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***Farmers' perceptions of land and water property rights:
Discrepancies between de jure and de facto rights in Tajikistan***

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Problem Statement

With about 85 % of irrigated agricultural land in Tajikistan, irrigation schemes play a central role for commercial crop production of dekhans¹ (peasants) but also contribute to food security for households by cultivating kitchen gardens or presidential land². However, many structural and institutional problems in the land and water sector hinder the efficiency and sustainability of Tajik agriculture.

A weak water governance system, which is especially characterized by unclear accountability, in-transparency and particularly indistinct responsiveness in the water system, is inhibiting the ongoing implementation of water reforms. On the level of farm household groups that use a common channel, those users of irrigation systems face the typical asymmetry in the common pool resource dilemma between head and tail enders (Sehring 2006; Rowe 2010). Besides this governance challenge, also high variability of water availability over the year and increasing salinization of groundwater is challenging water allocation and availability among water users. The Water Code is aimed to define the de jure property rights over water, where water is also stated to be exclusive state property. For irrigation systems, the code declares that the Ministry of Land Reclamation and Water Resources operates under the so called '*Mirob*'³ on the national and basin level, and Water User Associations (WUA) at the field level taking over operational tasks. In contrast to those defined responsibilities, public participation in operating and maintaining irrigation infrastructure on-farm and between farms is not clearly defined.

However, it is not simply the water sector which is challenging farm households. Land reform is an ongoing process, where land remains state property and farmers can get inheritable use rights for unlimited time. Anyhow, many local farmers are not aware about the status quo of the reform and consequently about the farm restructuring process. Officially, different legal forms of farm types exist for which every farmer could obtain a land certificate. But the different types at hand and the procedure to apply for certificates of individual land shares (e.g. dekhans) are often unknown or in-transparent to farmers as well as to local officials (Mandler 2013; Robinson et al. 2010; Robinson et al. 2008). Even if farmers hold certificates for a dekhans farm, self-classification into one of the different organizational forms is difficult, as certificates have less validity to farmers and classification often only exists on papers. According to official statistics of the Land Committee, land allocation in form of issuing land certificates is continuously progressing. Thus, transparency of land titling should improve steadily. Overall, dynamics in land allocation takes shape in four different processes: 1) farm restructuring and individualization takes place, that means the former members of kolkhozes receive individual land shares; 2) new farmers (from other villages or even foreigners) apply for land certificates of dekhans farms; 3) population increase expands the demand for kitchen gardens and affords to allocate more land to household plots to secure food security, 4) redistribution of former agricultural kolkhoz land with less quality or unused land to presidential plots.

¹ *Khojagi-i-Dekhoni*, Since 1992 dekhans farms are reallocated former collective and state farms (kolkhoze, sovkhoze). Organizational forms: 1) Collective dekhans farms, 2) individual dekhans farms, 3) family dekhans farms, overall 30 % of agricultural output are produced on dekhans farm land (TajStat 2011), ranging from 5 – 200 ha on 65 % of arable land (Lerman and Sedik 2008).

² With the Presidential Decree in 1995 and 1997 75 000 hectares were distributed to very poor rural households for subsistence farming, this land is surrounding the household or near the village, around 60% of total agricultural output is produced on 20 % of arable land by households plots and presidential land (TajStat 2011)

³ *Mirob* are increasingly established as public agencies responsible for water delivery, maintenance of off-farm irrigation and drainage infrastructure (including canals and pumps).

Along with more individual farming also the water sector is being challenged as more individual users nowadays are using the former centrally planned and organized irrigation infrastructure and now face to overcome the common pool resource challenge. Among others, this increases transaction costs of getting access to and allocation of water in irrigation canals.

For land and water resources, farmers now hold their individual property rights which should be legally stated in the land and water codes, the de jure rights. Anyhow, in reality land and water allocation and management is often carried out according to the farmers' perceptions of their rights. Those perceptions are expressed in the de facto rights of the farmers.

This paper is aimed to determine the discrepancies between de jure and de facto (property) rights of the different farm households with respect to land and water resources for the case of Tajikistan.

Theoretical Frame

For this study, the theory of property rights is used, which is further supplemented by the concept of bundles of rights (Schlager and Ostrom 1992). Property rights determine someone's authority to undertake a particular action. It describes the sanctioned behavioral, economic and social relation among resource users referring to a specific object or resource. The bundle of rights further distinguishes the property rights into 1) use rights (access, withdraw, exploit), 2) control/ decision making rights (manage, exclusion), 3) alienation rights (rent, selling, transfer). Farmers use resources according to their perceptions about their bundles of rights, so what they perceive as being authorized to do (de facto). These actions undertaken can differ from what is stated in the formal laws, the de jure rights (Schlager and Ostrom 1992).

The conceptualization of the bundles of rights is beneficial to analytically and descriptively identify the perceptions of property rights arrangements among the different rights holders compared to what is stated in the law (Johnson 2007). As various actors are present in the land and water sector in Tajikistan, it is important to reveal the complex situation and to understand who is holding what types of rights. The descriptive findings can further help to indicate relations between the users as for instance decision making rights indicate power choices, or holding the full bundle of rights enables someone to even change existing rules.

Methodological Design

With the problem background and the theory at hand, the following hypotheses are derived:

- H1: The perception of bundles of rights of land and water differs between legal forms of farms.
- H2: The perception of the bundles of rights of large-scale dekhans coincide more with the de jure rights of land and water stated by the laws than the perceptions of other farmers.
- H3: The perceptions of control and decision making rights for land and water are attributed to a few large-scale dekhans in each village.

For this paper data from a farm household survey conducted in March – May 2013 are used. In total 380 respondents were surveyed in one northern (Bobojon Gafurov) and one southern district (Bokhtar). Both districts count among the main agricultural areas in Tajikistan but differ substantially in land reform outcomes. To test the hypotheses, descriptive statistics for groups of different legal forms of farms (household plot, presidential plot, dekhans) and origin of farm operator are applied.

Expected Results

The post-Soviet case offers a unique opportunity for studying the property rights regimes, where the land and water property rights trajectory is now placed between incremental changes through ongoing land and water reforms and continuity of local elites' remaining soviet allocation mechanisms. As only few actors remain strong in the rural transition process, various peasants tinker their own joint local governance system based on their perceptions of their property rights. The perceived property rights for land are stronger and displayed by holding the full bundle of rights, although it is a state property and only use rights exist. For instance selling is not allowed by law, but perceived to be possible or even practiced by a limited number of farmers. In contrast, water property rights are perceived weaker in most parts of the bundles. Allocation and decision making about volumes and opening the gates is not perceived to be a farmer's property right as it is stated in the law. This sector is still very much organized in the former soviet system, where former kolkhoz irrigation managers are still in place and WUA are implemented on the basis of old kolkhozes. One can determine less variance of the perceived property rights of land and water on the meso-level, so less between the farmers within one village. But rather on the macro level, as a high variance between the regions and villages is at hand.

The results of this research are relevant in further assessing potentials of land use productivity in Tajikistan and pointing to sources of conflict. Based on these findings, further research will investigate particularly linkages of land and water governance systems to point out e.g. the relevance of land reallocation and its impacts on water management in terms of access to and availability of water.

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