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Analysis

Design principles for managing coastal fisheries commons in present-day Japan

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ABSTRACT

Ostrom (1990) challenged the traditional belief that commons management inevitably requires state ownership or privatization and instead established the notion of user self-governance. This notion, a third policy option for managing the commons, entails little or no state involvement. Under this notion, Ostrom developed eight design principles to which self-governing institutional arrangements adhere, while the role of the state is minimal. This article seeks to establish whether design principles characterize such institutional arrangements when the role of the state is accommodated explicitly within the principles. Drawing on a case study of present-day management of Japan's community-based coastal fisheries commons, our study shows that the design principles can better characterize self-governing institutional arrangements when the state adopts a pro-user self-governance role that provides strategic support for users, but neither takes ownership of the commons nor participates in engineering the institutional arrangements.

1. Introduction

One of the precise insights offered by *Governing the Commons* (Ostrom, 1990) is that users of natural resources can develop self-governing institutions in order to address overuse of the commons, or common-pool resources (CPRs), such as fisheries, forests, and irrigation systems, with little or no assistance from the state. Ostrom focused on and established in the literature the notion of user self-governance as a powerful third alternative to the prevailing state and privatization solutions. Furthermore, she developed eight design principles as the essential prerequisites or conditions for robust, long-lasting self-governing institutions for managing CPRs (Ostrom, 1990, 1992). Institutions are sets of working rules that reflect the socially evolving or devised restrictions that structure political, economic, and social interaction (North, 2005; Ostrom, 1992). In the present study, institutions are considered to be sets of rules that fishers negotiate, formulate, and agree to adhere to when conducting fishing activities.

Although Ostrom neither devalued the state's role and privatization nor attempted to push user self-governance as the only policy option to resolve all CPR problems (Ostrom, 2007), studies relevant to the topic, including her own, tend to employ these design principles in a setting in which the state plays a limited role (e.g., Cox et al., 2010; Schreiber and Halliday, 2013; Wilson et al., 2013).

How the design principles explain user self-governance in a setting with an explicit state role has not been addressed substantially in the CPR literature. This article investigates present-day management of community-based coastal fisheries in the Japanese context to address the issue. From the perspective of fisheries management practices in Japan, our findings suggest that the design principles can be applied to a case in which the state plays a strategically explicit role to promote pro-user self-governance regime within its formal setting.

The state's strategically explicit role is relevant, when it promotes pro-user self-governance. The state actively provides financial, legal, judiciary, administrative, technological, and research support to users at various levels to assist them to develop self-governing institutional arrangements at the local level. Nevertheless, the state neither claims the ownership of users' commons nor engineers local institutional arrangements. It also does not participate in day-to-day management and governance.

In the present study, the state plays a strategically explicit role to create a formal setting that allows natural resource users, if not the state authorities, to modify tradition-oriented self-governing institutional arrangements within the state's formal setting to manage the

Abbreviations: CPR, common pool resource; FCA, fishery cooperative association; FMO, fishery management organization; WFCC, wide-area fishery coordination committee; AFCC, area fishery coordination committee; FCC, fishery coordination committee; TURFs, territorial use rights in fisheries.

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commons over a long period of time. The policy option can be described as state-reinforced self-governance (Sarker, 2013; Sarker and Itoh, 2001, 2003; Sarker et al., 2014). Because in typical co-management, the government and resource users are likely to share decisions and management responsibilities at various levels, including the local level (Pinkerton, 1992; Plummer, 2009; Sumaila and Domínguez-Torreiro, 2010), we can isolate state-reinforced self-governance from typical co-management to emphasize that the managerial and decision-making role of the state is insignificant at the local level. We could conceptualize this as a specific form of co-management in line with some studies (e.g., Acheson, 2013; Gjertsen and Barrett, 2004; McCay et al., 2014) in which co-management is conceptualized to facilitate user self-governance or self-management.

2. Arguments about the Governance of the Commons or Common Pool Resources

A commons, which refers to a natural resource shared by many competing users, is a generic term, while a CPR, which is a specialized commons, is a clearly defined concept. A CPR is a large, natural, or human-made resource with or without property rights attached to it and satisfies two criteria: (i) it is difficult to prevent individuals (e.g., fishers) from receiving the benefits (e.g., fish) from the resource system, and (ii) the benefits derived by one individual are not available to others (Ostrom and Ostrom, 1977; Ostrom et al., 1994). Given this, there are two problematic aspects of CPRs: appropriation (i.e., the exploitation of benefits, such as catching fish from coastal waters) and provision (i.e., the preservation of benefits, such as catching selected fish without overfishing or not fishing for a certain period of time to allow the restoration of fish stock) (Ostrom et al., 1994).

There are three major policy alternatives for managing the commons or CPRs, namely, centralized ownership by the state (Hardin, 1968; Olson, 1965), privatized management (Hardin, 1968; Olson, 1965), and user self-governance (Berkes et al., 1989; Ostrom, 1990, 2010). Hardin (1968) suggested that users are self-interested rational beings locked into a system that does not allow them to communicate and develop the self-governing institutional arrangements needed to address the destruction or overuse of CPRs (Berkes et al., 1989; Ostrom, 1990, 2010). Kahui and Richards (2014) noted that the problems of the commons that Hardin (1968) delineated are founded in Gordon's (1954) work on economic theory and overfishing.

