



Bottom-Up Approaches to Knowledge Coproduction in Pasture Management: The Case of Kyrgyzstan

Irène Mestre ,

Institut Français d'Etudes sur l'Asie Centrale

ABSTRACT

This paper examines how local-level actors in Kyrgyzstan's community-based pasture governance system have organised themselves to influence knowledge generation and policy-making. It explores the sophisticated interplay between decentralisation, stakeholder coordination, and power dynamics in pastoral resource management. The paper describes the findings of the qualitative embedded multiple case study conducted between 2011 and 2019. Six municipalities in Naryn and Jalal-Abad oblasts were studied through 99 semi-structured interviews, participatory observation within NGOs, and engagement with national stakeholders. Ostrom's principles of sustainable community management were used as the analytical framework, complemented by literature on governance and social learning. Kyrgyzstan's decentralisation reform created new governance entities, notably Pasture User Associations (PUAs) and their executive bodies, as well as Pasture Committees (PCs), operating within a fragmented institutional environment. PCs adapted flexibly but faced challenges in terms of coordination with state agencies and local actors. The establishment of the Kyrgyz Federation of Pasture User Associations (KFPUA) created a platform for political representation, knowledge sharing, and legitimacy building, fostering bottom-up influence on national policy. However, legislative inconsistencies and reliance on donor funding remain the key constraints. This research highlights the importance of local agency in shaping sustainable resource governance and promoting participatory policy processes.

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1. Introduction

Kyrgyzstan has been often described as an agrarian country rich in pastures and livestock (Sacken & Morgan, 1869; Van Veen, 1995; Severcov, 1873). Pastures and agropastoralism continue to be portrayed as a vital element of Kyrgyz ethnic identity, associated with indigenous knowledge and values (Féaux de la Croix, 2011; Jacquesson, 2010a; Žaparov, 2011). During the Soviet period and prior to independence, agriculture served as a pillar of the republic's economy (Duncan, 1994; Fitzherbert, 2006; Kerven, 2006; Kyrgyz Soviet Socialist Republic, Encyclopaedia [rus. Kirgizskaja Sovetskaja Socialičeskaja Respublika, Ėnciklopedija], 1982; Mogilevskii et al., 2017), and was a priority of policy-making. After gaining independence and until 2009, pastures were divided into categories as per their seasonal use and administrative subordination (i.e. management at different territorial levels), although the actual management was rather limited to renting out the land, and even that was hardly implemented but still had a strong legacy of the Soviet management model (Lerman & Zedik, 2009; Petric, 2015; Steimann, 2011).

With the support of international actors, in 2009 the country adopted the *Law on Pastures* creating a community-based pasture management and governance framework and breaking away from the previous management style. Livestock owners started forming Pasture Committees with elected representatives. The PCs were vested with the authority to draft pasture management plans, collect livestock tax, as well as mobilize external funding from donors. The then created and still operating decentralised management and governance model builds on the assumption that involving users in decision-making can lead to fair and environmentally sustainable natural resource management (Ostrom, 1990), and hence limit pasture degradation (Mestre, 2019a; Murzabekov, 2017). Yet, as the PCs started to emerge and operate, it became clear that pasture management and governance was not only about what they were planning or implementing locally, i.e. inside the territories of corresponding municipalities - a clear need and demand appeared for understanding the actual way “pasture management and governance” was framed. In the Soviet Central Asia (CA) and subsequently in independent Kyrgyzstan, a significant line of research focused on pasture degradation with the aim of apprehending how official degradation assessments were carried out (Robinson, 2016; Robinson et al., 2003, 2012), the role of factors like livestock mobility on resource depletion (Crewett, 2012; Hoppe et al., 2016; Kirch et al., 2016; Zhumanova et al., 2016, 2021), as well as stakeholder perceptions of change in different resource conditions (Jacquesson, 2010b; Kerven et al., 2011; Levine et al., 2017). In parallel, researchers examined the emergence of coordination issues, as the newly established PCs had to deal with each other and vis-à-vis state forest enterprises (Dörre, 2012; Kasymov et al., 2016; Mestre et al.,

