Tunga B. Rai

WATER MANAGEMENT IN THE TRANS-HIMALAYA RAIN SHADOW OF LO-MENTHANG:

THE KGHYAMBA SYSTEM STEERS IRRIGATION PRACTICE FOR LHOBA PEOPLE

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Water Management in the Trans-Himalaya Rain Shadow of Lo-menthang:

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This case study unravels the example of how a customary institution is embedded in the social and physical uniqueness of a community of indigenous peoples. It demonstrates the value of recognizing and safeguarding the customary institutions and knowledge of indigenous peoples. This case study presents the facts—how the knowledge system and customary institutions of indigenous peoples are value-driven and evidence-based, and how these are instrumental in maintaining social order and environmental sustainability, and combating climate change through adaptation measures. This case study is based on an anthropological field work conducted by the author in 2004, 2009 and 2019.

BACKGROUND

Lo-menthang (Lomanthang), the ancient mud-walled town of Lo/Upper Maitang[1] (Upper Mustang) is the ancestral homeland of Lhoba indigenous peoples of Nepal. This village is situated in the southern part of the Tibetan

1. Maitang--the indigenous name of this place is misspelled and mispronounced as Mustang nowadays.

plateau in Nepal. It lies at an elevation of 3,850 meters above sea level. Lo-menthang is in a high-altitude rain shadow area behind the Annapurna Himalayan range of the country. It receives only occasional drizzle in summer but heavy snowfall in winter. Temperature drops to minus 10 to 20 degrees Celsius (-10°C to -20°C) from December to March and remains 15 degrees Celsius (15°C) to zero degree Celsius (0°C) in summer (Chhetri, 2008). Like in other parts of the Kaligandaki Valley, strong wind blows after midday in this region. Snowmelt rivers named Dhokpo Lho and Dhokpo

Zhyang flow through the south and the north of the village. These rivers are the main source of water for the villagers for household use, feeding livestock and irrigation. Lo including Lo-menthang is also home to endangered wildlife species like snow leopard, blue sheep, wild donkey and musk deer (ACAP, 2019). It is a corridor for migratory birds coming from the Siberian and Tibetan plateaus to many parts of Nepal. In recent times,

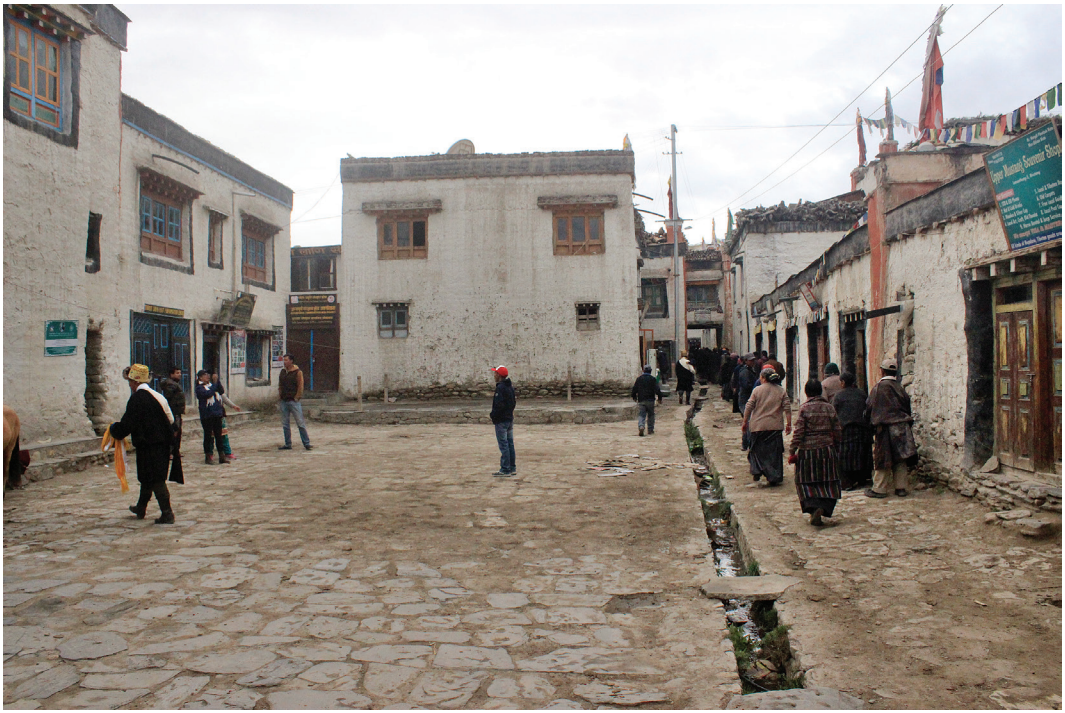
particularly after 1992, Lo-menthang has also become one of the country's most popular tourist destinations. This place is located at the juncture of natural_and cultural peculiarities. The mountainous terrains and farm fields around the village speak of the hardship the Lhoba people are living with, and also of their knowledge system and capabilities to adapt to the tough climatic conditions of this rain shadow region of the Himalaya.

The social context of Lo-menthang is equally distinct as its geographical uniqueness. Lo-menthang is the traditional capital of *LoTsho Dyun* (includes the nine villages of Lo). Traditionally, *Lho Ghyalpo*[2] *is* the chief of *LoTsho Dyun*. It is a fort-like town, with its compound surrounded by a 26-foot high mud wall. There are four watch towers at each corner of the compound wall. The only main entrance to the town is called *Ghegu*. Traditional arts and designs are inscribed on the gate. Inside it, there are some 170 houses including the 1700-year-old *Tashi De-Phel* (a palace), a small square in front of the palace, three old monasteries (Thubsten, Jhyamba, and Tsode), *Tsortens* (Lhob: Buddhist shrine/stupa). The setting of the village subsists in Mandala-like layers and circles. The white clay-washed *Tashi De-Phel* is at the center of the town. *Mhane* (Lhob: prayer wall) and *Tsortens* (Lhob: Stupa) surround *Tashi De-Phel* and houses. Trees and farm fields are on the outer circle of the settlement.

