CHAPTER 4

Fishing Policy: Toward Introduction of Science-based Measurement/Management of Resources

Masayuki Komatsu

Abstract There have been no substantive amendments to Japan's Fisheries Act since the end of the Second World War, with the result that Japan's fisheries have consistently been allowed to operate under a system of "Olympic-style" fishing. This has caused the decline of fisheries resources and the fishing industry itself, contributing to economic decline in the nation's rural areas (Komatsu 2014). Other major fishing nations have reformed their fisheries-related laws and regulations and spurred growth in their fishing industries. It is essential for the revitalization of Japan's rural areas that we learn from these efforts and rebuild resources, attract external investment, and promote employment.

This chapter discusses the introduction of an individual quota (IQ) system in Niigata Prefecture, and considers fisheries reform attempts proposed by municipalities in Hokkaido.

Keywords Olympic-style fishing • Fisheries Act • Revitalization of rural areas • Individual quota • Niigata Prefecture • Hokkaido

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1 Introduction

In the 70 years since the end of the Second World War, the Japanese fisheries have been allowed to operate under a system of "Olympic-style" fishing, in which victory goes to the operator who catches the most fish, due to a lack of amendments to the Fisheries Act and the Fisheries Cooperative Association Act.[1] This has resulted in the decline of fisheries resources and the fisheries, and is a major factor in the decline of rural area economies in Japan (Komatsu, 2011; 2012). Other major fishing nations, including Norway, Iceland, and the USA, have reformed their Fisheries Acts and Regulations and accordingly spurred growth in their fisheries. These nations have succeeded in building fisheries that contribute both to the economies of rural areas and to the economy of the nation as a whole. It is essential for the revitalization of Japan's rural areas that we learn from these efforts and rebuild resources, attract external investment, and promote employment (Japan Economic Research Institute, 2007).

While they have had only limited success, there have been medium- to long-term reform initiatives of the fisheries in Japan. These include the Individual Quota (IQ) system introduced to one Niigata Prefecture shrimp cage fishery, considered in this Section by Kojun Hamada, and the attempts put forward by municipalities on Hokkaido's Rishiri and Rebun Islands, discussed in this chapter by Mari Koyano (Hamada, 2018; Koyano, 2018).[2]

2 The Decline of Japan's Fisheries: The Most Serious Case among OECD Members

Japan's fisheries have displayed the most marked decline among members of the Organization for Economic Co-operation and Development (OECD) (Fig. 4.1).

Japan's deep-sea Fishing Industry has faced the successive imposition of Regulations within coastal nations' 200 nautical mile exclusive economic zones (EEZs), and only a few examples of these industries, such as purse seine fishery operations in the waters of Pacific island nations and deep-sea longline tuna fisheries, remain.

In addition, there has been a conspicuous decline in the volume of catches of fish species within Japan's EEZ. The peak catch of 11.3 million tons for fishing operations within 200 nautical miles of the Japanese coast was taken in 1985; this figure was reduced to 3.53 million tons in 2015 (Fig. 4.2). The coastal fisheries also declined from a catch of 2.10 million

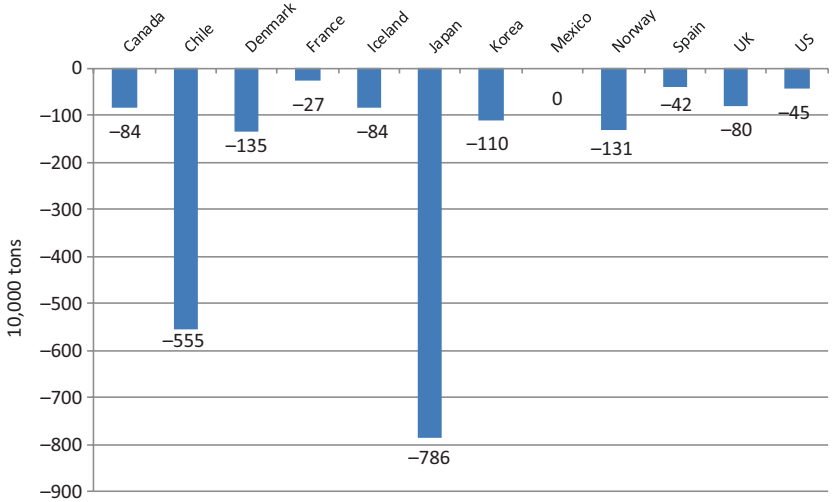

Fig. 4.1 Decline in the fisheries catch between past maximum catch and 2013 catch for OECD member nations with annual catch volumes of 500,000 tons or more. Source: Based on FAO Fishery Statistical Collections, Global Capture Production 1950–2013