2013). The deployment of such a decentralised management model has become a complex process shaped by several competing environmental approaches (Mestre, 2017a), revealing the importance of pasture management history as well as inherent power relations configuring policies and exerting local consequences (Murzabekov, 2017). The relatively low performance of the decentralisation of agricultural services has been documented by Wibke Crewett (2015a) who highlighted weak integration of municipality-level stakeholders in policy design. In this paper, the author examines how in a community-based governance setting and supported by higher-tier organisations local-level stakeholders have self-organised to influence knowledge production. This research complements the analysis of the top-down dynamics and power relations.

This study's main question reflects the ongoing debate in academic literature on knowledge generation in natural resource management and governance. The author sees governance of natural resource as "norms and rules of interaction between actor groups involved in natural resource use, and the resulting power relationships between these groups" (Hurni & Wiesmann, 2014; Meadowcroft, 2009) (also in Rist et al., 2007, p. 23). To investigate knowledge generation dynamics in the community-based pasture governance context, the author applied Ostrom's (1990) principles of sustainable community management, as revised by Cox, Arnold and Villamayor (2010). Stemming from the natural resource management concept focused on technical knowledge, the understanding of the role of knowledge builds on the importance of social learning to create connections between internal and external knowledge (Pahl-Wostl et al., 2007; Rist et al., 2007).

2. Methods and materials

This PhD¹ thesis research was conducted between 2011 and 2019, and was based on embedded case studies (Yin, 2011). A total of, six case studies were explored, three in Naryn Oblast (municipalities of Emgekčil, Emgek-Talaa, and Žerge-Tal), as well as three in Jalal-Abad Oblast (municipalities of Ala-Buka, Terek-Saj, and Kanyš-Kyâ (Fig. 1). The selection of case studies was guided by the aim of capturing the broadest possible diversity of rural municipalities, where - in addition to agro-pastoral activities - residents may or may not have access to mining-related income, as well as in terms of their distance from urban centers. Ninety-nine semi-structured interviews were conducted in the selected municipalities, inter alia with herders,

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livestock-owners, elected representatives of pasture committees and municipality councils, as well as at district, oblast and national levels with the representatives of KFPUA, NGOs, administration staff and governmental officials (18 interviews and four workshops). The interviews were complemented by ten months of participatory observation in an NGO actively implementing the pasture reform and four months in the villages and summer pastures.

The qualitative methodological approach used in this study differs from that used by Ostrom, Cox and Agrawal, who conducted their quantitative research based on large case study corpora. Case studies are particularly important as they enable deep insight into the processes across different scales of socio-ecological systems (SES). They therefore manifest an entry point for investigating the systems' complexity and can be synthesised when integrated into large corpuses (Poteete & Ostrom, 2007). The application of a common conceptual framework makes it possible to analyse these corpora, as well as utilize concepts complementing these suggested by Ostrom, Cox and Agrawal, in turn making it possible to elaborate an approach that is open to the dynamics on the ground, which otherwise may escape conceptualisation through community management (Poteete et al., 2010). The author chose a multiple nested case study allowing a comparison among three rural communities and likewise exploring the dynamics between local and national tiers as suggested by Agrawal (2001). The qualitative analysis of community management requires shaping as per each object of study and each field. Each of the principles undergoes analyses in relation to its context. Furthermore, in a qualitative approach, it appears more relevant to use them to highlight the governance-related arrangements and processes with regard to these principles than to assess them in a binary way - presence versus absence (Delgado-Serrano et al., 2017). The comparative approach is essential because it makes it possible to identify causal links, which are more difficult to pinpoint in single case studies (Poteete & Ostrom, 2007).