The village is traditionally organized into five wards or clusters: *Ghudang*, *Dhomalang, Jhyadang, Potaling*, and *Tsode*. Within the village, there are the *Kagni* (Lhob: a traditional entrance gate with Buddhist painting and mantras), the *Tsortens, the Dartsu* (Lhob: a prayer flag), and the *Lungdo* (Lhob: a prayer flag of a smaller size) installed/put up to protect the village from evil spirits and misfortunes. *Tsumi* (Lhob: a butter lamp) and *Kartsu*

2. Ghyalpo can be referred to as king these days. King, kingship and kingdom are more of a concept influenced by the colonization against indigenous peoples. Dr. K.B. Bhattachan also maintains: "I do not think that any indigenous peoples have a concept and practice of kingship. The use of the concept of kingship is a part of the colonization or Nepalization/Hinduization or Brahmanization. Ghyalpo looks to be a Lhoba term but if it really means a king, it is due to influence of others". That when and how the Lhobas began to use the term Ghyalpo and also the term king could be a topic of another study.

(Lhob: incense) offered to the deities in the mornings and the evenings give off an aroma typical of the Lhoba village. The *Mhanes*, in the middle of the streets, signal people to walk always keeping the wall on their right. Doing *Kora* (Lhob: going around the *Mhane* wall), spinning the prayer wheels, and counting the *Thange* (Lhob: prayer beads) all seem a part of the people's everyday life. In their leisure time, people, usually men, and the elderly hang out at *Ghegu* (Lhob: a main gate), with the elderly folks narrating jokes, folklores, myths and their personal stories and life experiences, to youngsters. Men sometimes flirt with young women, who reciprocate with smile in gold teeth (Thapa, 1992).



Monasteries and monks are held in the highest regard. Monasteries are well taken care of by the Lamas (Nep: monks) and the villagers together. The black, red, and white-washed clay lines on the wall of houses symbolize greed/anger, compassion and peace respectively. Skulls and horns of yaks

and wild animals placed at the corners, and the firewood along the side of the flat roofs, are characteristic of Lhoba houses. *Dartsu* on the roof, the prayer room, otherwise a corner with Buddhist text, *Thangkas* (Lhob: Buddhist painting), small statues of Buddha and his followers, *Oongu* (Lhob: a butter lamp for offering), *Shang* (Lhob: a water pot for offering), the photograph of Dalai Lama, *Guru Rimpotse*, and of *Karmapas* (Lhob: reincarnated Lama), lines of kitchen appliances such as Chinese thermos, reused tins and cans, tea cups, plates etc. all make up an identical ambience of Lhoba houses.

The worldview of Lhoba people is based on these unique physical and social characteristics. These features shape the community's social values and norms. Lhoba people have their own customary institutions that determine, regulate and sustain their values and norms. A total of 172 households with 569 people including 293 women and 276 men live in

Lo-menthang (Government of Nepal, 2011). Agriculture and livestock herding are the main occupations of these people. In recent years, tourism business (running guest houses and shops) has also emerged a source of income for a few families in Lo-menthang.

The Lhoba people identify themselves as an indigenous nationality with three distinct sub-groups called *Kuthag, Phalpa*, and *Gharpa*[3]. Regardless of this, all Lhobas have the same mother tongue and have common traditional attire, cultural practices and values. Each sub-group's role and responsibilities are defined by their customary institutions. The Kghyamba system is one such institution.

3. Even if Lhoba people are a distinct indigenous nationality of Nepal, they had to use Hindu surnames as the government had not recognized the Lhobas' surnames at the time when they had to present their surnames for government documentation. Therefore, Kuthag and Phalpa had to equate themselves with Bista/Thakuri (hill high castes) and Gurung (an indigenous group) respectively, whereas Gharpa was considered as Biswakarma, also abbreviated as BK, a Hindu untouchable caste. Most of the rituals and values of Lhoba people show that the Lhobas, like any other indigenous nationalities, are an egalitarian society. The literature on the topic by both foreign and Nepalese scholars have described the three sub-groups of Lhoba people as the hierarchical categorizations of castes in Hindu ideology. It is very much evident that these hierarchical categorizations and the adoption of such surnames as Bista, Gurung and BK are due to the influence of the rulers of the southern hills and colonization, Brahmanization, Hinduization or Sanskritization. They prefer endogamy, i.e., to marry within the same sub-group. However, in Lhoba society, the concept of touchability and untouchability (purity and impurity) are nonexistent, unlike in Hindu caste system.

KGHYAMBA SYSTEM AS PART AND PARCEL OF LHOBA LIFEWAYS

Lo-menthang makes a strong case for why no culture and identity survives without its agents and agencies. In Lo-menthang, it is evident that the *Ghyalpo* (the chief of *LoTsho Dyun*/the nine villages of Lo) and the *Kghyamba* system, the customary institution of Lhoba people, play a critical role in maintaining social order and preserving and sustaining their social and physical capitals. As an institution of self-governance, the *Kghyamba* system is key to the management of natural resources, including the use of water for irrigation. Relatively, its role in water management (for irrigation) is more pronounced as water is the most valuable natural resource in the arid land of Lo-menthang where there exists no forest though there used to be considerable pastureland in the past.

