Pastoralism: Research, Policy and Practice

COMMENTARY

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Governance of rangeland in Bhutan: Institutions and policy initiatives

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Abstract

High-altitude rangelands support the economies of mountain communities in the Himalayas. This article highlights institutions and policy initiatives for good governance of rangelands in Bhutan and draws lessons from previous efforts to mainstream rangeland development. Both formal and informal institutions support the rangeland governance in Bhutan. The article elaborates on critical rangeland-related amendments to the Bhutanese Land Act. Rangeland stewardship and access rights are outlined, along with alternative governance approaches that rely on pastoralists' traditions and indigenous knowledge. It highlights concerns and disputes about using and managing rangelands and explains traditional institutions and practices of conflict resolution. The article's final section discusses the challenges of rangeland governance and the aspirations of herding communities under the new Land Act. Rangeland owners have reconciled with the amendments to the Act. They are willing to work with the government to implement the Act's provisions and bring the desired reforms in rangeland governance.

Keywords Himalayas, High-altitude rangeland, Highland, Mountain communities, Rangeland governance

Introduction

Rangelands are understood as regions of the world's terrain unsuited for cultivation due to physical limitations, low and erratic precipitation, rough topography, poor drainage, or extreme temperatures, but are a source of forage for free-ranging animals as well as a source of wood products, water, and wildlife (Stoddart et al. 1975). For centuries, pastoralists adopted strategies to carve a livelihood by transforming the extensive marginal rangelands into economically productive areas (Mishra et al. 2010). The household economies are sustained even today through the efficient utilization of grassland resources by high-altitude livestock species, from camelids in the Andes to yak (*Bos grunniens*) in the Himalayan rangelands (Wangchuk and Wangdi 2015).

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Rangeland sustainability, however, depends on herding practices and access to resources, for which communal management has always been vital. Rangeland communities have negotiated over centuries in utilizing common resources and given rise to social norms, rules, and regulations on using rangeland resources. Hence, the governance of rangelands is critical for the pastoralists' future and the benefits they provide in climate change mitigation, biodiversity conservation, and protection of watersheds (Herrera et al. 2014). Although there are different interpretations according to the needs of institutions and individuals, governance from the rangeland context essentially refers to the rules, institutions, and processes that determine the use of rangeland resources and how laws and regulations are developed and enforced (Herrera et al. 2014).

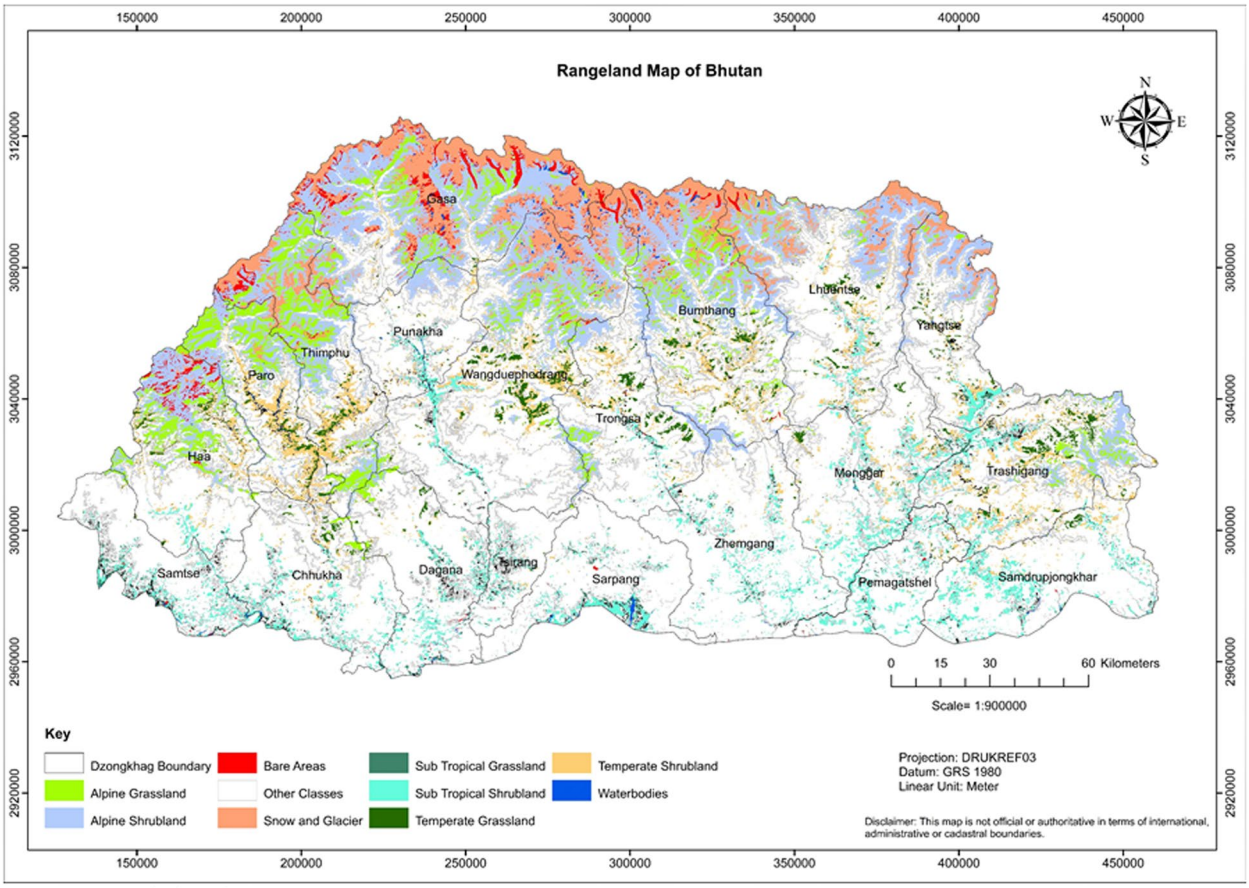
In Bhutan, a nation in the eastern Himalayas, rangeland is synonymous with the term *Tsamdro* and includes grassland and forest pastures (Wangda 2017; Dorji 2013; Gyamtsho 2000). Rangeland occupies over 6037 km^2 of the total land in Bhutan, including high-altitude rangeland and forested areas from alpine to sub-tropical zones

