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User self-governance in a complex policy design for managing water commons in Japan

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SUMMARY

Studies have typically emphasized one of three major policy alternatives—government (state) ownership, privatization, or user self-governance—to address overuse of "the commons" as a natural resource shared by many competing users. Studies tend to focus on each alternative separately. Government ownership or privatization is usually understood to undermine user self-governing institutional arrangements, while user self-governance has proved to be a very powerful policy alternative in managing the commons in many cases. An important research question arises as to whether a complex policy design can strengthen the competence of user self-governing institutional arrangements. This article defines a complex policy design as one that involves a mix of flexible policy alternatives rather than a rigid alternative to address overuse issues. Drawing on Japan's irrigation water management experience, this study demonstrates that when a complex policy design is tailored to facilitate user autonomy, it further strengthens user self-governance. The study provides scholars with insight into how self-governing institutional arrangements—which were primarily developed in the existing literature with the government's role assumed as absent or implicit—could be enhanced when the role is strategically explicit.

1. Introduction

When rational resource users fail to communicate and cooperate with one another but their actions are interdependent, they often overuse the commons (i.e., shared natural resources)—including an irrigation water system, a fishing ground, a forest, or the atmosphere—and ultimately destroy it (Ostrom, 1990, 2012; Anderies et al., 2004; Deacon et al., 2010; Ansari et al., 2013; Esteban and Dinar, 2013). This overuse phenomenon is metaphorically known as "the tragedy of the commons" (Hardin, 1968). Studies have typically emphasized one of three alternative policies—government (state) ownership, privatization, or user self-governance—to address the tragedy (Ostrom, 2007, 2012; Berkes, 2007; Basurto and Ostrom, 2009). Government ownership and privatization typically damage user self-governance, ultimately exacerbating the tragedy (Feeny et al., 1990; Ostrom, 1990, 2010; Ostrom et al., 1999).

Studies on user self-governance have demonstrated that users who are cooperative and who develop self-governing institutional arrangements in managing the commons can better address the tragedy (McEvoy, 1986; McCay, 1978; Berkes et al., 1989; Feeny et al., 1990; Ostrom, 1990, 2005, 2010; Cavalcanti et al., 2013). Nevertheless, these studies tend to focus on user self-governance that occurs when government involvement is absent or minimal and when shared resources are not privatized.

In this study, government or state ownership indicates the state authority's possession of the commons; under state ownership, users have neither property rights to the commons nor any rights to develop self-governing institutional arrangements to manage it. Users must obey the control rules that emanate from and are directed by the authority. In a slightly different situation, users might have certain property rights to the commons, but the government imposes coercive authority on users and profoundly interferes with their local traditions and institutions. Alternatively, with privatization, management of the commons is transferred to individuals who have private property rights in the commons and seek to maximize profits as their main objective. In user self-governance, the members of the community who are the core users of the commons communicate with one another and participate in every important decision-making process; community members

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negotiate institutional arrangements for self-governance of the commons within their community to collectively address use and overuse issues.

The literature on the commons has yet to adequately focus on how users self-organize and develop self-governing institutional arrangements when the state is involved and when there are elements of privatization. Agrawal et al. (2013) recently reflected this concern by noting that the literature on institutions and the commons has not thoroughly investigated the interactions of the state with local, informal organizations.

The aforementioned issues lead to the following research question: Can users craft self-governing institutional arrangements to address overuse of the commons in a complex policy design comprising elements of all three policy alternatives? By reflecting on Ostrom's studies (Ostrom, 2007; Ostrom et al., 2007), this paper defines a complex policy design as one that does not involve a single rigid policy but rather accommodates varying and flexible policy options that include governmental authority, privatization, and user self-organization to address the potential overuse and destruction of the commons embedded in a particular context. This article answers that question by drawing on the experience of Japan's local irrigation organization, which manages irrigation commons or common-pool resources (CPR) in cooperation with the nonparticipatory state. Our findings suggest that a complex policy design that creates an environment in which users have the autonomy to self-organize and self-govern can strengthen self-organizing institutional arrangements (which were originally developed without state involvement in the current contemporary framework) at the local level in the context of multi-level, multi-jurisdictional linkages of authorities. Consequently, strong and sustainable self-organization to govern the commons is possible, and the potential for overuse is substantially reduced.

