

COASTAL MARINE PROTECTED AREAS IN JAPAN AND THEIR INSTITUTIONAL CHARACTERISTICS

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ABSTRACT

A survey was conducted to create a comprehensive list of marine protected areas (MPAs) in Japan. There exist more than 1,000 fishery cooperatives in Japan, and many of them have established no-take zones for many years. Such zones are usually not reported to the government and, therefore, the complete picture of the MPAs in Japan has been largely unknown until now. Information on such local MPAs was collected through various sources, and a list of more than 1,000 MPAs was produced. Many of them take the style of self-imposed voluntary regulations. Nonetheless, it was suggested that free-riders of the conservation activities were uncommon. This is because agreements are usually made to maximize the benefit of the group of fishers and each member of the group monitors the compliance status of other members. The government has provided territorial use right for fishers, and this could have helped maintain such a self-governance framework.

Keywords: Co-management; Fisheries co-operative association; Marine protected area.

INTRODUCTION

A survey was conducted to create a comprehensive list of marine protected areas (MPAs) in Japan, and it identified more than 1,000 locations of coastal MPAs (Yagi et al, 2010). Approximately 30% of them takes the form of community-based self-imposed no-take zones (see table 1). The nature and institutional characteristics of these community-based areas are elaborated in this paper.

CURRENT STATUS OF MPAs IN JAPAN

Table 1 shows the number of MPAs in Japan by their management mechanisms. The six types of MPAs are marine park areas established by the natural parks law (hereinafter, referred to as type I MPAs), marine special areas established by the nature conservation law (type II MPAs), special protected zones inside the wildlife special protection areas, which are established by the wildlife protection and appropriate hunting law (type III MPAs), protected waters established by the act on the protection of fishery resources (type IV MPAs), legally binding no-take zones of aquatic animals and plants established

under the fishery act and prefectural fishery coordinating regulations (type V MPAs), and no-take zones established through self-imposed agreements among the members of the fishery co-operative associations (FCAs) (type VI MPAs). Their numbers are 82, 1, 23, 52, 616, and 387 respectively (Yagi et al, 2010).

The total area of MPAs in Japan was not provided by this study. Information on the possible overlaps between different types of MPAs, as well as the exact size of some areas in types V and VI MPAs, are missing and this makes an accurate calculation on the total coverage difficult at this stage (Yagi et al, 2010).

NATURE OF ZONING MANAGEMENT IN COASTAL FISHERIES

It should be noted that MPAs managed by the ministry of the environment take a top-down approach where the central government is a major driver of the conservation, while fishery related MPAs managed by MAFF (ministry of agriculture, forestry and fisheries) takes a bottom-up approach in which the role of informal functions of local FCAs is critically important. (see Figure 1)

The total number is 1,161 and 1,055 locations of them are implemented in conjunction with fishery regulations and they are largely originated from the bottom-up approaches. In particular, 1,003 locations take the form of no-take zones in fishery operations.

The relevance of the number of such no-take zones can be explained by the management system of fisheries in Japan. Most of the target species have been managed using input controls, while seven fish species (34% of national landing volume as of 2007) are subject to output control regulation under the total allowable catch (TAC) system since 1997. Input control methods involve limitations on vessel tonnage, horse power, gear, seasons, and areas of operation. The local FCAs play a critical role in the implementation of such rules. The number of the FCAs in Japan was 1092 as of March 31, 2009, according to the fisheries agency. Many FCAs owned one no- take zone, while other FCAs had two or more and still other possessed none. The number of the no-take zones is reasonable, judging from the fact that it roughly corresponds to the number of FCAs, which is a local co-management unit of coastal fisheries in Japan (Yagi et al, 2010).

GOVERNANCE MECHANISM OF SELF-IMPOSED MPA

A question may arise on status of enforcement for self-imposed areas. Yagi et al (2010) explained a mechanism for compliances of the rules as follows:

First, self-imposed no-take zones have certain economic relevance to implement peer monitoring among the members in the same FCAs. Because the limited entry system in coastal fisheries is strictly maintained by the fishery right regime imposed by the government, the same group of persons who belong to a same FCA assume long-standing rights to collectively use fishery resources in their waters. In other words, the same group of fishermen bears the cost of conservation and receives the benefits inside their local waters. Once they mutually agree to create a no-take zone as a mean to maximize their collective benefit, they have a strong incentive to adhere to it and peer-monitoring activities would be initiated to deter poachers. Several fishermen informed the authors that they in fact monitor positions of boats of their peers in the sea using vessel positioning devices, cell-phones, or other communication tools. Sanctions among co-operative members and the local societies are often levied in the case of infringement.

Second, self-imposed no-take zones are perceived as being just as legally binding as other no-take zones among FCA members. The majority of legally binding no-take zones and protected waters listed in prefectural fishery coordinating regulations are considered to be originated from historic voluntary no-take zones in the past. Community-based coastal fisheries management started more than 250 years ago in Japan (Aotsuka 2000). The record shows that the fishery regulation of Tokushima prefecture, for instance, which was enacted in 1895, contained provisions of closed areas and seasons. Such provisions were not a new creation at the time of the legislation about 115 years ago but merely a legalization of measures that already existed as self-imposed community rules (Aotsuka 2000). This observation is reasonable judging from the fact that a new creation of no-take zones from the scratch usually requires more transaction cost than just reauthorizing already existing customary rules. It can be argued that, because starting points of voluntary and legally binding no-take zones were similar, the members in FCAs tend to adhere to both rules in similar manners.

