Chapter 2 Review of Japanese Fisheries since FY2007

Section 1 Fishery resources and the marine environment

(1) Management of fishery resources in the waters surrounding Japan

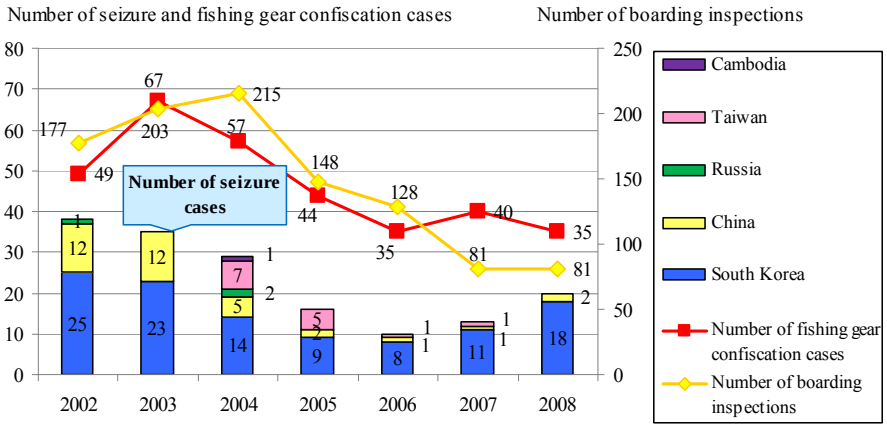
(Resource management in the waters surrounding Japan)

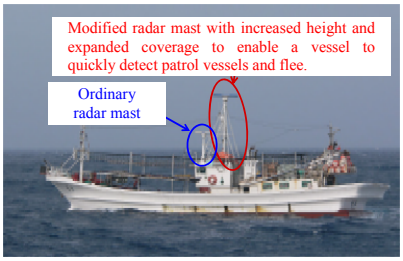
- As of March 2009, 49 resource recovery plans for 74 fish species, as well as 19 comprehensive resource recovery plans that focus on the fishery type, are being implemented or worked out.
- Improvement efforts were proposed regarding the Total Allowable Catch (TAC) system, including improvements in transparency, efforts not to exceed the Allowable Biological Catch (ABC) as much as possible taking into consideration business conditions, and efforts to make interim revisions a rule. While the introduction of individual quota and individual transferable quota systems is not appropriate at present, future utilization of the individual quota system will be studied in line with actual fishery conditions. For fisheries that have introduced this system, the appropriateness of quota transfers and other issues will be considered.

(Crackdown on illegally operating foreign fishing vessels)

- The nature of offenses has become increasingly sophisticated in recent years. Japan has been enhancing its monitoring of and crackdowns on foreign fishing vessels, in collaboration with the relevant agencies and countries.

Fisheries Agency's Boarding Inspections and Other Actions



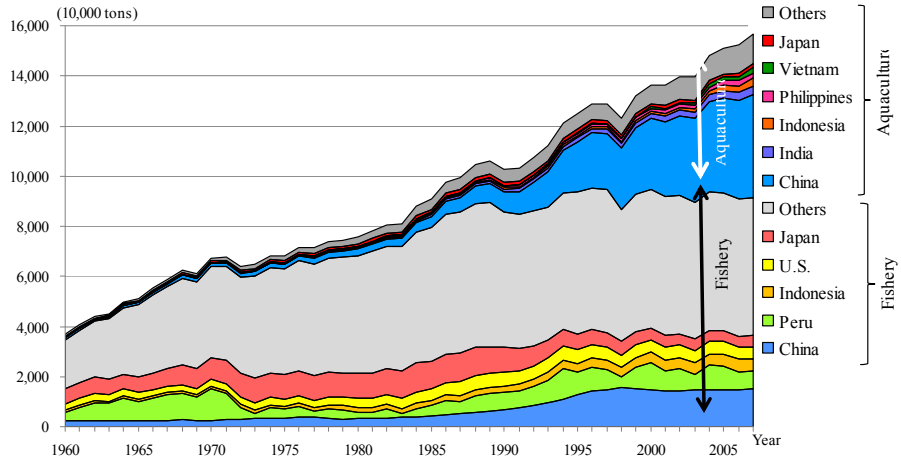


Source: Fisheries Agency

(2) International fishery resource conditions

- In recent years, marine fishery production volume growth has stagnated. Since the 1990s, aquaculture has supported the increase in overall production volume.

Changes in World Fishery and Aquaculture Production Volume



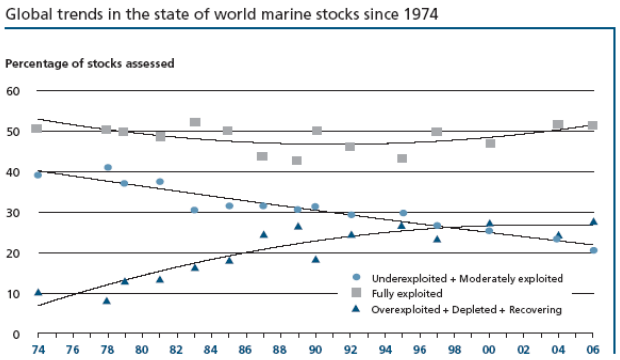
(Unit: 1,000 tons)

Country name	2007
World total	156,485
Fishery	91,290
Aquaculture	65,195
China	56,161
Fishery	14,988
Aquaculture	41,173
Indonesia	8,063
Fishery	4,942
Aquaculture	3,121
India	7,308
Fishery	3,953
Aquaculture	3,355
Peru	7,261
Fishery	7,221
Aquaculture	40
Japan	5,720
Fishery	4,436
Aquaculture	1,284

Source: "Fishstat" (Capture Production 1950-2007) (Aquaculture Production 1950-2007), U.N. Food and Agriculture Organization (countries other than Japan), "Annual Statistics of Fishery and Aquaculture Production," Ministry of Agriculture, Forestry and Fisheries (Japan only)

○ Regarding marine fishery resources, 19% were overexploited, 8% were depleted, and 1% was recovering from depletion. Approximately half (52%) were fully exploited, while 20% were moderately exploited or underexploited.

