

---

## TRANSFORMATION IN COMMON-POOL RESOURCES MANAGEMENT IN CENTRAL ASIA

# Editorial: Introducing "Transformation in Common-Pool Resources Management in Central Asia"

Ulan Kasymov<sup>1,2</sup>, Ahmad Hamidov<sup>3,4</sup> and Konrad Hagedorn<sup>1,5</sup>

<sup>1</sup> Humboldt University of Berlin, DE

<sup>2</sup> Technical University Dresden, DE

<sup>3</sup> Leibniz Centre for Agricultural Landscape Research (ZALF), DE

<sup>4</sup> Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, UZ

<sup>5</sup> Berlin Workshop in Institutional Analysis of Social-Ecological Systems (WINS), Humboldt University of Berlin, DE

Corresponding author: Ulan Kasymov ([ulan.kasymov@tu-dresden.de](mailto:ulan.kasymov@tu-dresden.de))

---

**Keywords:** Common-pool resources; institutional change; Central Asia

---

## 1. Introduction

"Yes, there has been a change of epochs, change of systems. [...] The Soviet Atlantis with all his cultural and spiritual heritage, with all its contradictions and vices, sank into the depths of the ocean. [...] We ourselves wanted this and helped it along many ways. But as it always happens, you expect one thing and another happens." (Aitmatov, 1998: 531)

The above citation from the Kyrgyz writer Chingis Aitmatov is quite illustrative of how many people in Central Asia and other post-Socialist countries have felt about the experience of change that their countries underwent following the breakup of the Soviet Union. Since the 1990s, governmental and non-governmental organizations as well as international development agencies have been actively promoting radical socio-economic reforms in the post-Soviet nations of Central Asia and the Caucasus as well as in post-reform China<sup>1</sup>. This has been particularly noticeable in many sectors of natural resource management (e.g. water and land), where privatization and decentralization reforms have been pushed to the forefront by experts and policy makers. Following the implementation of radical policy measures, many old institutions have disappeared, or are no longer enforced, leaving resource users to make major decisions about the management of natural resources and craft new rules and practices.

The most striking and puzzling aspect of this process has been how rapidly such changes occurred and continue to occur within the rules governing people's lives and regarding their relationships with nature as well as how they have been coping with, negotiating, adapting to and formulating new positions within a new reality. This new reality, however, is not completely new, as many old rules have persisted or been adapted. Consequently, many resource users have found themselves living in "parallel worlds", with new and old rules co-existing, conflicting or coalescing into a new synthesis. In many situations, people have had to ask themselves: What if I follow certain rules but not others – will I be punished or rewarded for my decisions? This situation has created much confusion and uncertainty. At the same time, it has also become a sort of test for many people, as their competences and skills were and still are being challenged and questioned in new socio-economic circumstances. People going through these transformation processes had to adapt all their knowledge and behavior to the new conditions. In the process, they have had to make decisions by learning very quickly from new experiences.

This period of far-reaching change has motivated the guest editors of this Special Feature to invite researchers working in Central Asia to reflect upon the past and current processes of institutional change in

---

<sup>1</sup> In China, radical change commenced in the 1980s, after the demise of the commune system and de-collectivization reform, also known as the Household Responsibility System reform.

these transition countries regarding the use and management of common-pool resources (CPR) that have been important for the livelihoods of their sizeable rural populations. The papers compiled here derive from a workshop on this theme held at the Division of Resource Economics of Humboldt University of Berlin in January 2016 and PhD research works conducted by Hamidov (2015) and Kasymov (2016).

## 2. Conceptualizing institutional change in Central Asia

The above-outlined period of change in Central Asian countries and other former Soviet and socialist states has initiated academic discussion revolving around institutional design and the consequent outcomes of transition reform (Kasymov and Zikos, 2017). A guiding question here has been how such institutional change can be conceptualized and empirically evaluated. Discussing such basic questions has prompted the development of two principal perspectives regarding change: 1) the top-down approach, where transition is designed and implemented by policymakers and administrators and 2) the bottom-up perspective, focused on institutional choices made by actors (Brousseau et al., 2011). The transition process has been seen as an experimental laboratory, where different rules and new forms of organization have been initiated and tested (Bichsel et al., 2010). At the same time, it has been proposed that path dependence has also influenced ongoing institutional development through the persistence of actors' mental models and organizational forms (Sehring, 2009; Hamidov et al., 2015). Meanwhile, institutional complementarities between new and old institutions have also been highlighted (Brousseau et al., 2011; Steimann, 2011).