Why many self-imposed MPAs are left unlisted in the government legal framework? FCAs usually have both published and unpublished rules (see Figure 2), and many MPAs fall in the category of “unpublished rules”.

Yagi et al (2010) explains the reason why some of them are left unpublished in official document as follows: first, the non-binding ones are relatively new and therefore missed the timing of major revisions of prefectural fishery coordinating regulations. Members of FCAs would prefer to avoid the rigorous documentation process required to register such areas as legally authorized protected areas, when good

compliance for such local MPAs are maintained even without the formal legal status. Second, fishers prefer flexibility in protecting migratory species. In the case of the sand eel fishery in Ise bay, the area of autonomous MPA changes weekly to allow timely escapement of moving fish stocks (Matsuda et al, 2010). If the regulation is legalized, it would not be fully adaptive to the rapidly changing distributions of target species of the protection (Yagi et al, 2010).

ARE JAPANESE STYLE MPAs GLOBALLY APPLICABLE?

It can be argued that the Japanese style self-imposed MPAs would be difficult to transfer to some other countries unless they have a similar tenure system based on strong territorial use-rights guaranteed by the governments. Obviously, users must be interested in the sustainability of the particular resource so that the expected benefits will outweigh current costs (Ostrom et al, 1999). To this end, the role of the government is important in keeping the non stakeholders from gaining access to no-take zones (Francour et al, 2001). In the case of Japan, the fishery right issued by the government allows exclusive access to fishery resources for the license holder, and is treated as a non-transferrable property right under the fishery act. In return, FCAs are expected to establish their collective management rules for resource exploitation in the tenure area (World Bank 2006). Self- imposed MPAs are one of the management tools, which could bring joint benefit to the members of the co-management group. In sum, the autonomous MPAs are not a product of simple altruism, but rather are logical extensions of the tenure system guaranteed by the government legal system.

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Table 1. Number of MPAs in Japan by their management mechanisms

MPA type	Management authorities	Legal framework	Number of sites
Marine park areas	Ministry of the environment	Natural parks law	82
Marine special areas	Ministry of the environment	Nature conservation law	1
Wildlife protection areas	Ministry of the environment	Wildlife protection and appropriate hunting law	23
Protected waters	Ministry of agriculture, forestry, and fisheries	Act on the protection of fisheries resources	52
Legally-binding no-take zones	Ministry of agriculture, forestry, and fisheries	Prefectural fishery coordinating regulations	616
Community-based self-imposed no-take zones	Local fisheries cooperative association	Published and unpublished rules of cooperative associations	387

(Source: Yagi N. et al. Marine protected areas in Japan: Institutional background and management framework. Marine Policy (2010))

Figure 1. Top-down and bottom-up approaches of the management of MPAs in Japan.

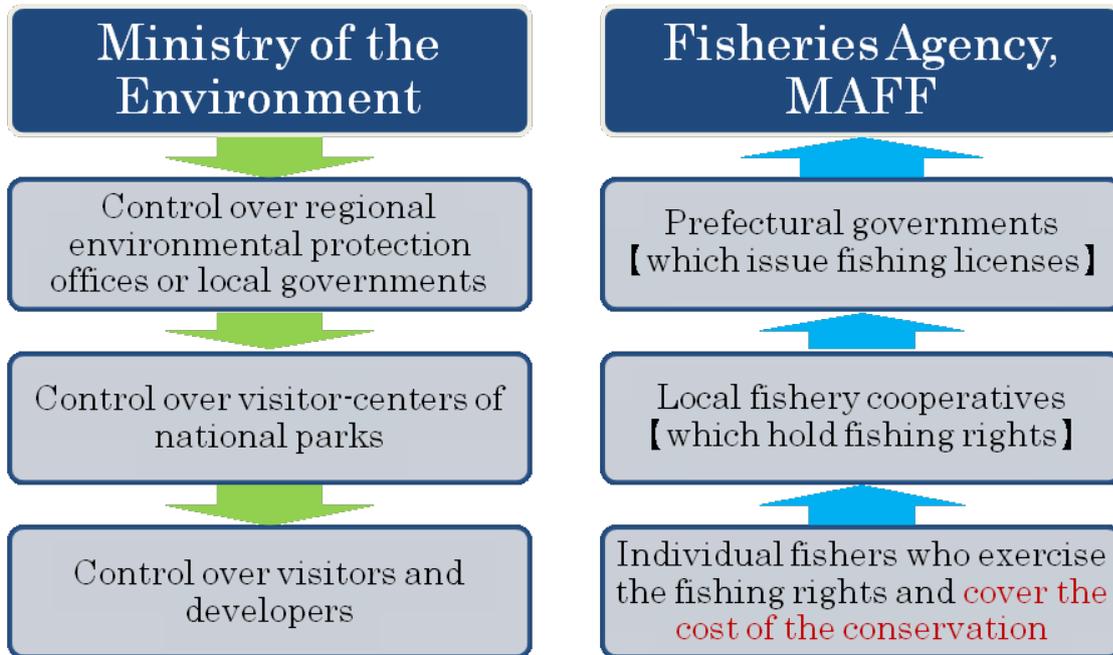


Figure 2. Structure of fishing rules and regulations in Japan.