Changes in World Fishery Resource Conditions (Left) and Examples of Resource Conditions (Right)



Condition	Examples of resources
Overexploited or depleted	Bluefin tuna (Atlantic Ocean) Pacific Cod (Northwestern Atlantic Ocean) Anchoveta (Southeastern Pacific Ocean) etc.
Fully exploited	Saithe*（Northwestern Atlantic Ocean） Sockeye salmon (Northwestern Pacific Ocean) Banana prawn (Western and Central Pacific Ocean)
Moderately exploited or underexploited	Bonito (Indian Ocean) Squid (Southeastern Pacific Ocean) Yellowfin tuna (Indian Ocean)

* Saithe: A type of codfish

Source: "The State of World Fisheries and Aquaculture (SOFIA: 2008)," "Review of the state of world marine fishery resources," FAO

(3) Foreign countries' fishery resource management

○ The Magnuson-Stevens Fishery Conservation and Management Act, the basic law governing fisheries management in the United States, was amended in January 2007 for the first time in 10 years. The amended Act stipulates strengthened resource management efforts, including eradication of overfishing, enhanced stock recovery, promotion of market-based management tools, and the expanded role of science in the decision-making process.

○ In the European Union (EU), resources are managed through a combination of the Common Fisheries Policy, a framework shared by all EU member countries, and individual fisheries management systems of each member country.

(4) Japan's bilateral fishery relations

○ Japan conducts its fishing operations in the waters off South Korea and China, and they in the waters off Japan, under its bilateral fishery agreements with the two countries.

○ Japan conducts its fishing operations based on three intergovernmental agreements with Russia:
(1) The Agreement between the Government of Japan and the Government of the Union of Soviet Socialist Republics Concerning the Mutual Relations in the Field of Fisheries off the Coasts of the Two Countries
(2) The Agreement between the Government of Japan and the Government of the Union of Soviet Socialist Republics on Cooperation in Fishery
(3) The Agreement between the Government of Japan and the Government of the Russian Federation on some matters of cooperation in the field of fishing operations for marine living resources

○ Japanese fishing vessels operate in the 200-mile fishing zones of the Pacific island countries and African countries under bilateral government-to-government or private-level agreements.

(5) Japan's multilateral fishery relations

○ At the annual meeting of the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Total Allowable Catch for bluefin tuna in the Eastern Atlantic, including the Mediterranean, was decided at 22,000 metric tonnes for 2009, 19,950 metric tonnes for 2010 and 18,500 metric tonnes for 2011.

○ The annual meeting of the Western and Central Pacific Fisheries Commission (WCPFC) agreed on measures by fishery type, with the aim of reducing the catch of bigeye tuna by 30% in the three years from 2009.

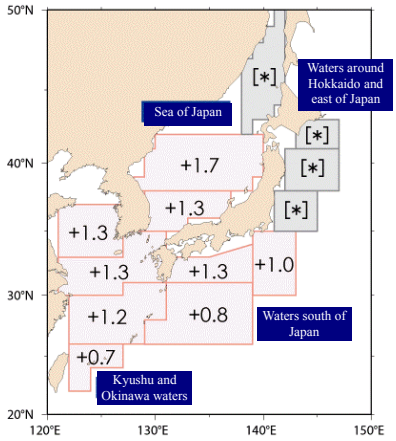
(6) Current conditions of overseas fisheries cooperation

○ Japan implements grant aid for fisheries and technical cooperation with other countries through the Japan International Cooperation Agency (JICA). The Overseas Fishery Cooperation Foundation imparts techniques and know-how to fishery operations of coastal countries. Japan also provides support to the Southeast Asian Fisheries Development Center (SEAFDEC).

(7) State of the marine environment

○ Concerns are growing over the effects of global warming. At the G8 Hokkaido Toyako Summit in 2008, Japan agreed to consider and work towards the adoption of a goal to cut global emissions of greenhouse gases by at least a half of current levels by 2050, under the Framework Convention on Climate Change.

Long-Term Trends in Average Sea Surface Temperatures in Seas off Japan (Annual Average) (ºC/100 years)



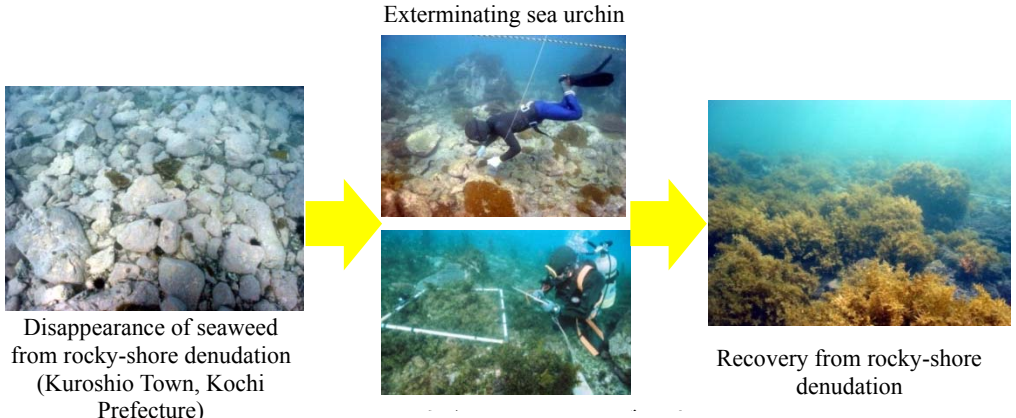
The annual average seawater temperatures in waters around Japan—in Kyushu and Okinawa waters, the central and southern Sea of Japan, and waters south of Japan—are rising at a rate of 0.7-1.7ºC every 100 years. This is 1.4 to 3.4 times the rate of annual average sea surface temperature rise of 0.5ºC for all seas.

