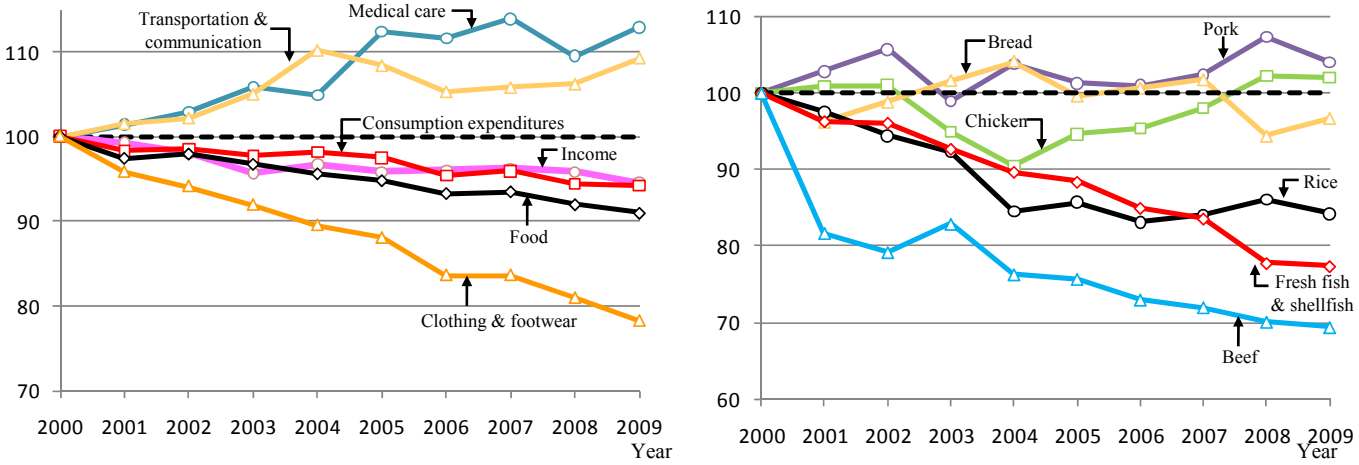
Section 1 Consumption, Supply and Demand of Fishery Products

(1) Trend of Consumption of Fishery Products

(Tight household budget is causing a shift away from fish)

○ Japanese households' food expenditures have declined in recent years, reflecting severe economic conditions. In particular, the expenditure for fresh fishery products has decreased notably.

Changes in Food Expenditures per Household (where year 2000 = 100)

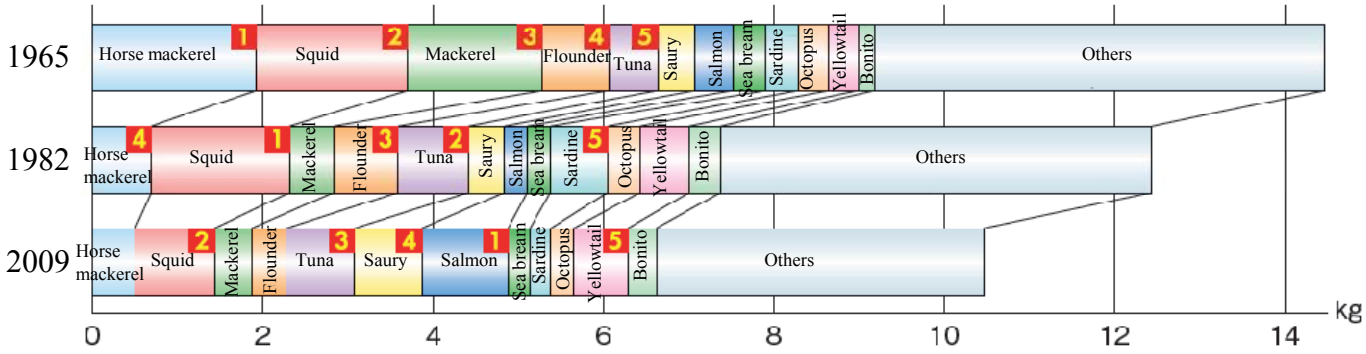


Source: Compiled by Fisheries Agency based on "Family Income and Expenditure Survey" (two-or-more-person households (excluding agricultural, forestry, and fishery households)) and "Consumer Price Index" by Ministry of Internal Affairs and Communications.