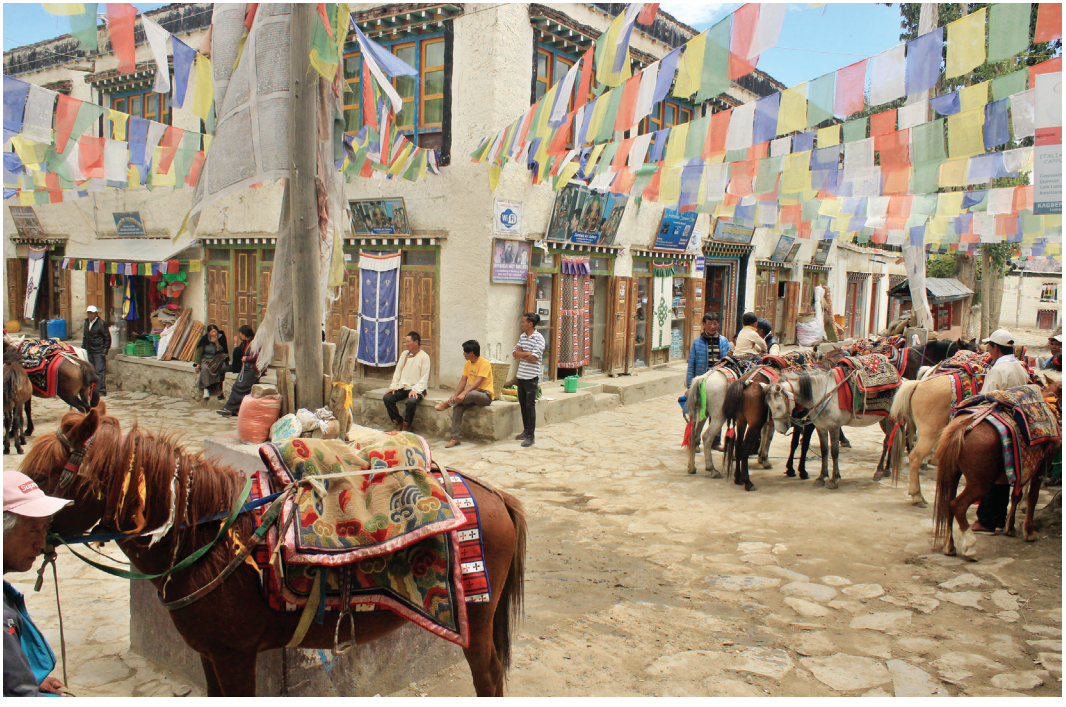
The team of *Kghyamba* comprises nine key personnel: one *Kghyamba* chosen from *Kuthag,* two *Mhetees,* and six *Tsumes,* all chosen from *Phalpa* sub-groups. The *Kghyamba* and his/her team hold the overall role for irrigation management, farming activities and other village affairs. The *Kghyamba* as the chief leads the institution, in coordination with *Ghyalpo*. Two *Mhetees* (deputies to *Kghyamba*) and a team of six *Tsumes* (associates) help *Kghyamba*, *Ghyalpo* and community members to oversee the execution of the community rules. In addition to the management of irrigation and farming activities, this system also handles disputes locally and takes care of almost all community affairs, thus maintaining social harmony within the community.

It is a centuries-old tradition of Lhoba people to choose a K*ghyamba* and his/her team, every year. A tradition, of course, is not created once and then left to its own momentum. The traditions exist because it is constantly produced and reproduced (Bell, 1992), and so is the case with *Kghyamba* system. The history of water management and the existence of customary institutions of self-governance and traditional resource management in Lo-menthang must be as old as the history of human settlement and agriculture there. This is obvious considering the fact that everyday life including agriculture and animal husbandry in an arid land is unimaginable without a prudent water management practice and that the written history of Lo-menthang dates back to the third to the fourth century.

If we look back into the history of human settlement in Lo-menthang, literature reviews show that there existed a pre-Buddhist Bon tradition in that area prior to the seventh century. In the eighth century, the Buddhist saint *Guru Rimpotse* (Padmasambhava) visited Lo-menthang (Gregson

2000, cited in Dhungel 2002). Lo, including Lo-menthang, was a part of the Tibetan kingdom of Gungthang until 1380, when A-ma-d" pal established this region, with the walled city of Lo-menthang as its capital. After four-century-long independence, Lo became a part of the kingdom of Jumla. After Jumla fell to the expanding kingdom of Gorkha in 1850, Lo became a part of so-called modern Nepal. For a century, the Lo region retained its own authority over the region, but the central government of Nepal used to regulate the revenue of the area. Customs collection from the trade along the Kali Gandaki Valley, which was a big trade route then, and the salt trade monopoly in the Thag/Thasang (Lower Maitang) region continued until 1928 (Thapa, 1992; Dhungel, 2002).

Lo-menthang including other villages of Lo became more isolated from the rest of the world when the Central Intelligence Agency (CIA) supported Tibetan rebellions based in Maitang until the 1970s. The Lo region was restricted for global Westerners until 1990. The government of Nepal had



