

EXISTING PROJECTS RELATED TO THE
IMPROVEMENT AND DEVELOPMENT OF COASTAL FISHING GROUNDS

IN JAPAN

by

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Abstract

The history of the establishment and development of coastal fishing grounds in Japan started when fishermen themselves began to form artificial reef fishing grounds by casting stones and sinking old ships into the sea. Since 1952, the government has directed its attention to their construction as a part of national policy. The projects promoted by the government can be classified into three groups: 1) construction of fishing reefs; 2) construction of grounds for propagation and culture; and 3) protection of coastal fishing grounds. The first area aims at creating fishing grounds which will simulate natural conditions; similarly, the aim of the second group of projects is to establish breeding and spawning grounds for useful organisms. Finally, the third objective is to protect the coastal regions from pollution by urban and industrial wastes.

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1. HISTORY OF THE CONSTRUCTION AND DEVELOPMENT OF COASTAL FISHING GROUNDS

The construction of coastal fishing grounds in Japan dates back to the days when the fishermen themselves began voluntarily to build up shores or reefs with stones or by scuttling useless old boats.

The establishment of fishing grounds undertaken by the central government as definite policy can be divided into three phases.

The first stage started with the development of shallow-sea fish propagation and culture; the objective was the culture and propagation of laver and scallops in the interior gulfs. The propagation and culture of major shellfish were systematized in 1952 and 1953. Government subsidies were granted to share the costs of various preparations: transporting the base materials, tillage, and land readjustments necessary for the construction of fishing reefs, shorelines, laver culturing grounds, and grounds for the propagation and culture of shellfish.

In 1961, the second phase began with the "Fish Project Related to the Improvement of the Structure of Coastal Fishery". Because coastal fisheries were stagnant, the project was aimed primarily at the establishment of basic productive facilities including the construction of fishing reefs and breeding grounds, as well as improvement of the product distribution system and welfare of fishermen. The project was revised in 1971 and renamed the "Second Project Related to the Improvement of the Structure of Coastal Fishery".

The Law Concerning the Construction and Development of Coastal Fishing Grounds was enacted in 1974, and concrete policies have been enforced since 1976. The third stage evolved from this period and continues to the present. The law promotes increased productivity of the coastal fishery, encouraging the construction and development of coastal fishing grounds, both comprehensively and systematically, in order to achieve stable growth and a greater supply of aquatic products. In compliance with the law, the "Construction of Coastal Fishing Grounds and Development Scheme" was decided on at a cabinet council meeting in 1976, and concrete policies are to be implemented.

2. BACKGROUND AND IMPLEMENTATION OF EXISTING PROJECTS

At present in Japan, the environment of fishing grounds has been deteriorating in the coastal areas, while the offshore and deep-sea areas are suffering from stronger international regulations brought about by the establishment of the 200 nautical mile economic zones. Consequently, it is extremely difficult to maintain the normal level of productivity and supply.

According to Japan's consumer pattern for aquatic products, the fish and shellfish procured mainly through coastal fishery enjoy strong demand, and prices are also high.

Under these circumstances, development, reinforcement, and protection of fishing grounds in the coastal regions have become vital issues in order to maintain a stable supply of aquatic products and to increase productivity of popular fish and shellfish. The rationale is that these areas are highly productive Japanese water zones where high quality fish and shellfish are produced.

In facing these issues, and in the attempt to stabilize the coastal fishery further, the "Construction of Coastal Fishing Grounds and Development Scheme" was formulated in accordance with the law related to the construction and development of coastal fishing grounds. As a result, a variety of work is being undertaken in compliance with the scheme.

The scheme is being implemented on a large scale with a total investment of ¥200 billion for the seven-year period extending from 1976 to 1982.

Table 1 shows the annual breakdown of costs. According to the Table, the budget has increased tremendously each year. This reflects the government's strong emphasis on promoting coastal fisheries in order to secure the level of production in view of the new international marine order.

3. CONTENT OF THE EXISTING PROJECTS RELATED TO THE CONSTRUCTION AND DEVELOPMENT OF COASTAL FISHING GROUNDS (Table 2)

Projects related to the construction and development of coastal fishing grounds can be generally divided into three categories: the establishment of fishing reefs, construction of grounds for propagation and culture, and protection of coastal fishing grounds. The scale and breakdown of each project are illustrated in Table 2. Care has been taken to separate the categories according to "objective" and "scale".