The rise in water temperatures may not be attributed solely to global warming since the waters in question are small in area and thus are prone to be influenced by natural fluctuations. Nevertheless, it is a fact that the rise in sea surface temperatures in waters around Japan exceeds the world average.

Source: "2008 Marine Health Examination—Long-Term Trends in Sea Surface Temperatures (in Seas off Japan)," Japan Meteorological Agency

○ Development of an optimal laver management method was promoted in response to laver color-fading damage.
○ In March 2008, three vessels collided offshore near Kobe City in an accident that caused one freighter to sink. Ways to remove oil from the ship were studied and educational activities for the prevention of oil pollution accidents were promoted.
○ Ways to deal with the sources and disposal of drifting trash and driftwood, including those from overseas, were studied.
○ The Japanese government finalized the "Guidelines for countermeasures against rocky-shore denudation," identifying causes of rocky-shore denudation and summarizing concrete countermeasures. Seaweed substrates were installed and underwater plant beds were created. Conservation activities led by fishermen were conducted.

Marine Forests Recovered from Denudation following Efforts Led by Fishermen



Disappearance of seaweed from rocky-shore denudation (Kuroshio Town, Kochi Prefecture)

Exterminating sea urchin

Monitoring after sea urchin culling

Recovery from rocky-shore denudation

Source: "Guidelines against rocky-shore denudation," Kochi Prefecture

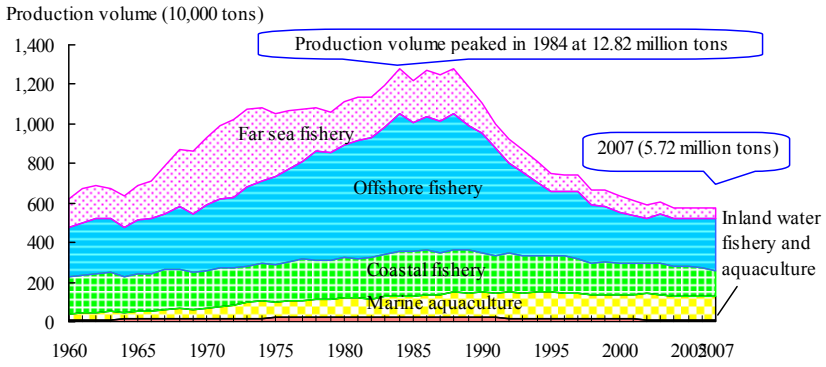
○ Damage was done to fisheries by giant jellyfish which emerged in coastal waters in the Sea of Japan, off the coast of Sanriku, etc. The government took advantage of the relevant funds to conduct surveys and provide information on the emergence of such jellyfish, and implement control measures on the sea.
○ Feeding damage to clams and fan-mussels by longheaded eagle rays, and damage to fishing equipment and feeding damage to catch, etc., by steller sea lions occurred. Measures were implemented to prevent and mitigate such damage to fisheries.
○ Damage to fisheries by river cormorants preying on ayu (sweetfish), Japanese dace, etc., became an issue. The "Act on Special Measures for the Prevention of Wildlife Damage" came into effect in February 2008. Measures such as mass repelling and extermination of river cormorants' nests were implemented, depending on the local situation.
○ Epidemic prevention technology against ayu (sweetfish) coldwater disease and koi herpesvirus disease were developed.

Section 2 Developments surrounding Japan's fisheries industry

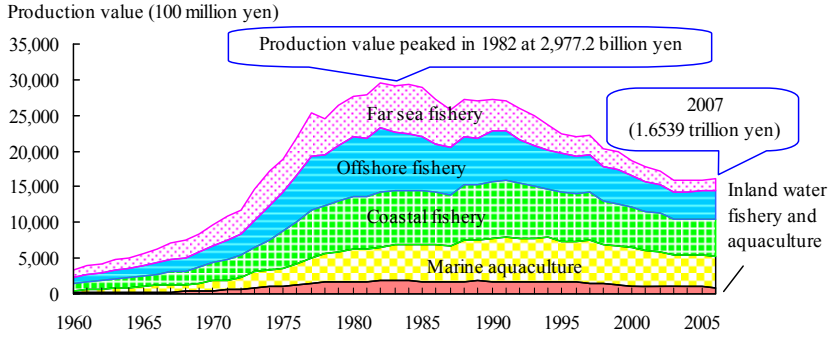
(1) Fishery and aquaculture production volume

○ In 2007, fishery and aquaculture production volume in Japan (including fish and seaweed) was 5.72 million tons, almost the same level as that of the previous year. The production volume for marine fishery dropped by 73,000 tons, while that for marine aquaculture increased by 60,000 tons. The production value stood at 1.6539 trillion yen.

Change in Fishery and Aquaculture Production Volume and Value



		2007 (1,000 tons)
Production volume	Total	5,720
	Marine	5,639
	Fishery	4,396
	Far sea fishery	506
	Offshore fishery	2,603
	Coastal fishery	1,287
	Aquaculture	1,242
	Inland water	81
	Fishery	39
	Aquaculture	42



		2007 (100 million yen)
Production value	Total	16,539
	Marine	15,757
	Fishery	11,268
	Far sea fishery	・・・
	Offshore fishery	・・・
	Coastal fishery	・・・
	Aquaculture	4,490
	Inland water	782
	Fishery	229
	Aquaculture	553

Source: "Annual Statistics of Fishery and Aquaculture Production," Ministry of Agriculture, Forestry and Fisheries

(2) Developments surrounding Japan's fishery

(Creating a dynamic employment structure)

○ Amid the global economic downturn, Japan's employment conditions have also deteriorated. In order to secure and nurture new fishery workers, means such as the FY2008 supplementary budget were utilized to provide job information, conduct practical, on-site training, and bring in new workers from fields other than the fisheries industry.

Launch of "The Ryoshi's" (The Fishermen)

"The Ryoshi's" (The Fishermen), made up of members who made the move to being fishermen from other industries, was formed to increase the number of potential candidates to become future fishermen and to communicate the joys of the fisheries industry and fishing village lifestyle.