In order to analyze this ongoing and complex process of institutional change, the authors gathered here employ complementary conceptual perspectives, seeking to explain the changes that have taken place and their consequences for the sustainability of CPR in Central Asia, Caucasus and China. They explore the key elements that have been shaping social practices and CPR governance so as to capture the duality of institutions and the complexities of institutional change, especially in terms of the impacts of institutions on people as well as how feedback from the people involved has been affecting institutions and their subsequent change (Hodgson, 2006). Below we summarize the key ideas of each paper in this collection.

*Yu and Kasymov (2020) "Social Construction of Pastureland: Changing Rules and Resource-Use Rights in China and Kyrgyzstan"*

Privatization and decentralization reforms in study regions in China and Kyrgyzstan transformed key formal rules in pasture use and have had profound effects on property rights relations among actors, reshaping resource use and management of CPRs. In the article that opens our Special Feature, Yu and Kasymov (2020) empirically examine these relationships. In doing so, they follow Bromley (1992), who offers an important perspective regarding the relationships between institutions and property rights: institutions are seen as "sets of rules, and property rights are a special class of institutions" (Yu and Kasymov, 2020: 4). Further, property rights are an essential part of the social contract:

"a claim to a benefit stream that some higher body – usually the state – will agree to protect through the assignment of duty to others who may covet, or somehow interfere with, the benefit stream."  
(Bromley, 1992: 2)

Yu and Kasymov (2020: 4) highlight the importance of the state for the development of property rights. Their article compares changing rules and property rights in the pastoral contexts of China and Kyrgyzstan, exploring social construction processes that affect property rights through changing legal correlates (or correlation of rights and duties) among involved actors regarding pasture use. The components of property rights in the two countries are unpacked by "detailing various kinds of rights and differentiating between property, liability and inalienability rules" (Yu and Kasymov, 2020: 5). Their article contributes to deepening our understanding regarding the impacts of institutional change on property rights in the studied regions.

*Hamidov, Kasymov, Salokhiddinov and Khamidov (2020) "How Can Intentionality and Path Dependence Explain Change in Water-Management Institutions in Uzbekistan?"*

However, why and how do formal institutions change in the first place? The next article introduces another conceptual perspective to shed light on the underlying processes of institutional choice. Hamidov et al. (2020) employ the concept of intentionality of institutional change in their review of recent reforms in

agricultural water management in Uzbekistan. In their analysis, the authors follow North (2005) in assuming that the intentionality and evolutionary nature of institutional change is shaped by the evolution of belief systems:

“Institutions are structures that humans impose on th[e] landscape in order to produce [a] desired outcome. Belief systems therefore are the internal representation and the institutions are the external manifestation of that representation.” (North, 2005: 49, cited in Hamidov et al., 2020: 18)

The authors also hold that “co-evolution of beliefs and institutions is a gradual process, constrained by history and differing across time and space” (Aoki, 2010, cited in Hamidov et al., 2020: 18). Thus, institutions are dependent on their past, as belief structures limit the choice sets of actors when they make decisions regarding institutions.

Applying this concept empirically, Hamidov et al. (2020) argue that policymakers in Uzbekistan designed irrigation reforms based on their shared beliefs, which were strongly influenced by external actors – meaning here international development agencies – who promoted a blueprint solution through implementation of an Integrated Water Resources Management (IWRM) approach across the nation. However, the institutional choices of Uzbek policymakers have also been constrained by formal institutions inherited from the Soviet period as well as by traditional, informal water management practices. The authors also share their empirical observations regarding challenges and constraints faced by water users when policy makers have sought to promote collective action through establishing top-down water consumers associations.

*Soliev and Theesfeld (2020) “Benefit Sharing for Solving Transboundary Commons Dilemma in Central Asia”*

This leads us to another important question addressed in this Special Feature regarding how collective action and more-sustainable institutions can be designed and promoted within Central Asia. When a CPR has a high value, as is the case with irrigation water in semi-arid regions of Central Asia, and transboundary institutions struggle to regulate its use, water users are confronted with a classic “appropriation problem” (Ostrom et al., 1993: 9). Here, they can either individually appropriate as much as possible of the given resource for their own use – leading to a tragedy of the commons situation – or constrain themselves by coordinating their resource use with other actors.