(Fish consumed at home has been changing)

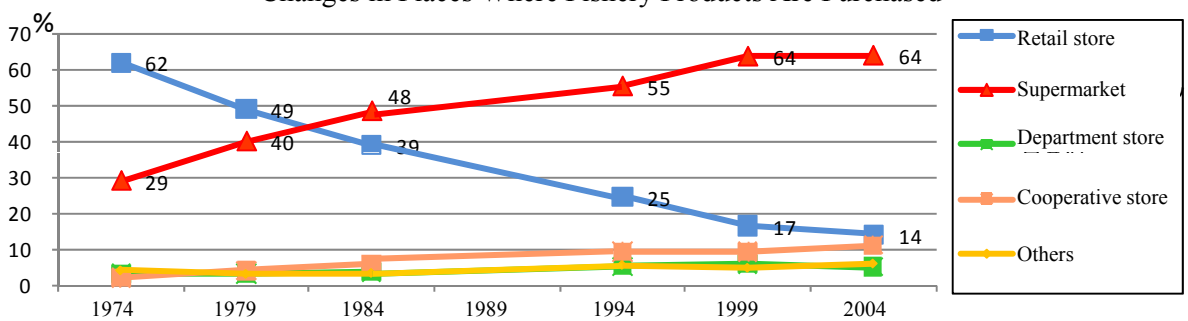
○ The three kinds of fresh fish most purchased by households in terms of quantity have changed from horse mackerel, squid, and mackerel in 1965 to salmon, squid, and tuna in 2009. The changes in the items and quantity purchased likely reflect the changes in the forms of fishery products purchased and the places where they are purchased.

Proportion of Per Capita Purchase Quantity of Fresh Fish by Item



Source: Compiled by Fisheries Agency based on "Family Income and Expenditure Survey" (1965 and 1982: all households (excluding agricultural, forestry, and fishery households); 2009: two-or-more-person households (excluding agricultural, forestry, and fishery households)) by Ministry of Internal Affairs and Communications.

Changes in Places Where Fishery Products Are Purchased

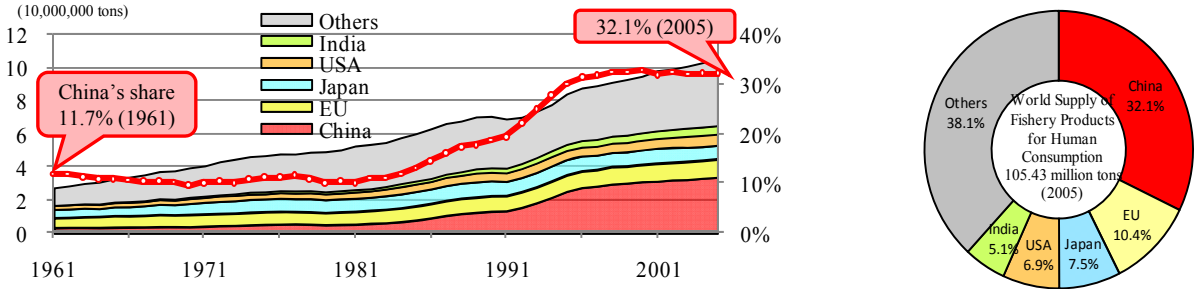


Source: "National Survey of Family Income and Expenditure" (two-or-more-person households; national; percentage of purchase amount) Ministry of Internal Affairs and Communications.