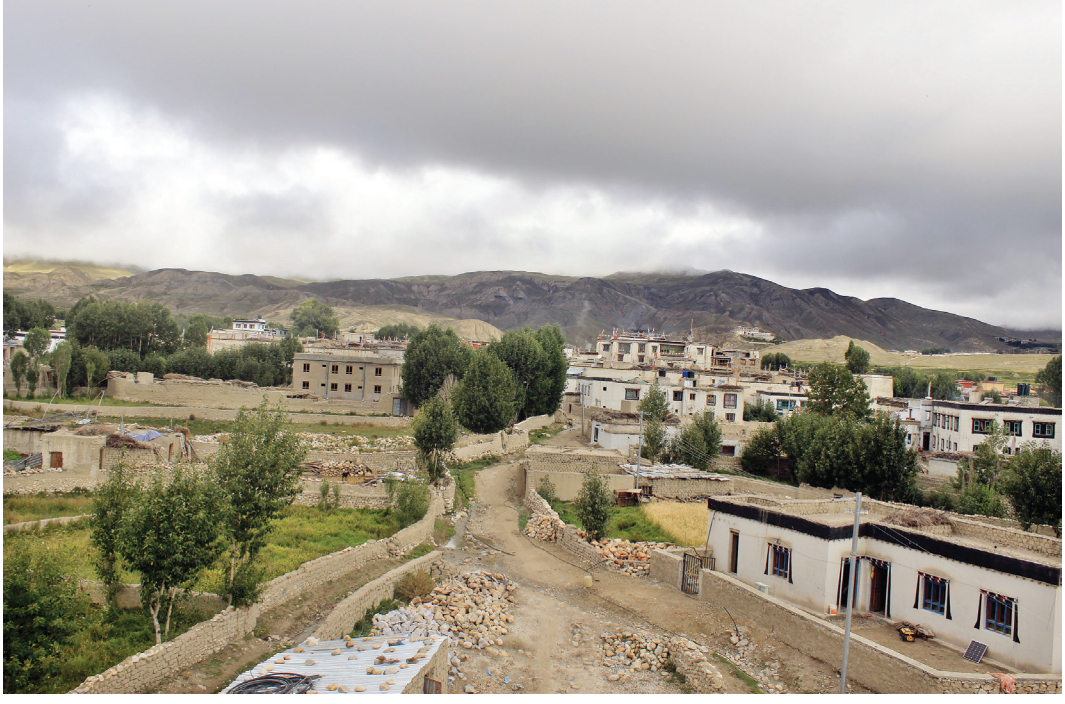
limited development supports in the region until the 1990s. These political cornerstones had lasting effects on Lo-menthang, with the area becoming detached in some ways from the central governance system of the country. Throughout this period, the intertwined role of *Kghyamba* system, *Ghyalpo*, and Gumba/Lama remained very strong and significant in community governance (Rai, 2007). Besides these studies in the literature, Dr. K. B. Bhattachan argues that written literature does not provide an accurate picture of the past (of indigenous peoples of Nepal nor of their customary institutions). Archeological studies of caves in Maitang have revealed that the history of Nepal is pushed back from 1,700 years to 2,900 years (Mishra, 1994; Shrestha, 1994). In his keynote speech on Nepal-China connectivity delivered in 2019, Dr. Bhattachan mentioned that the oral historical traditions (of indigenous peoples) go back to time immemorial. These arguments indicate that the customary institutions of self-governance and resources management including traditional irrigation practices in Lo-menthang or any other indigenous communities have been in existence for generations. It is true that much of the history of indigenous peoples is found only in the forms of folklore, folk songs, myths, folk dances, arts etc. As such, the written history of Lhoba people and their *Kghyamba* systems must be generations old. There was general consensus among key informants during the interviews that there's no knowing when the *Kghyamba* system exactly started but they all agreed that the system had remained in practice since a long, long time ago [4].

No matter when it started, the *Kghyamba* system is still going strong, interlocked with the lifeways of Lhoba people to date. The history of Lhoba people has come a long way witnessing many changes in the past. And throughout all this time, this customary institution has played a vital role in the management of natural resources, including irrigation water management and self-governance in Lhoba society.

4. Key informant interviews and group discussions.

SELF-GOVERNANCE: THE CORE OF KGHYAMBA SYSTEM

Collective action is the driving force behind the *Kghyamba* system. This very sense of collectiveness is inherent in customary values and norms in Lhoba society. There is no feeling of competition among members of the community. They simply have the realization that they should be responsive to the community need and, as part of the system, should take



on specific roles for the common good. To this customary institution, no leaders are elected nor any roles designated through formal means. Rather, members of the community customarily take turns to assume roles, which get reshuffled among themselves, every year. This collectivist culture of Lhoba people is reflected in their assuming of roles by households, not individuals. For example, *Kuthag* households take it in turns to assume the role of *Kghyamba* for a year. Likewise, *Phalpa* households switch the role of *Tsume* amongst themselves on a rotating basis. *Ghyalpo* and *Kghyamba* nominate *Mhetees*.

Also, role assignment and decision making are based on consensus and as per customary laws of the community. The leaders do not take decisions as they wish. They are just there to facilitate the decision making process as set by the customary laws. In case of conflict, wrongdoing or any matter that calls for action, the community members and *Kghyamba* collectively take a decision based on their customary practice (The following sections

explain more about how the decisions are implemented and what control mechanism are in place). Every household of the community gets a chance to participate in decision making processes. It is noteworthy that the *Kghyamba* governance system dealing with water resource management is inclusive and democratic to a great extent.

The process of seeking and dispensing justice is accessible for the community members. Complaints and suggestions on any affairs in the community are usually channeled through *Mhetees* to the *Kghyamba*. Whereas the *Mhetees* resolve minor cases, major ones are taken up with the *Kghyamba*. The *Mhetees* record cases and document charges and evidences and other details.

A team of six *Tsumes* representing five traditional village clusters (Potaling, Ghudang, Tsyode, Dhulang, and Ghyadang) work as associates to *Mhetees* and *Kghyamba*. *Tsumes* inspect any damage to the irrigation canal, monitor

the distribution of irrigation water, and also look after livestock grazing in the farm field. Of the total six *Tsumes*, one is chosen as *Tsume Aama* (Lhob: Tsumi in-charge) to keep the accounting records of collected fines while two others inspect the water sources and the canals. The rest focus on the irrigation plots to make sure that each plot gets enough, equal water. Until *Rhetsu* (Lhob: the third-time irrigation in a given cropping season), *Tsumes* have to take care of these tasks with close attention. They relay information to the villagers through an act of *Ghok* (Nep: a practice of informing villagers by shouting out the message loudly). *Tsumes* indeed help other members working for the system to ensure that the village is run in accordance with its community rules.

The rules for, and the roles and responsibilities of, *Kghyamba*, *Mhetees, Tsumes* and the community members are determined and legitimatized based on certain cultural norms and through certain rituals. In fact, all these instances show that the *Kghyamba* system is embedded in the Lhoba culture and lifeways.