Transboundary irrigation water management is an important and illustrative case of the commons dilemma in post-Soviet Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan), where irrigated agriculture plays a crucial economic role, contributing from 5 to 24% of gross domestic product (Hamidov et al., 2016). There is also growing competition in terms of access to and use of irrigation water among these neighboring nations. In order to address this dilemma, transboundary water governance in Central Asian countries and regional organizations have been following a conventional approach to solving this dilemma by enforcing the equitable and reasonable use principles of the International Water Law.

The authors disentangle these governance principles from the perspective of “bundles of rights” (Schlager and Ostrom, 1992: 249). Following Commons (1969, cited in Schlager and Ostrom, 1992), it is assumed that,

“[f]or every right an individual holds, rules exist that authorize or require particular actions in exercising that property right. [... A]ll rights have complementary duties. To possess a right implies that someone else has a commensurate duty to observe this right. Thus rules specify both rights and duties.” (Schlager and Ostrom, 1992: 250)

They argue that the principles of International Water Law, as applied so far in Central Asia, “tend to focus on assigning the appropriation-oriented bundles of rights – access and withdrawal rights – to water by each riparian country” (Soliev and Theesfeld, 2020: 63). In their view, however, provision-oriented bundles of rights, such as management, exclusion, and alienation rights, are key in managing and sustaining water resources collectively. Therefore, they argue for a shift away from focusing only on quantities of water in benefit sharing of transboundary irrigation water. Soliev and Theesfeld (2020) suggest distinguishing between economic development, egalitarian-social and environmental priorities in benefit sharing and highlight the importance of incorporating concerns regarding conservation and fairness within transboundary water governance.

*Salzer, Neudert and Beckmann (2020) "Potentials and Constraints of Common Pasture Use – Field Experiments in Common Pool Resource Management in Azerbaijan and Georgia"*

In order to solve tragedy of the commons situations, the literature suggests that endogenous rule making and communication can play an important role in coordinating appropriation activities (Ostrom et al., 1993). To empirically verify these assumptions for pastoral contexts, Salzer et al. (2020) explore stakeholder capacity to cooperate and communicate in Azerbaijan and Georgia, confirming through their experiments that "groups and individual participants are indeed capable of managing experimental pastures sustainably, especially if participants have the possibility to communicate". Their experimental results also reveal significant variance in player performance and decisions between the two countries, which the authors attribute to contextual conditions, such as "real-world pasture scarcity, common pasture management, as well as to differences in social capital endowment and cultural context factors" (Salzer et al., 2020: 225).

### 3. Findings and conclusions

We began this introduction with a citation from Chingiz Aitmatov, a Kyrgyz writer who was puzzled by the transformation he experienced after the collapse of the Soviet Union, recalling the magnitude of the change and the expectations he and many of his compatriots had prior to it. In our opinion, Aitmatov's sensibility regarding the reasons for the changes that took place and the unfulfilled expectations hovering around the post-Soviet transition are reflected in the research presented here.

The overall aim of this Special Feature is to investigate the reasons for the institutional changes that have occurred in the post-Soviet countries of Central Asia, the Caucasus and post-reform China, to understand and explain why and how CPR institutions there have been changed, and what impacts such alterations of the sustainability of resource use have produced in those areas. In seeking to contribute to the discourse among researchers and practitioners about designing and implementing CPR institutions, the following questions have guided the articles included here: Why and in what ways have the formal and informal institutions related to CPR use and management in Central Asia been changed? Have the changes made to these institutions improved or can improve the sustainability of resource use in this context? To address these questions, the authors assembled here report their findings using empirical evidence from ongoing processes of institutional change via illustrative examples of CPR commons situations such as pasture and irrigation-water use.