(Fig. 1) (Wangda 2017). The high-altitude rangelands are found between 3000 and 5000 m above mean sea level, temperate rangelands within an altitude range of 1500 to 3000 m, and sub-tropical rangelands below 1500-m altitudes (Dorji 2013). Rangelands fulfil about half of the fodder supplies to meet national fodder demand (Roder et al. 2001) and support pastoralists' livelihoods whose economies primarily depend on livestock herding. Hence, the sustainability of rangeland is founded on its governance that relies on pastoralists' indigenous knowledge and institutions. To meet the modern needs of pastoralists for equity and access in the use of rangelands, the Royal Government of Bhutan introduced policy changes in 2017 to strengthen the governance of rangelands. The Royal Government of Bhutan took a historic step to revise the Land Act. The government initiated drastic changes in the ownership and management of rangelands, making pastoralism an attractive opportunity for employment for the new generation of Bhutanese youth.

This paper summarizes earlier studies highlighting institutions and policy initiatives for mainstreaming rangeland development in Bhutan. Throughout the article, the term "rangeland" is used as a synonym for "grassland and forest pastures". The article describes the institutions of rangeland that play a critical role in the evolution of rangeland governance. It highlights stewardship and access rights from the indigenous knowledge and traditions of pastoralism. Rules and regulations are outlined on the utilization and management of rangelands. The article elaborates on processes determining the use of rangelands. Finally, the article identifies the challenges and opportunities for improving rangeland governance.

Long-term established system of rangeland governance

Migration and transhumance livestock herding in Bhutan is practised in response to seasonal changes in climate and vegetation. These practices utilize summer and winter rangelands and optimize foraging opportunities. Cattle and yak migrations are common. Migratory herds spend more time in winter and less in summer



Source: Wangda (2017)

Fig. 1 Rangeland map of Bhutan

rangelands. Regardless of herd size, cattle and yak herders observe local rules and regulations in the summer or winter rangelands. While cattle migrate from temperate to subtropical rangelands and vice versa within an altitude of 1000 to 3000 masl, yak migrates from alpine to temperate rangelands and vice versa within an altitude of 2500 to 4500 masl. The yak and cattle overlap in temperate areas, leading to year-round grazing and degradation of rangelands. Ura (2002) draws examples from central and western Bhutan and elaborates on the governance systems for managing summer and winter rangelands. Ura (2002) uses two models, namely "The Mongar Omdaar Model" to describe the governance in the cattle migration system and "The Haa Gyechukha Model" to describe the yak migration system.

