Conflict and mediation in high altitude rangeland property rights in Bhutan

Abstract

Semi-nomadic yak herders of Bhutan depend on high altitude rangelands and yaks for their livelihoods. Conflicts over high altitude rangelands among herders can lead to sub-optimal management with negative impacts on the environment, livelihoods and socio-economic well-being of semi-nomadic yak herders. This paper explores the conflicts and mediation mechanisms arising from property rights issues amongst semi-nomadic yak herders in three comparative areas of Bhutan: i) Yak herding under a traditional management system within a Protected Area system (Merak, East), ii) Yak herding under a more extensive traditional management system (Dakarla, West) and iii) Yak herding and sedentary livestock farming with improved pasture development (Sha Gogona, West Central). Qualitative research methods were adopted to capture the experiences and views of 151 semi-nomadic herders, livestock farmers and government officials including 40 individual interviews and nine focus group discussions. The research revealed that conflicts over high altitude rangelands occurred within and between yak herding and downstream communities. Unclear boundary and competing property rights; incongruence between sharing of benefits and costs, and contravention of collective choice arrangements all caused conflicts. These conflicts occur within and between communities regardless of the type of user rights regimes (i.e. private, communal or mixed). Herders and sedentary livestock farmers employed both informal and formal conflict resolution mechanisms to resolve intra-community and inter-community conflicts. Fostering tenure security through demarcation and fencing of rangeland boundaries, granting clear property and ownership rights and written group constitution and by-laws that build on traditional collective action are needed to reduce conflicts and improve high altitude rangeland condition.

Keywords: high altitude rangelands, property rights, tenure security, semi-nomadic yak herders, conflicts, Bhutan.

Introduction

Conflicts are a common feature of natural resource management (NRM) as people compete for natural resources as a means to enhance their livelihood (Sanginga, Kamugisha, and Martin 2007, Aryal et al. 2013, Azuhnwi et al. 2017). Competition over resources and potential rents accruable from these resources (Anderson 2004), competing rights (Peters 1990) and distributional consequences can result in failure to cooperate despite common goals (Poteete and Ostrom 2004). Salience (dependency), scarcity and hence the pay-off or economic value of the resource units as perceived by the resource users may lead to collective action problems (Gibson 1999). Changes in rangeland use pattern can foment conflicts (Azuhnwi et al. 2017). For example, Aryal et al. (2013) reported conflicts in Upper Mustang, Nepal due to change in land use patterns and competing rights between farmers, who encroached rangelands for cultivation of horticultural crops such as apple and peaches, and herders who are traditional rangeland owners. Similarly, Azuhnwi et al. (2017) reported conflicts between pastoralists and agricultural farmers and between pastoralists and fishermen in Cameroon as a result of change in land use pattern, poor land use planning and poor recognition of ownership rights.

Acheson (2006) argues that lack of willingness or ability to produce effective rules often leads to collective-action dilemmas or conflicts. Inadequate rules can produce uncertainties among natural resource users which in turn encourages strategic behaviour such as free riding. Free riding is enjoying the benefits accruing from the cooperative efforts of other members without sharing the costs (Ostrom 2003). Ostrom (2003) observed that collective action fails mainly due to difficulties or problems of excluding non-contributors or free riders from enjoying the benefits and fruits of labour of others. Free riding becomes pervasive where property rights are poorly defined and poorly enforced.

Some authors (Bedunah and Angerer 2012) believe that conflicts over rangeland use can create significant social, economic, and environmental problems and can result in sub-optimal governance and degradation of natural resources such as grazing land, forest and fishing where multiple users are involved (Turner 2011). In contrast, Sanginga, Kamugisha, and Martin (2007) in the context of their study on conflict management, social capital and adoption of agro-forestry technologies in the highlands of south-western Uganda posited

that conflicts may incentivize adoption of sustainable NRM technologies which may have a positive impact on social change. They identified three dimensions of social capital *viz* collective action, by-law implementation and linking to local government structures which they claimed have enhanced the community ability to transform conflicts into opportunities. However, many scholars (Poteete and Ostrom 2008, Turner 2011) concur that addressing and resolving conflicts is a prerequisite for optimal natural resource governance. Reconciling self-interest and group interest, assigning clear property rights, and addressing free riding problems are critical to reducing conflicts. Better communication and cooperation between users of natural resources, designing effective rules and monitoring and enforcement may also reduce conflicts (Ostrom 1990). Conflicts can be resolved by clearly specifying what rights members have, their roles, responsibilities and duties. The ability of detect and punish free riders is pivotal for reducing strategic behaviour and posturing (Singleton 2000).

In the context of Bhutan, high altitude rangelands (hereafter referred to as *tsa-drog* in Dzongkha, the national language of Bhutan) are located between 2500 and 5500 metres *amsl* (Gyamtsho 2002) and support approximately 38,222 yaks belonging to 993 semi-nomadic yak herding households in 11 districts (DOL 2015). Semi-nomadic yak herders' livelihoods are integrally linked with yak herding and high altitude *tsa-drog* management. High altitude *tsa-drog* are scattered and isolated without road connectivity and lack basic civic amenities such as healthcare, education and extension services (Derville and Bonnemaire 2010). *Tsa-drog* including sub-tropical, temperate and high altitude *tsa-drog* make up 4 % of the total land mass of the country (NSB 2014).

