

RESEARCH ARTICLE

Understanding the Role of Power in Changes to Pastoral Institutions in Kyrgyzstan

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Our article reflects on the Kyrgyz experience of a transformation in pasture use and management, seeking to contribute to the literature on institutional change in post-socialist contexts. We employ the distributional theory of institutional change in order to understand gradual, informal de facto institutional change which emerged because of changes in formal institutions (laws) that changed the bargaining positions of actors involved. The study findings demonstrate the dynamics of change of interrelated formal institutions, power resources, informal institutions, and their distributional consequences. We observe that the enforcement of new pasture legislation introduced in 2009 gradually reducing bargaining asymmetry among actors, in the long run potentially favouring less powerful pasture users, who are herders providing herding services to their community. Evaluating the potential implications of formal institutional change for day-to-day pasture management and informal institutions, we expect changes to contribute to maintenance of pasture health in the medium to long term. However, traditionally powerful actors (individual herders) typically try to resist these changes and the shift to new informal institutions is therefore still highly contested.

Keywords: Institutions; institutional change; power asymmetry; pasture management; Kyrgyzstan

1. Introduction

Since the early 1990s, Kyrgyzstan has undergone a change from a centralized state-managed economy to a decentralized market-oriented economy. This period of change in Kyrgyzstan and other former Soviet states triggered the emergence of an academic discussion on how the post-socialist transition, transformation and change in institutions should be conceptualized. There has been a shift in the way experts commented on the transition process. While first they seemed to support “blueprint”, top-down approaches for post-socialist transition they now critically evaluate the resulting bottom-up transformation and institutional change (Stark 2000; Sehring 2009; Bichsel et al. 2010; Brousseau et al. 2011). Addressing transition processes more in general, for example, Brousseau et al. (2011) note two perspectives that are particularly relevant for this study: “a top-down approach of administrated change in which enlightened reformers seek to implement transition and institutional change; and a bottom-up approach in which social groups try to impose transformation and institutional changes [...] and are] [...] able and willing to block reforms [...]” (13).

The changes in Kyrgyz institutions for the use and management of pasture land illustrate such a process of transition. Pastures are among the country’s most important natural resources, crucial for the wellbeing and livelihoods of the overwhelmingly rural (more than 60%) Kyrgyz population. The last quarter of a century provided valuable experience in experimenting with institutional design in pasture management. However, it also illustrated the complex processes unfolding in the aftermath of formal institutional change (Thiel, Mukhtarov, and Zikos 2015).

The literature highlights important characteristics of institutional change in the Kyrgyz pastoral context. First, top-down policy interventions have been struggling in the post-Soviet transformation, because of the predominance of spontaneously-emerging and changing informal rules. Second, they have been ineffective

at avoiding resource-related conflicts and degradation of the resource. Specifically, initial reforms did not recognize that sustainable pasture management in Central Asia greatly depends on pastoral migration, and they were unable to take into account the economic and political dynamics related to mobile herding (Undeland 2005; Kreuzmann 2012; Jacquesson 2010; Kasymov et al. 2016). The implementation of top-down policies has however triggered the gradual transformation and change of informal institutions and local resource-use practices throughout the last decade that guide day-to-day pasture users' decisions today.

In the grassland context of Kyrgyzstan, some scholars hint that informal (often undocumented, *de facto*) arrangements and resulting herding practices and less formal rules are the most important institutions that guide decisions of pasture users. Furthermore, bargaining and power relationships among users of pastures and related service providers (e.g. herders) play a central role in access to land resources and still very much dominate in shaping the resource use strategies in the post-socialist Kyrgyzstan (Steimann 2011; Dörre 2015; Shigaeva et al. 2007; Bichsel et al. 2010).

The scholars suggest that under the conditions of uncertainty marking this period – with institutional change unfolding across several levels in an uneasy and often contradictory way – pasture users began referring to different old and new rules, both formal and informal, to pursue their interests and negotiate access to the resource. The literature has referred to this phenomenon as “legal pluralism” (Hodgson 2009). The existence of overlapping rules opens room for negotiation and bargaining among actors. But as platforms for such negotiations are missing or not well established, powerful actors may gain asymmetric access to the resource and/or restrict it to other categories of users (Bonfoh et al. 2011). Shigaeva et al. (2007) state that “[...] the institutional context and the resulting power relations widely determine access to and (strategic) use of these resources [...]” (392). In our opinion, however, this literature is rather descriptive and does not provide sufficient and adequate micro-analysis of the role of power in the mechanisms and process of change.

Such analysis, for instance, was conducted addressing the post-socialist agricultural context of Eastern Europe by Hanisch (2000), Theesfeld (2005, 2011) and Schlüter (2001). The scholars extensively investigated institutional change employing alternative explanatory approaches comparing efficiency and power considerations of actors. Their findings concerning the implementation of reforms and processes of institutional change in the post-socialist context demonstrate that asymmetries of bargaining power and distributional consequences among actors played a crucial role during the implementation of agricultural reforms.

Against the background of these previous studies, in this article, we expand the literature by adding a study on the change of pastoral management as a result of agricultural reforms in Central Asia at the same time shedding light on a period in post-socialist transition that has hardly been examined thus far. Correspondingly, for the case of Kyrgyzstan we address pasture management before and after a comprehensive reform of its legal framework in 2009.

This paper aims (a) to reconstruct gradual, informal, *de facto* institutional change and explain the corresponding changes as a result of change of power relations, and (b) to illustrate use of our theoretical approach to this end that allows us to project further the implications of formal institutional change, if all further contextual change remain similar. The present study thus seeks to contribute to our understanding of bottom-up decentralised institutional change in the context of post-socialist transition and its conceptualisation. To explore the effects of pastoral reforms and the dynamics of institutional change we use the distributional theory of institutional change (Knight 1992). It is especially useful for understanding how informal institutions – in this case *de facto* informal arrangements that constrain strategic choices of pasture users – change due to changes in power asymmetries and/or distributional consequences. According to Knight (1992: 183) these factors are the main conditions producing incentives for both the intentional and spontaneous change of informal rules. We use this theory to understand change in informal pastoral institutions and their implications for pasture management in the initial post-Soviet period, and to analyse the effects that more recent, formal institutional change as a result of policy changes in 2009 will have on informal institutions, pastoral mobility and sustainability of resource use.

Note that due to space restrictions, this study does not refer to the broader historical and social context in which the described formal initiatives were embedded and which similarly affect the power relations and changes observed.¹ Instead, we focus the analysis on the implications of these broader changes for informal institutions of pasture use and for pastures themselves. With this narrow focus, we observe that the enforcement of new pasture legislation has lead to information institutional changes gradually reduce

¹ For a broader discussion on path dependence, post-colonialism post-socialism and the role of power in natural resource management in Kyrgyzstan please see Jacquesson (2010) and Schmidt (2013).

the bargaining asymmetry, favouring less powerful actors. We extrapolate what this implies for pasture management and status of pastures in the medium to long run. However, such a theory-based extrapolation assumes that factors affecting institutional change remain stable. In practice, however, we also note that powerful actors try to resist these changes. This may lead to unpredictable initiatives on their part, changing the factors embedding institutional change which in turn may change the long-term outcome of new legislations in a way that is not previewed in this paper. Therefore, our theoretically derived extrapolation of institutional change in Kyrgyz pasture management needs to be cautiously re-evaluated if contextual factors and factors affecting bargaining and distributional outcomes of pasture management change.

