

# Development of a Community-Based Fishery Management System in Japan

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**Abstract** *The development of Japan's community-based fishery management system is described. Over the past 250 years, three fishery laws were in effect. These fishery laws commonly adopted a fishing rights system as a tool for coastal fisheries management. During the feudal era until 1867, the fishing right system was used mainly to collect a fishery tax. The fishing right system established by the Old Fishery Law (1901-1947) helped to reduce conflicts between fishermen exploiting the same resources with different gears. The Current Fishery Law, enacted in 1949, has led to "Territorial Use Rights in Fisheries" by limiting its coverage to sedentary resources and non-mobile gear. At the same time, the Current Fishery Law created a system to establish coastal fishery management plans through fishing rights and licenses. These innovations have motivated fishermen to create the community-based coastal fisheries management system. Since the inception of the Current Fishery Law in 1949, the number of fishery management organizations created increased annually to a total of 1524 in 1993.*

**Keywords** Fishery law, fishing rights, fishing license, fishery cooperative association, community-based fisheries management, fisheries management organization.

## Introduction

Marine fisheries in Japan are administratively classified into coastal, offshore, and distant water fisheries. The coastal fishery is further classified into coastal fishery and coastal aquaculture. (See Figure 1 and Table 1) The coastal and offshore fisheries operate in Japan's territorial waters and the 200 mile exclusive economic zone (EEZ). The distant water fishery operates in the high seas and the EEZ of foreign countries. (For a definition of these fisheries, see Table 2)

Table 1 shows the economic structure of Japanese marine fisheries. In terms of the number of fishing establishments, the coastal fisheries are the mainstay of the Japanese industry, accounting for 94 percent of the total. Fishing establishments engaged in coastal fishery are all fishing households. In terms of fishery production in quantity, coastal and offshore fisheries play a major role, producing 30 percent and 56 percent of the total, respectively. However, in terms of production in value, the coastal fishery plays quite an important role, producing 55 percent of the total.

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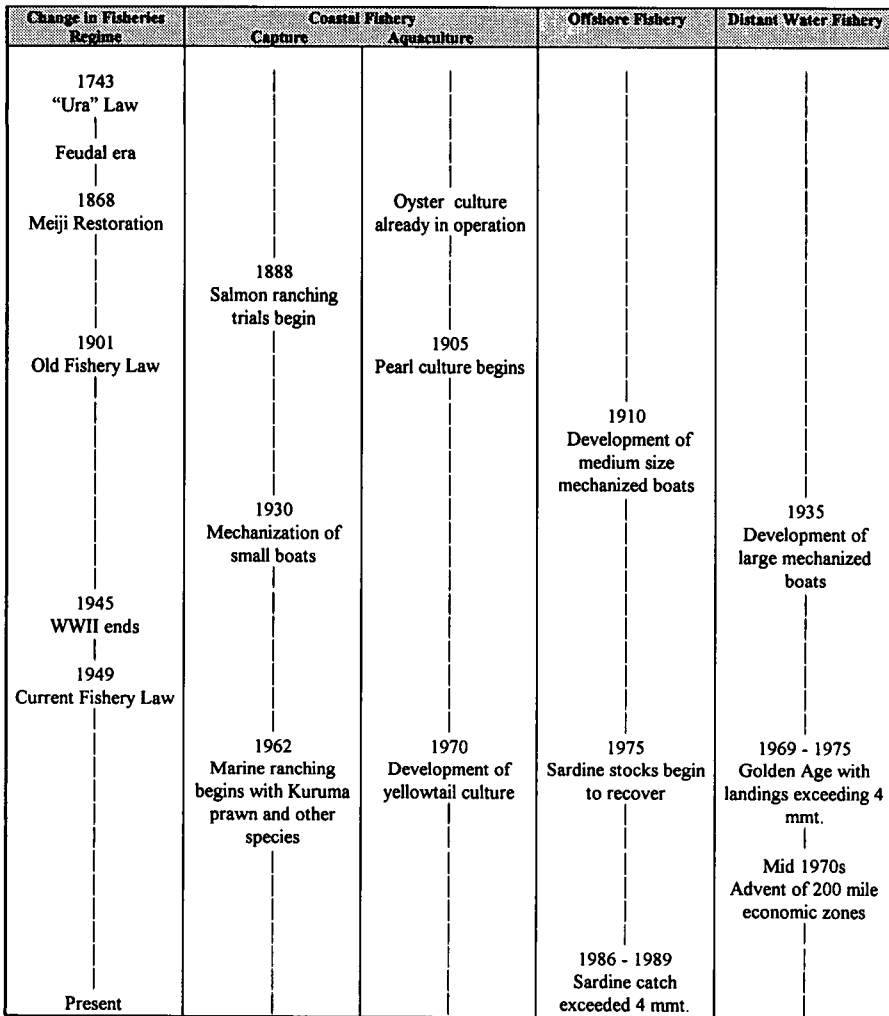


