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SPECIAL SECTION: The Commons: A Revisit

Gender and the Commons: Water Management in Trans-Himalayan Spiti Valley, India

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Abstract: Studies on common pool resource governance have largely focused on men, who tend to have disproportionate rights and ownership with regards property and resources. This has resulted in the access and control rights of women being generally overlooked. Gender disaggregated analyses have revealed the important role of women in the governance of the commons. While certain commons may be relatively more important for women, there are variations in their level of resource access and management role, influenced by social structures and divisions. We examined the role of gender and how such intersectionality could shape the governance of the commons in the Spiti Valley in the Indian Trans-Himalaya. We found that gender, class, and caste intersected in the governance of irrigation water. Our study highlights the role of women in the governance of the commons and points to the nuanced and variable roles found within this gender group.

Keywords: Decision-making; Intersectionality; Local institutions; Women.

1. INTRODUCTION

The importance of local institutions in common property resource governance has been well established (Ostrom *et al.* 1999; Agrawal 2002). Studies of local institutions often focus on the factors and conditions that enable successful governance of the commons (Ostrom *et al.* 1993; Wilson

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2013). Early studies, by default, described institutions run and managed by men, since, across most societies, men tend to have disproportionate rights to property, access, and control (Casari and Lisciandra 2016). Gender disaggregated studies subsequently revealed the crucial role of gender in better understanding the governance of the commons. Experiences, knowledge, perceptions, and capabilities with regards natural resource management varied between genders due to social structures that determine property rights, resource access, and control (Leach *et al.* 1995; Leach *et al.* 1997).

Social structures built around gender roles are embedded in culture and traditions, are context-dependant, and can vary from place to place. These mechanisms manifest in women and men having different access to information, environmental and social spaces, knowledge systems, and opportunities and challenges in relation to environmental change (Allendorf and Yang 2013; Leach 2007). For example, many women in rural India are responsible for meeting the fuel and food needs of the family, which require them to tend to land and gather forest produce, which gives them knowledge of the ecosystem and resources (Agarwal 1994, 1997). Often, women have limited access and control over resources, their own labour, the labour of others, and capital (Leach *et al.* 1997). For example, land rights in agrarian systems are largely concentrated among men (Zwarteveen and Meinzen-Dicks 2001). Gender and the commons influence each other, with gender structuring outcomes in the commons and the commons themselves shaping gender roles (Nightingale 2019). Gender is not homogenous and intersects with other axes of social differentiation such as class, caste, race, culture, and ethnicity in shaping access to land, water, and other spatially distributed environmental resources (Crow and Sultana 2002).

In this paper, using a case study, we examine the role of gender and how its intersectionality with other social influences shape the governance of the commons. We describe the governance of the irrigation system and the role of women in a high altitude agro-pastoral system. Our study focused on Kibber village, a Tibetan-Buddhist community located in Spiti Valley in the high altitudes of the Indian Trans-Himalaya, where agricultural lands are largely owned by men, while the water for irrigation is largely managed by women.

2. METHODS

2.1. Case study area

Kibber is an agro-pastoral village located at an altitude of 4,200 m above mean sea level in Spiti Valley, Himachal Pradesh, in the Indian trans-Himalaya. Temperatures range from -40° C in peak winter to 30° C in peak summer. Precipitation received is mainly in the form of snow in winter, which starts to melt in late March. The landscape is rocky, with steep slopes largely dominated by grasses, herbs, and shrubs.

There are 79 agro-pastoral households in the village. Most households in the valley are Tibetan-Buddhist. The main cash income is from the sale of green pea (*Pisum sativum)*. The other crops grown are barley (*Hordeum vulgare)* and black pea (local variety of pea).