(2) Trend of Supply and Demand of Fishery Products

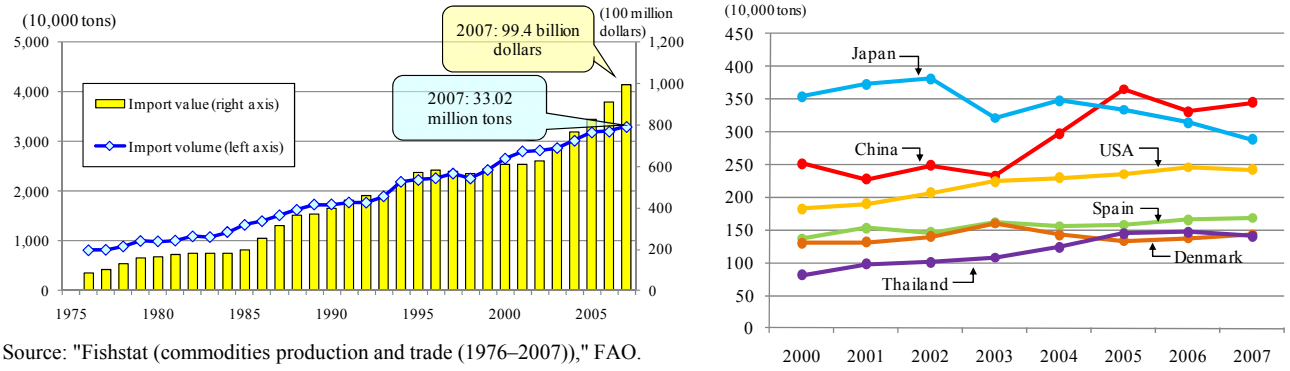
(Trend of World Supply and Demand of Fishery Products)
○ World fishery product supply has increased year by year due to a rise of health consciousness in Europe and the United States and the economic development in China, India, etc. The supply increase has been particularly notable in China, accounting for one-third of the total world supply in 2005.
○ Fishery product trade has also been on the increase year by year with demand growing worldwide. The total import volume and total import value marked a record high in 2007. Amidst a decrease in Japan's import volume, China's import value has surpassed that of Japan and ranked the highest in the world since 2005.

Changes in the World Supply of Fishery Products for Human Consumption by Country



Source: Compiled by Fishery Agency based on "Food Balance Sheets (1961–2005)" by FAO and "Food Balance Sheets" by Ministry of Agriculture, Forestry and Fisheries.

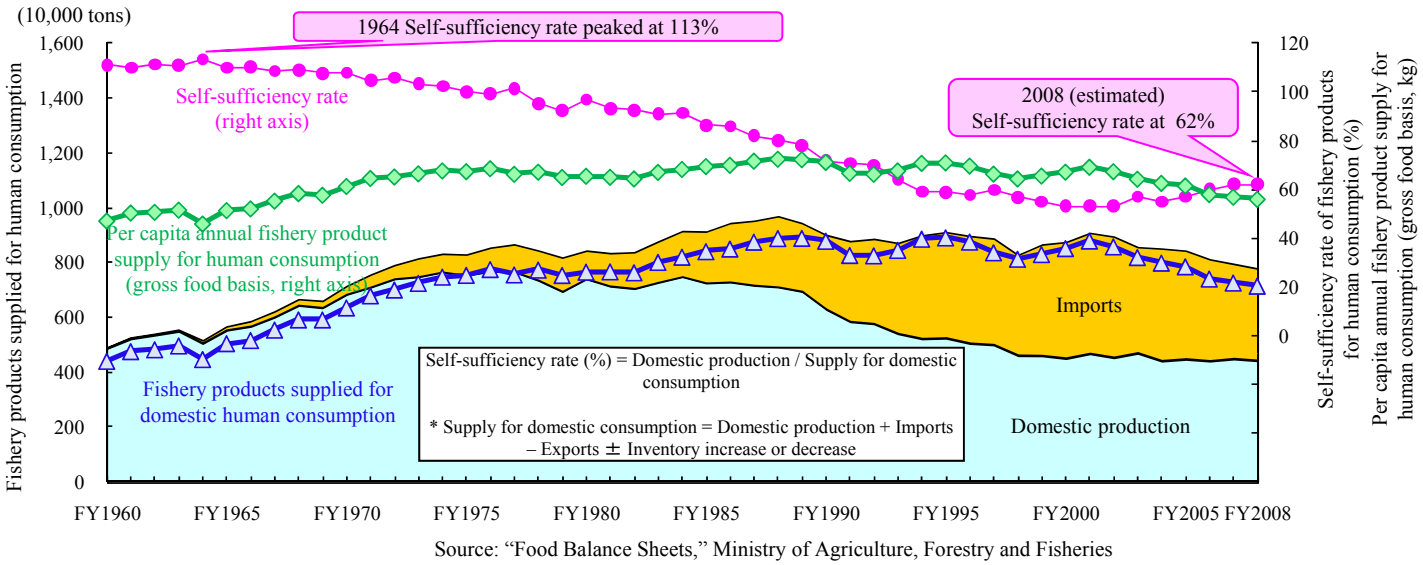
Changes in the World Trade Value and Volume of Fishery Products (Left) and Import Volume by Country (Right)