Tsa-drog thram (title) holders are only granted use (grazing) rights (Moktan et al., 2008). User rights regimes may be private, communal or mixed. Most herders and livestock farmers rent *tsa-drog* from absentee landlords/ladies and other rich herders to support their livelihoods and pay rent mostly in the form of butter and cheese. In Bhutan, both historical and contemporary government acts and laws have informed and influenced *tsa-drog* property rights arrangement and management regimes. For example, the Forestry Act of 1969 imposed ban on burning of *tsa-drog* and subsequently the Land Act of 1979 reverted ownership of *tsa-drog* to government and hence only use (grazing rights) are granted to the title holders. *Tsa-drog* title holders can graze their livestock on naturally grown pasture but

they are not allowed to develop (e.g. grow improved pasture) or carry out traditional *tsa-drog* maintenance activities such as burning, cutting and clearing of bushes and shrubs grown on tsa-drog.

Despite having customary *tsa-drog* management norms and rules, competition for scarce natural resources and uncertainty over future *tsa-drog* property rights have caused friction and conflicts. This paper explores the types and perceived causes of conflicts arising amongst semi-nomadic yak herders and between yak herders and downstream communities over *tsa-drog* property rights and management. Conflict mediation mechanisms utilised by the herders and communities and potential ways forward are described and discussed.

Methodology

A comparative case studies method based on qualitative research was chosen to study conflicts over high altitude rangeland governance. Three distinct geographic sites were selected with different property rights and management regimes: i) Yak herding under a traditional management system within a Protected Area system (Merak, East), ii) Yak herding under a more extensive traditional management system (Dakarla, West) and iii) Yak herding and sedentary livestock farming with improved pasture development (Sha Gogona, West Central) as shown in Figure 1 were selected to provide as representative views as possible on high altitude rangeland management across Bhutan.

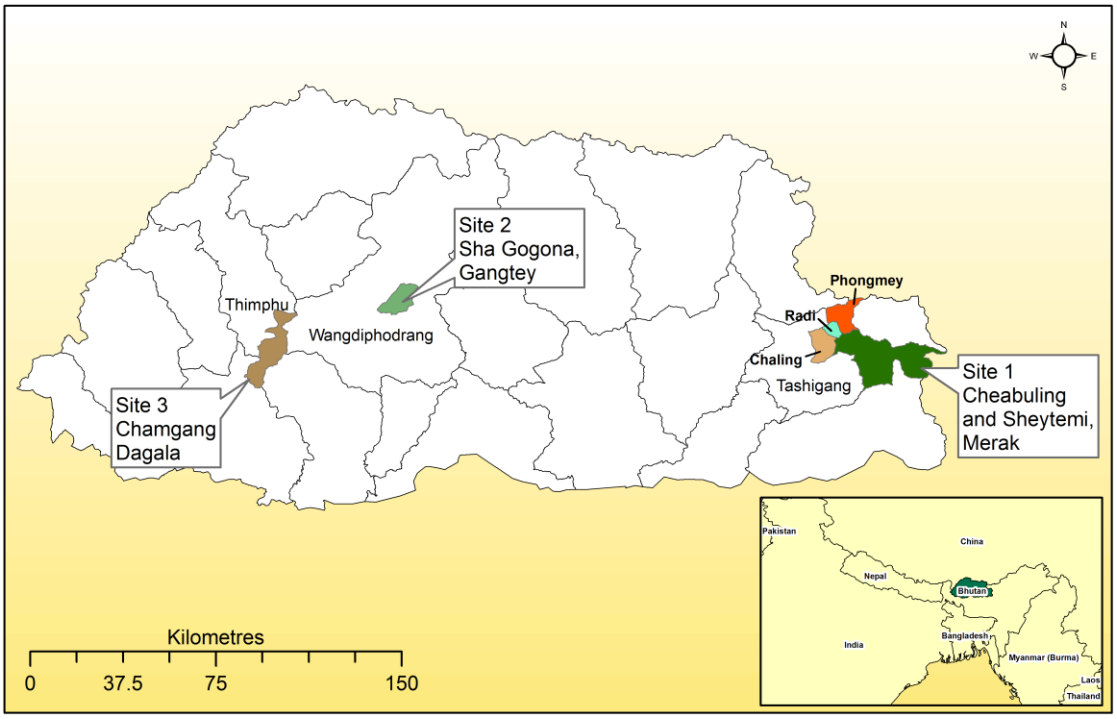

Figure 1 Map showing locations of the three case study sites

Qualitative research methods were used to enable exploration and in-depth understanding of perceptions, contexts, complex processes and causal relationships (Vaus 2001). It allowed understanding of the lived experience of herders and livestock farmers and how they are affected by their relationship with the physical environment and others (Berg 2009). Semi-nomadic yak herders; sedentary livestock farmers; farmers from downstream communities; officials from relevant central government and local government agencies participated in the research. In total, 40 semi-structured interviews (n=40) and nine focus group discussions (n=9) covering 151 participants were conducted between February, 2013 and June, 2014. The interviews were conducted first followed by focus group discussions to explore issues raised with a wider audience. Convenience and snowballing sampling methods (Morse 2008) were used to identify potential interviewees in the data collection process. All interviews and focus group discussions were conducted in local languages which were later translated and transcribed into English for analysis.