Reviving the local community and its people (Nanao City, Ishikawa Prefecture)

The Ishikawa Prefecture fisheries cooperative's Sazanami branch has made various efforts aimed at forming fishermen's characters and improving their skills. These have included providing training programs in which people from other professions, such as models, were invited as instructors. The "Freshness Plaza: Sazanami Market" and fixed netting excursions have also been organized.

(State of fishery business management)

○ In 2007, fishing income per coastal fishing household (coastal fishing households with fishing vessels, marine aquaculture households, and households with small-scale stationary nets) was 3.27 million yen.

Changes in Fishery Household Income

(unit: 10,000 yen)

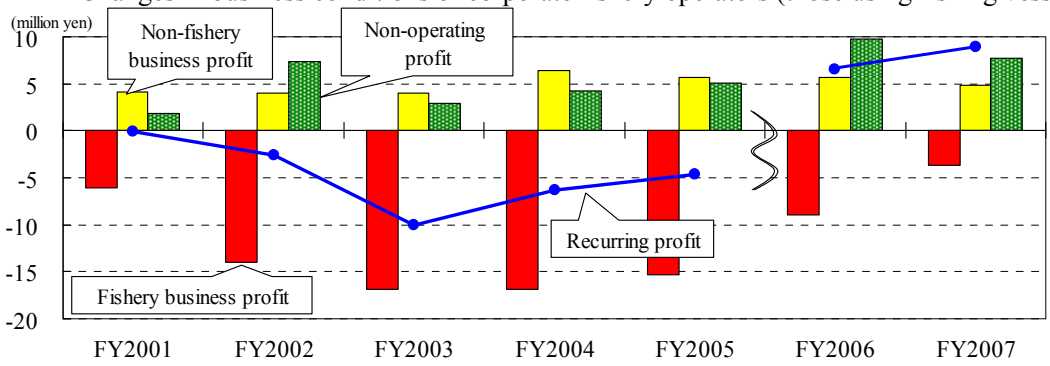
	2001	2002	2003	2004	2005	2006	2007
Average fishery income per coastal fishery household	299.5	287.1	271.1	282.3	280.1	296.9	326.6
Coastal fishery household with fishing vessel	225.7	226.7	215.6	215.3	214.3	246.6	274.2
Marine aquaculture household	686.9	602.3	570.8	626.2	611.4	507.6	538.4

Source: Prepared by Fisheries Agency based on "Fishery Business Management Survey Report" by Ministry of Agriculture, Forestry and Fisheries

○ Corporate fishery operators using 10-ton or larger powered fishing vessels saw reduced losses on fishery operations. However, they still depended on borrowings for most of their capital spending and suffered problems with short-term cash flow.

○ Projects under the new Fishery Business Management Stabilization Measures began in FY2008. Structural reform measures for fisheries using fishing vessels were implemented.

Changes in business conditions of corporate fishery operators (those using fishing vessels)

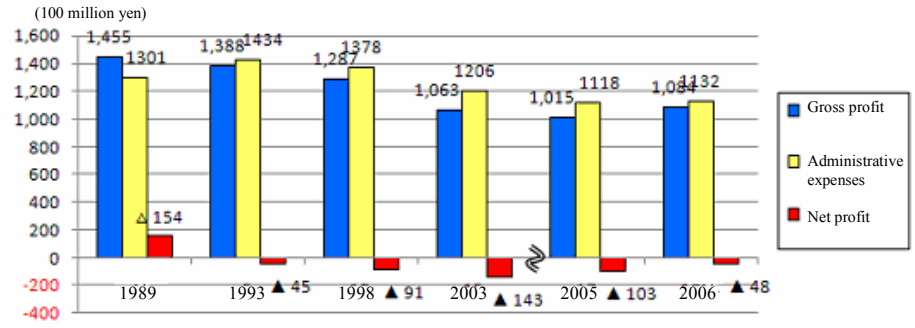


Source: "Fishery Business Management Survey Report," Ministry of Agriculture, Forestry and Fisheries

(Strengthening the organizational structure of fisheries cooperatives)

○ Efforts were made to merge fisheries cooperatives in order to enhance their organizational and business infrastructures. The "Fisheries Cooperatives Management Reform Support Fund" was established to support the reconstruction of struggling fisheries cooperatives.

Changes in fisheries cooperatives' total gross profits, administrative expenses and net profits



Source: "Statistics of Fishing Industry Cooperatives," Fisheries Agency

(3) Developments surrounding aquaculture

- ○ The fishing income of marine aquaculture households in 2007 increased from the previous year to 5.38 million yen, thanks to improved management in red sea bream and pearl aquaculture.
- ○ The production of bluefin tuna through aquaculture is growing each year. New efforts are being made, including onshore aquaculture and expansion of overseas markets. Job creation and economic ripple effects are expected following financial and other assistance from enterprises.

Changes in marine aquaculture household income

(unit: 10,000 yen)

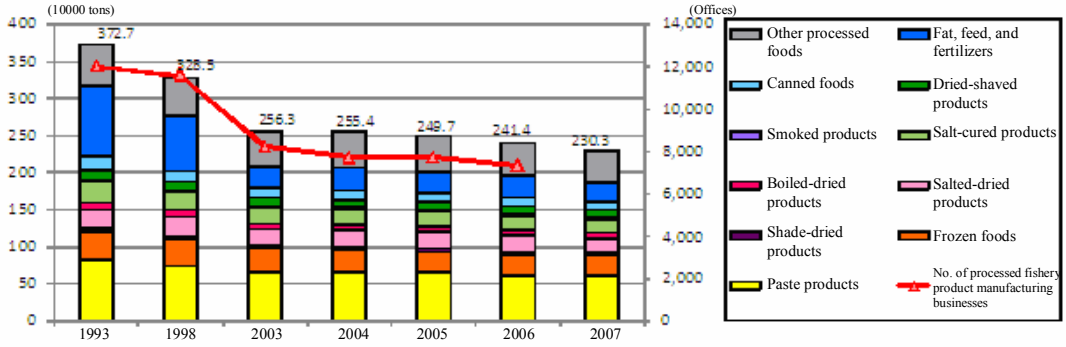
	Fishery Household Income						
	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007
Average	687	602	571	626	611	508	538
Amberjack	-404	280	1,014	617	-42	1,081	141
Red sea bream	1,198	177	-634	-493	356	389	917
Pearl	117	473	450	403	24	-14	708
Mother-of-pearl	149	79	226	226	332	・・・	・・・
Oyster	832	774	769	566	697	454	185
Scallop	942	687	670	1,020	894	597	608
Laver	889	765	692	763	748	574	682
Seaweed	294	384	396	448	435	375	347