Source: "Fishstat (commodities production and trade (1976–2007))," FAO.

(Trend of Japan's Supply and Demand of Fishery Products)
○ Japan's self-sufficiency rate of fishery products for human consumption has been on a slightly increasing trend due to the fall of the domestic production volume coming to a halt and a decline in the import volume of fishery products. The self-sufficiency rate for FY2008 was 62%, which is the same as the rate for FY2007.

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



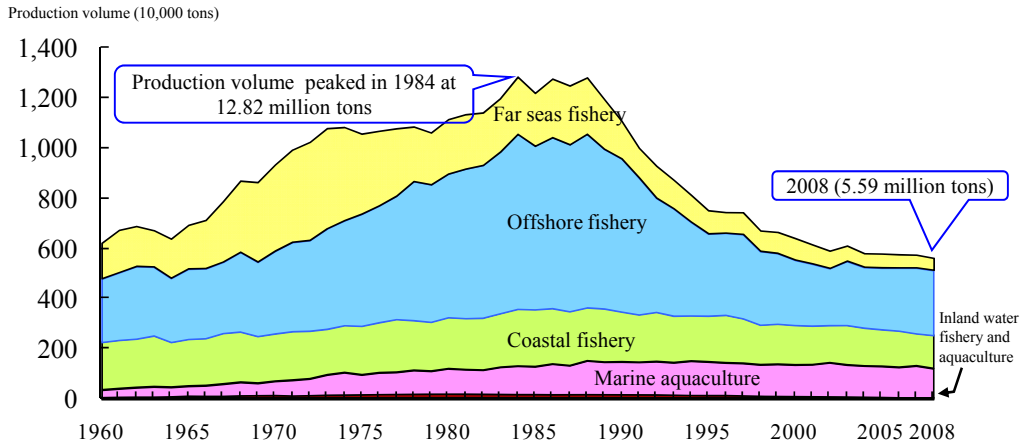
Source: "Food Balance Sheets," Ministry of Agriculture, Forestry and Fisheries