Using interview questions as a guiding framework for analysis, data for individual case study sites were firstly analysed to understand their respective peculiarities and idiosyncrasies. In the first stage of analysis, coding, categorisation and thematisation were carried out with the help of the computer assisted program NVivo (9 and 10 editions). Codes are points of interest highlighted as indexes and similar codes are linked to form categories and themes (Holton 2008) which were aligned with the thematic areas in the semi-structured interview guide questions. Relevant codes, categories and themes were constantly checked for compatibility and fit with data from the interviews and focus group discussions in order to make the data as congruent as possible. The iteration of coding, categorisation and thematisation continued until no new properties or dimensions are emerging parison (Dey 2007), that is, it has reached saturation. Similarities and differences from different case study sites were compared and contrasted to identify key themes and categories in the second stage of analysis. Theoretical reflections and inflections and 'making sense' of what the data were trying to signal or say (Bryman 2012) comprised the third stage of analysis.

Results

This research found that conflicts over property rights and use of natural resources such as *tsa-drog* and benefit streams accruing from them were reported from all the three case study sites. Conflicts over rights and use of *tsa-drog* can be categorised into: i) intra-community (among herders), ii) inter-community (between herders and downstream communities) and iii) transboundary conflicts. In this paper, intra-community conflicts are defined as those conflicts or disagreements taking place within the members of the same group, community or a village over rights and use of natural resources and benefit streams accruing from them. Intra-community conflicts arise mainly from not respecting collective choice rules and norms such as on entry-exit timing, failure to pay penalties and dispute over share of family inheritance. Inter-community conflicts are defined as those conflicts between two or more communities or villages administered under different *gewog* or *dzongkhag* that share common boundaries and the conflicts are over rights to use natural resources and benefit streams accruing from their use. Boundary disputes, conflicts over access/use rights, allegations of theft, maiming or killing of animals, crop

damage/depredation by cattle encroachment and destruction of fences and gates were some inter-community conflicts reported by the herders, livestock farmers and farmers of downstream communities. Transboundary conflicts are defined as those conflicts involving two or more countries which share international boundaries. Transboundary conflicts are mainly due to encroachment of *tsa-drog* by herders across the border and illegal harvesting of Caterpillar fungus *Ophilcordyceps sinensis*.

The following section details the three types of conflicts and are illustrated with quotations from yak herders, livestock stock farmers, downstream community members and government officials who participated in the interviews and focus group discussions.

Intra-community conflicts

According to herders in Cheabling, intra-community conflicts over property rights and resource use can arise due to: i) non-compliance of exit-entry timing into communal pasture ii) aggressive members failing to observe group norms and rules in both summer and winter *tsa-drog*, iii) disputes over family inheritance and iv) conflict due to difficulty in identification of yaks and yak cross. For instance, conflicts may arise whenever members do not abide by group rules and norms such as entry exit timing according to a 46 year old female herder:

> [...] Members are supposed to bring their animals on the prior agreed day and time. However, some households fail to observe these rules and start bringing their animals to Cheabling before others […] and because of these, there are lot of disputes. Of course they have come with a penalty system. However, they do not pay these fines and conflicts follow (SSI-CHER-03).

Conflicts may also occur within families over allocation of family *tsa-drog*. For example in Cheabling where three brothers are currently embroiled in a court case as recounted by a 46 year old male herder:

> […] In this case, the younger brother from the first wife gave a share of their family *tsa-drog* rights to their half-brother. However, the elder brother objected to this saying that their half-brother is not entitled to their family *tsa-drog*. The family *tsa-drog* has already been divided between the two brothers from the first wife […] (SSI-CHER-02).

Herders reported that conflicts occur due to the lack of proper animal identification system for their animals as the traditional yak identification system of tying coloured strings around the neck is ineffective. In the absence of a proper system, yaks and yak cross often get mixed up and conflicts occur as a result.

Similarly, intra-community conflicts in Sheytemi were also often due to non-compliance of the exit-entry rule, but also conflicts over summer *tsa-drog*, allegations of lack of transparency in the proposed allocation and demarcation of *tsa-drog*, and giving incorrect and misleading information about a donor funded community-based sustainable rangeland management project. A 64 year old female herder described the conflict over summer *tsa-drog* as follows;

> […] The conflict is about summer *tsa-drog* […] We have been leasing this *tsa-drog* at a place called Thangtoe from the absentee landlady for the last 20 years or so […] He (the *opponent*) has decided to sublease the same *tsa-drog* to two other herders unilaterally. After that we also took our animals to that same *tsa-drog* as we had no choice. But in the process, the other two herders nearly killed my old man (SSI-SH-01).

One herder recounted how a community initiative to lease the existing *tsa-drog* at Sheytemi failed because of lack of consensus among the fellow tenants. He said that if the community cannot cooperate and work as a team to lease *tsa-drog*, the herders will have to continue to rent *tsa-drog* from the landlords and landladies, further entrenching their own predicament:

> […]We will have to scratch your head before *jindha* (landlord/landlady) and give *tsa-rin* (grass charge) to *jindha*, contribute labour to *jindha* and we will end up being their servant. [...] our goals and aspirations will remain unmet and unfulfilled (FG-SH-01).

Disputes and conflicts over *tsa-drog* ownership, contravention of group norms and rules, late payment of milk and allegation of corruption by the chairperson of the management committee were reported from Sha Gogona.

> [...] Before only four households used to own large area of *tsa-drog* but starting from 2004 there is balanced and equitable distribution and allocation of lease land (SSI-GO-01).

A 29 year old herder added:

> Before that, we had just that a small piece of privately registered land. Since there was no place for our animals to graze, they used to encroach on their land and as a result they used to several conflicts in the past. . Nowadays, we have land right from our own doorstep, it is convenient now (SSI-GO-02).