In cattle migration, herds move from summer to winter rangelands by the end of Autumn. Rules are more stringent in winter than in summer rangelands, especially communal ones. It is because the winter rangelands are generally small, where cattle spend a prolonged duration. Moreover, pastoralists in winter rangelands have large numbers of livestock, with rangeland areas almost nonexistent in the official record (Dorji 2013). In such situations, a fair division of winter rangelands considers only the milking cows. The herders' long-term established knowledge about the carrying capacity also helps them to decide the stocking rate on each winter rangeland. Although the division of winter rangelands is based on consensus, good rangelands are allocated through a lottery, which is valid for a season. Long-term established practices allow herds to graze for a certain period in winter rangelands. By late spring, winter rangelands are closed, and further grazing is prohibited, which signals the time for herds to migrate to summer rangelands. For rangelands with high competition, a community consultation process decides the exit-entry timing and a penalty is given to defaulting herders (Tenzing et al. 2018). These restrictions aim to prevent people and cattle from harming the sprouting of forages and enhance their natural regenerative capacity in winter rangelands.

In yak migration, as elaborated in the "The Haa Gyechukha Model" followed in western Bhutan (Ura 2002), both summer and winter rangelands are considered simultaneously for division among herders. Depending on the grazing condition, all summer and winter rangelands are ranked. The best summer rangeland is paired with the worst winter rangeland; the second-best summer rangeland is paired with the second worst winter rangelands, and so forth. This mechanism has been followed for ages and compensates for loss a herder may find in winter with gains in the summer. The ranking and pairing of rangelands are done with fairness. To compete and be eligible for the allocation of rangelands, several herders join together to form groups whose number is equal to the number of paired rangelands. Each pair of rangelands is randomly allocated to a group of herders through the casting of dice or *Dro goey* (system of diving rangelands) (Choden 2010). One member of each group of herders, who has the most significant number of yaks, gets the privilege to throw three dice at a time on behalf of the group. The herder who scores the highest picks up the best pair of rangelands. The second choice is given to the herder who scores the second highest dice, and so forth. The validity of the allocation of rangelands varies from 3 to 11 years.

Rangeland stewardship and access rights

Before The Land Act of 2007, influential people and religious institutions owned most rangelands. The owners either leased out rangelands or employed landless people to herd livestock on their rangelands. The lessee or the employee, in return, paid in kind (livestock products) to the employers. After paying an annual grazing permit fee, the herders bought rights to graze on government-owned rangelands.

Ura (2002) describes rangeland stewardship and access rights followed by pastoralists in Bhutan. Herders delineate boundaries of rangelands using natural landmarks such as mountain passes, mountain ridges, gorges, streams, trees, rocks, lakes, and footpaths (Tenzing et al. 2018; Ura 2002). There are three types of rangeland ownership: government, private, and communal. The government-owned rangelands are leased to the herders as pasturelands (Royal Government of Bhutan 2017). Private and communal rangelands are managed according to customary practices. Privately owned pastures are leased for a fixed period. Herders also rent rangelands if they do not own or find rangelands insufficient for their herds. In such cases, fees are paid to the owners.

During migration, the owners, whose rangelands are on the migratory routes, provide a temporary right of way for the migrating herds. The herds in transit can stay on the private rangelands for three nights. The other arrangement concerns the winter rangelands on the fringes of villages owned by herders from temperate regions. After the migratory herds depart for summer rangelands, local cattle owners have the customary right to graze on residual forage in winter rangelands.

In a situation where a herder owns rangeland and cattle without a workforce for herding, there are two arrangements by which the owner contracts the whole herd to another family who manages the herd on the owner's rangeland. In the first arrangement, the contract herder pays the owner a fixed quantity of dairy products based on the original number of cattle handed over to the contract herder, irrespective of the increase or decrease in

the number of cattle when the herd is handed back (Ura 2002). At the end of the management term, the herd is returned to its original size, but the herder retains the increment in herd size. In the second arrangement, if the loss within a herd exceeds the limit, the contract herder has to give substitute cattle to make up for the missing cattle.

There is another arrangement practised in western Bhutan. The management of a herd alternates between specific households in summer and winter (Ura 2002). When a herd is in summer rangelands, it is managed by a household in summer rangeland. Similarly, when the same herd is in winter rangelands, it is tended by another household in winter rangelands. The products of the herd are shared equally between the two households. However, the households in summer rangelands make the initial investment to purchase the herd.

Institutional setup for settling disputes over rangelands

There are disputes or conflicts over using rangelands, especially related to transit and winter rangelands (Tenzing et al. 2018; Ura 2002). Conflicts and disputes arise due to the overlap of rangeland areas, breach of grazing duration on rangelands belonging to other herders, illegal grazing, the establishment of permanent settlements in rangeland areas, and restricted access to rangelands along international borders (Ura 2002). Therefore, rangeland issues in southern districts are primarily resolved in courts of law. In contrast, disputes over rangeland use are settled out of court with the help of arbitrators.