The definition of 'community' is still open to debate. Whereas it was defined in the early 20th century as a population living in a given territory and sharing agricultural activities (Galpin, 1915), its definition subsequently evolved to adopt a relational approach in the middle of the century. In the field of community-based natural resource management research and projects, 'community' has been defined as a set of individuals, institutions and actions, whose interactions within the community differ in intensity and nature from interactions with individuals or groups outside the community. This definition is deliberately broad, as the diversity and complexity of communities require examination beneath the surface of immediately visible processes. Thus, the community approach should not mask the divergence of interests and powers among stakeholders. In this research, communities were investigated at the scale of *ayil aimak* (rural administrative territory) and comprising the *ayil ökmötü* (local self-governance bodies). Further details on the methodolo-

gy and results can be found in the PhD thesis and separate papers (Mestre, 2017a, 2017b, 2019a, 2019b).

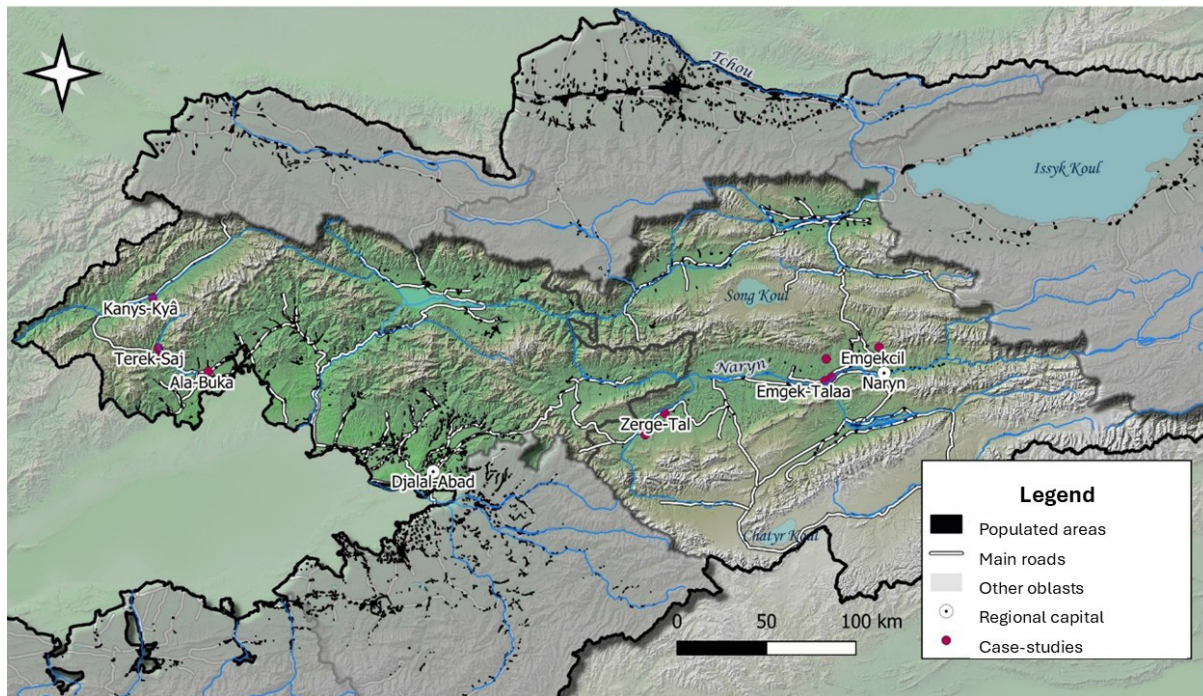


Figure 1. Case studies in Jalal-Abad and Naryn Oblasts (source: Mestre, 2019; Université Lyon 3 - UMR 5600 EVS, QGIS; data: Abdiev et al., 2017, and Open Street Map).

3. Results and discussion

3.1. Conceptual framework of community-based natural resource management

Ostrom (1990) identified eight principles that enable a user-composed institution to organize natural resource management in a robust way and to sustain itself, i.e. to function despite disturbances. These eight points were later enriched but are still considered the determining elements (Ostrom, 2009; Cox et al., 2010):

1A. Clearly defined boundaries: individuals or households which are allowed to withdraw resource units from the common-pool resource are clearly defined.

1B. Clearly defined boundaries: boundaries of the common-pool resource are clearly defined.