RESHUFFLE OF ROLES AND RESPONSIBILITIES IN KGHYAMBA SYSTEM: INTERPLAY BETWEEN CULTURE AND IRRIGATION

The third day of *Dawa Dhangbo* (Lhob: the first month of Lhoba calendar) is Sakaluka, the auspicious day to change the tenures of *Kghyamba* and the team, for that year. Every year, on this very day, people gather at a winter barren field and symbolically start farming activities of the year, after four months of freezing winter gets a bit warmer for cultivation. They go to the field dressed up in traditional costumes. With them, they bring compost, seeds, plough, *Zho* (Lhob: the cross-breed bull of a yak and a cow), and farming tools. Lhoba people come to the field to worship their deities for sufficient irrigation and good growth and harvest of crops. They also pray to ward off potential natural calamities affecting their crops and irrigation canal. They worship their land and water deities offering *Karstu* (Lhob: incense). People re-install the *Lha Tho* (Lhob: symbol of the deity) for *Lumo* (Lhob: deity). They observe this day as an auspicious opening of farming and irrigation activities of the year. The *Kghyamba* has the overall responsibility of bringing the villagers together to conduct this ritual. Actually, this is also the day to pick and ritually legitimize the selection of the new functionaries of the *Kghyamba* system--*Kghyamba, Mhetee*, and *Tsume*--for that year. For the celebration of *Sakaluka*, the following arrangements need to be made:

- The outgoing functionaries of the *Kghyamba* System (i.e. one *Kghyamba,* two *Mhetees,* and six *Tsumes*) hand over the responsibilities to their successors.

- The new executive team of the *Kghyamba* System (that comprises one *Kghyamba*, two *Mhetees,* and six *Tsumes*) take over the responsibilities for one year.
- Two *Zhos* plough the field
- A girl ploughs and a boy pulls the *Zho* and casts the seed
- A boy digs up the compost
- A girl puts the compost into the bamboo basket
- A boy digs the canal
- A girl takes the sand, soil, and gravel out from the canal
- They offer a goat to the deities
- Lama recites religious verses
- *Ngangpa* (Lhob: a Buddhist priest) performs Puja

On the day of Sakaluka, the villagers along with the *Kghyamba* first meet at the Mhetees' homes and then visit the Tashi De-Phel palace, monasteries, and the canal. Extending the best wishes for prosperous farming and greenery, people exchange their food and *Tsyang* (Lhob: home-made wheat beer). Each activity begins at an auspicious moment as specified by the Ngangpa. The boys and girls, who as part of the ritual, plough and perform other activities in Sakaluka, are chosen based on their *Lho* (Lhob: zodiac sign or date/year of birth as per the lunar calendar). People sing while performing all these activities.

Precisely, Sakaluka is not a mere festivity. It bears special significance when it comes to the *Kghyamba* system and its management of water for irrigation and agriculture as well as the cultural affairs and religious life of Lhoba people. This festivity culturally legitimizes the tenure of the *Kghyamba* and his or her team for the next one year's period. It formalizes the transfer of the role as *Kghyamba* from one household to another.

SOME FUNCTIONS OF THE KGHYAMBA SYSTEM: STEERING THE IRRIGATION PRACTICE

Maintenance and Operation of Canal

Heavy snowfall in winter makes the irrigation canals fragile and may even cause partial damage to them. The gravel silts on the canal, and *Ha* (Lhob: conduits) and *Zhiu* (Lhob: intakes) require maintenance before the canal system is brought to operation in spring. Around the first or the second week of April, the villagers repair all the structures used for water harvesting. Since every household uses the Huyu irrigation system, each household has to contribute labour for maintenance of the canal. In the cases of other canals, only the households owning a farmland in the command area and those going to use the water, have to contribute labour for maintenance work. The landlords, who rent out their land in *Phutok* (Lhob: paying amount of grains equal to the seed cultivated), *Bhokma* (Lhob: leased-out or given for a pre-conditioned amount of grains), or *Phezo* (Lhob: the tenant paying half of the produce) do not have to contribute labour for canal repair. Individuals aged between 16 and 60 years are eligible for labour contribution. They work together, sharing their ideas and experiences and learning skills and knowledge with one another, especially from older people. Actually, elderly people cannot make as much labor contribution as young people do. However, these senior citizens replenish the deficit by sharing their valuable knowledge and experiences with youths. The

villagers share food items and beverages such as *Tsampa* (Lhob: roasted wheat/naked barley flour), *Shui Tsyaa* (Lhob: butter tea) and *Tsyang* (Lhob: home-made drink similar to wheat beer) while working at the canal sites. They enjoy singing and sharing a light moment together and recounting stories from the past about their canals and so on. The irrigation canals are developed with locally available materials and traditional technology. Once the villagers complete the maintenance work, the canal is brought into use to distribute the water to every plot in the field. The *Kghyamba* and his/her team get the workforce from the community for all these activities.

These instances demonstrate that the *Kghyamba* system offers an opportunity for optimizing the benefits from collective action, and for using local materials and indigenous technology that could be called "hybrid modern" technology, for effective natural resources management and sustainable environment.