Figure 1. Development of Marine Fisheries and Regulatory Regimes

Table 1.  
Economic Structure of Japanese Marine Fisheries, 1991

	Total	Coastal Fishery		Offshore Fishery	Distant Water Fishery
		Capture	Aquaculture		
Number of Fishing Establishments	175,444 (100%)	128,903 (73%)	36,951 (21%)	9,298 (5%)	212 (0.1%)
Number of Fishing Boats	277,949 (100%)		253,149 (91%)	22,235 (8%)	2,565 (1%)
Number of Fishermen	370,300 (100%)		300,300 (81%)	70,000 (19%)	
Production (1000 MT)	10,843 (100%)	1,992 (18%)	1,273 (12%)	6,081 (56%)	1,496 (14%)
Value of production (Billion Yen)	2,562 (100%)	805 (31%)	609 (24%)	704 (27%)	444 (17%)

**Table 2**  
Definitions

Coastal Fishery	A capture fishery and aquaculture operating in coastal waters near fishing communities using boats (powered and non-powered) of less than 10 GRT. This fishery maintains the livelihood of the communities' fishing households.
Offshore Fishery	A capture fishery operating in waters outside coastal waters but within Japan's 200 mile EEZ, using powered boats over 10 GRT operated by fishing enterprises for profit.
Distant Water Fishery	A capture fishery operating on the high seas or the EEZ of foreign countries, using powered boats over 100 GRT.
Fishing Establishment	An economic unit of any type or size engaged in the capture or culture of aquatic animals and plants; 95% are fishing households engaged in coastal fisheries.

There is no internationally accepted definition for Community Based Fisheries Management (CBFM). However, in Japan the CBFM is regarded as a system of fisheries management created at the initiative of fishermen. Its activities include the management of fishery resources, effort, and grounds. A particular feature is the management of fishery resources, including conservation by establishing catch limits and propagation of fisheries through marine ranching. Japan's CBFM has been developed mainly for the coastal fisheries and partly for the offshore fisheries. There are a variety of CBFMs in operation, in terms of fish caught and fishing gear employed, reflecting the complexity of Japan's coastal and offshore fisheries.

### Changes in Fishery Management

Over the past 250 years, Japanese fisheries have been regulated by three separate laws: "Ura" Law (1743–1867), Old Fishery Law (1901–1948), and Current Fishery Law (1949 to present). (See Figure 1) These fishing rights have been used for different reasons.

*"Ura" Law (1743–1867)* The "Ura" Law was the first fishery law in Japan. The law ensured the collection of taxes from villages granted fishing rights. However, there was a similar tradition before the "Ura" Law was enacted. Under the "Ura" Law, all villages along the coast were classified as either fishing or farm villages. The fishing villages were granted an "Osumi-tsuki" by Samurai Lord. The "Osumi-tsuki" was a fishing right that allowed villagers to engage in various fishing activities in their area. Farm villagers were only allowed to collect seaweed to use as fertilizer. On occasion, an "Osumi-tsuki" was awarded to an individual who made a special contribution to a Samurai lord; such occasions were rare.

*The "Blank Period" (1868–1900)* The feudal era ended in 1867 thus terminating the "Ura" Law. The policy of the new government was the modernization of

every aspect of the Japanese administration. A special fishery mission dispatched to Europe found fishery laws in France, Germany, and England, but none fit the conditions in Japan. It took 32 years to get a new law in place. This period was characterized by resource disputes between fishermen. Intermediate measures failed.

*Old Fishery Law (1901–1948)* This law, here after referred to as the Old Law, was formulated by the new Governmental and approved by parliament in 1901. The Old Law was Japan's first piece of modern day legislation based purely on Japanese ideas, while the other laws were modifications of European models. According to the Old Law, fishing rights were classified into 1) exclusive fishing rights, 2) set net fishing rights, 3) specific fishing rights, and 4) aquaculture rights. It stipulated that the exclusive fishing rights were to be granted only to a Fishery Society (FS). As a result, all fishermen in a fishing village had to organize their own FS, otherwise, they were not allowed to fish. (See Figure 2)

While the Old Law was being drafted, fishermen requested the maintenance of traditions and rights established by the Samurai lords. As a result, all "Osumitsuki" granted by the feudal lords were converted into a coastal fishing right known as the Exclusive Fishing Right (Traditional). However, the Old Law also created a category not covered by the traditional exclusive fishing right. It was known as the Exclusive Fishing Right (New).