Construction of fishing reefs

Natural conditions such as the distribution of reefs, circulation of bottom materials on the water basin, and the breeding and migration pattern of aquatic animals and plants are carefully taken into consideration when promoting the construction of fishing reefs.

Works pertaining to the project include the placement of durable construction materials such as concrete alongside natural reefs, expanding the grounds for existing single-rod and long-line fisheries. Furthermore, in order to establish fishing reefs which will enable net fishing including small-scale surrounding net fishery and small-scale dragnet .

fishery, artificial fishing reefs will be constructed. They will function in much the same manner as natural reefs, and on water basins located in the path of migrating schools which do not have a natural reef.

Construction of grounds for propagation and culture

Generation and growth of aquatic animals and plants, distribution of algae grounds and tidelands, and other similar natural conditions which are necessary for the propagation and culture, supply and demand of seedling and bait, tendency of supply and demand of the corresponding aquatic creatures, etc. are to be studied for the establishment of grounds for propagation and culture.

In Japan, studies on the ecology of useful organisms in the shallow regions have been advancing in recent years. As a result, techniques for the production of seedlings and feedstuffs, and aquatic engineering works have been improved. With these techniques, breeding of useful organisms will be promoted, breeder fish will be protected, and young plankton will be collected and protected - all prerequisites for the creation of breeding and raising grounds for fry. To these ends, algae grounds and tidelands, shoals for breeders, offshore dikes, etc. will be constructed.

With regard to culture, breeding grounds where aquatic animals and plants can be adequately controlled and raised to maturity will be established and improved. This will be carried out through the establishment of breakwater facilities for the interior gulfs or shallow seas, and also through the drilling and dredging of waterways.

Protection of coastal fishing grounds

Although the coastal regions in Japan have achieved industrial development in recent years, the amount of urban and industrial waste has increased. As a result of industrial activity, various kinds of accumulated waste have been causing the marine environment to deteriorate; thus, the fertility of the fishing grounds is declining. In order to return these areas to their normal state, the accumulated waste will be dredged and eliminated.

Table 1. Implementation of Projects Related to the Construction and Development of Coastal Fishing Grounds

	in billion Yen				
	1976	1977	1978	1979	Accumulation
Business expenses	9 868	15 914	24 233	32 132	82 147
Growth over the previous year		1.61	1.52	1.33	-
Progress rate against the plan	5.3%	13.9%	27.0%	44.4%	-

Progress rate is the rate against a total amount of ¥185 billion, excluding reserve expenses.

Table 2. Content of the Existing Projects Related to the Construction and Adevelopment of Coastal Fishing Grounds

Types of Projects	Project Scale	Project Name	P u r p o s e	C o n t e n t s
1976 & 1982	75 billion	Construction of medium-scale fishing reefs Construction of large-scale fishing reefs	1. Reinforcement and expansion of existing fishing grounds and natural reefs 2. Construction of fishing grounds for small-scale long line fishing	Fishing reefs formed by submerging durable materials such as concrete blocks.
185 billion	75 billion	Construction of artificial fishing reefs	1. Construction of artificial reefs for the development of fishing grounds in unexploited deep sea areas 2. Construction of fishing grounds for fishery, including net fishing employing vessels under 10 tons	Groups of fishing reefs constructed from durable materials.
15 billion as reserves)		Construction of farms for propagation fry	Construction of facilities for protection and cultivation of natural fry and artificial seedlings	Construction of Zostera areas and tidelands
	100 billion	Development of large-scale propagation farms Construction of fishing grounds Development of shallow-water fishing grounds	1. Development of large-scale propagation facilities suitable for propagation and cultivation of useful marine organisms 2. Protection of breeders and construction of farms for organisms from plankton to fry Construction of medium-sized culture farms suitable for aquaculture in unexploited shallow waters and inland bays Development of large-scale culture bases in unexploited shallow waters or inland bays	Establishment of jetties and sea walls; dredging; sowing; tilling; soil preparation; construction of reefs for breeders, fry and seaweed; and tidelands Establishment of break waters and improvement of sea water exchange (preparation of channel markers, excavation of channels, pumping and draining facilities, and aeration facilities)
Coastal Fishery Construction and Development Projects	10 billion	Maintenance and preservation of the fishing ground environment	Restoration of fishing grounds which suffer degraded productivity caused by an accumulation of wastes, sludge, and pollutants	Removal of deposits, tilling, and sowing Dredging, preparation of channel markers, and excavation of channels

Schematic diagram of coastal fishing ground improvement and development