The paper is structured as follows: we introduce our analytical framework and conception of institutional change, followed by our research design and methods; then we present the problems of pasture management and pasture reforms since 1991. This is followed by an illustrative, detailed analysis of one bargaining situation in pasture management in two case studies. The bargaining situation is of core importance in developing our stylized understanding of reasons and mechanisms of institutional change and addressing the question of how power asymmetries in pasture use have changed as a result of new formal regulations implemented throughout the latest reform of pasture management in 2009. Finally, we use this understanding of the effects of formal institutional change on the process of informal institutional change and sustainability of pastures to extrapolate the effects of the 2009 reform in the medium to long-term.

2. The Distributional Theory of Institutional Change

The distributional theory of institutional change describes “the process of institutional change [...] through differentially resourceful actors that negotiate about institutional change in view of their interests” (Theesfeld 2005). Knight views institutions as stabilized (equilibrium) outcomes of negotiations between actors (1992). Institutions affect the payoffs for actors involved by providing information that structures strategic action and shared expectations of outcomes.

Knight prioritizes the role of informal institutions (e.g. conventions, norms and self-enforced codes of conduct) that stabilize social expectation, structure social life and have self-enforcing character. The formal institutions (e.g. constitutions, statute law, common law and regulations) are enforced by state and co-structure social interactions and collective decision-making.

With this in mind, Knight pays particular attention to power relationships in strategic bargaining over institutions and defines power as “[...] the ability to affect one’s feasible set [of choices]” (Knight 1992: 41). How long an actor can withstand cooperation, giving in to unfavourable outcomes, depends both on relative bargaining power (determining payoffs for non-cooperation) and on distributional outcomes (determining payoffs for cooperation). The decision to cooperate or not is central for Knight’s institutional analysis of the basic social interaction among actors. For a bargaining interaction, cooperation is a rational strategy of bargaining partners, but there is “[...] the conflict among a range of cooperative solutions.” (128). In his conceptualisation, Knight builds on Rubinstein’s bargaining model (Rubinstein 1982: 97) that is represented by the following situation and question: “Two individuals have before them several possible contractual agreements. Both have interests in reaching agreement, but their interests are not entirely identical. What will be the agreed contract, assuming that both parties behave rationally?”

The relative bargaining power of actors may change because of the collective action of disfavoured actors, when they are able to get organised and push for changes of a the status quo. Also, changing distributional consequences due to external factors (e.g. changing socio-economic context conditions) may increase disfavoured actors’ incentive to change the status quo (Knight 1992: 146–147). Most importantly for this study, we argue, the intervention of the state and its enforcement of new formal institutions – pasture law, regulations and arrangements at the municipal level may affect the bargaining power of actors and distributional consequences as well as creating an incentive to challenge informal rules – the contractual arrangements and equilibrium outcomes of negotiations between pasture users.

We conceptualize the setting in which actors negotiate institutional change as “illustrative bargaining situation”. In this situation the interaction among herders implies competition for access to the resources and/or cooperating in using them. Actors’ “[...] pursuit of distributional advantage will drive the emergence of social institutions” (Knight 1992: 210) and the final institutional form is the result of repeated interactions of actors with varying power (211). Please note that due to the complexity of institutional change, actors – who intentionally make decisions concerning new institutions based on their beliefs about the potential benefits offered by different institutional forms – may be disappointed by its unintended consequences (Knight and North 1997).

In our study we provide a stylized description of the bargaining situation over institutional change in which power positions are indirectly expressed through actors' strategies. This does not mean that actors will always make use of their position and power resources. Thus, power resources and action situations may be difficult to observe. Obviously, adopting this perspective assumes that as analysts we are able of adopting a privileged perspective from which we can interpret the specific strategies of actors as expressions of their power resources. We consider the groups of pasture users as actors in our analysis.

Below we delineate a heuristic of power resources related to bargaining and institutionalization in pasture use, based on Knight (1992), Schlüter (2001), Theesfeld (2005, 2011), Thiel and Egerton (2011), Thiel (2014). We present below as overarching categories concerning the ways in which actors bring about change of existing rules or institutionalisation of new rules. Our choice of categories aims to minimize overlaps between types of power resources and is informed by our observations as regards the ways in which actors affect institutionalization:

- (a) Credibility of commitment is key to relative bargaining power. Awareness of social actors' payoffs for non-coordination (breakdown values) can influence the credibility of strategies: Credibility of commitment or trustworthiness (Theesfeld 2011) depends on players' breakdown values (i.e. payoff in case of failure to agree). For example, exit costs of non-coordination and time preferences (favouring early coordination over delayed coordination) can affect an actor's credibility in regard to adopting particular (coordinated or non-coordinated) strategies. Player B accepts the credibility of player A's commitment, if he knows that player A is likely to suffer less in case of non-cooperation in comparison to a situation of coordination, thus, player B's incentives to agree to cooperate on player A's terms are higher. Credibility of player A depends also on how his risk acceptance and patient attitude to (coordinated) interaction is perceived by Player B. State intervention in bargaining among actors can influence the credibility of players' commitment by reorienting their expectations about the behaviour of bargaining partners, for example by informing bargaining actors about potential state sanctions in case of non-compliance.
- (b) The organisability of a group refers to the transaction costs for collectives to agree on a common strategy in bargaining. For example, this type of power resource can be supported through state intervention, which can reduce the costs of organizing and coordinating the group and in that way affect bargaining outcomes (Knight 1992: 193). The state may financially support self-organization, it may provide the rules according to which self-organization is to function or it may delineate communities in ways that they share mental models, facilitating their self-organization. Please note that this category of power is relevant for the bargaining situations where actors are groups of individuals.
- (c) Positional power is related to actors' strategic position in terms of providing access to information about available institutional alternatives (Theesfeld 2011), access to assets (e.g. financial resources for investment, natural resources and human capital), or access to sanctioning power as capacity to carry out credible threats² (Theesfeld 2011). Positional power also provides an ability to shift the transaction costs of informing, negotiating, agreeing, monitoring, enforcing and adapting institutions. One special form of positional power is access to a social network which provides privileged access to information, assets, or sanctioning power. For example, the former Soviet elite (nomenklatura) continues to hold powerful positions in formal organizations responsible for managing natural resources in many post-socialist countries (Sehring 2009; Theesfeld 2011).

Positional power can also be changed as a result of state actions. North (1981 cited in Knight 1992) points out that the state may have its own interests, which can be different from economic actors' distributional interests. It may support institutions promoting more socially-efficient resource use and management by distributing information about new rules, sanctioning non-compliance, providing access to assets, and taking over or shifting transaction costs. Note that in adapting this approach to our study context we do not include physical power and violence as positional power (Theesfeld 2011) as we did not observe them empirically.

² Theesfeld uses the term "menace power" for this power resource (Theesfeld 2011).

To understand institutional change and the complex interplay between informal and formal institutions we analyse how new formal rules shape change of informal rules – contractual arrangements and equilibrium outcomes of negotiations between actors, due to changes in power asymmetries and/or distributional consequences of institutional arrangements. We direct our analysis in this way to address top down implementation of formal institutions in post-socialist Kyrgyzstan, which were designed without bargaining and greatly influence informal institutions.