Owing to their importance, the central Government issued both exclusive fishing rights. They were valid for 20 years with possible renewal. The traditional

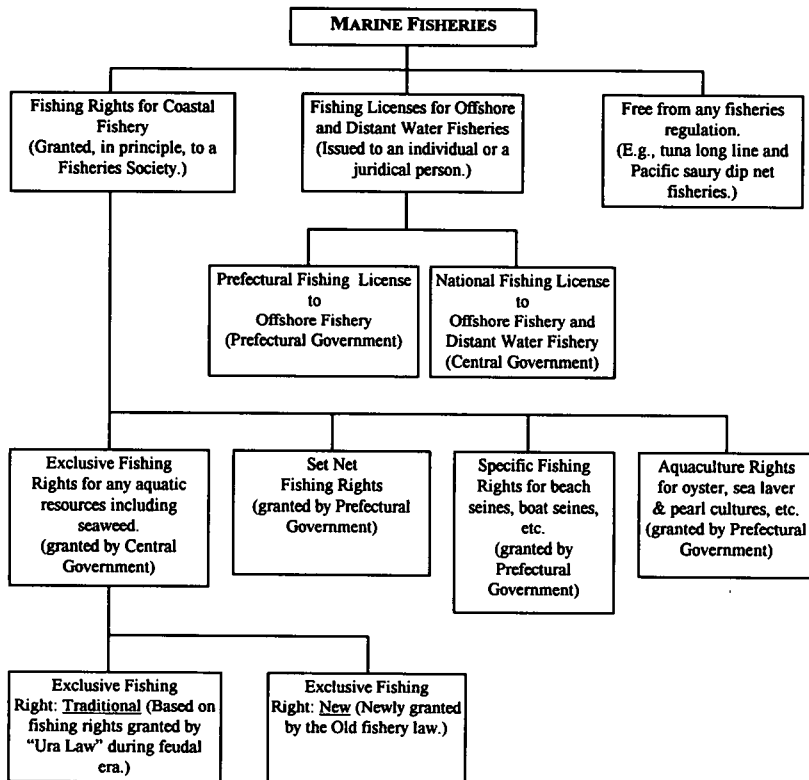


Figure 2. Fishery Regime Based on Old Fishery Law, 1901–1948

right remained the same, when it was renewed. However, when the new right was renewed, in response to a request from a FS, the area was expanded seaward to cover migratory resources, such as sardines, mackerel, squid, etc. The expansion of the new right was a result of the mechanization of small boats.

Due to their localities, the prefecture Governments took charge of granting: 1) set net fishing rights, 2) specific fishing rights for beach and boat seines, and 3) aquaculture rights with a validity of five years. These rights were granted to persons capable of fishing or aquaculture when the fishermen's society was not financial solvent.

The operation of mechanized boats, otter trawls, pair trawls, and Danish seines near shore resulted in conflicts with coastal fishermen. This signified the emergence of offshore fishing. In response, the Government introduced within the framework of the Old Law a restricted fishing license system. A closed area for trawl fishing was also established. Enforcement of the New regulation required large expenditures by the central and prefecture Governments for patrol boats and inspectors.

Japan is located in a temperate zone. There are a variety of resources being exploited by different groups of fishermen using different gear. Even among the coastal fishermen there were struggles for resources. Trawl fisheries fostered other types of conflict. The Old Law helped to reduce these struggles and conflicts rather than conserve the resources. Nevertheless, fishing rights granted to the FS along the coast were perceived by fishermen as restricted resources for their village.

In 1933, the country encountered a great recession. To help fishermen improve their income and living conditions, the Government introduced a fishery infrastructure to FSs fishing ports, fishing marketing halls, ice making factories, cold storage, etc. This infrastructure allowed many FSs to be involved in fish marketing auctions and it also changed their status from the guardian of fishing rights to a Fishery Cooperative Association (FCA).

In the past, fishermen were exploited by middlemen. Consignment sales of fish to the FCA increased opportunities for both the FCA and fishermen. The financial status of the FCA was stabilized, and the mutual reliance and solidarity of fishermen was strengthened. These institutions were taken over by the FCA which were newly reorganized after World War II. This may be one reason why the community based fishery management, under the initiative of fishermen, developed smoothly during the postwar period.