2A. Congruence between appropriation and provision rules and local conditions: appropriation rules limiting time, place, technologies and quantity of resource units correspond to local conditions.

2B. Congruence between appropriation and provision rules and local conditions: benefits obtained by users from a common resource, as defined by appropriation

rules, are proportional to the investment required in terms of labor, equipment, and financial means, as determined by the provision rules.

3. Collective-choice arrangements: individuals affected by the rules related to resource use have access to the decision-making process.

4A. Monitoring: monitors are present and actively monitor the state of a resource and its use.

4B. Monitoring: monitors must be accountable to the users, or the users themselves conduct the monitoring.

Graduated sanctions: it is common for sanctions applied to users who violate the rules of use to be graduated according to the severity and context of violation. Sanctions are applied by other users, by authorities accountable to users, or by both.

Conflict-resolution mechanisms: users and their representatives have access to rapid and low-cost conflict-resolution platforms to resolve conflicts between users or between users and the authorities.

Minimal recognition of rights to organise: rights of users to define the operational rules of their institutions are not challenged by external governmental authorities.

Nested enterprises: appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized at multiple scales within nested structures.

The first five principles are interconnected. They constitute the structure of operation in order to organize response to internal disturbances and strengthen the management system. The subsequent two (6 and 7) concern support from actors at higher tiers, and the last (8) highlights the importance of coordination across scales.

Ostrom also identified recurring factors that may contribute to management system failure:

- rapid changes to which the management system cannot adapt,
- lack of transmission of management principles between generations,
- implementation of community-based management systems via standardized international programs with associated funding,
- “opportunistic” behavior (including corruption),
- absence of an institution capable of collecting and disseminating information,
- lack of means to cope with natural risks.

These principles were analyzed as fields of knowledge production in the construction of a new community-based pasture governance model, rather than in an assessment perspective to determine the congruence between the implementation and the theoretical framework.

3.2. Community pasture management: towards a decentralised system?

The supporters of the pasture management and governance reform had presented it as a measure to simplify processes and improve the overall system's sustainability by limiting the number of involved players. Yet, while the allocation of grazing land among PCs and agro-pastoral users in the same municipality is now done directly, many other management functions cannot be performed without implication and coordination with other bodies (Fig. 2). This forces PCs to steer the process of establishing new interaction mechanisms, through negotiation and mobilization, and then ensure the longevity of such mechanisms. In practice, the processes have not led to stable agreements, with the most important aspects of negotiations concerning the definition of priorities for PCs and the allocation of income generated by PCs to ensure proper grazing land use.

As Dörre (2015) points out, the decentralisation of grazing management responsibility down to the municipal level has led to a reduction in the state's prerogatives, with the latter reducing engagement and, thus, subsidies. However, given their limited resources and great needs, this poses a challenge for local administrations. In addition to management functions, the reform has given pasture committees a coordinating role between different types and levels of actors. The PCs set up at the level of smallest local authorities should therefore liaise, negotiate and cooperate with state forest enterprises pursuing an hierarchical top-down relationship with the PCs, and pushing pasture committees to adopt environmental approaches and modes of action (Mestre, 2017a; Murzabekov, 2017).