First, Yu and Kasymov (2020) contribute to the ongoing discourse by clarifying the relationship between alteration of rules and their effects on property rights and duties in the context of pasture use and management. Changing rules and property rights reshapes the flows of benefit and cost streams between actors. In the particular cases studied, the state has been protecting the interests of actors that are in line with its own concerns and, as a result, such actors have benefited most from new institutions. In China, for example, due to public concern over environmental degradation linked to the pre-existing pastoral system, new institutions were implemented that now support the interests of outsiders, to the detriment of pastoralists. Meanwhile, in Kyrgyzstan, state intervention to enforce new institutional arrangements now protects the interests of individual livestock owners and pushes community herders to increase their pastoral mobility.

This leads us to another important reason for institutional change that has been a key focus in one of the studies presented here: the role of shared beliefs in institutional choice. Hamidov et al. (2020) highlight a need to support the learning process, which resource users and policy makers in Uzbekistan need to go through in order to overcome gaps between their beliefs and to, eventually, increase the adaptive efficiency of CPR institutions there.

Furthermore, using the empirical example of transboundary irrigation-water governance in Central Asia, Soliev and Theesfeld (2020) highlight the advantages of benefit sharing while recognizing the diversity of possible values associated with CPR use and management. Incorporating this approach into transboundary water management may help actors (in this case being countries) to configure the most beneficial options for all parties involved. To achieve sustainable CPR use, not only economic but also environmental and egalitarian-social issues need to be recognized as a top priority and institutionalized accordingly. Meanwhile, and contrary to previous empirical studies that stressed high levels of opportunism and difficulties in organizing collective action in CPR management during the earlier years of post-socialist transition (Zavgorodnyaya, 2006; Theesfeld, 2009; Hagedorn, 2014), Salzer et al. (2020) argue that, today, pasture users tend to cooperate when they are encouraged to communicate and coordinate their resource use.

We hope readers will find the research presented in this Special Feature informative and contributing towards better understanding of transformation in CPR management and change of institutions and practices

in Central Asia and beyond. The guest editors welcome any feedback from scientists and practitioners working in the area of institutional change and governance reform.

## Acknowledgements

We would like to thank the journal's editorial team, particularly Frank van Laerhoven and Sergio Villamayor-Tomas, for their feedback and support in developing this Special Feature. We are also very grateful to all the contributing authors and to the reviewers. Financial assistance for publishing this Special Feature was provided by the Leibniz Centre for Agricultural Landscape Research (ZALF).

## Competing Interests

The authors have no competing interests to declare.