Source: Prepared by Fisheries Agency based on "Fishery Business Management Survey Report" by Ministry of Agriculture, Forestry and Fisheries

(4) Processing and distribution of fishery products

- ○ Production of processed fishery products decreased, reflecting a decline in the consumption of fishery products and a drop in the number of fishery operators. Efforts were made to strengthen business infrastructures and develop domestically-processed products that precisely meet consumers' needs.

Changes in the production of processed fishery products and the number of manufacturing businesses



Source: Prepared by Fisheries Agency based on "Fishery Business Management Survey Report" by Ministry of Agriculture, Forestry and Fisheries

- ○ In order to enhance the competitiveness of domestic fishery products, it is necessary to develop diverse distribution channels that connect the fish-landing areas and consumers, as well as to streamline distribution bases.

A "Fresh Fish Train" that links the fish-landing area and consumption area

The Federation of Ise-Shima Fish Peddlers' Associations' group reserved train has been running since 1963 for peddlers delivering fishery products landed in Mie Prefecture to Nara and Osaka Prefectures.

Promoting consumption of local fishery products and reducing CO_2 emissions through Fish Mileage (Shimonoseki City, Yamaguchi Prefecture)

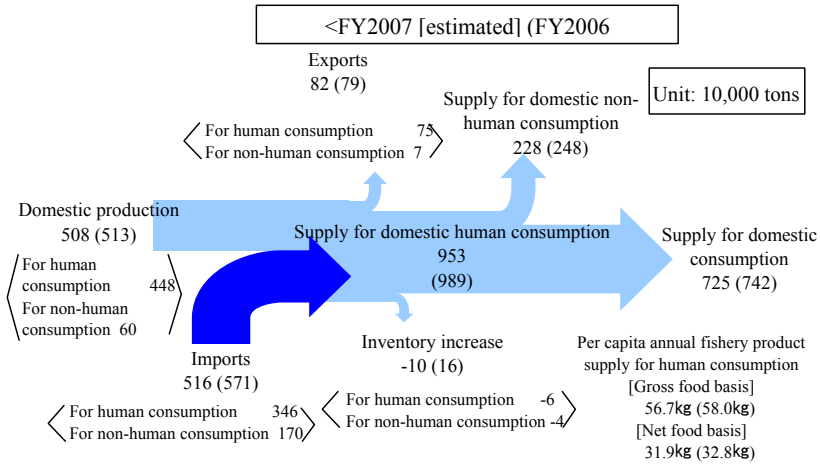
In December 2008, five restaurants in Shimonoseki City launched the Fish Mileage Campaign by incorporating the concept of food mileage. Seafood dishes with a shorter distance between the fish-landing area and the restaurant were given greater "fish miles." Customers collecting a certain amount of miles could take part in a drawing for a meal voucher. The campaign was aimed at expanding consumption of local products as well as preserving the environment.

Section 3 Supply and demand and consumption of fishery products

(1) Supply and demand of fishery products in Japan

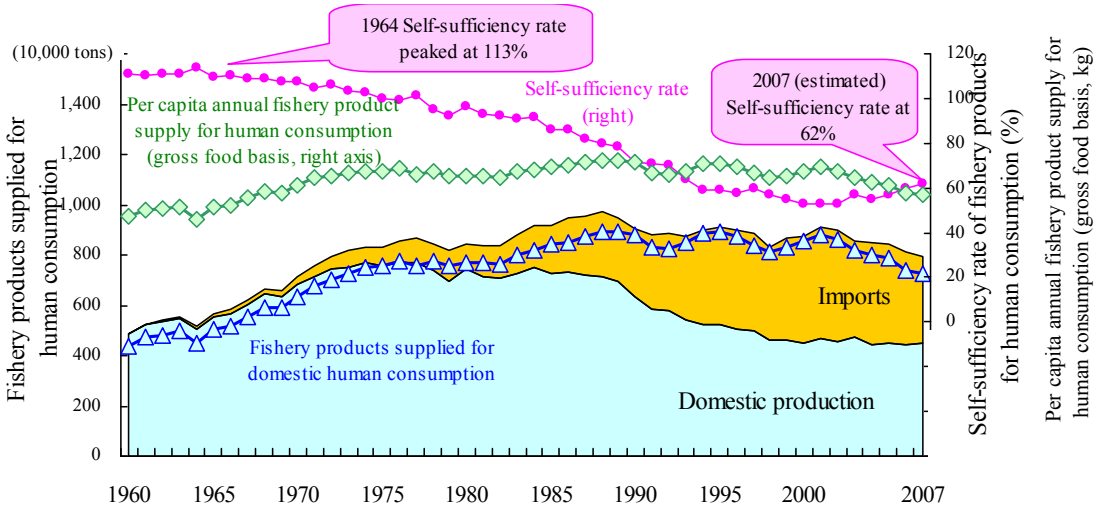
- In FY2007, fishery products supplied for domestic human consumption decreased by 170,000 metric tonnes from the previous year to 7.25 million metric tonnes (on the basis of the original weight). The per capita annual fishery product supply for human consumption came to 56.7 kg on a gross food basis and 31.9 kg on a net food basis.
- The self-sufficiency rate of fishery products for human consumption in FY2007 rose by two percentage points from the previous year to 62% (as estimated). The self-sufficiency rate of seaweed came to 71% (as estimated).