In Dakarla, intra-community conflicts were mainly over cattle encroachment and contravention of group norms and rules as observed by a 56 year old herder from Dakarla:

> Yes, we do have conflicts. We always encounter some problems, some conflicts now and then, here and there. However, they are not major ones. It is mostly to do with things like your animals have encroached into my *tsa-drog* […] "If your animals encroach others' *tsa-drog*, […] and finish off the fodder resources on others' *tsa-drog*, then that becomes a major source of conflict. We have to pay *tsa-rin chu-rin* (grass charge, water charge) depending on the extent and nature of damage. Just giving *tsa-rin chu-rin* is not always enough, people still fight. You might have to give your *tsa-drog* as compensation (SSI-DA-01).

According to a 68 year old herder, communal *tsa-drog* are more prone to conflicts than private tsa-drog:

> When it comes to communal *tsa-drog*, there are about 20 to 30 households who depend on the communal *tsa-drog* and therefore one can expect conflicts. Like in his case (referring to the younger herder), for example, there are 18 to 30 households and they have to let their animals into that communal *tsa-drog* at the same time. During that time, they fight […] (SSI-DA-02).

Inter-community conflicts

In addition to intra-community conflicts herders, downstream communities and others also reported inter-community conflicts. Disputes over boundaries and cattle encroachment, imposition of fines and allegation of overgrazing caused conflicts between the upstream herder community of Cheabling and downstream community of Phongmey. For example, there is an on-going boundary dispute following the creation of a community forest by the Phongmey community as observed by the herder from Cheabling:

> […] In the past the boundary used to be from that *shing boto* [roughly translates as a tree *(shing)* with a *knob (boto)]* but the boundary of the community forest of Phongmey has encroached right into our territory.

> They have included a huge portion of our forest inside their community forest (SSI-CHER-02).

On the other hand, people from Phongmey denied the allegation and maintained that the community forest boundary did not encroach into the forest belonging to the herders. It appears the dispute is mainly over the inability to come to an agreement over the location of the visual boundary reference point. Several rounds of meetings between the two *gewog* administrations have failed to resolve the issue. Moreover, herders allege that neither the concerned government forestry officials nor the members of the downstream community of Phongmey consulted them.

The other source of conflict is the imposition of fines on herders' animals that stray into the community forest. Herders complained that whenever their animals stray into the community forest, animals are impounded and fines imposed. The absence of boundary fencing separating the community forest and *tsa-drog* belonging to Cheabling herders makes preventing cattle encroachment difficult. According to a female herder from Cheabling:

> For the first offence, we have to pay Nu.50 (US$ 1.00 approx) and it increases to Nu.100 (US$ 2.00 approx) for the second offence. Since we have many animals and usually they flock together, therefore, when they stray into their territory even for a short while, we have to pay in the thousands (SSI-CHER-03).

This cattle encroachment according to the downstream community of Phongmey is causing overgrazing inside their community forest and is one of the main causes of landslides and flash floods in the area. The 35 year old *tshogpa*, a member of the Jonphu Tashi Yoebar Community Forest observed:

> […] We explained the reason for creating community forestry which is mainly to prevent further landslides and flash floods in the area. Therefore, we requested them (herders) to cooperate and to take care of their animals properly (SSI-PH-02).

Inter-community conflicts over property rights to *tsa-drog* of Sheytemi, allegation of theft, maiming and killing of livestock and deliberate destruction of border fencing and gateposts were also reported between the upstream herder community of Sheytemi and downstream community of Radhi. For example, six households from the downstream community of

Radhi claim property rights (lease rights) to *tsa-drog* at Sheytemi during the summer. The households maintained they had a lease agreement with the then absentee landlord which allows them to use *tsa-drog* of Sheytemi during summer months. A 61 year old interviewee from Radhi who was a member of the six households claimed:

> We used to have an agreement which requires herders of Merak to take their yaks and *dzo dzom* (yak cross) to summer *tsa-drog* by the 15th day of the third Bhutanese month (April-May). Similarly, we bring back our animals by the 7th Bhutanese month (August-September) […]. After the herders leave for summer *tsa-drog*, we take our animals there (SSI-RA-01).

The above arrangement continued without any problem until the demise of the absentee landlord in 1999. The conflict started after the absentee landlord passed away, when other households from Radhi took advantage of using the pastures as explained by the farmer from Radhi:

> Later on after the demise of the landlord, the other households of Radhi […] started taking their animals to Sheytemi […] the caretaker herder and the landlady (wife of the absentee landlord) have submitted an application to the district court withdrawing the rights given to the six households (SSI-RA-01).

The herders of Sheytemi confirmed that they had several conflicts with the downstream community of Radhi. According to a 50 year old herder, the farmers of Radhi deliberately destroyed their boundary fencing and outpost gate on several occasions:

> […] They destroyed and dismantled our boundary fencing and gate. They used them as firewood. They would dismantle them without a trace […] (SSI-SH-04).

In 1999-2000, the community of Radhi accused yak herders of Sheytemi of killing three of their cattle while being chased away from Sheytemi. According to the caretaker herder:

> […] Police came and rounded up all the *brokpa* (herders). They took all the *brokpa* to Lungzor (district prison), imprisoned them, beat them up and tortured them […] (SSI-SH-04).