Section 2 Developments Surrounding Japan's Fisheries

(1) Japan's Fisheries in the Global Context

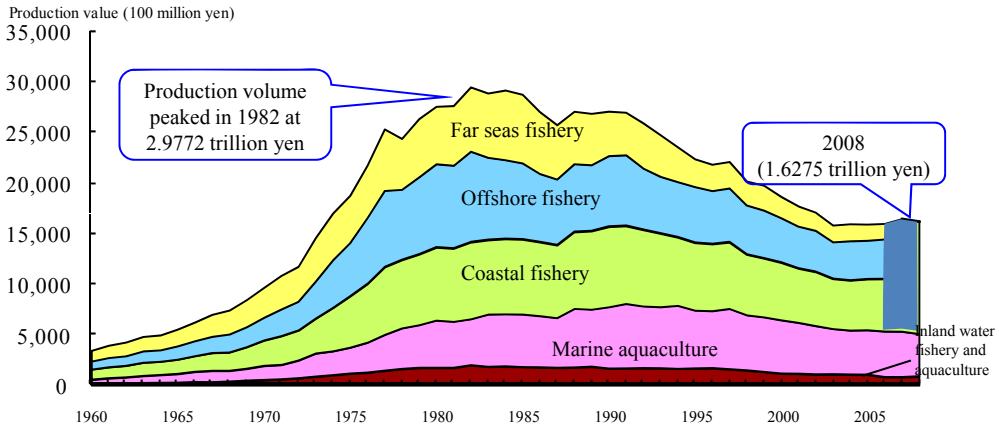
(Status of Japan's fisheries and aquaculture)
○ In 2008, fishery and aquaculture production volume in Japan was 5.59 million tons, decreased by 2.2% from the previous year. The production value came to 1.6275 trillion yen, falling 1.5% from the previous year.

Change in Fishery and Aquaculture Production Volume and Value



		2008 (1,000 tons)
Production volume	Total	5,592
	Marine	5,520
	Fishery	4,373
	Far seas fishery	474
	Offshore fishery	2,581
	Coastal fishery	1,319
	Aquaculture	1,146
	Inland water	73
	Fishery	33
	Aquaculture	40

* Figures for offshore fishery and coastal fishery are estimates.

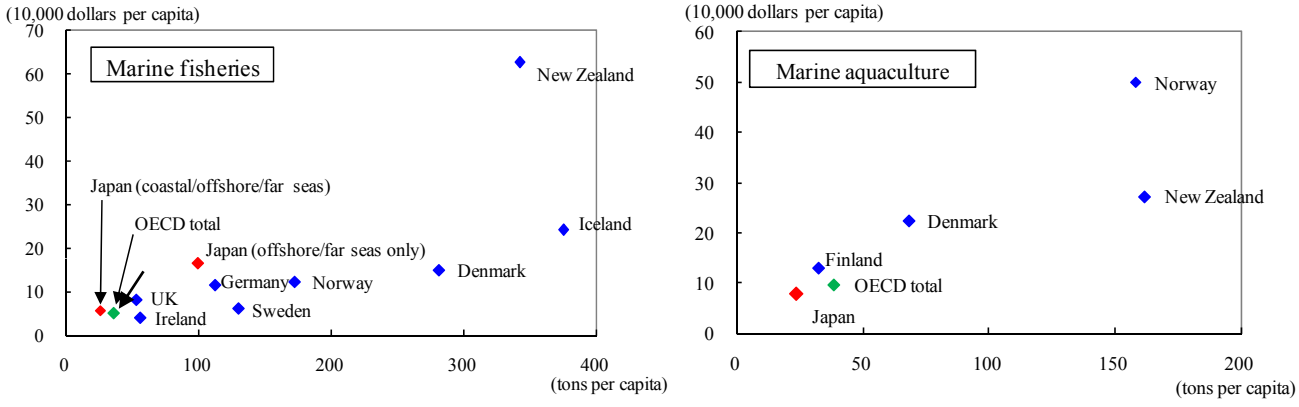


		2008 (100 million yen)
Production volume	Total	16,275
	Marine	15,423
	Fishery	11,246
	Far seas fishery	…
	Offshore fishery	…
	Coastal fishery	…
	Aquaculture	4,178
	Inland water	851
	Fishery	239
	Aquaculture	612

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

(International standing of Japan's Fisheries and Aquaculture)
○ When comparing the per capita production volume and production value of fishers of offshore and far seas fisheries in Japan with those of major fishing nations, the per capita production volume is low, but the per capita production value is relatively higher.