*Current Fishery Law (1949–Present)* From 1945 to 1952 Japan was occupied by Allied Forces. The aim of the Allied Forces, policy was the reformation of every aspect of Japan's administration. A nation-wide land reform program, which was implemented with great success was a typical example. As a result, all landless farmers became owner farmers. The Old Law was abolished and all established fishing rights nullified. The Government compensated those who lost fishing rights under the Old Law with bonds that were redeemable in five years.

In 1948 all FSs and FCAs established by the Old Law were replaced by the Fisheries Cooperative Association (FCA) as required by the Fisheries Cooperative Law. This law called for the establishment of FCAs in a democratic manner, in principle, for each coastal municipality. In 1949, the Current Fishery Law (Current Law) was promulgated with reformed fishing rights. Then, within the new legal framework, fishing rights were granted to the newly organized FCAs.

The central Government gave the prefecture Governments total responsibility for granting fishing rights. The procedures established by the Current Law for granting these rights were so democratic that fishermen viewed their fishing resources as their own, thus resulting in the creation of a community based coastal fisheries management system.

### The Current Fisheries Management System

The community based coastal fishery management system has been successful for two reasons. Firstly, fishing rights reformed under the Current Law conform to the "Territorial Use Rights in Fisheries" (TURF). Secondly, allocation of the fishery resources to FCA or fishermen are based on the Coastal Fisheries Management Plan (CAMP) which has been formed in a democratic way by a regional fisheries coordination committee.

There are two tools in use for the management of Japanese coastal fisheries: 1) fishing right for coastal fisheries and 2) prefecture fishing licenses for offshore fisheries. (See Figure 3). In terms of international management methods, both fishing rights and licenses fall under the category of Limited entry.

*Fishing Rights (Coastal Fishery)* Under the Current Law, the fishing rights are classified into three groups: 1) common fishing rights, 2) large scale set net fishing rights, and 3) coastal aquaculture rights. The common fishing rights correspond to

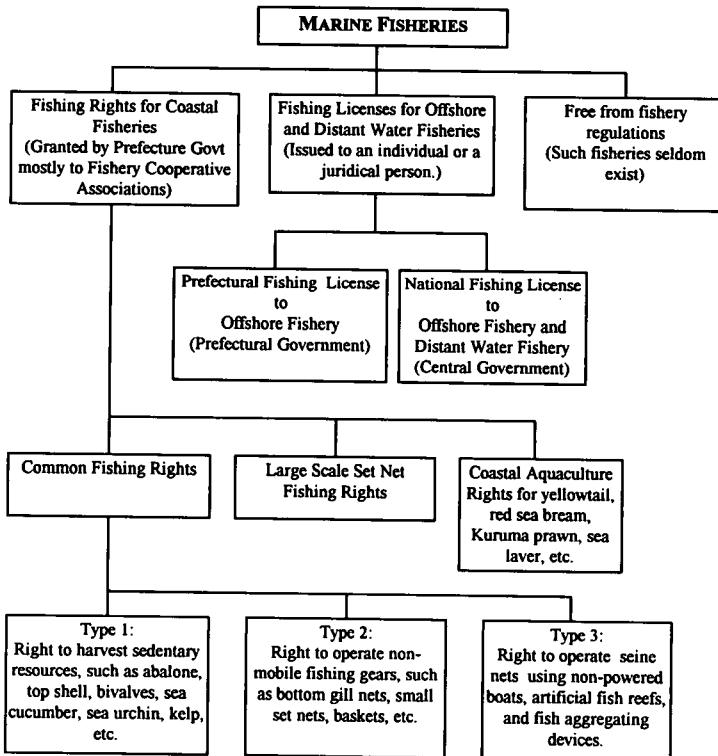


Figure 3. Fishery Regime Based on Current Fishery Law, 1949-present

the Old Law's exclusive fishing rights, as it covers the entire sea area adjacent to the respective fishing village.

Compared with the previous exclusive fishing rights, resources covered by common fishing rights Type 1 are confined to sedentary resources. Similarly, fishing gear covered by common fishing rights Type 2 and 3 are confined to non-mobile gear. This restriction is due to the policy that excludes any migratory fish and mobile gear from common fishing rights. In this way, the common fishing rights have been a real TURF in the strictest sense. As a result, the exclusive nature of the common fishing rights lends a sense of proprietorship over the resources. (Yamamoto, 1983) On the other hand, mobile fishing gear, formerly under the exclusive fishing rights, is managed by the prefecture fishing license.

As for the large scale set net fishing rights and coastal aquaculture rights, there have been no significant changes. The validity of the rights are ten years for the common fishing rights and five years for the remaining two. As for large set net and coastal aquaculture rights, changes in fish stock and the sea environment sometimes necessitate a location change.