In Dakarla, there was no reports of inter-community conflicts as the interaction between herders of Dakarla and downstream communities are limited compared to their counterparts

in the east. However, Dakarla herders complained about destruction of their summer camps by wildlife poachers and encroachment of summer *tsa-drog* by horses and ponies belonging to the porters of tourists. A 26 year old female herder recounted:

> One of the main problems facing herders of Dakarla is from encroachment of our summer *tsa-drog* by horses and ponies belonging to tourist groups who visit our area (SSI-DA-05).

Tourist groups usually visit Dakarla in late summer and early autumn after herders have already left for their winter *tsa-drog* in lower altitude regions.

> Not only this, these tourist groups also destroy our camps and calf pens. They extract wooden shingles from roofs and other wooden materials from calf pens and use as firewood (SSI-DA-05).

Transboundary conflicts

While most of the conflicts reported by the yak herders and downstream communities were intra-community and inter-community conflicts there were also transboundary conflicts mentioned. As there is a porous international border between Bhutan and Tibetan Autonomous Region, China, a number of incursions by Tibetan yak herders into *tsa-drog* inside the Bhutanese territory were reported across several districts. Such incursions were reported from Haa and Gasa *dzongkhag* according to government research and park officials who participated in the interviews. There are several reasons for the encroachments; for grazing and harvesting the caterpillar fungus (*Ophilcordyceps sinensis*) which fetches a premium price on the international market. For instance, a government researcher with the Council of RNR Research of Bhutan (CORRB) noted the problem of transboundary encroachment:

> […] Tibetan herders encroach into our *tsa-drog* of highlanders in Gasa and Haa areas. This is a macro issue because of the border thing, you know (GOV-RE-01).

Similarly, a park official of Sakteng Wildlife Sanctuary, Phongmey recounted an incident he witnessed when he visited yak rearing areas of Haa to conduct a biodiversity survey in 2010:

> It is in upper Haa, it's called Khatey and the disputed land has been taken away. China claims that it is theirs and we claim as ours. Right now there is no resolution (GOV-FO-01).

Perceptions on causes of conflicts

Resource scarcity and ensuing competition due to increase in livestock populations is the underlying primary driver of conflicts over natural resources according to herders, livestock farmers and downstream farmers. For example, a 56 year old herder from Dakarla postulated:

> Conflicts occur due to diminishing quantity and quality of *tsa-drog* on one hand and increasing livestock population on the other hand. So when there is not sufficient fodder for the animals, this inevitably causes conflicts and disputes (SSI-DA-01).

On asking why *tsa-drog* productivity and production has declined over the years, a herder from Sheytemi explained:

> [...] In the past we had fodder and these days because there is increase in animal population, animals are unproductive. But if you don't have them, there is nothing much we can do since we depend on them we have to keep them. If you have 5 or 6 milking animals, we want to increase to 8 or 9 and then you want 10 or 11 of them. You think you need little bit more each time. Because of this increase in animal population, fodder availability has decreased and natural environment has degraded compared to the past (SSI-SH-03).

Potential economic and other benefit streams accruable from utilisation of these scarce resources is another potential cause of conflict, according to a 61 year old farmer from Radhi. Parties involved in the conflict(s) have a vested interest in claiming rights to scarce resources like *tsa-drog* according to the above-mentioned farmer from Radhi:

> Of course when we say *tsa-drog* it is basically because of the prospect of income accruing from it […] For example, these days if you sell a Jersey calf, it fetches around Nu.30,000 (US$ 600 approx). A mule foal will fetch around Nu.50,000 to Nu. 60,000 (US$1100-1300 approx.). It is basically because income generation is at stake (SSI-RA-01).

According to some of the research participants, some government acts and laws may undermine traditional and customary rangeland management practices and set herders and

livestock farmers on a direct collision course with the law enforcement agencies. For example, the ability of herders to carry out provisioning activities such as clearing and burning of *tsa-drog* is constrained due to strict forestry rules and regulations according to a herder from Sha Gogona:

> Government and forestry people do not allow us to burn *tsa-drog*. Pasture comes up quite well after burning but nowadays, due to ban on burning we are not allowed to burn *tsa-drog*. When we do not burn *tsa-drog*, different types of trees grow [...] (SSI-GO-04).

When herders are unable to carry out maintenance activities, unpalatable woody plant species overrun *tsa-drog* forcing herders to resort to unsustainable practices such as lopping of fodder trees. For example, when herders of Cheabling and Sheytemi do not get adequate fodder resources for their livestock from open grazing from their *tsa-drog*, they resort to illegal lopping of fodder trees from the surrounding forests to provide supplementary fodder for their livestock as recounted by a 59 year old herder from Cheabling:

> [...] During winter, we keep our animals on this communal pasture. We faced difficulty in the last 5 to 10 years, we have to provide supplement feed to our animals by lopping fodder trees found in the nearby forest since there is not sufficient fodder in the communal pasture (SSI-CHER-01).

Indiscriminate lopping of fodder trees results in forest degradation culminating in flash floods and landslides during monsoon season. On asking an old herder who was herding cattle in the forests below Cheabling at the time of interaction why they lop fodder trees, he replied:

> If we do not lop fodder trees, our animals will die of starvation and ultimately we too will die from hunger and starvation. We don't have much choice; we are helpless. I know lopping is not good for the environment but [...] (Field notes).

Nationalization of *tsa-drog* following the announcement of new Land Act of Bhutan in 2007 seemed have precipitated more disputes and conflicts. For example, a 59 year old herder from Cheabling said that after surrendering grazing permits and *thram* (titles), some herders have taken advantage of the fluid situation:

> Some herders were of the view that since there is no ownership right anybody is free to graze on anybody's *tsa-drog*, resulting in conflicts and disputes (SSI-CHER-01).