International Comparison of the Production Capacity of Fisheries and Aquaculture
(Per Capita Production Volume, Per Capita Production Value)



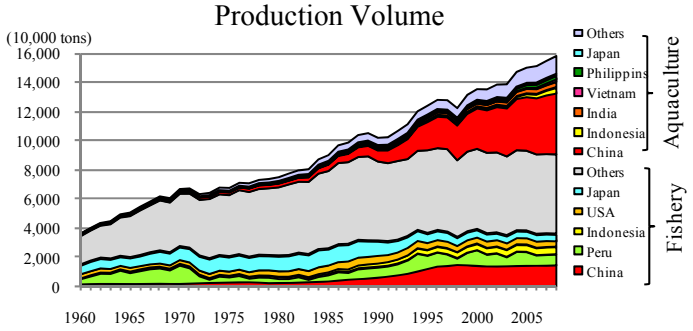
Source: Compiled by Fisheries Agency based on OECD Report 2008 (other than Japan), and "Annual Statistics of Fishery and Aquaculture Production" (2005) and "Report of Survey on the Trend of Fishery Employment" (2005) by Ministry of Agriculture, Forestry and Fisheries.

(It is required to strengthen the international competitiveness of Japan's aquaculture by effectively using its own technology)

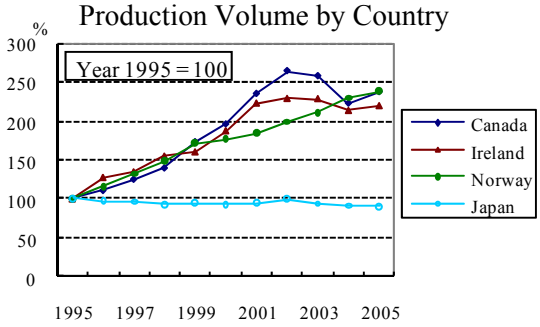
○ Among the OECD member countries, Japan ranks the highest in terms of aquaculture production volume. From 1995 to 2005, however, while Canada, Ireland, and Norway posted high growth every year, Japan showed a decline.

○ Raising the international competitiveness of its aquaculture by effectively using world-leading aquaculture technology, including the seedling production technology for bluefin tuna, is a significant issue.

Changes in World Fishery and Aquaculture Production Volume



Changes in the Growth Rate of Aquaculture Production Volume by Country

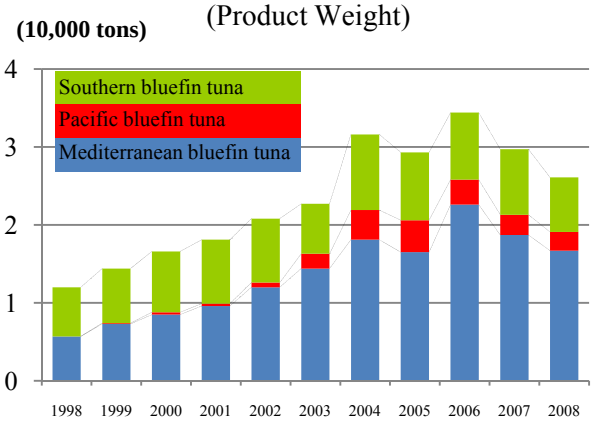


Source: Compiled by Fisheries Agency based on "Fishstat" (Capture Production 1960–2008) (Aquaculture Production 1960–2008) (countries other than Japan) by FAO and "Annual Statistics of Fishery and Aquaculture Production" by Ministry of Agriculture, Forestry and Fisheries.

Aiming to Establish Closed-cycle Aquaculture Technology for Bluefin Tuna That Does Not Rely on Natural Resources

The farmed bluefin tuna which Japan imports include *fattened tuna*, which have been caught by purse seiners, fed in fish cages, and fattened within a short period. The production volume of such fattened tuna has been growing since the latter half of the 1990s due to exporting to Japan, and there are concerns about their impact on resources. While fishing regulations on bluefin tuna have been strengthened in the international community, Japan has seen development races by research institutes, such as universities, and by the private sector aimed at realizing a closed-cycle aquaculture of bluefin tuna that does not rely on natural resources. They are expected to make further efforts to establish closed-cycle aquaculture technology that does not impose a burden on natural resources.