It is important to note, however, that Knight sees changes to informal institutions as a slow process. Shift of power may not immediately take effect and lead to institutional change; former informal rules may persist and co-exist with newly emerging alternative informal rules. This is related to either collective action problems of institutional change or difficulties and inertia in altering actors' expectations (Knight 1992: 146–147), but also resistance of disfavoured actors. As we describe below, this is also what we observed in our study of institutional change in pastoralism in Kyrgyzstan.

3. Research Design and Methods

In studying institutional change, we will use our understanding of the relations between asymmetries in power resources and how they change to discuss the currently unfolding and likely pathway of further (informal) institutional change in the future (after the period of time investigated).

Concretely, we first adopt an ex-post perspective on institutional change, reconstructing the change of informal institutions after the introduction of radical agricultural reform in 1991 and the policy interventions of 1991–2009. We explain the outcomes observed before 2009: herding strategies that led to reduced pastoral mobility and related overgrazing on near-village pastures. Subsequently, building on our ex-post perspective, we apply an ex-ante perspective to analyse and project currently unfolding changes of informal institutions (un-documented, de facto rules and arrangements) in Kyrgyzstan, exploring the impact of new socio-economic conditions and the enforcement of new formal institutions, which were introduced in 2009 as a response to reduced pastoral mobility and the overgrazing problem. In relation to the latter we need to presume stability of further factors affecting institutional change.

Qualitative data for the empirical study were gathered from two case studies in Kyrgyzstan during 2011–2014. There we investigated formal and informal rules in pasture use. The formal regulation was represented by legislation introduced in 1991 and 2009; the informal rules were represented by often-undocumented, de facto arrangements made by pasture users for coordinating pasture use (since 1991). The two cases were further representative of social-ecological conditions in their particular regions. To explore and illustrate institutional change in different local contexts, two communities in the Naryn (a remote mountain area) and Chui (relatively close to the capital) regions in Kyrgyzstan were selected, to achieve maximum variance along relevant dimensions (Seawright and Gerring 2008) influencing institutional change, such as pasture resource availability and condition, conflicts over access to the resource, exit opportunities and availability of alternatives, and distance from and interaction with the central government.

The strategy of selecting most different cases was considered appreciate for an exploratory study (Seawright and Gerring 2008) as we sought to explore how the diversity of socio-ecological dimensions may shape institutional change. Diversity regarding pastoral systems and characteristics of actors are important here in terms of various causal paths that we assumed can define the same institutional outcome observed across Kyrgyzstan – reduction of mobility and the overgrazing problem. Similar are also the formal governance structures introduced. These similarities suggest that changes are not case-specific.

As we will illustrate later in our article, we found, however, that despite differences between the communities regarding socio-ecologic characteristics and some differences of informal arrangements regarding organizing herding of cows, dynamic changes in power relationships and institutions have exhibited similar patterns in both communities. We explain this with the fact that both communities are traditionally agro-pastoral communities with similar post-1991 informal de facto undocumented rules regarding pasture use and resulting problematic outcomes, and that the enforcement of new formal rules has been initiated more or less simultaneously in different parts of the country including the studied communities.

The case studies rely on extensive field research carried out in two communities. In total, more than 80 expert interviews were conducted. The authors were also extensively engaged in participant observation at round tables, official meetings on pasture-related issues organized by the Ministry of Agriculture and Melioration of the Kyrgyz Republic and the Food and Agriculture Organization of the United Nations (FAO), the CAMP Alatoo NGO and the Agency for Technical Cooperation and Development (ACTED) at the national level, and at the meetings of Pasture Users Unions (PUUs) and Pasture Committees (PCs) in Jergetal and Tosh Bulak communities. The “expert interviews” conducted were topically structured (Liebold and Trinczek

2002). The goal of this method is to stimulate actors narratives about their opinions and experiences. The “experts” are actors who have specific knowledge of institutions and practices based on their professional, but also personal experiences; in this case, that meant those involved in pasture use and management. Pasture users, members of PUU and PC, and regional and national experts in Chui, Naryn and Bishkek were interviewed. Analysis of the empirical data followed a qualitative systematic content analysis approach (Mayring 2010). Our findings are based on the empirical data collected and analysed between 2011–2014.

4. Institutional Context in Pasture Use and Management

In this section we set the stage for our subsequent, detailed case study of how the reform of the formal institutional framework of pasture management changed institutions after 2009. For this purpose, we first describe the general socio-economic characteristics of the selected communities, the status of pastures as crucial resource of pastoralists as it developed between 1991 and 2009 and as it has been affected by pasture mobility. Subsequently, we explain the role of formal and informal institutions in the way pastures and pasture mobility developed in this period.

4.1. Case study areas

The Jergetal and Tosh Bulak communities, in the Naryn and Chui regions of Kyrgyzstan, respectively, were selected to study institutional change in pasture use (**Figure 1**). Jergetal is located in a remote mountain region with harsh climate conditions, with traditional specialization in livestock, and limited economic alternatives. Tosh Bulak has the characteristics of a peri-urban area, with mild climate, good access to markets and developed infrastructure. Jergetal has a larger total pasture area than Tosh Bulak, for climatic and topographic reasons. The communities also have different herd structures and marketing options for pastoral products. Jergetal has relatively more sheep and horses and sells meat and wool, while Tosh Bulak has relatively more cattle and depends on the sale of milk. Yet, despite the differences, the selected communities face similar problems regarding pasture use. In both communities, livestock populations have increased significantly in recent years, negatively affecting pasture conditions. Winter pastures and most accessible spring and autumn pastures are overgrazed, as herders use them all year without pasture rotation. In contrast, the most distant high-mountain summer pastures are underused. The problem of overgrazing is a typical problem not only for other parts of Kyrgyzstan, but also for other Central Asian countries (Kreutzmann 2012; Robinson et al. 2012).