The nationalisation policy seems to have had a dampening effect on herders and livestock farmers making them apathetic and tolerant of encroachment and other infringements. Following the announcement of the nationalisation of *tsa-drog*, herders, livestock farmers and farmers of downstream communities understood it as the cessation of the existing *tsa-drog* ownership arrangement. They thought that existing *tsa-drog* property rights holders would not be able to claim *tsa-drog* rights or ownership. Hence, they have become less strict and allow encroachment against their will according to a 38 year old farmer from Chaling:

> In the past, we used to object. We used to collect butter and cheese from those (herders from Sheytemi) who use our community *tsa-drog*. We understand that only the herders, who do not have any land in lower valleys, are allowed to have *tsa-drog* ownership rights [...] After that we could not raise any objection (SSI-CH-01).

In the same way, the community of Sha Gogona is apprehensive of the government policy for undertaking commercial logging in their locality, which they said has resulted in the loss of biodiversity and environmental degradation including drying of water sources.

As can be seen from the preceding sections, competition over scarce natural resources like *tsa-drog* lies at the root of many conflicts. Conflicts over high altitude rangelands occur within and between yak herding and downstream communities. Unclear boundary and competing property rights; incongruence between sharing of benefits and costs, and contravention of collective choice arrangements all caused conflicts. These conflicts occur within and between communities regardless of the type of user rights regimes (i.e. private, communal or mixed). More recent conflicts have also developed as a result of government policies. The following section discusses the conflict resolution mechanisms that were mentioned by the herders, livestock farmers and downstream communities.

Conflict resolution mechanisms

Conflict resolution mechanisms are important to resolve conflicts quickly and effectively. It is important to identify, analyse and understand potential underlying causes of conflict in

order to manage and resolve both real and perceived conflicts more effectively. This research showed that herders, livestock farmers and farmers from downstream communities resort to both informal and formal conflict resolution mechanisms to resolve conflicts. Informal conflict resolution mechanisms involve dialogue between conflicting parties. The first step to resolving conflicts is to encourage dialogue between the aggrieved parties and to bring them to the negotiation table according to herders and government officials. Traditionally, the first point of contact for reporting and resolving conflict is the village *tshogpa* (elected village representative, village convener). Alternatively, village elders may broker peace between the parties. A 38 year old herder from Cheabling said that conflicting parties explore all possibilities to settle conflicts locally as far as possible:

> […] Before things get out of our hands, we try to negotiate and try to solve the conflict within ourselves when it is still in the forest. If all these disputes are referred to the *gewog* administration, hundreds of people might have to go there. But most of these conflicts, we try to resolve internally (SSI-CHER-08).

The party who is at fault typically goes to the victim to ask for pardon or forgiveness and offers local alcoholic drinks called *ara* or imported beer and other gifts to the victim when asking for forgiveness.

The second informal conflict resolution mechanism is based on reciprocity, mutual respect and understanding as observed by a 63 year old herder from Sha Gogona:

> When there is nothing much one can do about it […] We just have to request them not to be so hard […] we can always tell him that we have been considerate in the past and he should also be considerate and try to understand […] (SSI-GO-06).

The third informal conflict resolution mechanism is to pay compensation or provide substitute *tsa-drog*. Compensation is another way that communities have resolved conflicts informally, according to a 56 year old interviewee from Dakarla:

> […] If there is enough fodder resources left on the affected *tsa-drog* for his animals for the remaining time, then it might be possible to settle the dispute with the payment of *tsa-rin chu-rin*. However, in case of extensive damage, then you must provide a substitute *tsa-drog* from your own *tsa-drog* (SSI-DA-01).

Parties in conflict can take recourse to formal conflict resolution mechanisms when informal measures have failed to resolve the issue. A number of formal conflict resolution mechanisms were mentioned by herders, livestock farmers and government officials. Mediation by local government officials like the *gup* and *mangmi* (elected local representatives) is the first step in formal conflict resolution, according to a 56 year old herder from Dakarla:

> If the conflict is not resolved within the community, it is then forwarded to the *gewog* administration for mediation and settlement. The village *tshogpa* (village convener) informs the *gewog gup* (elected head of local administration) […] (SSI-DA-01).

In the event that local administration officials fail to resolve the conflicts, the parties in conflict can seek the intervention of the sub-district or district court and other higher forms of adjudication channels. A livestock official explained how formal settlement of a dispute takes place:

> When we have a dispute or a conflict, the first place the herders go to is the *gewog* office. If the *gewog* office fails to settle the conflict, the case is then forwarded to the *dungkhag* (sub-district) court. If *dungkhag* court fails to settle the case, it is then forwarded to the *dzongkhag* (district) court and then to the High Court in Thimphu […] (GOV-LO-01).

In rare situations, any aggrieved party not satisfied with the decisions of the various courts, can submit a petition to His Majesty the King. For instance, a 50 year old herder from Sheytemi said that representatives from the downstream community of Radhi prostrated before the king in the 1980s:

> […] They (people of Radhi) went and prostrated before the king. It was about the *tsa-drog*. The king ordered an inquiry into *tsa-drog* of Sheytemi. Following the Royal Command, a team comprising *dzongda* (district administrator), *mitse thupoen* (elected Member of Parliament) and *deychab* (Police Superintendent) came here and did mapping. As a result, the absentee landlord gave a large portion of land as *kidu* to the people of Radhi because they were facing lot of difficulties [...] (SSI-SH-04).