Changes in the Import Volume of Farmed Tuna (Product Weight)

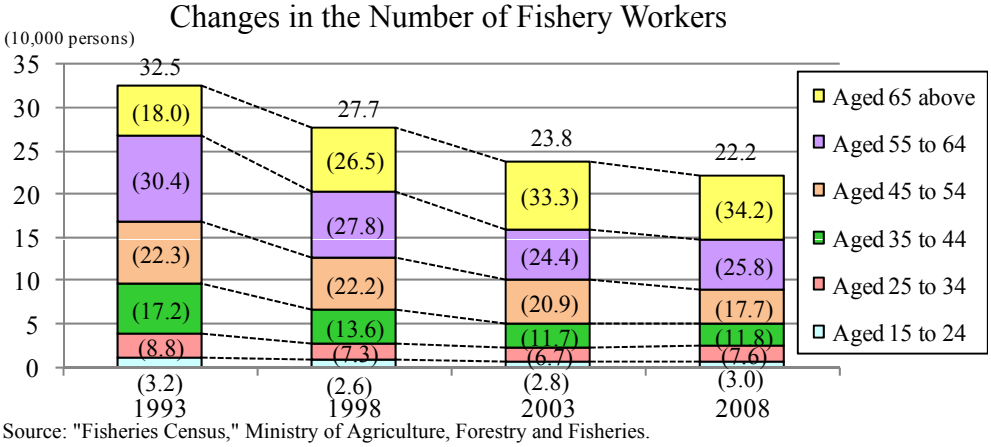


Source: Estimated by Fisheries Agency based on "Trade Statistics of Japan" by Ministry of Finance, WCPFC documents, and CCSBT documents.

(Employment structure)

○ The number of fishery workers was 222,000 in 2008, decreasing by 6.9% from five years earlier. The proportion of elderly people aged 65 or above rose by 0.9 percentage points to 34.2%, indicating further aging of fishery workers.

Changes in the Number of Fishery Workers



Source: "Fisheries Census," Ministry of Agriculture, Forestry and Fisheries.

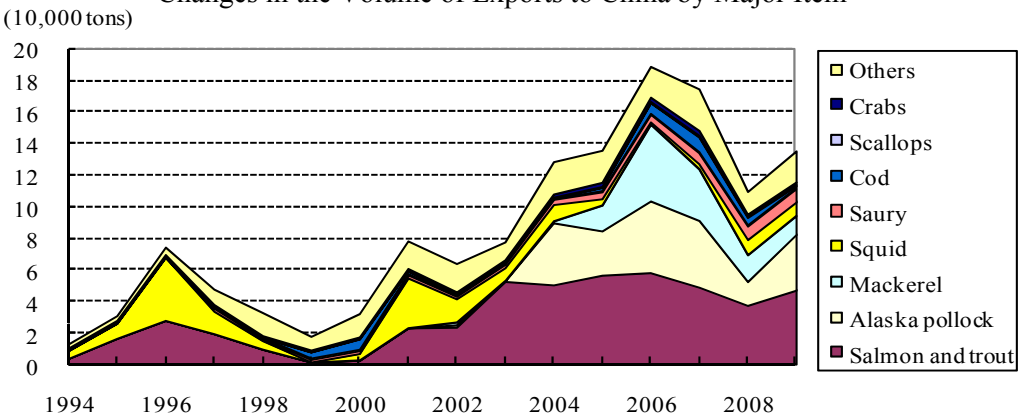
(Promotion of fishery product exports)

○ Whereas the domestic market is expected to shrink as a result of a population decline and consumers' shift away from fish, demand for fishery products has been expanding in Europe, the United States, China, and other countries.

○ The Ministry of Agriculture, Forestry and Fisheries promotes exports with the aim to increase Japan's exports of agricultural, forestry, and fishery products and food items to a level of 1 trillion yen by 2020 ("New Growth Strategy (Basic Policies)" decided by the Cabinet on December 30, 2009).