The community is composed of three traditional social groups: the *chechang* (landlords), who are considered 'upper' caste, and the *dzo* (drummers) and *beta* (pipers), who are considered to be of a 'lower' caste. Each family in the social groups is split into the *khangchen* (big house), which is the family of the eldest son, and the *khingchun* (small house), comprised of all younger siblings. Land ownership is restricted to the *chechang khangchen*. The *chechang khingchun* and the *dzo* and *beta khangchen* and *khingchun* do not own land, but they can rent land from *chechang khangchen*. In 2020, 55 households belonged to the *chechang* community, 16 households to *dzo*, and 8 households to *beta*. Of this, 21 households were considered *chechang khangchen*.

An extension of land rights to the landless took place under the Himachal Pradesh Nautor Land Rules, which were enacted in 1968 to provide agricultural land to people across the state, and especially to people from designated tribal districts, including Lahaul-Spiti. Under this scheme, the *dzo* and *beta* received property. The *nautor* lands are shared between villages (e.g., some of the *nautor* land given to Kibber households are interspersed with land given to households from other villages such as Kee), where the water management system is different, and mediated by the government's Public Works Department. In the following sections, we describe the cycle of farming for traditionally held land. We also include a brief description of water management for *nautor* lands.

2.2. Data collection

We collected data through key informant interviews with seven members of the village. We interviewed three men and four women. All three men belonged to *chechang* families; two of them belonged to *khangchen* households and were in their thirties, while one who was past 60 belonged to a *khingchun* household. Among the four women who participated in the

discussions, one woman in her thirties was from a *chechang khangchen* household, two women in their sixties were from *chechang khingchun* households, and one woman in her thirties was from a *dzo* household. The interviews were open-ended discussions on the governance of water. The information was also supplemented by the knowledge of the authors, who have spent over ten years working in this system.

3. RESULTS

The irrigation system is closely interlinked with the land property rights system. We briefly describe the details of the land property rights system after which we describe the irrigation system. A more in-depth analysis of the property rights system can be found in Tsering (2018).

Table 1: Social classification of Kibber society and the distribution of traditional property rights

Social classification	Traditional property rights	Class and caste
Chechang khanchen	Ownership	Upper class and upper caste
Chechang khingchun	Can rent land	Upper caste and lower socio-economic class
Dzo khanchen	Sometimes (if gifted by the village), if not can rent land	Upper socio-economic class and lower caste
Dzo khingchun	Can rent land	Lower socio-economic class and lower caste
Beta khanchen	Sometimes (if gifted by the village), if not can rent land	Upper socio-economic class and lower caste
Dzo khingchun	Can rent land	Lower socio-economic class and lower caste

Source: Authors.

3.1. Property rights

In Kibber, there are broadly three types of households with respect to property rights. The *chechang khanchen*, considered the original inhabitants of Kibber, hold most of the property rights. They are also considered upper caste and upper class. Property rights belong primarily to the men of the household. The first son inherits all the land, and the *chechang khanchen* households are considered the first son descendants of the original inhabitants of Kibber. The second sons usually become monks. They are left a little land they can cultivate, which is returned to the eldest son after their death, and cannot be inherited by their children. These households are *chechang khingchun*. If there are only daughters in a family, the husband of the oldest daughter inherits all the land. He is considered an adopted son. The

dzo and *beta*, traditionally drummers and pipers, do not own property under the traditional property rights system. They can rent land from the *chechang khanchen* in exchange for their labour. They are considered to be of a lower caste than the *chechang khanchen* and *khingchun*. In Kibber, there have been instances where the village has given *dzo* and *beta* households land from the common temple land. For example, a *dzo* household and all its descendants were given the responsibility of closing the water source each afternoon (5:00 p.m.) during the cropping season. In return, they were gifted land. Another *dzo* household was gifted land in lieu of their musical contribution to the village.

3.2. Irrigation system

The traditional irrigation system in Kibber is considered the domain of women. It was initially built for irrigating the traditional crops barley and black pea, but it was subsequently adapted by women to irrigate green pea, a cash crop.