Tenzing et al. (2018) elaborate on traditional mechanisms for resolving disputes among herders over the use of winter rangelands. Both informal and formal mechanisms are followed in resolving disputes. In the informal mechanism, parties negotiate to resolve a dispute. The first point of contact for reporting and resolving a dispute is *Tshogpa* or the elected village representative. In some cases, village elders also broker peace between the parties. Disputes are resolved by defaulters offering apologies and seeking forgiveness or paying compensation. When informal mechanisms fail, disputed parties resort to formal dispute resolution mechanisms. The first point of legal dispute resolution is the *Gup* and *Mangmi* (elected local representatives), who mediate the resolution process at the local level. When the mediation fails at the local level, the disputed parties seek the intervention of the sub-district or district court.

Formal institution in rangeland governance

The Royal Government of Bhutan took almost three decades to significantly revise the Land Act 1979. The revision was necessary because most owners of rangelands gave up livestock rearing on rangelands (Dorji 2013). The Royal Government needed to redistribute the unused rangelands equitably to pastoralists who did not own or had insufficient rangelands. Moreover, the goal to enhance livestock production required rangelands to be more productive, which was achieved by cultivating productive forage species on rangelands. These provisions were incorporated in The Land Act of 2007 (Royal Government of Bhutan 2017). The provisions, enforced in 2016, contributed to the evolution of the governance of Rangeland in Bhutan after 2007.

The Land Act of Bhutan 2007 commands the Royal Government to compensate herders and nullify their gazing rights over rangelands. The Act nationalizes and maintains rangelands as state-owned land, which will be leased to livestock herders who genuinely need rangelands. Individual households or communities who own livestock are eligible to lease the rangelands. However, the Act makes an exception for the highland communities because they depend on rangeland for livelihoods. The highland communities are eligible to lease rangelands irrespective of possession of livestock and herd size, which does not apply to herders from temperate and subtropical regions. The Act also makes another exception that highland communities may sub-lease rangelands, which is prohibited for herders from temperate and subtropical areas. The highland communities are given a lease period of not less than 30 years with the possibility of an extension.

Nevertheless, the Act also clarifies that the highland communities may be stripped of these benefits and their lease terminated if they abandon their places of domicile. Upon lease, the land act permits herders to develop pasture on leased rangelands but on the condition that the land development complies with the officially approved rangeland management plan. The Act prohibits rangelands on lease for purposes other than those mentioned in the management plan. The lessee is not permitted to establish permanent infrastructure on the leased rangelands. A rangeland lease is discontinued except for highland herders if a leaseholder no longer owns livestock. Transaction of leased Rangeland is prohibited but can be inherited within the lease period. In the state-reserved forests, the Forest and Nature Conservation Rules 2017 (Royal Government of Bhutan 2017) restrict cattle grazing in areas fenced for natural regeneration and in plantation areas, both fenced and unfenced, till the seedlings are well established.

Challenges and opportunities to strengthen governance of rangelands

In the initial years, nationalizing rangelands under the Land Act of 2007 created a free-for-all situation whereby some herders started grazing on rangelands belonging to others, particularly winter grazing areas of migratory herds, creating communal disharmony and social discord

(Dorji 2013). Lack of education on the new changes in the revised Act made Bhutanese misinterpret the law and penalize some herders for actions that the Act has not prohibited (Dorji 2013). However, the issue is currently resolved, as the survey, mapping, and redistribution have ensured equity and fairness in rangeland ownership. Due to the challenging life and environment in the mountains, rural outmigration has become a common phenomenon among mountain youth. The siblings of herders are seeking better economic opportunities elsewhere and exiting from the herding environment.

The policy move to halt interdistrict cattle migration (Namgay et al. 2017) is another herculean task facing the Land Act. The decision was directed toward addressing cattle migration as a cause of spreading livestock diseases, mainly foot-and-mouth disease (FMD) (Dukpa 2011). However, since time immemorial, cattle migration has been an age-old practice, a move to halt such traditional practices may invite criticism and resistance from herding communities. Like Namgay et al. (2017), meaningful alternatives are needed to encourage herders to sedentarize cattle herding.

Because of education and awareness about the intent of rangeland redistribution, the Bhutanese are now forthcoming as they benefit from the Land Act 2017 (Dorji 2013). Especially the pastoralists who do not own rangelands benefit from the revised Act. Even the rangeland owners who preferred the status quo earlier have reconciled with the changes in the revised Act and are willing to cooperate with the government in the implementation (Dorji 2013).

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Authors' contributions
Kesang Wangchuk conceptualized the research, analysed the literature, and wrote the manuscript. Jigme Wangdi contributed to the concept and preparation of the manuscript. Tashi Dorji contributed to the concept and offered scientific advice to improve the manuscript. The authors read and approved the final manuscript.

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