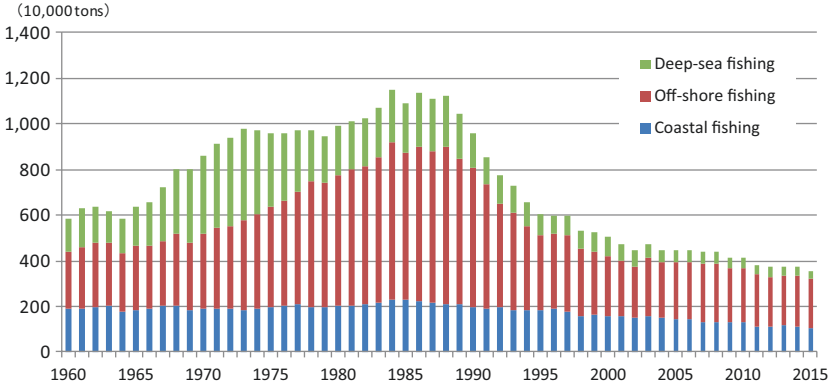

Fig. 4.2 Trends in capture fisheries catch for Japan (1960–2015). Source: Fisheries Statistics by the Ministry of Agriculture, Forestry and Fisheries. 2015 figures are tentative

tons in 1977 to 0.7 million tons in 2015 (excluding scallops, and salmon around Hokkaido, resources of which have increased as a result of hatchery breeding programs).

Overfishing has resulted in a conspicuous Decline in Catches for medium-sized fisheries and offshore fisheries (trawl net fishing, etc.) conducted within Japan's EEZ. Small-scale coastal fisheries and marine aquaculture have also experienced a continuing decline, with the recent reclamation of the lands of coastal waters and the construction of large-scale embankments causing the loss of favorable breeding and fishing grounds in seaweed beds and estuarine and tidal flats, a marked deterioration of fishing grounds, and a lack of new investment in fisheries. Olympic-style fishing is largely responsible for all of these effects.

3 Overseas Success in the Recovery of Fisheries Resources and Fisheries

Almost all of the fisheries products imported by Japan originate in Norway, Iceland, Canada, and the US state of Alaska. All of these have scientifically assessed their fisheries resources, set targets for the sustainable maintenance or recovery of those resources, calculated Available Biological Change (ABC), and set Total Allowable Catch (TAC) below ABC. In addition, they also apply the IQ system, in which the TAC is divided among individual fisheries operators based on criteria including their historical catch volume.

In advanced fisheries nations other than Japan, Individual Transferrable Quotas (ITQs) have been introduced and established, and fisheries businesses have increased their stability. For example, the seafood company VSV, located on the Westmann Islands off the southern coast of Iceland, was formed by individual small fishermen who combined their investments, enabling them to achieve more stable fisheries operational management. In the future, the company intends to make further investments and employ highly educated personnel in order to enable it to reduce its simple workforce while also ensuring a stable supply of fish to the market. It also plans to rationalize the management of its fisheries business.

The Individual Vessel Quota (IVQ) introduced by Norway in 1990 has also produced positive outcomes. The government of Norway is now considering reforms to promote the further stability of the quota management scheme over the next 20 years. They concluded at the committee in

December 2016 and still consider at the Government. Like oil resources, fisheries resources are regarded as common resources among the people living in Norway, and the country is examining the possibility of introducing resource rent and transferability of catch quotas for the smallest category of fishers.