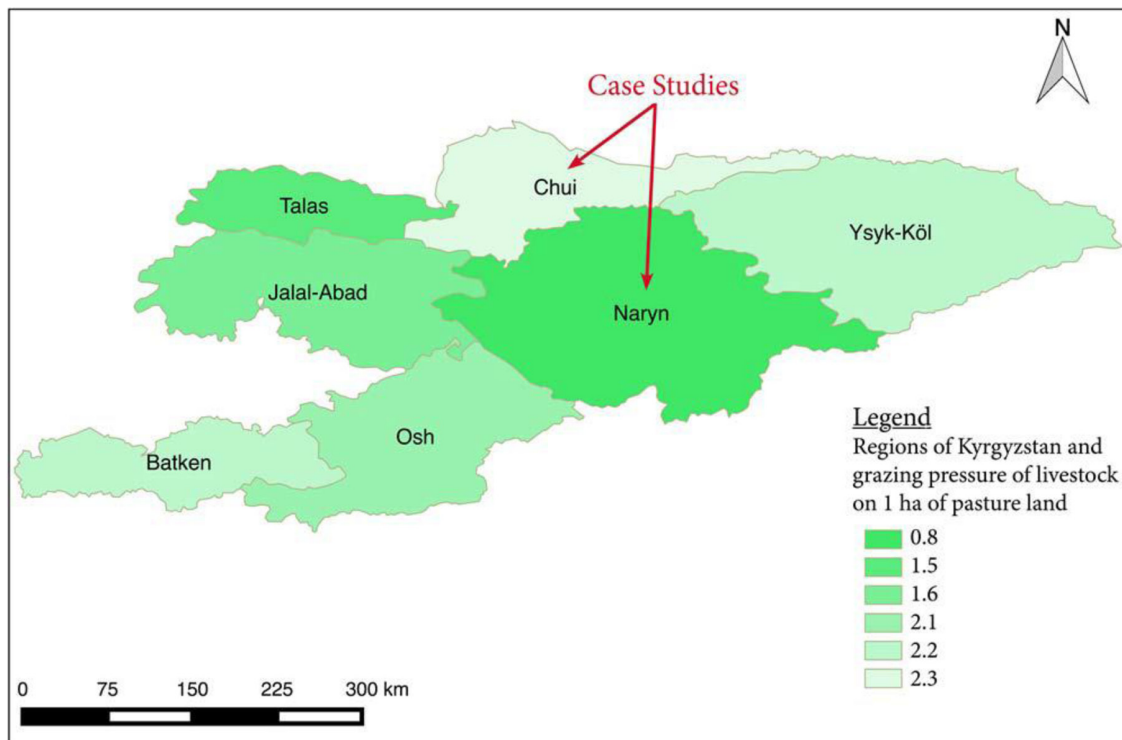


Figure 1: Research areas [Source: Based on the National Environmental Report (2012)].

4.2. Pasture use pattern as an institutional outcome (1991–2009)

For the period from 1991–2009 the literature shows that the main institutional outcome was a massive reduction in pastoral mobility (Undeland 2005; Farrington 2005; Shigaeva et al. 2007; Kerven et al. 2012; Jacquesson 2010; Ludi 2003). As Soviet-era rules disappeared and livestock went into private hands, private individuals leased state pastures, and herders and communities made new herding arrangements.

The institutional outcome was much less pastoral mobility: many herders stayed on spring and autumn pastures close to their villages, without moving livestock to summer pastures. This caused overgrazing and conflict between pasture users. Considerable deterioration of infrastructure that had supported pastoral mobility in the Soviet era also contributed to this outcome and the magnitude of the social dilemma around pasture use: individual benefit became increasingly at odds with the welfare of the community.

Both case study communities faced these problems. In Jergetal, the accessible winter, spring, autumn and some summer pastures were overgrazed, but some summer and spring/autumn pastures were underused, due to their remoteness or lack of access to water. Isakov (2013) reports that in the Jergetal community the carrying capacity of the pastures³ that were accessed could be increased by more than 50% if long-term overgrazing were prevented. Meanwhile, for Tosh Bulak, Shigaeva et al. (2007) reports that the productivity⁴ of near-village winter and spring pastures (pre-mountain pastures)⁵ decreased by more than 30%. In contrast, the productivity of remote high-mountain summer pastures increased by more than 20%. In middle-term however, this may lead to decrease of productivity of these pastures due to the replacement of palatable grasses by less palatable plants. Focusing on the period up to 2009, in the following we first describe the formal institutions and subsequently the informal institutions responsible for these outcomes.

4.3. Formal pasture management institutions (1991–2009)

Above-cited deterioration of pastures, pasture mobility and infrastructures were influenced by changes in formal and informal institution in the period between 1991 and 2009. Undertaking radical post-socialist agricultural reform, starting in 1991 Kyrgyz policymakers chose to decentralize formal pastoral institutions. Initially, kolkhozes and sovkhoses were dissolved and their livestock placed in the private ownership of former collective and state farm workers. The pastures were retained under state ownership and could be leased to private pasture users.

However, throughout this period the distribution of management responsibilities among state administrations remained based on the pasture categorization inherited from the Soviet era – with categories determined by the distance between pastures and settlements. Even when an important redistribution of responsibility took place in 1995, the use of the Soviet-era categories persisted: municipalities became responsible for pastures “near villages”, while middle-distance or “intensively used” pastures were put under district administration, and the Ministry of Agriculture was made responsible for remote pastures. The State Agency for Environment Protection and Forestry and forest enterprises were made responsible for pasture management in forested areas. The contemporary literature reports that the pasture allocation procedures prescribed by the agricultural reform laws of the period were complicated, created high organizational costs among participants, and were rarely properly applied or enforced (Undeland 2005; Steimann 2011; Dörre and Borchardt 2012).

4.4. New formal institutions after 2009

Responding to the pasture-related problems, particularly overgrazing and conflicts over pasture access, the Kyrgyz parliament adopted the new Law On Pasture in 2009. The new law introduced radical changes to the pasture management system: (1) it abolished the three-level Soviet-era system of state pasture management, distributing responsibility for management of all pastures at the local level, to the newly formed Pasture User Unions (PUUs) and Pasture Committees (PCs); (2) it abolished the area-based long-term pasture lease system (which had encouraged individual resource rights, and resulted in overgrazing) and introduced an annual livestock-based pasture fee (“pasture ticket”); lastly, (3) it introduced a planning and monitoring system for pasture use and management to be undertaken by the local communities. By 2011, PUUs and PCs had been created in all 454 municipalities in Kyrgyzstan, including the Jergetal and Tosh Bulak communities.

³ The carrying capacity of pastures means the maximum number of animals that can be grazed without overusing the resource.

⁴ The author measured the change of pasture productivity by accessing figures on average dry forage productivity (centner/ha). This metric measurement is used in agriculture in Kyrgyzstan.

⁵ The pre-mountain pastures are located at altitudes between 800 and 1,400 m and can be used as winter, spring and autumn pastures.

One of the first tasks for each newly established PC is to collect pasture fees and allocate pasture tickets to pasture users. The collected pasture fees are supposed to finance the committee's overhead costs and be invested in pasture infrastructure and improvement. The pasture fee is defined annually by the PC for each type of livestock and pasture. It cannot be lower than the basic tax for using a pasture, and needs to be approved by the municipality. Collecting pasture fees is, however, a difficult task, since livestock monitoring is a problem in both communities. For example, the PCs in Jergetal and Tosh Bulak only managed to collect less than half of their pasture fees in 2012 (Annex 2). The pasture ticket is allocated according to annual pasture use and a management plan, which is developed and implemented under the coordination of the responsible PC. Pasture capacity and condition (productivity and level of degradation) and the size of livestock populations need to be annually monitored and assessed by PCs as a basis for negotiating pasture allocation for the following year's pasture use plan.

The implementation of the new pasture legislation has triggered a gradual repositioning of actors and redistribution of access to pasture resources. Below, we will prioritize the analysis of change of local, informal institutions after the changes in formal institutions in pasture management that have occurred in post-Soviet Kyrgyzstan and that we have described here.