All three rights are granted to the FCA. However, the rights for large set net and coastal pearl aquaculture are sometimes given to individuals in cases where the local FCA lacks the financial resources to utilize it. As done under the Old Law, the Current Law regards these rights as property rights but they cannot be sold or leased. It is also important to note that fishing rights in Japan are effectively area based. (Christy, 1992)

*Fishing Licenses (Offshore fishery)* The fishing license system under the Current Law is exactly the same as those established by the Old Law, that is national and prefecture fishing licenses. (See Figure 3)

The number of fishing units for offshore fisheries under the prefecture fishing license system is restricted. Therefore, even offshore fishery operators have a sense that they are chasing their own resources. For this reason, community based coastal fisheries management systems have been developed for offshore fisheries as well. Offshore fishermen are also members of a FCA. Fisheries covered by such fishery management systems are mobile (*e.g.* baby trawls, boat seines, small purse seines, *etc.*) and are not covered by fishing rights.

For gear regulated by fishing licenses, fishing effort is controlled by the number of licenses issued, limitation on vessel size and gear, and through the opening and closing of seasons and areas. Fishing licenses are normally valid for five years with possible renewal. The license is transferable under certain conditions.

### **Coastal Fisheries Management Plan (CFMP)**

*Regional Fisheries Coordination Committee and Its Role* The CFMP is a framework for a prefecture governor to grant fishing rights or issue fishing licenses. For the formation of the CFMP, a Regional Fisheries Coordination Committee (RFCC) is established for every prefecture, and the Committee develops the CFMP using FCA proposals and other reference materials provided by the prefecture Government (See Table 5). The RFCC consists of 16 members, nine fishermen, and seven nominated by the prefecture governor. The seven nominees are well acquainted with fisheries in the prefecture or represent a broad public interest. Each member serves a four year term and the chairman is elected from among the members.

To clearly understand fishery management in Japan, the following example is provided. A map and two tables are used to illustrate the number, location, and types of fishing rights and licenses. (See Figure 4 and Table 3 and 4)

*Shizuoka Coast Fisheries Management Plan* Shizuoka is one of 47 prefectures in Japan that faces the Pacific Ocean. Spread out along its 200 kilometers coast line are 36 FCAs with approximately 27,500 full-time and associate members. In 1992, they harvested 289,000 metric tons (MT) from marine fisheries (the fresh water harvest was 10,000 MT). The offshore fisheries accounted for the largest part of the catch, about 175,000 MT. The distant water catch was 75,000 MT, and coastal fisheries provided another 33,000 MT. Coastal aquaculture produced 5,000 MT. In 1992, the Shizuoka fishing fleet numbered over 7,300 boats. Most (94 percent) were under 10 Gross Register Tons (GRTs). In other words, the fleet consisted mostly of small boats appropriate to the coastal and offshore fisheries.

Of the four components of Shizuoka's marine fishery, only the distant water fishery is regulated by the central Government. The coastal and offshore fisheries and coastal aquaculture operations are under the jurisdiction of the Shizuoka

**Table 3**  
Coastal Fisheries Management Plan, 1993, Shizuoka Prefecture

<b>Fisheries under Fishing Rights</b>	
Common	20
Large Scale Set Net	18
Aquaculture	101
Total	139
<b>Number of boats operating under Prefecture Fishing Licenses in Shizuoka Prefecture waters</b>	
Medium size purse seine	25
Small size purse seine	28
Baby trawl	123
Boat seine for anchovy, halfbeak, etc.	1,351
Danish seine for sea bream	10
Mackerel scoop net	32
Stow net	216
Deep sea bottom gill net	501
Small set net	87
Drive-in net	18
Other gear	546
Total	2,937
<b>Numbers of boats based at Shizuoka Prefecture operating under National Fishing Licenses</b>	
Distant water tuna and skipjack	69
Offshore tuna and skipjack	25
Large scale purse seine	22
Saury pike lift net	9
Large scale squid angling	4
Overseas squid angling	6
Total	135

Source: 1993 Report of Fisheries, Shizuoka Prefecture



**Table 4**  
List of Fishing Rights in the Coastal Fisheries Management Plan, 1993,  
Western Half of Shizuoka Prefecture