Irrigation Water Distribution

The *Kghyamba* system adheres to democratic norms also while sharing irrigation water among the cultivators. The turn for each household or plot to use water is determined taking into account various factors such as the nature of the plot, the type of crops planted on it and the location of the command area. In some cases, the villagers resort to *Para* (Lhob: toss) to decide which household or plot would use the water first, while in other instances it is decided on a first come first serve basis. The villagers always reach consensus on what method to employ. They may also agree to allow a certain plot to use water based on the kinds of crops cultivated there as different crop types require watering at different times of their growth. A land with a crop such as *Rhema* (Lhob: pea) requires irrigation before the casting of seeds. However, crops like *Toe* (Lhob: wheat), *Gyabray* (Lhob: buckwheat), and *Nhay* (Lhob: naked barley) need to be watered only after cultivating the seeds. The distribution of water based on crop types and on their water requirement is

also a good way of sharing the scarce water. The following calendar shows water requirements and water allocations for crops:

Table 1: Water requirement for different crop types

SN	Crops	Water Requirement	Planting time	Frequency of water allocation until the harvest	Harvest time
1.	Nhay (Lhob: Necked barley)	After seed cultivation	Last week of March to April	6 times	Sep.-Oct.
2.	Toe (Lhob: Wheat)	After seed cultivation	Last week of March to April	6 times	Oct.-Nov.
3.	Alok (Lhob: Potato)	Before seed cultivation	Last week of March to April	Not defined	Sep.-Oct.
4.	Gyabray (Lhob: Buckwheat)	After seed cultivation	April to May	4 times	Sep.-Oct.
5.	Rhema (Lhob: Peas)	Before seed cultivation	April to May	4 times	Sep.-Oct.
6.	Tsuk (Lhob: Mustard)	Before seed cultivation	April to May	3 times	Sep.-Oct.

Source: Fieldwork 2004 and fieldwork 2019

Water allocation at different times as indicated in the Table 1 shows that the people possess in-depth knowledge on farming and irrigation. Irrigation of *Rhema* (Lhob:peas) for the first, second, third, and fourth time is called *Taptsu*, *Bhutsu*, *Ngutsu*, and *Rhetsu* respectively. Likewise, for *Toe* (Lhob: wheat), the three irrigation times are called *Khantsu*, *Ngutsu*, and *Rhetsu* respectively. This information shows that in Lo-menthang, there is a practice of farming different crops with proper allocations of scarce water in an equitable way. In case there are issues regarding disruption in water distribution or any complaints regarding water sharing, such issues are resolved locally through the *Kghyamba* and his/her team.

Conflict Management

Complaints and conflict are likely when sharing scarce resources. When everyone is in need of the same resource, the competition tend to increases. This could give rise to conflict. It helps community members to have some common norms for sharing resources among themselves. In Lo-menthang, irrigation is vital to the cultivation of crops, given its arid climate. As water is such an important resource there, Lo-menthang and its neighboring village of Tsonub sometimes get into conflict, each village claiming to solely own and have the right to use the water from the river. People of Lo-menthang would say, "No one may take even a single drop of water from the local Numaghung river, which belongs to the people of Lo-menthang."[5] On the other hand, the people from Tsonub express their resentment:

This (Numaghung) river flows through our village. We should have the rights to use the water. They (Lo-menthang residents) only lay claim to the water in winter when water is needed the most. They forget calamities induced by snowmelt in summer.[6]

Key informants during this study recalled a case happened a couple of decades ago: Lo-menthang people went to Tsonub riding horses; they destroyed the *Nagma* (Lhob: plots ready for cultivation), the irrigation canals, and the conduits in Tsonub. They ransacked yak barns of Tsonub people near Ghyaga, destroyed butter, cheese, and everything they came across and also took away eight yaks with them. Behind the conflict was the dissatisfaction over sharing of water from the Ghyaga river. The conflict escalated to such an extent that even *Kghyamba* and *Ghyalpo* could do nothing about it. Finally, the case reached the district court. In the end, the *Kghyamba*, the chief district officer, and the regional development officer brokered an agreement between the disputing sides.[7] Elderly people still

5. Key informant interviews and group discussions.
6. Key informant interviews and group discussions.
7. Key informant interviews and group discussions.

remember the pact: "As per the agreement, Tsonub would not go for Lo-menthang's water and Lo-menthang would not take away Tsonub's yaks."[8] The *Kghyamba* system plays a significant role in addressing grievances held by dissenting sides. The locals have their own traditional control mechanism to oversee such cases. One of the key informants, Pema, says, "Conflict over water resource sharing occasionally arises between the two villages and sometimes even within a village even to this day. But the villagers and the *Kghyambas* resolve such conflicts on their own."[9]

Tsepa: The Control Mechanism

Another informant, Kunga Funzo, referring to how someone is charged with fine as per their tradition for violating a community rule, said:

8. Key informant interviews and group discussions.
9. Key informant interviews and group discussions.

"Tashi was slapped with *Tsepa* (Lhob: penalty) last year after his neighbor and Tsume reported that he took unfair precedence over his neighbors for irrigation. Queue-jumping is very uncommon among the villagers."[10]

Meanwhile, Pema, seated next to Kunga, said, "People are also fined *Tsepa* in case their livestock graze in others' agriculture fields or destroy others' crops. They also have to pay *Tsepa* if they do not join in canal maintenance and repair work."[11] During an interview on *Tsepa*, another informant stated: "The villagers gathered for canal maintenance work last week, but nobody came from Kunga's house. The next day, his wife, Sonam, came to pay *Tsepa* to *Tsume Aama* for not being able to be there for labour contribution."[12]

The tradition of *Tsepa* (Lhob: charge/fine) has been in practice for generations. It is still very helpful in controlling misconduct in community affairs. All these traditional practices bear significance for Lhoba people as they enable these indigenous peoples to earn their livelihood in this arid land. From the observation and interviews conducted during this study, it is clear that *Kghyamba* system plays a crucial role in managing water resource as well as maintaining social order in the community. However, a lack of stakeholder support and enabling environment has posed a serious challenge for survival of the institution for future generations.

10. Key informant interviews and group discussions.
11. Key informant interviews and group discussions.
12. Key informant interviews and group discussions.

WHY KGHYAMBA SYSTEM MUST NOT DIE

The *Kghyamba* system is integral to the lifeways of Lhoba people. It plays a lifeline for the Lhoba indigenous peoples to sustain their livelihood through irrigation water management in the arid climate of the trans-Himalaya village.