5. Interactions Among Pasture Users and a Representative Bargaining Situation in Pasture Use

In order to illustrate the effect of the latest reforms on actors' power resources and explain them using the distributional theory of institutional change we first identify and describe a representative bargaining situation that occurs in pastoral management. In particular, we identified, two primary types of actors who are involved in complex interactions and bargaining processes related to pasture use: 1) community herders without any livestock or with only small numbers of livestock, who provide herding services for community, and 2) individual herders who are usually a wealthy large-scale livestock owner caring for his own livestock. Many individual herders successfully provided their services for the community in the past until they increased their own herds and decided to stop as they gained more from herding own animals than others. Usually, they have a better access to assets, such as financial resources for investment and human capital (e.g. skills and knowledge on livestock and pasture management). They interact with each other primarily by bargaining and competing for access to the resource.

In these bargaining situations, powerful actors benefit more from non-cooperation than from cooperation. An individual herder (Actor A) and a community herder, (Actor B), bargain and compete over access to spring and autumn pastures. In this situation the interests of individual and community herders are at odds in the short term. Both herders are generally better off with cooperation in the long run, as seasonal migration by both improves the productivity of common pastures and their livestock, avoiding conflicts. In the short term, however, individual herders can usually do better by avoiding cooperation and occupying the most accessible, productive pastures close by. Such non-cooperation leads to decrease of pasture mobility and collective losses for communities – overuse, less productive pastures and conflicts.

For those herders who decide to secure access formally, individual herders may have signed long-term pasture lease contracts under the previous legislation – leases that can still be valid but may not have been prolonged after 2009. To secure their privileged access such individual herders buy or build barns on winter, spring and autumn pastures; and individual herders fence pastureland to produce winter fodder.

Individual herders can obtain exclusive access to pastures: negotiations between them and the community herders, which determine whether the individual herd owners seek exclusive pasture access or not, is the bargaining situation on which we focus. Individual herders obtaining exclusive access to pastures create a dilemma. Without communication and coordination of pasture allocation among pasture users, individual herders are better off individually if they can secure privileged access to the accessible winter, spring and summer pastures. Nevertheless, in the medium to long term, this leads to overutilization of these pastures and low livestock productivity because of decreasing pastoral mobility for the community as a whole.

We selected the bargaining situation between an individual and a community herder outlined above⁶ because it is representative for the study area and its outcome is strongly related to pastoral migration, contains social dilemma and is affected by changes in formal and informal institutions. We observe this interaction in both communities under study.

⁶ For the description of another illustrative bargaining situation between a livestock owner and a community herder, please see Ulan Kasymov (2016).

A failure of cooperation between individual and community herders can cause conflicts between two types of actors. Notably, most conflicts among herders within communities are managed informally by community elders, neighbours and municipalities. Only in exceptional cases do formal organizations at a higher level intervene. This highlights once more the complexity of change of informal institutions and importance of involvement of the third parties such as elders, municipalities and PCs in this context. For analytical reasons, however, we focus first on bargaining between the individual and community herders in order to illustrate the first logic of institutional choice – constraining choices of other through own commitment. We include in our analysis the effect of involvement of a third party and another logic of institutionalisation at the later stage.

This is a dynamic form of bargaining interaction, with sequential exchange of decisions and responses:

1. The individual herder makes the first move by occupying accessible and productive spring/autumn pastures and taking decisions regarding use of summer pastures later.
2. The community herder makes the second move as he is more flexible and his decision regarding choice of pastures depends on what type of animals and how many he was able to collect from his clients in the community.

There are four possible outcomes in this bargaining situation (**Figure 2**):

1. Cooperation by both actors: Both the individual and community herders move with their livestock from winter to spring, summer and autumn pastures and back. This strategy supports pastoral migration promoting regeneration and better status of pastures.
2. Defection by individual herder and cooperation by community herder: The individual herder stays on spring and autumn pastures close to the village and market, without moving to summer pasture, while the community herder is forced to move from winter pastures directly to summer pastures and back. This strategy disrupts pastoral migration leading to overgrazing and decreasing pastoral productivity. Additionally, individual herders, as they cannot keep their animals in the village during winter and need more winter fodder, may build a barn for their livestock and fence some pastureland to produce winter fodder for his livestock. Community herders often lack financial means necessary for such investment, and do not really need barns as during winter they distribute the collected animals to their owners keeping only small numbers at home. In the cases when individual herders own barns and fence pastureland, the access of community herders to spring and autumn pastures is reduced. Community herders are then forced to move from winter to summer pasture and directly back to winter pasture. This pattern further increases the risk of losing livestock to bad weather in the mountains in spring and autumn.
3. Cooperation by individual herder and defection by community herder and: The community herder stays on spring and autumn pastures close to their village, without moving to summer pastures while individual herder move. This strategy also disrupts pastoral migration leading to overgrazing.
4. Defection by both actors: Both herders stay on spring and autumn pastures close to their village, without moving to summer pasture ending up in conflict. This strategy is the most problematic one because it not only disrupts pastoral migration leading to overgrazing, but also causes conflicts among pasture users. Conflicts between herders are an interaction outcome, when both bargaining partners defect and decide to stay at spring and autumn pasture and when it is not sufficient fodder for both herds there. In the short term, the material gains (distributional advantage) for herders are highest if they stay on spring and autumn pastures, selling livestock products at local markets and benefiting from lower transportation costs. This implies that both may defect.

Furthermore, the herders have dealings with other actors and organizations at local, regional and national levels – dealings that require coordination via institutions. But institutions that are often primarily informal undocumented and de facto arrangements. For example, In the 1991–2009 period traditional informal institutions such as “Mal koshuu” and “Bada” were revitalised and adapted to the new realities (Steimann 2011). Many owners of small and medium livestock have been pooling their livestock together (mal koshuu) to collectively use common pastures. This made economic sense in the new privatized world. Individual herders have costs if they move only their own livestock. Community herders increase their income if they collect livestock and provide herding services to individual livestock owners as clients. Thus, providing herding services has become a popular business for community herders who may have their own

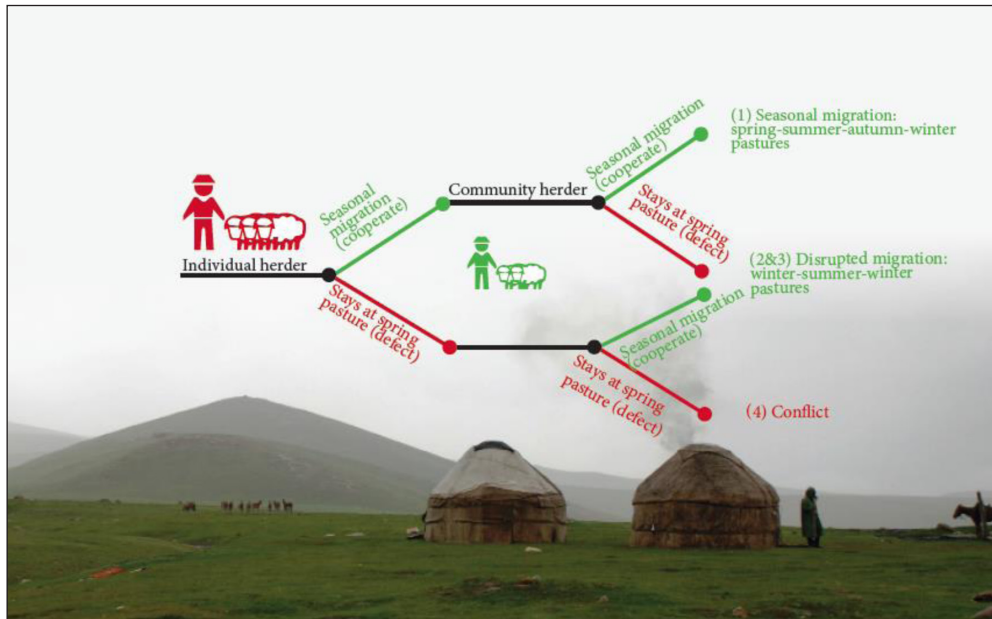


Figure 2: Bargaining between individual and community herders. [Source: Authors, design by Alybek Ismailov].

livestock (they are typically owners of small and medium size herds) while collecting additional livestock from clients. In the Bada arrangement households jointly negotiate and hire a professional community herder (*badachi*) to take care of their animals. The community herder collects animals in the spring. After herding the livestock onto seasonal pastures, the herder brings the animals back to their owners in the autumn.