1. Common Fishing Rights				
Number	Name of FCA	Type 1 Sedentary fishery resources	Type 2 Non-mobile gear	Type 3 Non-powered seine & fish reef
16	Shizuoka City	Lobster, Top shell, Abalone, Octopus, Sea Urchin, Sea cucumber, and Arame seaweed	Rock fish gill net	Beach seine
17	Yaizu, Kokawa, Ohigawa	Lobster, Top shell, Abalone, Oyster, Whelk, Sea Urchin, Sea cucumber, and Arame seaweed	Rock fish gill net and 'Konoshiro' bag net	Beach seine and Artificial fish reef
18	Yoshida, Sakai, Sagara, Jizou- kata, Omae-zaki	Lobster, abalone, Oyster, Hard Clam, Top shell, Octopus, Sea Cucumber, Lug worm, Agar-agar, and Undaria	Rock fill gill net and 'Konoshiro' bag net	Beach seine and Artificial fish reef
19	Sakai, Sagara, Jizo-Kata, Omae-zaki	Lobster, Abalone, Top shell, and 'Kajime' seaweed	Rock fish gill net	
2. Large Scale Set Net Fishing Rights				
Serial No.	Owner of Fishing Right	Location of Fishing Grounds		Species mainly caught
S18	Mr. Takayuki Hasegawa	Off Tajiri-hama beach of Yaizu City		Yellowtail, Horse mackerel, and Mackerel
3. Aquaculture Rights				
No.	Owner of Aquaculture Right	Location of Aquaculture Rights		Species for Aquaculture
1.	Shizuoka City FCA	Off Iwable beach		Undaria
2.	Yaizu FCA	Off Hama beach		Scallop and oyster
3.	Ohigawa FCA	Off Ohoigawa Town		Undaria
4.	Sakaida FCA	Off Sakai Town		Undaria
5.	Sagara FCA	Off Sagara Town		Horse mackerel and sea bream

prefecture and its CFMP. The CFMP is divided into two parts. One part deals with coastal fisheries and aquaculture under this fishing right system, the other with fisheries under the prefecture fishing license system.

### Fishing Rights

*Common Fishing Rights* For all of the Shizuoka prefecture, 20 common fishing rights have been established and assigned to 35 FCAs. See Figure 4 for a map of the western half of the prefecture. The map shows that the fishing right C 16 was awarded to the Shizuoka City FCA only, while rights C 17, C 18, and C 19 were divided among several neighboring FCAs. Table 4, Section 1 lists the specific fishing rights. Not all assigned areas have the same harvesting rights. For example, Type 1 and 2 rights are always available, while Type 3 rights are not.

The common fishing rights range from 1 to 8 kilometers off-shore from the

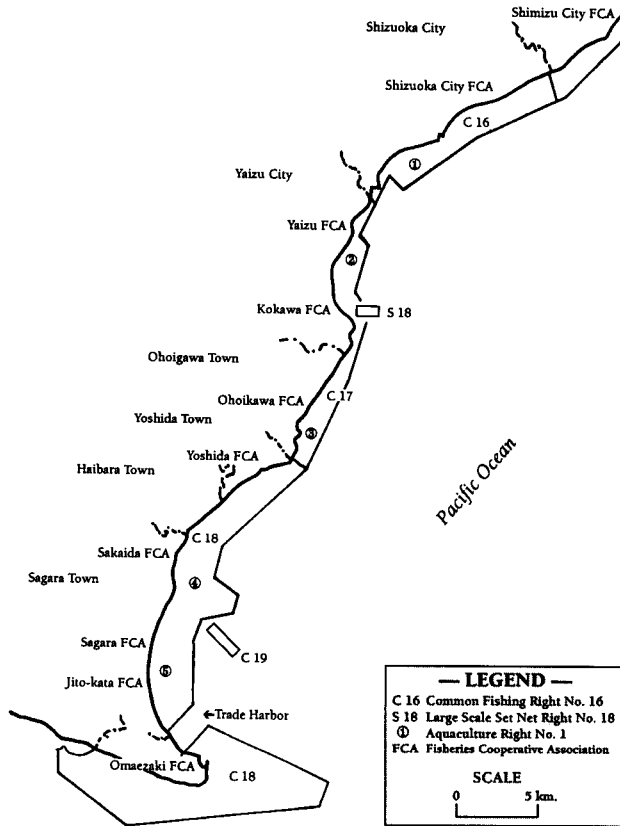


Figure 4. Coastal Fisheries Management Plan (Fishing Right Allocation)

Shizuoka prefecture. Occasionally a right is established in an area not contiguous to the shore, see C 19 in Figure 5. This usually occurs when sedentary resources are found near an offshore reef. There are also coastal areas where no rights are granted. The map shows that fishing right C 18 is divided by a trade harbor, an area that is unassigned.