Snow melt is the main source of irrigation water, which is brought to the fields using water channels that are repaired before the start of irrigation each year and are maintained through the growing period. The agricultural season is from March to September, determined by seasonality. All households have use rights, but land owners have the right to irrigate their fields first.

The crops are irrigated in cycles through the season, and each time a particular sequence is followed. In preparation for irrigation, women build embankments in the fields, based on natural gradients, to guide the flow of water. This is done as the men plough the land using yaks or tractors. The date of ploughing is decided in a village meeting, attended by a male representative of each household and the *numbardar*, who is the rotating head of the village. A religious ceremony performed by the oracle (*devta*) marks the beginning of ploughing. The first round of irrigation, called *yurma*, occurs 40 days after ploughing. Weeding is carried out by women before the first irrigation cycle and is done periodically thereafter. Just before *yurma*, the women scatter the fields with dried *Aconogonum* sp. plants collected from pastures to increase water retention and prevent soil run-off. Irrigation on the first day of *yurma* is reserved for the fields of the traditional healer (*amchi*) and the *devta*. Women from all households participate in irrigation on the first day. The second day is reserved for families who have faced a serious illness or death the previous year or have pregnant women who are unable to work in the farm. The third day, referred to as *tiping langzet,* is reserved for families who support the *khangchen* and have participated in the maintenance of water channels. The land is owned by the

khangchen, but the families have rights to the produce from the field. After the third day, the remaining fields are irrigated. Fields have designated days for irrigation. If on certain days the water flow is less and fields receive less water, it is considered divine intervention and they are not given another chance. The second and third irrigation cycles follow the same system of irrigation.

This order is followed for the first three irrigation cycles, after which the fields of the *khangchen* receive fixed turns. It is the responsibility of *khangchen* women to ensure the *dzo* and *beta* who have rented land from them receive enough water. The *khangchen* can also give water to the *khingchun* of their family on their turn.

The women from the *chechang khanchen* households have the control rights over the irrigation water and all women who own and rent agricultural land have use rights. After the first irrigation, the women from *chechang khanchen* households decide when the second and third irrigation is to take place based on soil, weather, and crop conditions. This decision is made collectively, with all women from *chechang khanchen* households having equal voice, irrespective of age or amount of land owned. Once they decide the dates, they approach the *numbardar* who informs the *devta*. The *devta* performs a religious ceremony after which the second round of irrigation begins, which follows the same sequence as the first.

Two women chosen on an annually rotating basis from the *khanchen* households manage the daily distribution of water. They are in charge of inspecting and monitoring the condition of the water channels and communicating to the *numbardar* about repairs needed, ensuring that the fields receive water on the assigned days, ensuring that the water pressure to all the fields is similar, etc. To assess the water pressure, blocks of wetland sedges are placed in the channel and the pressure is assessed based on the movement of the sedges. The two women also resolve any disputes. Persistent disputes are taken to the *numbardar,* who may take them to the village council and the *devta*. The interviewees reported that the rules are written in a book in the possession of the *devta*. However, no one in the village has seen the book. The *devta* refers to it at the time of conflict or confusion, and his word is taken to be final. An interesting story from a few generations ago is still often narrated. A conflict between two women over water distribution turned violent and one of the women was killed by the other. It was decided that the family of the woman who lost her life would receive all the overflow water through the night till 8 a.m. the next morning, when it would be divided for the rest of the fields. This arrangement is still followed today, several generations later. Myths exist that also determine

watering patterns, such as too much or too early watering can make the plants 'thirsty'.

The rules for the irrigation system in Kibber are thought to have existed for centuries and our interviewees were not sure if women were involved in their original conceptualization. Today, the women from *chechang khanchen* households formulate collective choice and operational choice rules. For example, decisions related to the repair of water channels are made by women and are communicated to the village through the *numbardar*. Similarly, decisions related to the start of the second and subsequent cycles of irrigation are made collectively based on their knowledge of farming.