## References

- Aitmatov, C. 1998. *Stat'i, Vystupleniya, Esse, Dialogi*. Vol. 7, 531.
- Aoki, M. 2010. "Understanding Douglass North in the game-theoretic language." *Structural Change and Economic Dynamics* 21(2): 139–146. DOI: <https://doi.org/10.1016/j.strueco.2009.10.002>
- Bichsel, C., G. Fokou, A. Ibrahimova, U. Kasymov, B. Steimann, and S. Thieme. 2010. "Natural resource institutions in transformation: The tragedy and glory of the private." In *Global Change and Sustainable Development: A Synthesis of Regional Experiences from Research Partnerships*, edited by H. Hurni, and U. Wiesmann, 255–269. Geographica Bernensia.
- Bromley, D. W. 1992. "The commons, common property, and environmental policy." *Environmental and Resource Economics* 2(1): 1–17. DOI: <https://doi.org/10.1007/BF00324686>
- Brousseau, E., P. Garrouste, and E. Raynaud. 2011. "Institutional changes: Alternative theories and consequences for institutional design." *Journal of Economic Behavior & Organization* 79(1–2): 3–19. DOI: <https://doi.org/10.1016/j.jebo.2011.01.024>
- Hagedorn, K. 2014. "Post-socialist farmers' cooperatives in Central and Eastern Europe." *Annals of Public and Cooperative Economics* 85(4): 555–577. DOI: <https://doi.org/10.1111/apce.12051>
- Hamidov, A. 2015. "Institutions of Collective Action for Common Pool Resources Management: Conditions for Sustainable Water Consumers Associations in Semi-Arid Uzbekistan". In *Institutional Change in Agriculture and Natural Resources*, edited by V. Beckmann & K. Hagedorn, Aachen: Shaker Verlag GmbH.
- Hamidov, A., K. Helming, and D. Balla. 2016. "Impact of agricultural land use in Central Asia: a review." *Agronomy for Sustainable Development* 36(1): 6. DOI: <https://doi.org/10.1007/s13593-015-0337-7>
- Hamidov, A., Thiel, A., and D. Zikos. 2015. "Institutional Design in Transformation: A Comparative Study of Local Irrigation Governance in Uzbekistan." *Environmental Science and Policy* 53: 175–191. DOI: <https://doi.org/10.1016/j.envsci.2015.06.012>
- Hamidov, A., U. Kasymov, A. Salokhiddinov, and M. Khamidov. 2020. "How Can Intentionality and Path Dependence Explain Change in Water-Management Institutions in Uzbekistan?" *International Journal of the Commons*. DOI: <https://doi.org/10.5334/ijc.947>
- Hodgson, G. M. 2006. "What Are Institutions?" *Journal of Economic Issues* XL(1). DOI: <https://doi.org/10.1080/00213624.2006.11506879>
- Kasymov, U. 2016. "Designing institutions in a post-socialist transformation process. Institutions in regulating access to and management of pasture resources in Kyrgyzstan." In *Institutional Change in Agriculture and Natural Resources* edited by V. Beckmann & K. Hagedorn, Aachen: Shaker Verlag.
- Kasymov, U., and D. Zikos. 2017. "Understanding Human Actions and Institutional Change: What Are the Impacts of Power Asymmetries on Efficiency in Pasture Use?" *Resources* 6(4): 71. DOI: <https://doi.org/10.3390/resources6040071>
- North, D. C. 2005. *Understanding the Process of Economic Change*. Princeton University Press. DOI: <https://doi.org/10.1515/9781400829484>
- Ostrom, E., R. Gardner, and J. Walker. 1993. *Rules Games and Common Pool Resource Problems*. University of Michigan Press. DOI: <https://doi.org/10.3998/mpub.9739>
- Salzer, A., R. Neudert, and V. Beckmann. 2020. "Transformation in common-pool resources management in central asia potentials and constraints of common pasture use – field experiments on common pool resource management in Azerbaijan and Georgia." *International Journal of the Commons*. DOI: <https://doi.org/10.5334/ijc.953>
- Schlager, E., and E. Ostrom. 1992. "Property-Rights Regimes and Natural Resources: A Conceptual Analysis." *Land Economics* 68(3): 249–262. DOI: <https://doi.org/10.2307/3146375>

- Soliev, I., and I. Theesfeld. 2020. "Benefit Sharing for Solving Transboundary Commons Dilemma in Central Asia." *International Journal of the Commons*. DOI: <https://doi.org/10.5334/ijc.955>
- Steimann, B. 2011. "Making a Living in Uncertainty: Agro-Pastoral Livelihoods and Institutional Transformations in Post-Socialist Rural Kyrgyzstan." *Human Geography Series 26*. Zurich and Bishkek: Department of Geography, Division of Human Geography, University of Zurich.
- Theesfeld, I. 2009. "The downgrading effect of abuse of power on trust and collective action in Bulgaria's irrigation sector." In *Institutions and sustainability. Political economy of agriculture and the environment – essays in honour of Konrad Hagedorn*, edited by V. Beckmann, and M. Padmanabhan, 223–242. Springer. DOI: [https://doi.org/10.1007/978-1-4020-9690-7\\_11](https://doi.org/10.1007/978-1-4020-9690-7_11)
- Yu, L., and U. Kasymov. 2020. "Social Construction of Pastureland: Changing Rules and Resource-Use Rights in China and Kyrgyzstan." *International Journal of the Commons*. DOI: <https://doi.org/10.5334/ijc.940>
- Zavgorodnyaya, D. 2006. *Water user association in the Republic of Uzbekistan. Theory and practice*. PhD Thesis, Center for Development Research (ZEF). Bonn, Germany: University of Bonn.

**How to cite this article:** Kasymov, Ulan, Ahmad Hamidov, and Konrad Hagedorn. 2020. "Editorial: Introducing "Transformation in Common-Pool Resources Management in Central Asia"." *International Journal of the Commons* 14(1): pp. 439–444. DOI: <https://doi.org/10.5334/ijc.1053>

**Submitted:** 16 June 2020

**Accepted:** 16 June 2020

**Published:** 24 August 2020

**Copyright:** © 2020 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.



*International Journal of the Commons* is a peer-reviewed open access journal published by Ubiq Press.