**Large Scale Set Net Fishing Rights** In the western half of Shizuoka prefecture there is only one such right, number S18. It has been granted to a private citizen. See Figure 4 and Table 4, Section 2).

**Coastal Aquaculture Rights** There are five aquaculture rights in place on Shizuoka's western coast located in protected areas near the shore. All of these rights have been awarded to FCAs. (See Figure 4 and Table 4, Section 3).

**Prefecture Fishing Licenses** The Shizuoka prefecture has a fishing license system for 33 different gear types used in the offshore fishery. The number of licenses issued for each gear type is established by the RFCC. Decisions are based upon data provided by the Shizuoka Fisheries Experimental Station and fishermen. Applicants for the license are usually members of an FCA and need FCA approval before submitting a license request to the prefecture governor. This system allows for harmonizing the efforts and harvests of fishermen operating

under a fishing right with those holding licenses. In 1993, there were more than 2,900 licenses issued. (See Table 3)

### **FCA Fishing Right Management Committee (FRMC) and Its Role**

The FCA FRMC has two roles: 1) to propose a FCA draft management plan to the prefecture Government, See Table 5, Section 1, and 2) the establishment of a plan to make best use the resources or fishing grounds allocated by the fishing rights.

The FRMC may propose the creation of CBFM at the FCA level. There may be an instance when a group of fishermen who were allowed to collect abalone may establish their own CBFM. In Japan, the Government has never guided fishermen/FCA's creation of CBFM systems, although campaigns guided by fishery economists and the National Federation of Fisheries Cooperative Association (ZENGYOREN), took place in the latter half of the 1970s and the early 1980s.

The Current Law has fostered a more community based management approach, with fishermen participating through the FRMC and other organizations.

**Table 5**  
Formation of the Coastal Fisheries Management Plan

- 
1. The Fishery Cooperative Association drafts management plan.
    - a. Establishes a Fishing Right Management Committee.
    - b. Drafts a management plan indicating members' desired fishing rights.
    - c. Submit plan to the prefectural Government.
  2. The prefectural Government prepares for RFCC.
    - a. Forms a Regional Fisheries Coordination Committee (RFCC).
    - b. Synthesizes all Fishery Cooperative Association draft management plans.
    - c. Collects material needed to justify the drafted management plan.
    - d. Forward the material with the original draft to the Regional Fisheries Coordination Committee.
  3. The Regional Fisheries Coordination Committee
    - a. Prepares a draft of the Coastal Fisheries Management Plan using material provided by the prefectural Government.
    - b. Forwards the draft to the prefectural Government.
  4. A Public Hearing is held.
    - a. Announces through the government gazette and other means, a public hearing on the drafted plan.
    - b. Holds a public hearing.
    - c. Obtain consent from the Regional Fisheries Coordination Committee for any changes to the plan.
  5. Fishing Rights are granted.
    - a. Announces a final management plan which indicates all fishing rights and the location, species, type of gear, and fishing season.
    - b. The prefectural Governor grants Fishing Rights to applicants.
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Note: This table is based on the manual used for the implementation of the Current Fishery Law.

## Community Based Fisheries Management System Developed in Japan

Until 1987, the CBFM was known only on a case by case basis. For the first time in 1988 a fishery census enumerated all of the fisheries management organizations in operation as of November 1 of that year (Hasegawa, Miyazawa and Yamamoto, 1992). The 1993 fishery census did the same. The census defined community based coastal fisheries management as having three basic components: 1) management of fishery resources, 2) fishing efforts, and 3) fishing grounds. Fishermen's groups involved in any of these elements with or without written rules were, for the purposes of the census, defined as Fisheries Management Organizations (FMOs).

*Results of the 1988 Fishery Census* The 1988 fishery census identified 1,339 FMOs. The census tried to count the number of FMOs by the year it was organized. As a result, 30 FMOs were organized by the end of 1948 before the Current Law was enacted, and 871 were newly organized between 1949 and 1976. Another 394 FMOs appeared between 1977 and 1988. There were 44 FMOs for which the year established was not known. Of the 1,339 FMOs identified, 1,004 (75 percent) were established based on fishing rights, 294 (22 percent) were established by prefecture fishing licenses. Surprisingly, 17 other FMOs (2.8 percent) were established without reference to either fishing rights or fishing licenses.

Of the 1,339 FMOs analyzed, 1,017 (76 percent) involved the management of sedentary resources, such as abalone, top shell, spiny lobster, sea urchin, and clam. There were 229 FMOs (17 percent) which involved migratory species, such as Kuruma prawn, mantis shrimp, red sea bream, and flat fish. Thus, it can be said that most FMOs have been involved in sedentary resources. About 70 percent of the FMOs are involved in management of fishery resources, and over 90 percent help manage both fishing grounds and fishing efforts.