The role of men in the management of the irrigation system is limited. Men are responsible for ploughing the land, providing labour to maintain the irrigation channels, collecting *Aconogonum*, and, along with the other members of the household, harvesting. The pastures are primarily managed by men.

The nature of the management of the irrigation system is different for non-traditional land, i.e., *nautor* land. Reforms enacted through the Himachal Pradesh Nautor Land Rules, 1968, mandate the allocation of land for agriculture to those with less than 4 acres of land for self-cultivation. This legislation allowed the large landless population to claim land for cultivation, especially in the tribal districts of Lahual-Spiti and Kinnaur. Land owned by the government, considered 'wasteland', outside towns, reserved and demarcated protected forests, were provided as *nautor* land, and each household was granted a maximum of 4 acres of land (Rahimzadeh 2018). In terms of irrigation management, households from multiple villages own arable land in the same area, and each village appoints a person to coordinate matters for their group. These representatives coordinate among themselves to decide water distribution among the village groups. This responsibility is usually held by men. The Irrigation and Public Health (IPH) Department under the district administration is responsible for the maintenance of the water channels in *nautor* lands. In case of a conflict, the resolution agency is the IPH and the office of the sub-divisional magistrate (SDM), unlike in traditional land, where the path to conflict resolution is within the community.

4. DISCUSSION

In our study system, gender, class, and caste intersected in the governance of the irrigation system. Land is owned by men, and the ownership of agricultural land gives households access to irrigation water. Women's management of the irrigation system is mediated by male ownership of

agricultural land. This system is common to other villages in Spiti Valley (Tsering 2018) and to irrigation systems in Nepal (Upadhyay 2003).

Control rights over the irrigation system closely followed the class and caste distinctions of the private property system, with only the upper caste and upper class having control over irrigation water. The *dzo, beta*, and *chechang khinchun* had access to irrigation water if they rented land from the *chechang khanchen,* and water was provided under the direction of their landlord.

In the case of gender, while women did not have land rights, *chechang khanchen* women (upper caste and upper class) had control rights. They have the power to control and restrict access to irrigation water. Their work is explicitly recognized and they are considered the managers of the irrigation system. They have the power to make decisions and are involved in conflict resolution mechanisms. Although this power to control irrigation water is mediated through men, who are their husbands or fathers, their voices are represented in the system. This role of women, as actors with agency in a management system, is fairly rare, especially in patriarchal societies where women are rarely represented at the community or policy level (Upadhyay 2003).

Although the *chechang khanchen* women have significant influence, the *chechang khinchun*, and *dzo* and *beta* women have no formal power in the system. Rather, they have to negotiate access to irrigation water by aligning themselves with a *chechang khanchen* household either by renting land or through labour. This reiterates the perspective that women are not a homogenous group; rather, the same societal divisions of class and caste also operate in systems managed by them, with certain sections having greater privileges than others (Joshi and Fawcett 2005). One important limitation in our study is that our interviewees were primarily from *chechang* households as we had a greater access to them. Therefore, the views of *dzo* and *beta* households may be inadequately represented.

5. CONCLUSION

If the sustainable development goal of 'no one left behind' is to be achieved, it is essential that the perspectives, knowledge, and interests of both men and women be integrated into decision-making (Brown and Fortnam 2018). Case studies have shown that when women are involved in community forest management, and the group composition consists of more women, forests are in better condition (Agarwal 2009). Further, women are also more likely to comply with the rules if they are involved in management. To integrate women into decision-making, it is important to

focus on the different roles they occupy in society, while being aware of caste and class barriers to participation.

We have described a long enduring water irrigation system managed by women and its intersection with gender, caste, and class. While women are the primary managers, their power is mediated by men who own the agricultural land. We also found that due to societal barriers of class and caste, power was concentrated among the *chechang khanchen* (upper class and upper caste) and excluded women from lower classes and castes from decision-making. Thus, understanding the role of women in the governance of common resources requires a disaggregated analysis not just between genders but also within women as a group.

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