These and other traditional institutions coordinate how the herders and livestock owners negotiate over cooperation in the following situations concerning who obtains greater benefit from cooperation: in spring, livestock owners and herders negotiate the terms and conditions of herding. They benefit from sharing costs and risks related to pastoral mobility. When preparing to move to remote summer pastures, herders negotiate with truck drivers about the price of transportation services under the time table and price arrangements negotiated and set at the community level. Here herders benefit by getting help in moving to remote summer pastures, and drivers, obviously, benefit from selling their services. Herders bargain with traders to sell their livestock and livestock products during summer and autumn coordinated by established local and regional markets (due to space limitations, we do not include our research on this type of interactions in this article).

6. Illustrative Analysis of Informal Institutional Change

In this section we analyse the selected illustrative bargaining situation: bargaining between individual herders and community herders concerning their access to accessible and productive pastures. We focus on representative examples from both empirical cases, before and after the reform of 2009 to explain the informal institutional change that we observed – as a change of the equilibrium outcomes of negotiations between individual and community herders. We present the reasons for bargaining outcomes and provide an analysis of how actors' power resources have shaped the equilibrium that we call in our study informal undocumented *de facto* institution.

In the years following 1991 the bargaining interaction between herders often happened without involvement of local leaders and authorities and even without direct communication, on a “first in time, first in right” basis: “Today each herder has pastures, where his father and grandfathers went in the past. They are going to the some place and others accept this”.⁷ This a simple principle of the “grandfathering” rule that exclude new entrants. In CPR management exclusion is a key feature of set of rules that prevents from an open access situation. This rule is recognised, implemented and enforced by local users themselves as it is “consistent with common-sense notions of fairness based on traditional use [...]” (Damon et al. 2019: 33).

⁷ Interview with an ex PC member in Jergetal, August 31, 2011.

During informal negotiations between herders a claim that their fathers and grandfathers used a particular pasture is accepted as legitimate.

This has been changing recently since organizations at the community level – such as municipal administrations, PUUs and PCs, who became responsible for the management of pastures within their borders in 2009 – have been intervening through enforcement of formal rules and, consequently, changing the conditions for negotiation among the actors involved. To take an example, these organisations convene a general community meeting in spring (usually in April) and develop pasture use and management plans, where everyone, but especially the herders, are invited to take part and discuss different issues, including the terms and places for herding.

As stated above the carrying capacity of available spring and autumn pastures can accommodate herders better if they rotate (first to spring pasture, later to summer pasture, and then return earlier from the mountains to autumn pastures (Strategy 1 in **Figure 2**). This strategy is also better for the community and its natural resources as a whole: it ensures better pasture health and productivity through seasonal rotation, and it prevents conflicts.

In cases of defection by one or both actors (Strategies 2, 3 and 4), however, when one or both herders stay on spring and autumn pastures without moving to summer pastures, they end up in conflict that has to be dealt with in their community by elders, neighbours and municipality and greatly decrease the cooperation in pastoral mobility and reduce pasture productivity over time.

As already described under Subsection 4.1, pastures were greatly overused in the period until 2009 because the most common outcome observed was that individual herders stayed on spring and autumn pastures close to their villages, without moving livestock to summer pastures. Responding to this, the community herders either had decided to stay there as well (Strategy 4), or they had been forced to move from winter to summer pastures (Strategy 2). In both the Jergetal and Tosh Bulak communities, respondents were as a result reporting an increase of conflicts within communities after 1991 (most conflicts were nonviolent and resolved through facilitation by community leaders).

As a result of the choices made by individual herders and the responding choices of community herders, pastoral migration was disrupted indicating the emergence of what is essentially a new *de facto* informal institution “grandfathering” rule, created through the way actors have bargained in this situation. From this development, the following questions arise: Why were individual herders in a stronger bargaining position than community herders?

To understand why that is the case in this bargaining situation, we first investigate power relations between community herders and individual herders between 1991 and 2009 that led to emergence of the problematic outcome. Subsequently, we discuss an *ex-ante* institutional change perspective and interpret changes in power resources as a result of pasture reform after 2009 to generalise regarding further changes in informal institutions in the future.

6.1. Power resources of actors that led to emergence of institutional outcomes 1991–2009

The institutional setup and 1991-era changes in socio-economic context conditions, such as increased populations and value of livestock, high demand for fodder, herding services and more rivalry for the resource, motivated individual herders in both the Jergetal and Tosh Bulak communities to stay at spring and winter pastures excluding others from accessing the resource.

The question arises why individual herders there were no restraints in place to stop them to do so? Our study reveals that bargaining positions in this situation depend, to a large degree, on the credibility of commitment and positional power individual herders have in this bargaining situation. This illustrates the first mechanism of institutionalisation – to constrain others through own commitments (Knight 1992).

(a) Credibility of commitment:

Individual herders sometimes signed long-term rental contracts under the 1991 pasture regulation, giving them *de jure* claim to a pasture; more often, they simply built private barns on pastures and fenced pasture land, giving them *de facto* exclusive control of a pasture. Either line of action provided individual herders with great credibility in regard to their commitment to defend exclusive access to spring and autumn pastures close by and not moving to summer pastures. According to a municipal land use administrator in Jergetal, the number of applications by mainly individual herders to build or legalize barns increased along with rising livestock numbers since around 1996, illustrating how individual herders have gradually acquired the assets that made their commitment to stay on spring and autumn

pastures credible. A community herder's complaint during a community meeting in Jergetal confirms this development:

"There are some livestock owners who own barns on winter and spring pastures and do not allow others to come to that pasture. For example, one herder in our village has occupied 500 ha of pasture, though having only 100 sheep and 20 horses."⁸

(b) The organisability of a group:

This power means that the transaction costs for collective action to agree on a common strategy in bargaining can be kept low as the bargaining done by individuals. In our study we could not identify power asymmetry in relation to this resource.

(c) Positional power:

As stated in Section 2, positional power improves the strategic position of actors by providing access to information about available alternatives (e.g. information about distribution of pasture plots, and quality of those plots) and access to assets (e.g. credits and human capital). Individual herders have significant positional power due to their access to human capital such as professional experience and skills in livestock management and pasture use. The community herders, in contrast, are often less successful or they are young and inexperienced herders who have started providing herding services just recently. Compared to the community herder, who tends to be poorer, individual herders usually have better access to financial capital. In both communities studied, individual herders were able to acquire loans from credit organizations and bribe local officials and get privileged access to more productive pastures.