Conditions of Fishery Product Supply and Demand



Source: "Food Balance Sheets," Ministry of Agriculture, Forestry and Fisheries

Changes in the Self-Sufficiency Rate, etc., of Fishery Products for Human Consumption



Source: "Food Balance Sheets," Ministry of Agriculture, Forestry and Fisheries

Self-sufficiency rate (%) = Domestic production / Supply for domestic consumption

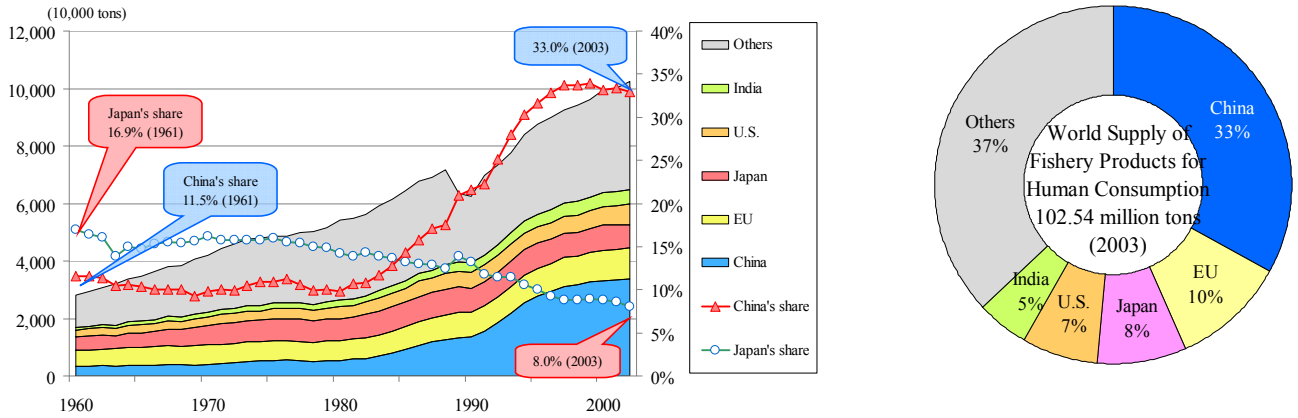
* Supply for domestic consumption = Domestic production + Imports
– Exports ± Inventory increase or decrease

- A national campaign aimed at improving Japan's food self-sufficiency rate, "FOOD ACTION NIPPON," was launched in October 2008.

(2) World supply and demand of fishery products and fishery product trade

○ The world fishery product supply for human consumption nearly quadrupled in the 40 years from 1963 to 2003. However, Japan's share of the world's total supply decreased from 16.9% in 1961 to 8.0% in 2003.

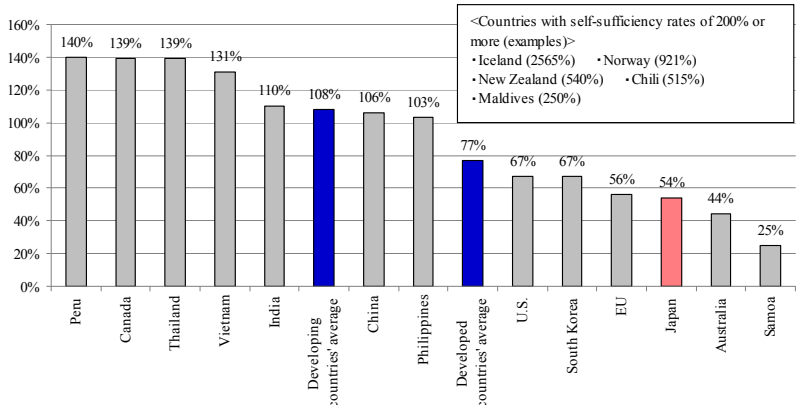
World Supply of Fishery Products for Human Consumption by Country



Source: Prepared by Fishery Agency based on "Food Balance Sheets" by Ministry of Agriculture, Forestry and Fisheries (Japan), and "FAOSTAT" by U.N. Food and Agriculture Organization (countries other than Japan)

○ The average self-sufficiency rate of fishery products for human consumption (2001-2003 average) was 77% for developed countries.

Self-Sufficiency Rate of Fishery Products for Human Consumption in Foreign Countries (2001-2003 Average)

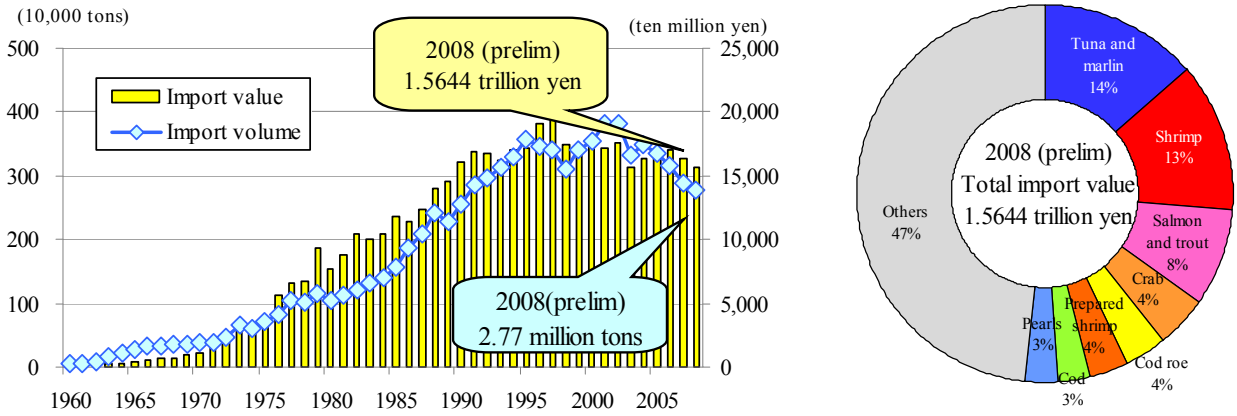


Source: "Food Balance Sheets," Ministry of Agriculture, Forestry and Fisheries (Japan), "Yearbook of Fishery Statistics—Commodities," U.N. Food and Agriculture Organization (countries other than Japan)

(3) Japan's fishery product trade

○ Japan's fishery product imports in 2008 decreased by 4% from the previous year to 2.77 million metric tonnes in volume and by 4% to 1.5644 trillion yen in value. Imports of tuna and marlin, shrimp, and salmon and trout saw declines.