Without irrigation, the dry land would turn to desert. Had there been no collective action and shared values among Lhoba people, the canals to the farmlands would have dried up. Thus, the *Kghyamba* system is critical to not only the survival of the Lhoba people but also the ecological sustenance of Lo-menthang.

Besides, this customary institution, unlike non-indigenous institutions on natural resources management, is uniquely grounded in social, environmental and cultural contexts in tandem with the worldview of indigenous peoples. The selection/election of leaders, the decision-making process and the participation of community members in it, the reward and punishment system, the sharing of roles and responsibility, and many other features of this institution are in contrast to the non-indigenous state-sponsored institutions and practices of natural resources management. Many of the state-sponsored so-called 'community institutions' such as 'Users Groups', 'Users Alliances', 'Interest Groups' actually do not fit into local contexts, in many ways. State-sponsored institutions are usually guided by a solitary method and ideology of resource management. This method

and ideology disregards distinct socio-cultural contexts and the diversity of communities. For example, the Community Forestry and the Community Forest Users Group in Nepal, one of the country's most romanticized and falsely popularized so-called community-based institutions, is promoted based on the Forest Act (1993) of Nepal. The forestry law of Nepal violates the rights of indigenous peoples by eliminating their rights to land, territories and resources. Customarily owned and used lands and forests of indigenous peoples have been converted into Community Forests or into some other kind of forest regimes. In contrast to these government-introduced institutions, the *Kghyamba* system embodies the significance of collectiveness grounded in social, cultural and environmental contexts. However, the traditional system is facing challenges for its survival as the state laws are unsupportive of it. For instance, the irrigation policy of Nepal (2060 BS) does not make any reference to indigenous institutions of irrigation management, at all. The policy makes mention of the "traditional irrigation system", in the context of 'the types of irrigation system' but as per definition, a "traditional irrigation system" means a system constructed and managed by its users. This definition does not incorporate customary institutions of indigenous peoples. Just like the 1993 forest act provides for the 'Community Forest Users Groups', the irrigation policy focuses on "Users Association." The policy defines a 'Water Users Association' as a registered association (of all levels) under the prevailing law with the objectives of construction and operation of the system. The intent of this policy is that 'the prevailing law' should be interpreted as the statutory law. Furthermore, capacity building, information dissemination and participation of the users are limited to Users Associations. These provisions hinder the collective rights of indigenous peoples such as Lhobas and are against the tenets of customary institutions such as the *Kghyamba* system. The participation of Users Associations in survey, design, estimation and construction of small scale projects (having less than 25 hectare of irrigation area in the hills and less than 200 hectares in Tarai and inner Tarai) and medium scale projects (having 25 to 500 hectare of irrigation area in the hills and 200 to 2000 hectares in Tarai and inner Tarai) is provisioned in the policy with no

mention of indigenous peoples and their customary institutions. The policy has made no references to customary institutions of indigenous peoples, conflict resolution, resource mobilization and development of technology. However, studies show that a vast portion of irrigation systems had evaded government interventions and remained locally managed (Berg, 2006); the number of irrigation systems in Nepal ranged from 20,000 to 100, 000 (Pradhan, 1988; GTZ, 1991). Many of the locally managed irrigation systems are managed by customary institutions. The *Kghyamba* system is an example of the fact, 'community-managed irrigation systems are performing better than government- managed systems (Ostrom, 2002)'.

Compared to state-sponsored community institutions, the *Kghyamba* system is more democratic, functional, participatory, productive and rooted in local context. Like any other customary institutions, the system is based on the idea of collectivism. Generally, state-sponsored, so-called modern institutions are under the influence of political parties and elite domination. Such elite-captured institutions are unable to serve the collective need of a community. For example, the customary institution of Tharu indigenous community, *Badhghar*, used to perform judiciary functions within the community. It also used to oversee irrigation activities. In *Chhatis Mauja* irrigation system, when outsiders migrated into the areas or *Mauja*s of Tharus, the task was taken over by a committee elected by general consumers. One consequence of that change was that the whole election process would be influenced by interests of political parties and the committee would tend to not perform well as local political elites used the committee as a platform to advance their own political interests (Uprety, 2008). As the committee and other functionaries are picked based on their political inclinations, they are likely to serve party interests rather than the community.

Unlike this, the *Kghyama* system operates based on collective thought and for the common good of Lhoba people. It substantiates the argument that the 'best' management practice cases are typically found in the mountains

(where indigenous institutions are still vibrant) and the 'worst' cases, in the hills. The reason is that in hill communities, the penetration of market forces and the disturbances associated with civil war diminish the viability of community-based collective action. In the mountain communities these forces, although very much present (accepting the civil war), do not have these detrimental effects (Berg, 2006). Precisely, the *Kghyamba* system has potentials to make significant contribution to the national and global efforts of natural resources management and to address the common challenge of climate change.

SIGNIFICANCE OF KGHYAMBA SYSTEM IN THE FACE OF CLIMATE CHANGE

The Intergovernmental Panel on Climate Change (IPCC) reports the global crisis of climate change and the urgency of collective climate action. The impacts of global warming on natural and human systems have already been felt and observed. Many land, ocean and mountain ecosystems and some of the services they provide have already changed due to global warming. There are limits to adaptation and adaptive capacity for some human and natural systems at global warming of 1.5°C, with associated losses. IPCC also recognizes that there are a wide range of adaptation options that can reduce the risks of climate change. And, adaptation and mitigation are already occurring. A mix of mitigation and adaptation options implemented in a participatory and integrated manner can enable rapid, systemic transitions – in urban and rural areas – that are necessary elements of an accelerated transition consistent with limiting warming to 1.5°C. Such options and changes are most effective when aligned with economic and sustainable development, and when local and regional governments are supported by national governments (IPCC, 2018). At the backdrop of the global need of collective action against climate change, indigenous peoples are recognized as one of the 'non-party stakeholders' for climate action. The United Nation