Strategies to reduce conflicts and enhance collective action

While this research demonstrated that the herders and downstream communities are employing a range of informal and formal conflict resolution mechanisms there are additional practices that can be implemented to reduce conflicts and enhance collective action. Sensitisation and awareness creation, sharing of ideas, knowledge and experiences and training in problem solving, social mobilisation and group dynamic enhancing skills were suggested by herders and livestock farmers to reduce conflicts and to enhance collective action in the community. Awareness of common goals and purpose is vital to motivate community members to identify with their goals and reduce conflicts. For instance, in Sha Gogona, the community encountered initial resistance to the pilot leasing program in the beginning mainly due to lack of proper understanding of the concept behind it according to a 46 year old livestock farmer from Sha Gogona:

> In the beginning (of the pilot leasing program planning phase) we faced a lot of difficulties. People said this and that and some people did not understand properly. We faced lot of difficulty in the beginning [...] (SSI-GO-03).

However, sensitisation and awareness creation takes time and effort especially if it relates to a new concept such as leasing and improved pasture development. This was demonstrated by the challenges and difficulties faced by the above-mentioned herder from Sheytemi. Likewise in Cheabling, an attempt to develop improved pasture on communal *tsa-drog* in the past has failed as a consensus could not be reached among the community members. A 52 year old herder from Cheabling hinted that lack of exposure of herders and contact with other herders and the outside world may explain why some herders do not feel comfortable with collective action efforts:

> […] What I feel is those *nagzipa* (referring to herders generally) are always in the forest with their animals and that's why they do not know or understand [...] (SSI-CHER-09).

Sharing of ideas, knowledge and experiences between members in an interactive forum, where one can express one's views and experiences frankly and freely, and meeting regularly are important to reduce conflict and foster collective action. For example, a 59

year old herder from Cheabling emphasised the need for consultation among members to achieve shared goals:

> In order to promote trust and cooperation [...] it is important for all herders to come together, consult among themselves and undertake activities collectively […] I feel that collective interest is more rewarding than pursuing individual goals and objectives (SSI-CHER-01).

A livestock farmer from Sha Gogona stressed the importance of maintaining basic human values, such as helping each other, and sharing of lessons learned and best practices among members of the group or community to encourage collective action and community development. He observed:

> If you want to enhance trust and cooperation, it is important to help each other [...] it is important to inform and consult [...] share some of the lessons and good practices for example on improved pasture development and other arable crops with the rest [...] (SSI-GO-04).

A training program on social mobilisation and group dynamic enhancing exercises was conducted in Sha Gogona as part of a pilot leasing program in 2003-04. Herders and livestock farmers from this village found such training vital for fostering collective action. A 29 year old herder from Sha Gogona recognised that training in social mobilisation and group formation skills certainly had a positive impact on enhancing trust and cooperation needed to promote collective action in the community:

> The level of trust and cooperation has improved mainly after we started functioning as a group. The training on group formation showed us how each one of us has to contribute something for the common cause […] (SSI-GO-02).

Such trainings should be seen as part of enhancing planning and organisational capacity of farmer's group members which are important for the future sustainability of the group and also to inculcate the concept of self-reliance and self-directed natural resource management. A group approach provides a useful platform to encourage collective action as exemplified by the pilot leasing program in Sha Gogona.

Discussion and conclusions

This research sought to explore the types and perceived causes of conflicts arising amongst semi-nomadic yak herders and between yak herders and downstream communities over *tsa-drog* property rights and management in Bhutan, as well as the conflict mediation mechanisms utilised by these communities. The research revealed that conflicts occur within and between communities regardless of the type of user rights regimes (i.e. private, communal or mixed). Conflicts may arise due to ambiguous property rights/competing claims/rights to an important natural asset such as rangelands (Ojanen et al. 2017). Unclear property rights result in uncertainties and ambiguities which encourage free-riding that result in conflicts (Ostrom 2003). Runge (1981) argues that uncertainty is the major motivating force in overexploitation of common property resources. In the context of agricultural land, Feder and Feeny (1991) claim that any uncertainty or risk to property rights (i.e. ownership risk) decreases the incentive to make investment in development and maintenance activities, thereby generating inefficiencies in the allocation of resources. NRM inefficiencies may result due to free-riding and conflict arising from uncertainty surrounding the nature of rights or due to incomplete utilisation for fear of conflict (Schroeder and Castillo 2013). In property rights' literature, scholars (Bromley 1992, Libecap 2009, Demsetz 2002) reiterate that property rights have to be complete and well-defined regime for effective NRM. Ill-defined property rights lead to mismanagement of NRM and hamper future investment due to uncertainties about the benefits and future returns (Omura 2008).

In the context of common property resource management, conflicts arise mainly due to strategic behaviour of individual estates and the uncertainty that this causes (Bullock 1999). As exemplified by opportunistic herders of Cheabling who brought their livestock to winter communal pasture before other members did resulted in conflicts and an inequitable sharing of benefits. Access to less fodder from communal pasture necessitates the less powerful and less vocal members to lop fodder from state forest and rent rangelands from other herders, absentee landlords and institutions occasioning environmental and socio-economic costs. For instance, lopping may precipitate forest degradation and payment of rent may further diminish the already meagre source of livelihood of poor herders. Rent accumulation renders herders to become increasingly indebted and entrenched in poverty. According to

Turner (2011), in general, the common property resource dilemma develops when there are too many users seeking to use a limited good. In the same vein, Sanginga, Kamugisha, and Martin (2007) argue that conflicts are unavoidable especially in the natural resource governance arena where multiple users and claimants are involved. Similarly, Quinn et al. (2007) observe that high transaction cost, conflicting objectives and inequalities between rights holders undermine successful common property rights management. Conflicts may occur whenever there is divergence between community interest and private interest (Elster 1989, Poteete and Ostrom 2004).