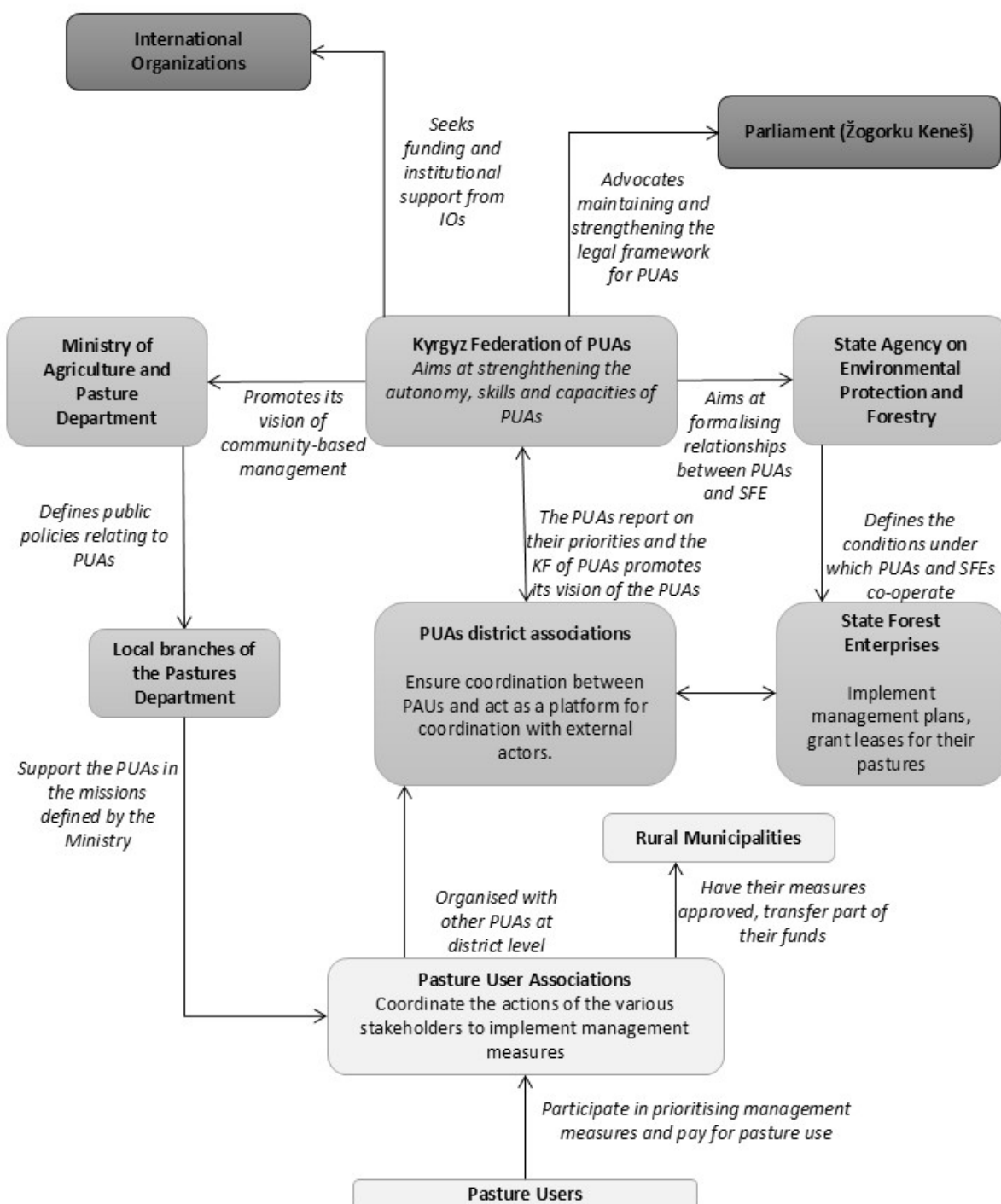


Figure 2. Main interactions among pasture management and governance stakeholders (source: author).

Community management of pastoral resources is largely shaped by national actors. The legal framework is mainly defined by the Ministry of Agriculture (MoA) with the support of international organisations. However, pastoral resource management and governance are cross-cutting, linking agriculture, ecosystem protection, and economy. Hence, although the MoA is the main national player, the State Agency for Environmental Protection and Forestry (SAEPF) plays a significant role as well.

The MoA and Pasture Department are limited in their resources, which hampers the application of the guidelines and regulations adopted. Because of this weakness, the MoA closely collaborates with international actors capable of providing funding. Yet, the corresponding organisations promote diverse community-based management approaches and tools. With the domestic players mobilizing these different paradigms, as well as forced to somehow relate to each other, this leads to an ‘institutional bricolage’ and negotiations.² In other words, the resulting plurality at the national level translates into a loose legal framework not providing a clean-cut regulation for all aspects of community grazing land management, particularly in the case of non-agropastoral use. As a result, the PCs have considerable room for manoeuvre, e.g., in negotiating non-agropastoral use payments.