Until 2009 individual herders built barns and fenced off pastures and exclude community herders. This was allowed under the old pasture regulation for the long-term contract holders. But many individual herders also built them without obtaining formal contract. Building of barns and fencing is an attempt to privatize and secure their access to productive and accessible pastures around these barns. The grandfathering rule permitted them to do so. These investments reinforce individual herders' positional power. Furthermore, many have had long-term pasture lease contracts, signed under the previous pasture legislation (before 2009). This furthers their credibility in bargaining, a better strategic position and more power to control access to the resource. In the case of disputes with the community herders, they received support from the local and regional officials. Due to the fact that, in general, fewer pastures are available in Tosh Bulak and a larger pasture area there was leased to individual herders, this control of pastures by individual herders plays a more important role in Tosh Bulak than in the Jergetal community. A community herder in Tosh Bulak informed us that, "Some individual herders leased a pasture in order to privatize it in the future. Others [community herders] have collected livestock but cannot use the pasture."⁹

Finally, positional power of individual herders has been strong as many are former members of the former Soviet elite network (*nomenclatura*) that provided them privileged access to information and assets in the past. A teacher and medium-scale livestock owner in Jergetal informed us that many individual herders are former *kolkhoz* leaders and professional herders who had better access to information (e.g. plans about privatisation of livestock, barns and distribution of land) benefited from privatization of the collective farms. They received a larger and better share of the formerly collective livestock herd, barns, land and became rich thereafter, as they also knew how to manage livestock and deal with risks in the mountains.¹⁰ This allowed them and their families to gain and retain a privileged access to attractive pastures.

But how were collective herders responding to this? Certainly, community herders were unhappy. A community herder in Jergetal voiced his concern at a community meeting: "Why should only one person have the right to use this pasture? Where will the others go?"¹¹ Many young community herders were avoiding conflicts with more powerful and experienced individual herders by opting to move from winter pastures directly to a more remote summer pasture (disrupted migration Outcome 2). But as livestock's value and numbers increased, more conflicts between pasture users (Outcome 4) were reported in both municipalities.

⁸ Participant at a community meeting in Jergetal, September 1, 2011.

⁹ Participant at a community meeting in Tosh Bulak, April 4, 2013.

¹⁰ Interview with a teacher in Jergetal, August 31, 2011.

¹¹ Participant at a community meeting in Jergetal, September 1, 2011.

6.2. Projected implications of formal changes institutions on pasture management after 2009

In this subsection, we first look at the ways that the power resources described in the previous section have been affected by the enforcement of formal institutions under new pasture legislation implemented since 2009, specifically by the pasture use and management planning and enforcement of pasture fees (pasture tickets). This nicely illustrates the second mechanism of institutionalisation – “[...] to constrain actions of others through actions of actions of a third party” (Knight 1992: 188). Then we elaborate on the likely future institutional changes and their impacts, acknowledging that due to the resistance of individual herders and inertia in change of informal institution more time and efforts to enforce new formal rules will be necessary until both new informal and formal rules can be established the effects of the pasture reform can be fully observed and evaluated. We assume that in order to assure pastoral mobility and more sustainable pasture use the new informal and formal rules need to change social expectations of pasture users.

(a) Credibility of commitment:

The ownership of barns on pastures, combined with the fencing of pasture land, secures individual herders privileged access to pastures, but also provides them with more credibility in regard to their commitment to retain their exclusive access to the resource and be more patient in the bargaining. Please note that this does not mean that the individual herder refuses to cooperate completely. He just wants to get a more favourable baseline for future bargaining rounds. Significantly, that this power resource is not affected by new institutions as the building of barns on pastures and fencing is not addressed in the new regulations. In 2013, 146 barns on winter, spring and autumn pastures in Jergetal and 43 in Tosh Bulak are owned by large- and medium-scale wealthy, individual herders. According to a municipality land use specialist in Jergetal, the number of applications to build or legalize barns quadrupled in 2013 compared to the previous year. Barn ownership (even without legalisation) allows the individual herders' claim their de facto rights for pasture simply by physically staying with their livestock on the land during the whole year. This is supported by the “first time, first in right” principle of the grandfathering informal rule.

(b) “Organisability of group” power:

More recently organised workshops and pasture-use and management planning meetings influence the community herders' “organisability of group” power – the ability to organize and act collectively is supported by interventions of PCs that facilitate organisability of the group by reducing the costs of organization and coordination. The PC leaders of both communities report that it is mainly community herders who actively participate in the workshops and pasture-use planning meetings organized by the PCs and who support their implementation. Even when bargaining between individual and community herders is conducted individually, a better organisation of community herders and their agreement leads to a common bargaining strategy. For example, they jointly try to get support from municipalities and PCs in pushing individual herders to cooperate and inform PCs about non-compliance of individual herders with pasture use planning for seasonal mobility's.

(c) Positional power:

The current developments demonstrate that the implementation of the new pasture legislation has initiated complex re-negotiations among pasture users and triggered a repositioning of the different actors. This is especially true regarding bargaining between individual and community herders. In this restructured bargaining situation, new formal rules favour the thus far less powerful player: the community herder. The enforcement of new formal institutions by PCs and municipalities, for example through pasture-use and management planning and allocation of pastures to herders via pasture tickets described in Subsection 4.4, seems to help community herders constrain the strategic choices of individual herders. As a result, this reinforces their positional power at the expense of the bargaining power of individual herders.

For instance, the new formal institution pasture ticket has gradually reduced the positional power of individual herder such as access to assets (pastures) when their lease contracts were not prolonged. PCs that way gained flexibility to re-allocate pastures on an annual basis. Similarly, PCs have been reducing individual herders' positional power by implementing pasture-use and management plans, forcing herders to negotiate and, eventually, under a typical pasture use plan, jointly move to spring, summer and autumn pastures. According to the head of the Jergetal PC it is mainly young community herders that have been taking part in annual planning meetings and that support the enforcement of new formal institutions, such as pasture use and management. Although the planning of future pasture use is based on current pasture allocation, it may change herders' access, if carrying capacity of a pasture indicates that access should be limited.

Planning pasture use at the community level also helps to decrease information asymmetry regarding available pastures and their quality. That way, also plans to improve pasture infrastructure (e.g. roads, bridges and water points) are published, which can affect the decisions of actors in the bargaining process. Thus, individual herders' positional power, which was based on their previous, privileged access to information, is reduced, and transaction costs of bargaining are reduced for community herders. Further, formal procedures to apply for resource use rights allow for simpler renegotiation of accessible and productive spring and autumn pastures during formal community meetings.

Further, the enforcement of pasture-use plans and the allocation of pastures to herders via pasture tickets gives additional sanctioning power (which we classify as subcategory of positional power) to community herders. This favours community herders in comparison to the setting before reform of the pasture legislation. A former member of the Pasture Committee in Jergetal recalls that "one wealthy livestock owner [an individual herder] has a long-term leasing contract and a barn on the spring and autumn pastures and refused to move to summer pastures in 2010. The PC went to aksakal sotu [the elder's court at the municipality level] in order to punish him. This year it seems he did go to the summer pasture."¹²

Nonetheless, two important, contradictory dynamics of the change in power relations affected by the new formal and old informal rules must be highlighted here. We observe that the enforcement of new pasture legislation by PCs gradually reduces the bargaining power of individual herders, as illustrated above. However, the PCs find it difficult to enforce pastoral mobility when there is resistance by individual herders who still have asymmetric bargaining power and can constrain choices of community herders.