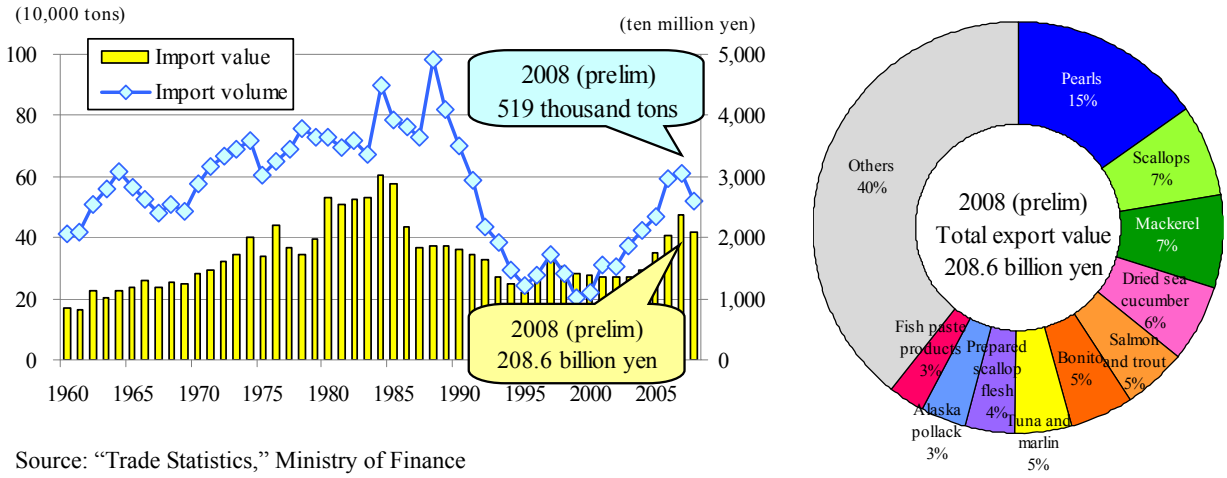
Changes in Japan's Fishery Product Imports and Import Value Breakdown



Source: "Trade Statistics," Ministry of Finance

- In recent years, Japan's fishery product exports have increased on the back of growing global demand. However, in 2008, exports decreased for the first time in six years due to a drop in domestic production of salmon and other fishery products, the global economic downturn and the yen's appreciation. Japan's 2008 fishery product exports decreased by a 15% volume from the previous year to 520,000 metric tonnes and by 12% in value to 208.6 billion yen.
- Aiming to attain an annual export level of one trillion yen for agricultural, forestry and fishery products by 2013 as a national goal, the government enhanced sanitary control by introducing the EU-HACCP (Hazard Analysis Critical Control Point) system and made preparations for a system to issue export certificates.

Changes in Japan's Fishery Product Exports and Export Value Breakdown

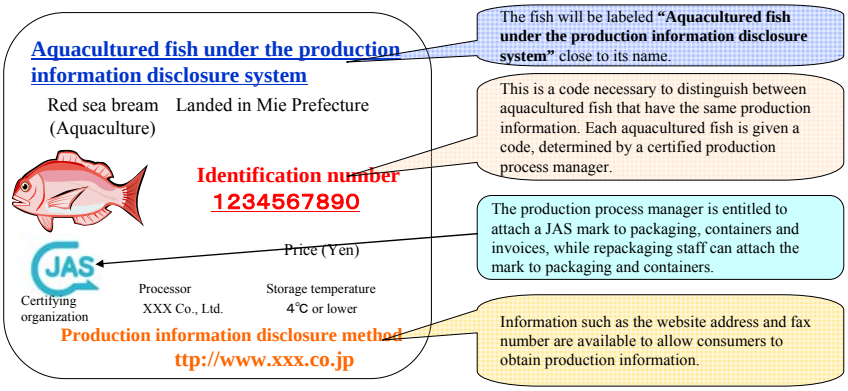


Source: "Trade Statistics," Ministry of Finance

(4) Ensuring the safety of fishery products and the trust of consumers

- Efforts are made to ensure the proper use of fisheries medicine for aquaculture. The JAS (Japanese Agricultural Standard) production information disclosure system was introduced in aquacultured fish.
- In order to ensure the safety of fishery products and the trust of consumers, efforts are made to utilize and spread the HACCP system and enhance traceability.

Labeling Methods for Aquacultured Fish under the Production Information Disclosure System



The first JAS certification for aquacultured fish (Kushimoto Town, Wakayama Prefecture)

Marine product company O, which engages in aquaculture of red sea bream and longtooth grouper in Wakayama Prefecture, received the first JAS production information disclosure certification for aquacultured fish in June 2008. The company had accumulated detailed information on feed and fisheries medicine used.

Farm inspections and exchanging views on aquacultured fish (Shizuoka Prefecture)

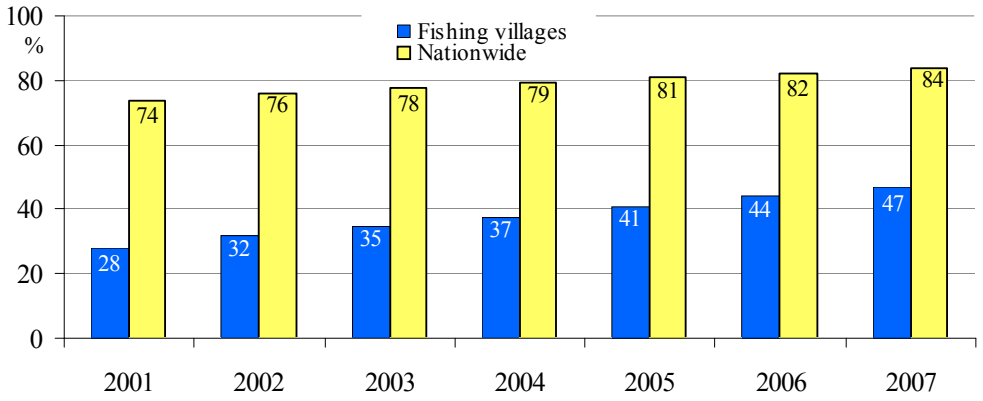
The Shizuoka Prefecture Marine Aquaculture Association and Uchiura fisheries cooperative invited 45 consumers from Tokyo for a tour of red sea bream farms. They exchanged views on aquaculture methods and the safety of aquacultured fish.