The diversity of actors and approaches, in the case of community-based management of pastoral resources, gives room to the PCs to adapt the regulatory framework to local needs and conditions. The local branches of the Pasture Department support infrastructural projects, but do not oppose measures developed locally by the pasture committees. The diverging approaches to the environment and the resulting stakeholder strategies have an impact on the operation of PCs, which are at the heart of the reform aimed at decentralising pastoral resource management. The difference between how various stakeholders define the ‘environment’ represents a crucial underlying element of pasture management, as it guides the subsequent definition of resources and users. Depending on the adopted concept of the environment, the PCs may lean towards infrastructure management - as is the case with Water User Associations (Schmitt, 2015) - or towards a management mode taking natural resources into account.

The high adaptability of pasture committees and stakeholder fragmentation at the national and international levels curbs the elaboration of a common framework for defining the priorities of community-based pasture management and governance. Due to this great diversity, no institution has formulated specific community pasture management evaluation criteria. In turn, in the absence of a framework common for all stakeholders, the performance evaluation of pasture committees has been solely based on a particular approach utilized by a given evaluating agency, which gives rise to divergent approaches, and none of the stakeholders recognised by all the others

² See also Crewett (2015b) for more information on the ‘institutional bricolage’ related to local-level implementation of pasture committees.

(Dörre 2015). Hence, the risk of an institution employing its in-house criteria to question the performance of pasture committees. The lack of a single framework likewise poses challenges related to national-level monitoring of pastoral uses and resources, especially in terms of secondary pasture uses, e.g., tourism, bee-keeping, hunting, and mining (Mestre, 2017b).

3.3. The Kyrgyz Federation of Pasture User Associations: a leverage for knowledge coproduction?

The PUAs are often perceived as lacking legitimacy due to their community status as opposed to the status of highly-valued experts and specialists. Thus, they are regularly at loggerheads with respective municipalities over the allocation of funds obtained from the grazing land use tax.

In addition to local appropriation strategies at the municipal level, PCs have also organised themselves to acquire the necessary legitimacy to be part of the negotiations with district- and oblast-level players. They have also sought to influence national-level decisions binding for them. The corresponding initiatives have emerged in the country's south, particularly in Jalal-Abad Oblast. In 2013, on their own initiative, the Terek-Saj PUA and other PUAs inside the same district formed an association to coordinate management actions and gain greater influence over government agencies. In particular, district associations seek to facilitate the organisation of transhumance routes between the territories of several communities.

In 2013, the nationwide Kyrgyz Federation of Pasture User Associations was set up, with the membership of PUAs and associations of PUAs. The KFPUA aims to protect the interests of its members at the national level and capitalise on their experiences. Since 2015, the Federation has been headed by the former director of the national Pasture Department, who had previously led the actual reform. Despite being a former representative of the administration, his commitment also means that his legitimacy as the Federation's head is undisputed among the PUAs, staff of local Department branches, as well as politicians. He had overcome opposition and ensured the involvement of international actors during the process of setting up the PUAs in the early 2010s. Replaced as the Pasture Department Director, his role as the KFPUA's head has relied on the same skills and networks. In 2015, the Federation brought together 400 of the country's 454 PUAs, as well as associations from 26 of 40 districts. The Federation's charter (KFPUA, 2016b) defines the organisation's primary objective as assisting PUAs in resolving conflicts with pasture users, other PUAs, municipalities, forest management units and administrations of natural protected areas. Its other objectives include building capacities of the PUAs, pasture committees and district associations; devising sustainable grazing management practices; and disseminating best practice throughout the country and abroad. Finally, the KFPUA

aims to monitor the PUAs, communicate with donors and promote the interests of the Federation members at the national level. During 2016-2020, KFPUA focused on strengthening the capacities of the PUAs, promoting the rights and interests of the PUAs, and building the institutional capacities of district associations and the Federation (KFPUA, 2016c). In terms of non-agropastoral uses, KFPUA plans to engage in legal consultations, negotiation support, and drafting amendments to the grazing law. The Federation strongly supports the Coordination Committee bringing together government and non-government players, as well as international and civil society organisations engaged in the pasture sector.