Regarding the management of the fishery resources, the prefecture Government, FCA, and even the FMOs have established their own fishery regulations or rules. In many instances, FMO rules are more stringent. For example, the FMO minimum size for abalone is much larger than either the prefecture or FCA regulations. Many FMOs monitor the fishing grounds and have the authority to fine or suspend violators. They assess stocks, set catch limits, and monitor for pollution. Over 60 percent of the FMOs are involved in marine ranching and about half in fishing ground enhancement (e.g., artificial reefs and man-made spawning grounds). They share in the costs and are subsidized by the central and prefecture Governments through the FCAs. Both Governments also subsidize pollution monitoring efforts.

According to the 1988 census, a majority of FMO members believe that community based management has been successful in reducing competition for resources and conflict among fishermen. Most thought that catches had stabilized due to FMO management in general and its reduction of fishing efforts in particular. This sense of cooperation extends to a system of catch pooling in 11 percent of FMOs, and after predetermined costs are deducted, the proceeds are distributed equally to the fishermen.

*Results from the 1993 Fishery Census* From 1988 to 1993 there was an increase of 185 (14 percent) FMOs, from 1,339 to 1,524. In 1993 the total number of fishing households participating in an FMO was 69,985, 43 percent of the total, which

means that nearly half of the fishing households were involved in a CBFM. Of the 1,524 FMOs identified, 452 (30 percent were FCAs, 598 (39 percent) were fishermen's groups which had been established for each gear within FCA, and 314 (21 percent) for fishermen's groups which were newly established for the purpose of fisheries management. The number of FMOs counted by target species were: 121 for bastard halibut, 122 for flat fish, 103 read sea bream, 359 for prawn, 352 for sea urchin, 547 for abalone, and 358 for top shell. Thus, in comparison with the results of the 1988 fishery census, the number of FMOs aimed at catching migratory species increased. On the other hand, the number of FMOs counted by type of gear employed were: 216 for baby trawls, 312 for gillnet, 587 for the collection of clams and seaweeds, and 252 for other gear.

## **Conclusions**

For CBFM's to succeed, fishermen may have to conceive resources as their own. FAO's report of Consultation on the Regulation of Fishing Effort has suggested that property rights can take many forms, for example, individual catch quota, "TURFs", etc. When fishermen consider fish stocks as their property, they adopt a more positive attitude towards conservation and management measures. The 1949 revision of the Japanese fishery law has led the nature of Japanese fishing rights to TURFs by limiting its coverage to sedentary resources and non-mobile gear. This has led fishermen to be more positively involved in CBFMs.

In many FCAs, marine ranching is intensified at the cost of the FCA or shared financially among fishermen. Fish from marine ranching is also perceived by fishermen as their own, and increases the chance of creating CBFM systems. To create a CBFM, a fishery law is needed to award fishing rights and issue licenses, and fishermen's organizations are indispensable. While new fishing rights were being granted by the Current Law, new FCAs were already in existence with good solidarity and mutual reliance among fishermen. This facilitated the creation of a community based coastal fisheries management system.

To create a new CBFM system, mutual agreement among fishermen is indispensable. Such an opportunity may occur at the FCA's fish market where the daily catch sale takes place. This will enhance chances of fishermen creating CBFMs. The FCAs will be financially strengthened by the steady income from auction commissions. (Hirasawa, 1992). However, it may be argued that absence of a sustainable yield in many FMOs is a weak point in Japan's CBFM system. In recent years, however, fishermen are trying to have MSY/TAC with the help of the prefecture fisheries experimental station.

There are arguments that the success of CBFM development in Japan is due to the long history of the fishing rights system. In a country where there has been no history of fishing rights, fishermen may not accept such a system, hence, there will be no chance to develop a community based fishery management. However, in my recent visit to Thailand in December 1993, although the fishermen did not have legally endorsed fishing rights, they did conceive ownership of resources near their villages. Therefore, there is a possibility of developing CBFM systems for Asian countries.

**Abbreviations**

EEZ	exclusive economic zone
CBFM	Community Based Fisheries Management
FS	Fishery Society
FCA	Fishery Cooperative Association
TURF	Territorial Use Rights in Fisheries
CAMP	Coastal Fisheries Management Plan
CFMP	Coastal Fisheries Management Plan
RFCC	Regional Fisheries Coordination Committee
MT	metric tons
FRMC	Fishing Right Management Committee
FMO	Fisheries Management Organization

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