We have accommodated the complex policy design in the current contemporary Institutional Analysis and Development (IAD) theoretical framework that was developed by Ostrom et al. (1961). The IAD framework principally analyzes self-organizing institutional arrangements of non-state actors, such as irrigators, while the role of the state is invariably excluded from the framework. In our research, we have incorporated the role of the state in the IAD framework to examine how the state can play an important role in strengthening the institutional arrangements of self-organizing non-state users. We have also integrated certain characteristics of privatization of the commons into the framework. All of these endeavors have broadened the theoretical and empirical scope of the IAD framework and its corresponding theoretical development in organizing CPR users.

Before answering our research question, we must clarify a misperception about Ostrom's (1990) work on user self-governance. Certain scholars have misperceived Ostrom's work as being anti-government and anti-state (Mansbridge, 2010), primarily because she was deeply and successfully engaged in exploring user self-governance as a third alternative that involved minimal or no assistance from government authorities and no privatization. She explored the third alternative policy primarily to challenge the rigid views of Hardin (1968) and Olson (1965) that governmental and privatization solutions were the only alternatives to overuse of the commons, but Ostrom's intent was not to disregard the role of the state and privatization entirely.

Due to Hardin's (1968) article, "The Tragedy of the Commons" and Olson's (1965) book, *The Logic of Collective Action*, many scholars believed that users of the commons—forestry and irrigation systems—are always negatively rational, that such users pursue immediate short-term benefits and that they are trapped in a system in which they cannot self-organize and communicate with one another to collectively manage the commons that they use as a community (Ostrom, 1990, 2005, 2012). As a result, as Hardin and Olson argue, the destruction of the commons is unavoidable. They suggest that government ownership and the privatization of the commons are the only two ways to address the overuse in all contexts (Ostrom et al., 1999; Ostrom, 2012). Hardin particularly argued that we must choose one of these two solutions, or we "acquiesce in the destruction of the commons" (Hardin, 1968, p. 1245). Studies by Gordon (1954), Demsetz (1967) and Lovejoy (2006) point to a somewhat similar line of thought.

Ostrom's (1990) influential book, *Governing the Commons,* as well as her subsequent publications (e.g., Ostrom, 2005) provided an entirely new focus on the issue of the overuse of the commons. Analyzing hundreds of international case studies, Ostrom (1990, 2005) established that users are not necessarily negatively rational and are not always trapped in a system where they fail to self-organize and communicate. Ostrom determined that a policy option that involves user self-organization for self-governance can be a third and substantially powerful policy alternative, though she did not claim that this option ("user self-organization") is the only option to address the issue of overuse (Ostrom, 1990, 2009, 2012; Ostrom and Cox, 2010; Poteete et al., 2010). As stated earlier, Ostrom challenged the notion of "only" two alternatives of Hardin, but she did not dismiss the views as entirely ineffectual. Publications in the *Proceedings of the National Academy of Sciences* (Ostrom, 2007; Ostrom et al., 2007) have clarified this misconception by stating that government regulation and privatization can play a role in managing the commons and that no single policy option, including self-organization, is a universal solution.

Although the role and importance of the state and privatization are recognized and user self-organization has been established as a third alternative policy, we do not know theoretically and empirically whether user self-organized institutional arrangements can develop and become sustainable in a complex policy design.

2. Complex policy design for managing irrigation commons in postwar Japan

Japan's participatory irrigation management can be exemplified as a highly successful case in Asia (Nagata, 1994; Tanaka and Sato, 2005; Kono et al., 2012). The irrigation rate for paddy cultivation is nearly 100%; irrigated paddy yield in Japan ranges from seven to eight tons/hectare/one season a year (Okamoto, 2006), which is several times higher than the yield in many other Asian countries.

Because of the strained diplomatic relations between Japan and China during the ninth to fifteenth centuries (i.e., Medieval Period), the control of agricultural water was transferred from the state to the feudal governments that decentralized agricultural water management (Fukuda, 1984; Shimura, 1984; JNCICID, 1994). This simple, decentralized agricultural water management practice marked the genesis of the self-governing irrigation system in Japan (JNCICID, 1994; Shimura, 1984). Although the government was closely involved in the system and provided logistical supports, such as formal approval of user self-governance, it remained disengaged from participating in the local irrigation water allocation activities and conflict resolution mechanism processes. In the late Medieval Period and throughout the Tokugawa Period (1600–1868), villagers organized themselves to form a self-governing village council that created rules-in-use for irrigation water utilization. Although the feudal government improved land and water resources by financing repair materials such as wood, the villagers had to maintain and repair irrigation canals and weirs, self-govern their irrigation facilities, and share irrigation water in accordance with the decisions of their village council. The Meiji government introduced the Water User Association Ordinance in 1890 to establish the Water User Association (WUA), which was comprised of landlords