Section 4 Development of Attractive Fishing Villages with the Use of Local Resources

(1) Improvement of living environment and enhancement of anti-disaster capacity for fishing villages

○ In view of delays in the development of an infrastructure for daily living as well as the rapid progress of the aging society in fishing villages compared with urban areas, the Government promotes measures to establish sewage facilities and other community facilities. Efforts are being made by fishing regions to cooperate to enhance anti-disaster capacity under the "Guideline to develop disaster-resistant fishing regions."

Transition in the Coverage of Sewage Systems in Fishing Villages



Source: Fisheries Agency, "Survey on Villages in Hinterland of Fishing Ports"

(2) Multiple functions of fisheries industry and fishing villages

○ The fisheries industry and fishing villages have multiple functions in addition to their primary function to supply fishery products. These functions include conservation of natural environments, protection of people's lives and properties, provision of places for people to live and exchange, and formation and preservation of local communities.

Multiple Functions of Agricultural, Forestry and Fisheries Industries

To raise awareness of the importance of seaweed beds and tidelands, where fry are reared [Miyako, Miyagi Prefecture]

Under the initiative of fishery operators and local administrative bodies, activities were launched to protect fry and fish eggs. In 2006, with the aim of raising the public awareness about the importance of seaweed beds and tidelands, they held gatherings to observe creatures living on seaweed beds and tidelands and workshops to experience fixed net fishing.

(3) Exploitation of local resources for invigoration of fishing villages

○ Fishing villages are full of diverse resources, such as fresh fishery products, rich nature, and beautiful scenery. In various places nationwide, activities are being carried out within the collaborative framework among agriculture/forestry/fisheries, commerce, and the manufacturing industry, as well as women's groups. Efforts are being made toward invigorating local economies, with a focus on the industry of creating and maximizing the value of local resources retained in the sea and fishing villages (generally called *marine industry*).

Product development with the use of nonstandard fish [Sasebo, Nagasaki Prefecture]

The fish market in Sasebo, in cooperation with the fisheries cooperative, began processing minced fish, using nonstandard horse mackerel. A freezer manufacturer cooperated with the fish market to introduce an automated processing system covering the steps from filleting to vacuum packaging.

Providing consumers with specialties from the island with the refreshing sea air [Shimonoseki, Yamaguchi Prefecture]

The women's division of the fisheries cooperative produces and sells locally caught fish and *wakame* seaweed at *Shiokaze-no-Sato Tsunoshima*, a facility consisting of a processing factory, shops, and a restaurant.

Aquaculture activities as the bridge between the intellectually disabled and the local community [Unzen, Nagasaki Prefecture]

Akatsuki Gakuen, a welfare facility for people with intellectual disabilities, provides the opportunity to breed fish such as red sea bream and yellow jack. Participants carry out all that they can in this work, from conveying and mixing feed to feeding and shipping fish. This program has promoted their exchange with the local community.

Invigorating the local community through collaboration between the fisheries industry and the tourism industry [Himaka Island, Aichi Prefecture]

Based on a proposal by the tourist association, Himaka Island has been advertised as an "island of octopus and *fugu* (blowfish)," thereby successfully raising the price of fish as well as increasing the number of visitors. Fishery operators engage in intermediate breeding of *fugu* and provide fishing-experience events. Fisheries and tourism have continued to have a good collaborative relationship.

Revitalizing the seashore region through the Octopus Box Owner Program [Hokkaido]

As a publicity event to increase popularity of locally caught octopus (octopus dofleini), the Octopus Box Owner Program was launched in FY2007. Gatherings have been held to provide the owners the chance to actually see their own octopus boxes.

Changing the handicaps of a remote island into a business opportunity [Satsumasendai, Kagoshima Prefecture]

Koshikijima Fisheries Cooperative introduced a special quick-freezing system to improve the quality of *kibinago* (banded blue sprat) to prevent them from quickly losing their freshness, thereby making possible their stable shipment. Cooking lessons using *kibinago* are also held.

(Productive Fisheries Developed through Collaboration with Local Communities)

[Awarded the Emperor's Cup] Tanaume Honten (Tanabe, Wakayama Prefecture)

This company manufactures chewy and elastic *kamaboko* (steamed fish paste), using domestic white fish, *eso* and *guchi*, and applying its original manufacturing method. It carries out various activities to contribute to the local community, such as donating fish cakes to children's homes, accepting elementary school students to visit its factory, providing junior high school students with work experience, and implementing training programs for participants in employment support seminars arranged by Hello Work (Employment Service Agency).

[Awarded the Prime Minister's Prize]

Kitaura Pacific Mackerel Aquaculture Cooperative Business Unit (Nobeoka, Miyazaki Prefecture)

People engaging in aquaculture of fish, mainly great amberjack, have established a cooperative business unit and launched a project to breed Pacific mackerel. They have successfully earned stable profits.

[Awarded the President's Prize of the Japan Agriculture, Forestry and Fisheries Promotion Association]

Kanedai (Kesennuma, Miyagi Prefecture)

The company manufactures fish pickled in sugared vinegar by quickly freezing fresh saury and adding the *yuzu* (Chinese lemon) flavoring. It also contributes to the local community by planting trees.