Hardin (1968) and Olson (1965) considered that the state's centralized ownership, which offers users no freedom to develop self-governing institutions, and the privatization of the commons are the only two alternatives available to prevent the tragedy of the commons, that is, the destruction of shared natural resources by competing users (Berkes et al., 1989; Feeny et al., 1990; Ostrom, 1990; Ostrom et al., 1999; Sarker et al., 2008a, 2008b, 2009). Drawing on case studies, Ostrom (1990, 2005) claimed that not only can self-interested individuals in an interdependent situation communicate to successfully resolve CPR problems, but user self-governance can also serve as a third powerful policy alternative to avert the tragedy of the commons. Earlier relevant works that Ostrom cited include Berkes (1989), McCay and Acheson (1987), McKean (1982), and Wade (1987). Ostrom demonstrated that state ownership and privatization might result in a greater tragedy of the commons (Ostrom, 1990; Ostrom et al., 1999, 2011).

Ostrom, however, maintained that the state has a role to play, that privatization does not always result in the tragedy, and that user self-governance is not necessarily the only policy option (Ostrom, 2007; Toonen, 2010). Despite this, some scholars misperceive Ostrom's stance as anti-state and anti-privatization (Mansbridge, 2010). Careful reading of her works (Ostrom, 1990, 1998, 2007, 2010), however, confirms that her approach is rather against a simple blueprint solution, be it state, privatization, or user self-governance, for resolving all CPR problems (Ostrom, 2007, 2012). In other words, she emphasized that a complex, diagnostic approach that can accommodate the role of the state rather than a simple panacea can better resolve the commons dilemma (Basurto et al., 2013; Ostrom, 2007). This thought is also reflected in Ostrom's design principles.

We argue that despite Ostrom's reference to the importance of the state's role in both her design principles and school of thought, research on the commons tends to exclude the role of the state in addressing the commons dilemma (Cooke et al., 2013; Cox et al., 2010; Ostrom, 1990, 2005; Schreiber and Halliday, 2013; Wilson et al., 2013). In other words, literature on the commons has yet to focus systematically on the interactions of the formal state with local, informal organizations (Agrawal et al., 2013).

3. Governance of the Coastal Fisheries Common Pool Resources in Japan

Studies describe Japan's coastal fisheries as having a long history of successful management institutions (e.g., Makino, 2011, 2013; Makino and Matsuda, 2005). Although the harvest level of coastal fisheries has decreased, the level is relatively steady compared to that of offshore fisheries (e.g., Popescu and Ogushi, 2013). Declines in the production volume of offshore fisheries are primarily due to significantly decreased activities in the offshore waters after the introduction of exclusive economic zones (Popescu and Ogushi, 2013; Uchida and Makino, 2008). Declines in the harvest level of coastal fisheries are explained by several factors, including inadequate numbers of young successors, increases in the number of aged fishers, adverse environmental changes affecting coastal waters, and underutilization of scientific information to exploit migratory fisheries resources (NPFMRI, 2012; Popescu and Ogushi, 2013; Uchida and Makino, 2008). Despite all this, scholars agree that Japan's coastal fisheries resources management can provide us with valuable insights and experience from an institutional sustainability and development perspective (e.g., Uchida and Makino, 2008).

Japan's fisheries sector comprises coastal, offshore, distant water, and inland water fisheries (Makino, 2011, 2013). Coastal fisheries, which can be conceptualized as closed-access complex CPRs, have undergone a series of changes over time. They moved from a community-based management system in the Edo period (1603–1868) to a failed government system in the early Meiji period (1868–1901). In the second half of the 19th century, the state attempted to modernize the management of coastal fisheries by seizing control of the seas but the effort failed because of strong disagreements by the locals (Murota, 2013). In the late Meiji period (1901–1912), coastal fisheries evolved into the community-based management system seen today.

In particular, coastal fisheries underwent remarkable changes in the postwar period (after World War II, from 1945 onward). The Meiji Fishery Law, enacted in 1901, granted statutory standing to the fishing rights developed in the Edo period and accommodated Japanese fishing traditions practiced under the *Ura* law (1741–1867). The 1901 Law also encouraged fishers to self-organize and established fisheries societies that later became the present-day FCAs (Yamamoto, 1995). FCAs are, thus, state-recognized, self-organizing associations of fishers who reside in coastal villages and self-govern adjacent near-shore coastal fishing grounds. This study focuses on the present-day management activities of FCAs in Japan, excluding those facing challenges from catastrophic natural disasters.

4. Eight Design Principles

This study is theoretically underpinned by Ostrom's (1990, 2005) school of thought in general and eight design principles (Ostrom, 1990, 1992, 2010) in particular. Our interdisciplinary research team comprises academics from different universities with strong theoretical backgrounds in economics, public administration, political science, and fisheries resource management, as well as a marine research institute practitioner who is well versed in the management of Japan's coastal