Thanks to accumulated wealth and successful livestock management experience, individual herders are well respected in their communities. This probably explains why the formal institutions put in place in recent years of pasture reform hardly improved the situation of community herders thus far, despite the formal intervention to change their positional power. Especially in Tosh Bulak, where as we presented earlier the positional power asymmetry was higher than in Jergetal, many individual herders belong to community elites and are involved in one way or another in the management of pastures by working in leadership positions in municipalities and Pasture Committees, allowing them to intervene when the enforcement of new formal institutions threatens their personal interests. Thus, using his positional power the individual herder could hamper the implementation of the new formal institutions that favour community herders, simply by not complying with the new formal rules and not sharing information regarding seasonal allocation of pastures, pasture quality and funding opportunities. Thus, individual herder in many cases continue not to cooperate. This, we expect, will only change once further decrease of pasture productivity and conflicts with the community herders increase the costs of non-cooperation.

Overall, evidence suggests that the reform of pasture legislation and its enforcement relatively favours community herders, notwithstanding the fact that individual herders still have important power resources, such as the credibility of commitment and positional power and can constrain choices of others. If PCs continue to become more effective in implementing the new rules, and as lease agreements run out and younger herders take over, community herders should obtain a better position in future negotiations over access to spring and autumn pastures. A lot depends, of course, on the development of implementation capacities of the state and its representation at the local level (municipalities; PUUs and PCs), as well their independence from individual herders. That way it becomes more likely that the rotation system will be institutionalized once again as a new equilibrium that is socially beneficial for the whole community.

7. Discussion and Conclusion

Our study was motivated by the challenge formulated by North (1990: 140) – "We need to know much more about [informal rules] and how they interact with formal rules". We sought to contribute to this research agenda illustrating the case of pasture management in the post-socialist Kyrgyzstan. The case allowed us to learn about the role of bargaining power for the mechanisms and reasons for gradual change of de facto informal rules and how this is shaped by formal institutional change. In our approach we first, reconstruct gradual, informal, de facto institutional change as a result of change of power relations. Second, we illustrate use of theoretical approach of Knight (1992) to this end that allows us to project further implications of formal institutional change, if all further contextual change remained similar.

Seeking to contribute to discussion about the change of de facto informal rules and effect of new formal rules in the pastoral contexts, the research questions pursued during this study have been: What was the

¹² Interview with a former member of the PC in Jergetal, August 31, 2011.

role of the interplay between formal and informal institutions in the deterioration of pastures until 2009, how did the reform of formal institutions affect de-facto informal institutions of pasture management and how can we conceptualize this change. As a result of the application of this conceptualization, what can we expect as medium to long-term outcome of the reforms if we assumed contextual conditions to continue relatively stable?

To address these research questions, we presented our evaluation of the process of institutional change in relation to changes in the bargaining power of pasture users. To study these complex processes of institutional change we used the distributional theory of institutional change of Knight (1992).

The literature that employs Knight's theory (Schlüter 2001; Theesfeld 2011; Thiel and Egerton 2011; Thiel 2014; Theesfeld 2005) focused mainly on the analysis of the role of bargaining power in explaining change of formal institutions (Thiel and Egerton 2011; Thiel 2014), failures of the post-socialist decentralisation reform (Theesfeld 2005; Theesfeld 2011), or privatisation process (Schlüter 2001). While we find this conceptualization by Knight and colleagues to be useful also for our study, we further use it to extrapolate the changes throughout the 5 years following the reform into the medium to long-term future.

Adopting an ex-post perspective to explain institutional change, we observed problematic informal institutional change in the communities of Jergetal and Tosh Bulak. Collective agreements about resource use based on the "first in time, first in right" principle of the grandfathering rule did abandon rotation of pastures. In result winter pastures and the most accessible spring and autumn pastures became overgrazed, as some powerful individual herders use them throughout the whole year without rotation. This is in line with the studies on grandfathering: Damon et al. (2019: 37) argue that "If firms or individuals can benefit by harvesting more now and thereby getting a larger share in the future, then many of them will engage in overfishing or overharvesting". Our analysis suggests that this outcome can be explained by the ability on the part of powerful individual herders to constrain the choices of community herders to use productive and accessible pasture in a way that benefitted individual herders. The grandfathering rule and its outcome was favoured by formal rules underlying pasture management up to 2009.

Further, analysing the period right after formal institutional change in 2009, we found that enforcement of new formal institutions has been affecting the relative bargaining power of herders and has had a redistributive character. Specifically, the reform of pasture legislation supports less powerful actors. Nonetheless, we also consider corresponding re-configuration to be ridden by inertia and therefore to continue to unfold throughout oncoming years. Specifically, we expect young community herders to favour further change. We project that in the future it can contribute to emergence of a new informal institution which favours pasture rotation as a socially better strategy of pasture users, also reducing overuse. We argue that this would be the result of gains in bargaining power by community herders. Consequently, we expect them to be able to re-negotiate access to pastures, which will also lead to change in de facto rules of pasture allocation, a change which has only just begun.

What we observed is that community herders have been questioning the legitimacy of asymmetrical access to pastures enjoyed by individual herders; and individual herders have been experiencing pressure from Pasture Committees, municipalities and community herders to migrate to summer pastures, rather than remaining in the spring/autumn ones. Nevertheless, wealthy and powerful actors try to resist this change, refusing cooperation as to retain their asymmetric positional power. We empirically observe that many have better access to assets, strong reputation, long term pasture use formal contracts and own of bars on pastures. Therefore, we observe a situation that we may call a "disequilibrium". The old informal grandfathering rule has been challenged by groups disfavoured in bargaining, while the enforcement of the formal rules push individual herders to negotiate, establish more transparent platforms for negotiation at the community level and enforce pasture rotation. But a new informal rule still is not in the place in the form of a new equilibrium that is broadly shared and implemented. Therefore, the role and ability of state and its local representatives (PCs) to facilitate the bargaining and support new rules and overcome resistance from powerful actors will remain crucial.

Our study confirms what other authors observed as well: "The recent innovation in pasture law has not comprehensively resulted in the desired outcomes on the ground" (Dörre 2015: 1), and the shift to a new equilibrium and new informal institutions that are effective and socially beneficial has not yet occurred (UPAGES Report 2016). The key question remains open whether change of the bilateral bargaining interactions between resource users, which we empirically observed in our study, will result in a new equilibrium and be aggregated to the level of socially shared informal rules in near future. Our interpretation of empirical findings based on our conceptualization of institutional change point into a promising direction. Further, the role of individual herders is gradually undermined by generational

change and licenses that run out. Thus, we have reasons to believe that in the medium to long term a more sustainable institutional equilibrium that favors collective herders and reduces pressure on pastures close to villages will emerge.

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Competing Interests

The authors have no competing interests to declare.

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