4 New Initiatives in Japan: The Cases of Niigata Prefecture and Hokkaido's Rishiri and Rebun Islands

There are some examples of pioneering efforts within Japan itself. An IQ has been introduced in Niigata Prefecture. On Hokkaido's Rishiri and Rebun Islands, municipalities are pushing ahead with improvements in existing systems, looking towards the renewal and revitalization of the fisheries. Miyagi Prefecture's special fisheries rights initiative, which is intended to extend the rights to aquaculture fisheries to private companies, rather than limiting them to the fishermen who are members of fisheries cooperative associations, is another example of a new initiative to reform the Fisheries Act of Japan. These initiatives have yet to progress, and their success remains limited, but as a starting point for reform efforts in Japan, it is to be hoped that they will inspire further efforts on a national basis. Since Niigata Prefecture introduced its model IQ program in FY 2011, the revenue of operators participating in the program (shrimp pot fishing of sweet shrimp, *Pandalus eous*) has seen a rapid and significant improvement (Fig. 4.3) (Komatsu, 2015; Niigata Prefecture, 2011).

In Chap. 5, Associate Professor Kojun Hamada analyzes the economic effect of the establishment of this model IQ program in terms of an increase in the price of fishery products, and discusses the benefits of the introduction of IQ (Hamada, 2018). It is of considerable interest that these benefits do not accrue only to participants in the specific fisheries to which the IQ was introduced; the IQ also has an economic ripple effect on other fishing industries catching the same species.

Based on actual field surveys, in Chap. 6 Professor Mari Koyano offers a consideration, from a legal perspective, of current initiatives being conducted on Hokkaido's Rishiri and Rebun Islands, elucidating the basis for efforts to manage sea cucumbers, sea urchins, and other important coastal resources (Koyano, 2018). Together, these chapters can be considered to offer a succinct introduction to current efforts to promote recovery in Japan's fisheries resources.

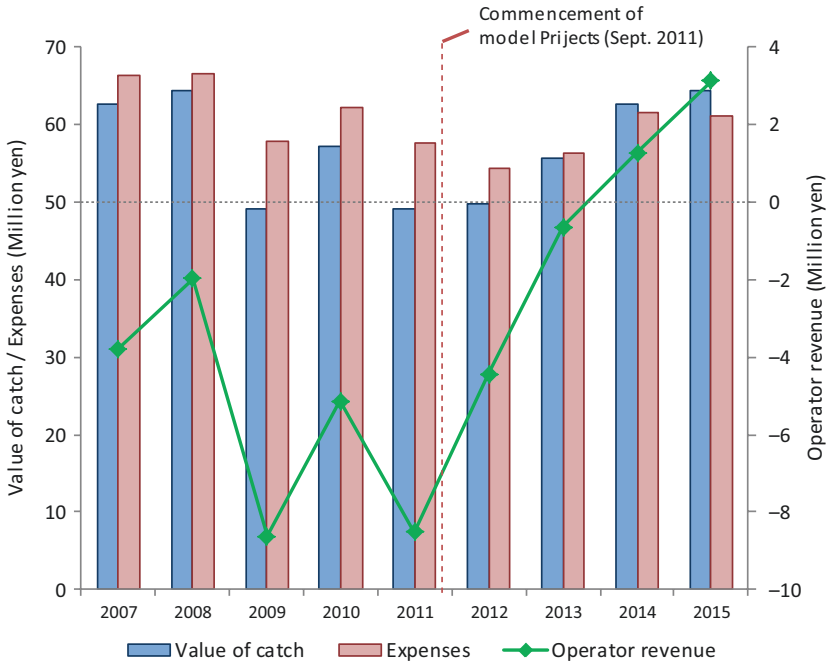

Fig. 4.3 Trends in revenue among participants in Niigata Prefecture's model IQ fishery. Source: "Document 5," 8th Niigata Prefecture Committee for Overall Evaluation of New Resource Management (Convened on July 26, 2016)

Notes

1. "Olympic-style" fishing refers to a system in which neither a fishing period nor a total catch volume is set for the purpose of resource management, or even if a total allowable catch (TAC) is set, it may not be allotted as an individual quota to each operator or boat. This system favors operators who catch the most fish in the shortest amount of time, hence the term "Olympic-style." "Olympic-style" fishing has a negative effect on resources, because it encourages operators to catch even juvenile fish, despite their low market price. The administrative authorities in Japan tend to set the TAC based on socioeconomic factors beyond the scientifically verified allowable biological catch (ABC).
2. Individual quota, or IQ, is allotted to individual operators (or individual boats) based on historical catches within the TAC. Because operators must stay within their allotted quotas, IQ leads them to closely follow market

needs and trends, avoiding lower-priced juvenile fish and selectively catching larger fish. This has the benefit of both increasing operators' income and protecting fisheries resources.

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