Framework Convention on Climate Change (UNFCCC) recognizes the need to strengthen knowledge, technologies, practices and efforts of indigenous peoples for addressing and responding to climate change. It had established a platform for the exchange of experiences and sharing of best practices on mitigation and adaptation in a holistic and integrated manner (UNFCCC. 1/ CP.21/ 2015). Parties to the UNFCCC, among others, have acknowledged that adaptation action, among others, should also be based on and guided by the best available science and, the knowledge of Indigenous Peoples, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions (UNFCCC Paris Agreement, 2015). At the same time, the Paris Agreement in its preamble has acknowledged the rights of indigenous peoples in climate actions. When viewed all these efforts and provisions from the standpoint of Lhoba people, it is not hard to understand that *Kghyamba* system has great potential to materialize those concepts, translate those international agreements into collective actions and into local realities, thereby contributing to the national and global initiatives for climate action. The knowledge of Lhoba people also reflected in their customary institutions and natural resources management practices is a science, too. There is that opportunity for the 'best available science' (referred to in UNFCCC agreements) integrate the Lhoba people's science and their rich organic experience into the mainstream western science. For that, the first step would be to protect and give recognition to *Kghyamba* system that ultimately helps to integrate the contribution of 'non-party stakeholders'—Lhoba people, in this instance—into national and global climate actions.

The recognition of *Kghyamba* system will also be important considering the fact that like other indigenous peoples, Lhoba people live in a unique, symbiotic relationship with natural resources. Their collective rights over their collective domains including their institutions of self-governance (such as *Kghyamba* system), land, territories and resources are inalienable. These rights are affirmed to some extent by the constitution of Nepal and fully by international laws and human rights instruments including binding treaties

such as International Labor Organization Convention on Indigenous and Tribal Peoples (ILO- 169) and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). It is pertinent to note here that Nepal endorsed UNDRIP and ratified ILO Convention 169 in 2007. Nepal is also a signatory to the Convention on Biological Diversity (CBD), and a party to the United Nations Framework Convention on Climate Change (UNFCCC), among others. These international instruments also uphold Free, Prior and Informed Consent (FPIC) of indigenous peoples and their rights to exercise customary law as a standard for ensuring their rights over lands, territories and resources that they own, occupy and/ or use customarily or by other means. As the *Kghyamba* system is a part of Lhoba indigenous peoples' lifeways with an emphasis on collective rights, the aforementioned national and international provisions should apply to it in giving it due recognition.

The constitution of Nepal (2072 BS) in its preamble states that it aims to end all forms of discrimination and oppression created by the feudalistic, autocratic, centralized, unitary system of governance. It further emphasizes on protecting and promoting social and cultural solidarity, tolerance and harmony, and unity in diversity by recognizing the multi-ethnic, multi-lingual, multi-religious, multi-cultural and diverse regional characteristics of the country, amongst other things. The constitution aims to ensure economic equality, prosperity and social justice by eliminating discrimination based on class, caste, region, language, religion and gender and all forms of caste-based untouchability.

The constitution also states that the country is committed to protect human rights. The Art 51 (g) of the constitution (policies relating to protection, promotion and use of natural resources) states that the state shall pursue the principles of environmentally sustainable development including the principles of (free) prior informed consent. It is the need of the hour to make sure these national and international standards are met even in the case of *Kghyamba* system. This would greatly help realize the vision of the constitution and implement sustainable resource management practices and climate action by utilizing the indigenous peoples' knowledge as acknowledged in Art 7.5 of the UNFCCC Paris Agreement.

CONCLUSION

The *Kghyamba* system is embedded in the distinct social and cultural context of Lhoba people and the geographical uniqueness of the place they live. It has remained part and parcel of Lhoba lifeways since time immemorial, with its norms deeply rooted in the culture, tradition and worldview of the indigenous peoples.

The customary institution plays an outstanding role in natural resources management including irrigation water management and self-governance in Lhoba society. It exemplifies that customary institutions and the knowledge of indigenous peoples are value-driven and evidence-based and that these are instrumental in maintaining social order and environmental sustainability. It is important to recognize and safeguard the customary institution and knowledge of Lhoba people as these, unlike non-indigenous institutions of natural resources management, are uniquely grounded in the social, environmental and cultural contexts as well as the worldview of the indigenous peoples.

A sense of collectiveness is at the core of the system. There is no competition among members of the community for any position of the system. Every Lhoba individual who as part of this system is responsive to the community need and thus are willing to take on a certain role for an effective functioning of the system. The selection of leaders, the decision-making process, the participation of community members, the reward and punishment arrangement, the sharing of roles and responsibility and many other features of this institution are in sharp contrast to natural resources management practices and local governance of non-indigenous state-sponsored institutions.

The *Kghyamba* system demonstrates strong interplay between the culture, the customary values and norms, and the natural resources management practice of Lhoba people. It has enabled Lhoba people to adapt to the tough climatic conditions of this trans-Himalayan rain shadow of Lo-menthang. This rich cultural heritage that embodies the centuries-old indigenous knowledge on natural resources management can be combined with the 'best available science', as referred to in the UNFCCC Paris Agreement, to create synergy of the organic, indigenous experiences and the mainstream western science and thereby tackle wider environmental and social challenges . But before this, there is an urgency to protect and give due recognition to the *Kghyamba* system that would help to link Lhoba people's contribution to natural resources management and climate action at the national and global level.

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This case study unravels the example of how a customary institution is embedded in the social and physical uniqueness of a community of indigenous peoples. It demonstrates the value of recognizing and safeguarding the customary institutions and knowledge of indigenous peoples. This case study presents the facts—how the knowledge system and customary institutions of indigenous peoples are value-driven and evidence-based, and how these are instrumental in maintaining social order and environmental sustainability, and combating climate change through adaptation measures.

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