, it's possible to keep the pressure on. The Village Secretary and head of the current BMC also reported that employment days are being provided to prepare for traditional festivities so that the youth engaged in preparations also get some remuneration. These kinds of actions can be formalised based on an annual calendar in discussion with the communities and the administration.

3. **The District Administration should influence homestay schemes to support traditional houses and engage traditional Lepcha and Limbu institutions and youth organisations promoting biocultural revival**

Schemes such as the homestay construction/improvement grant can also be influenced by the District Administration to support traditional buildings for ecotourism and cultural tourism. Community organisations play an important role in outlining their priorities for development interventions and keeping the public representatives as well as government informed. The Development Boards, which

were supposed to be making such recommendations, have unfortunately fallen into the trap of mainstream programme implementation. The traditional institutions of Sezoom, as well as newer organisations such as Limbu Youth Society, are spearheading considerable biocultural revival and could have a remit beyond issues of identity politics if the landscape is collectively governed.

### 4. Integrating biocultural concerns in the Gram Panchayat Development Plan and enhancing agriculture, forest and environment policy coherence

BCHTs are bottom-up integrated landscape approaches that cross sectoral boundaries. Under the decentralised governance approach, the government has made provisions for bottom-up planning under the Gram Panchayat Development Plan (GPDP). This approach calls for microplanning exercises conducted by women's' self-help groups and other self-help groups at village level. However, a systemic gap is the lack of efficient and effective engagement of different government line departments in this process. This results in a mismatch of priorities, beneficiaries, sociocultural and economic streamlining and convergence in projects, and eventually affects the impact and sustainability of government interventions. At the level of the proposed BCHT, whose area covers parts of only two gram panchayats, it is possible to integrate biocultural concerns in the GPDP process. However, to gain the full support of the communities, the BCHT would need to generate greater economic benefits than conventional government schemes. Recognition of the landscape nationally and internationally is also important to generate financial support for establishing a BCHT and thereby also enhance government interest and support. In the case of the Potato Park, international recognition has helped to generate funding through grants, research collaboration, and educational tourism visits (for example by universities) and sale of handicrafts and other biocultural products.

### 5. Recognising the proposed BCHT as an FAO Globally Important Agricultural Heritage System (GIAHS)

Both the communities and the government are keen to raise the profile of the proposed BCHT globally, and, to this end, the Forest and Agriculture Departments are supporting its recognition as a Globally Important Agriculture Heritage System (GIAHS). The Departments of Agriculture in West Bengal state and at national level have endorsed the idea of registering the proposed Lingsey-Lingseykha BCHT as a GIAHS. The State Biodiversity Board of West Bengal has also processed the proposal and sought acceptance of the BMC at the gram panchayat, block and district level. It is recommended that this process of recognition should continue as it is a long process, which will finally be routed through the national Ministry of External Affairs and recommended to the FAO. At the same time, the process must proceed with the full and active participation of the Indigenous and local communities of Lingsey-Lingseykha and be duly supported through a democratic community process that has constitutional validity under the Biodiversity Act. It is also critical to ensure that formal recognition as a GIAHS does not compromise the autonomy and leadership of the Indigenous Peoples to collectively govern their biocultural territory in accordance with their customary laws, values and institutions.

### 6. Restoring customary sustainable use and forest rights

This study shows that the Lepcha and Limbu and other Indigenous mountain tribes not only respect but worship nature and have their own resource management systems for conservation and sustainable use of forests. Through an intricate balance of different land uses in the landscape they create not only niches of exceptional biodiversity but also highly resilient, complex, adaptive systems. In colonial times unprecedented restrictions were imposed on customary use that not only alienated the communities but also reduced the conservation status of the forests while imposing added hardship on tribal communities. The Indian government has sought to restore this balanced and harmonious co-existence by granting rights for customary use under the Forest Rights Act 2006. Therefore, in order to enhance conservation and livelihoods and stem the rapid loss of traditional ecological knowledge, the restrictions imposed by the Forest Reserves and Neora Valley National Park should be removed and the traditional rules and customary rights and responsibilities of Lepcha, Limbu and other Indigenous communities

over forests in Lingsey-Lingseykha should be recognised under the Forest Rights Act. Evidence shows that recognising Indigenous knowledge and rights leads to more effective, cost-effective and equitable conservation outcomes (UNEP-WCMC, 2021). A BCHT or GIAHS is unlikely to succeed and be sustained by communities unless Indigenous Peoples' rights are fully recognised. The Convention on Biological Diversity requires countries to take action to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities" (article 8j); and to "protect and encourage customary use of biological resources in accordance with traditional cultural practices" (article 10c).

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