In 2016, KFPUA members prioritized the harmonisation of secondary pasture use payments and unification of pasture monitoring methods and assessments of PCs. Their mobilization resulted in the amendments to the corresponding legislation, however, certain aspects of monitoring and performance evaluation, mostly oriented towards policy dialogue, could not be carried out under the Federation's leadership.

As an association of entities, KFPUA can respond to calls for projects from international organisations, i.e. its main source of funding; in addition, it also collects membership fees (1,000 som in 2015). Moreover, during 2016-2020, income-generating activities, e.g., legal consultations for district associations and PUAs, as well as preliminary studies for partner organisations, were planned. The Federation has been also supporting district associations in setting up activities to ensure their financial self-sufficiency, in particular via the production and sale of fodder plant seeds (KFPUA, 2016a).

3.4. Protection of local-level autonomy and development of a supporting network

The local players' strategy for influencing the national players is based on two intermediaries at the national level: KFPUA and its network of district associations, and NGOs. The Federation and its subsidiaries aim to raise the priorities of the PCs from the local to the national level. Owing to the leadership and networks of its director and the Federation's status, it can adopt a more political stance than NGOs.

In terms of interactions among local managers, the Federation is seeking to protect the autonomy of the PUAs and PCs against transforming them into merely technical services rather than community institutions. In case of the PCs becoming a technical department of a municipality administration, the mechanisms for representing the interests of different stakeholders and sub-systems would likely be greatly diminished.

The Federation and its network strengthen interactions among various tiers. The hierarchical relationships that had previously existed mainly between the national Pasture Department and its subsidiaries, on the one hand, and PCs, on the other hand, have been since supplemented by bottom-up dynamics through district

associations and KFPUA. The PUAs and PCs have emerged from the Pasture Department implementing its community-based grazing management policy, alongside other MoA departments. However, the strong support they had received during the initial setup phase was weakened by political changes. That led to the Department's re-organization rendering it new responsibilities related to the genetic improvement of livestock and fish farming, as well as the replacement of its director. Consequently, the resources allocated to pasture management have shrunk, both locally and nationally. Furthermore, government support reflects a development-focused vision and neglects other aspects of pasture management, such as coordinating and monitoring pastoral resources.

The support on behalf of local Department's branches to the PCs was important at the onset of the community pasture management policy but has been dwindling. Thanks to its more flexible operation, KFPUA and its network have been filling the gap by providing administrative, legal and financial resources (through projects), as well as defending the interests of users, member PUAs and PCs at the national level. By promoting the interests of the PUAs to the Parliament and international actors, the Federation goes beyond the Department's remit.

The Federation likewise collaborates and partners with other countries in CA, building on the experience exchanges that had taken place during the implementation of community pasture management domestically. The corresponding international initiatives manifest the organisation's primary line of business (KFPUA, 2016a). First, they aim to disseminate good practices in community-based pasture management, with Kyrgyzstan as a regional forerunner in the field. Second, international engagement acts as justification and protection against domestic stakeholders criticizing this management method.

The context is favourable to the Federation's existence. The climate of plurality enables it to coexist with the Pasture Department. The KFPUA status as an NGO allows better funding opportunities (e.g., from donors and international organisations) and independence from the government. However, the Federation's long-term sustainability still depends on its ability to win tenders from these organisations. The KFPUA is also seeking to devise an effective self-financing mechanism to reduce its dependence.

4. Conclusion

The creation of district level associations and KFPUA has broadened the room for communicative action, as platforms to exchange ideas, concerns, and priorities (Rist et al., 2007). The current system is less oriented towards specific management operations—such as integrating traditional knowledge into planning or monitoring.

Instead, it functions as a space in which rules and norms can be renegotiated. The collective action dimension could be further investigated to better understand the dynamics of social learning and the epistemic process between knowledge generation and governance in Kyrgyzstan.

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