As demonstrated in this research, infringement of collective choice norms and rules may result in conflicts (Ostrom 1990). For example, infringement of collective choice rules and norms such as prior-agreed entry-entry timing, failure to pay fines and inequitable sharing of costs and benefits (free riding) resulted in conflicts over common property resources (Ostrom 1990). As shown by the Sha Gogona example, a group constitution and by-laws written and developed by the community themselves may have a far greater chance of deterring infringement and fostering compliance which in turn may promote trust and cooperation among members of the group or community. This finding concurs with that of German et al. (2010) who found that collective choice rules and norms codified and written in the form of a group constitution and by-laws may provide a clearer basis for effective monitoring and enforcement and minimize conflicts.

This research has also demonstrated how policy mismatches and failures in NRM can erode environmental integrity and socio-economic well-being of herders and livestock farmers. Some government acts and laws which impinge on traditional or customary natural resource governance norms and rules may precipitate conflicts. The ban on burning of rangelands, which the herders consider to be a vital traditional rangeland management tool, following the passing of the Forestry Act of 1969, is a case in point. The ongoing boundary conflict between herders of Cheabling and downstream community of Phongmey after the creation of community forestry as discussed earlier is another example of how a government initiated program can undermine customary practices. The nationalization of rangeland and reverting rangeland ownership to the State with the enactment of the Land Act of 1979 has reduced the bundle of rights of herders and livestock farmers (Schlager and Ostrom 1992). After the passing of this Act, only use rights were granted to title holders.

As a consequence of restrictive government policies on use and rights to rangelands, herders cannot carry out maintenance activities, like clearing of bushes, shrubs and understorey of forests and burning of *tsa-drog* which were an integral part of traditional *tsa-drog* management regime. In the absence of these maintenance activities, unpalatable woody species begin to encroach and constrict available *tsa-drog* (Gyeltshen et al. 2010, Dorji 2011). This amounts to more or less a state sponsored 'free riding'. In addition, herders cannot take up improved pasture development on their *tsa-drog,* hence, enhancing productivity of *tsa-drog* is not possible under the existing *tsa-drog* property rights regime even if it is technically feasible, socially acceptable and economically viable. In order to overcome fodder shortage especially in winter, herders and livestock farmers are compelled to lop fodder trees from nearby state forests to provide supplementary fodder for their livestock. In addition, herders may also increase their herd size and diversify into rearing other livestock species as coping mechanisms against diminished livestock productivity and which tend to develop into a vicious cycle (Turkelboom and Wangchuk 2009). Policy mismatches have also reported from other countries. For instance, the privatisation drive in China resulted in a mismatch between the new property regime and traditional yak herding norms and practices (Ho 2000). In the same vein, Sundstrom, Tynon, and Western (2012) in the context of their study on the implications of rangeland privatization on traditional resource management among the Maasai in Southern Kenya found that group ranch privatization has disturbed community cohesion and created conflicts over resources us such as water between neighbouring landowners and communities. Some Maasai have sold rangeland allotted to them to outsiders, who may come with other traditions and land uses that conflict with Maasai traditions. Such failures are symptomatic of a top-down institutional arrangement. Top-down policy initiatives and programs that undermine customary natural resource governance may prove counterproductive with environmental and social consequences. Boyce (1994) argued that as poverty deepens, the poor are compelled to degrade the environment for the imperatives of day-to-day survival. He suggested that if the poor are themselves the principle victims of this environmental degradation, the poor grow steadily poorer in a vicious cycle. This is supported by Dasgupta (2000) who posit that individuals will take any available measures to obtain basic subsistence in a situation where population growth is exacerbated by prevailing poverty. According to Devlin (1998), until poverty is alleviated, citizens of developing countries

such as Bhutan will not have the ability to partake fully in activities designed to stop environment degradation.

As discussed above, secured and unambiguous property and ownership rights of rangeland are vital to reduce conflicts and promote sustainable rangeland management. Quinn et al. (2010) posited that well-defined property rights induce a sense of ownership security which is important for inducing investment to enhance productivity and efficiency These authors argued that for property rights to be more secure, they need to be clear, precise and diligently enforced (Quinn et al. 2010). Solomon, Snyman, and Smit (2007) argued that the issue of secure land tenure, both customary and legal is fundamental for effective and sustainable rangeland management and is demonstrated by Neudert's (2015) study on pasture leasing rights for mobile pastoralists in Azerbaijan where they observed that herders see possession of a lease contract as a prerequisite for secure access to pasture land in the future. Hence, it is vital to discuss rangeland property rights reforms in public discourses and to involve pastoralists in planning and decision making processes to arrive at a socially and environmentally acceptable property rights arrangement. Fostering tenure security through mechanisms such as demarcation and fencing of rangeland boundaries, granting clear property and ownership rights and written group constitution and by-laws that build on traditional collective action are needed to reduce conflicts and improve high altitude rangeland condition.

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