○ China's fishery processing industry is becoming internationally competitive. In order to compete with China, Japan should not only supply ingredients for processing, but also enhance the added value by exporting fresh fishery products and processed fishery products that use Japan's original freshness-keeping technology or processing technology.

Changes in the Volume of Exports to China by Major Item



Source: "Trade Statistics of Japan" by Ministry of Finance.

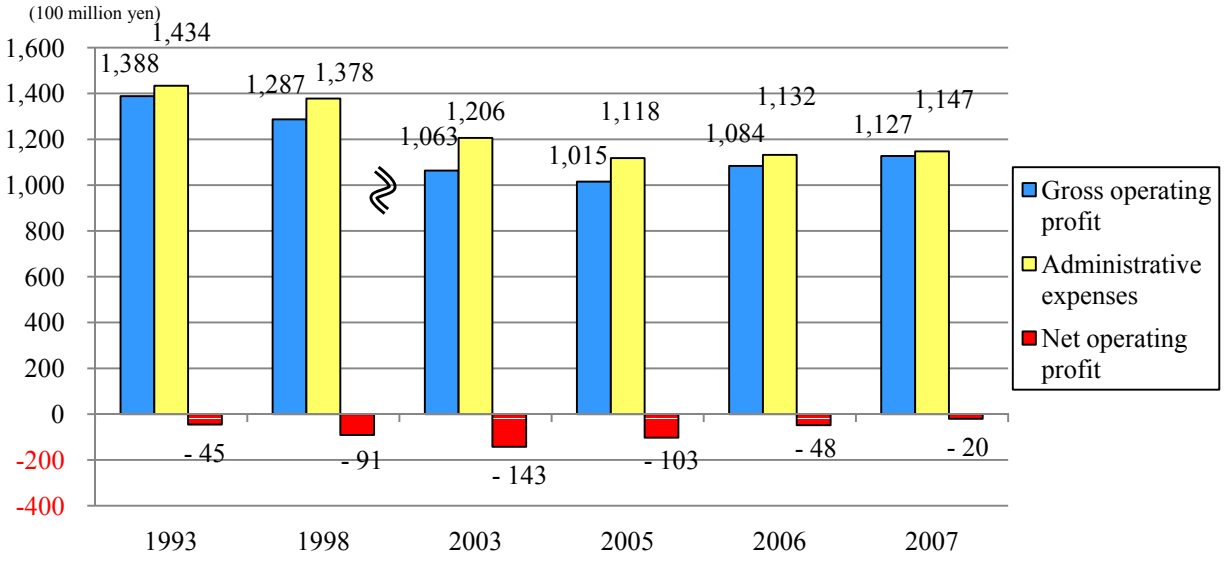
(2) Developments Surrounding Japan's Fisheries and Aquaculture

(Strengthening the foundations of fisheries cooperatives)

○ The business management of fisheries cooperatives faces an extremely severe situation. Some cooperatives find it difficult to improve their management due to their large amount of loss carried forward, which acts as an impediment to merging with other cooperatives.

○ The "Fisheries Cooperatives Management Reform Support Fund" was established to prevent fisheries cooperatives from going bankrupt and to support fisheries cooperatives that are engaged in the development and implementation of a management improvement plan (FY2008). In addition, the "Project for Promoting Reinforcement of Fisheries Cooperatives Management Base" was established supply, which provides financial replenishment for the interest on Fisheries Cooperatives Management Reform Support Fund (FY2010).

Changes in Fisheries Cooperatives' Gross Operating Profits, Administrative Expenses and Net Operating Profits



Source: "Statistics of Fisheries Cooperatives," Fisheries Agency

(Scale of fishery business differs substantially depending on the types of fisheries)

○ Although fishery operators engaged in Minister-licensed fisheries only account for 1% of all fishery operators, they have a 40% share in the Japan's total production volume.

○ Fishery operators engaged in coastal fisheries account for 95% of all fishery operators, but their average catch in value per operator is 7.38 million yen.

Comparison of the Scale of Fishery Business by Types of Fisheries

		Number of fishery operators	Catch in value (100 million yen)	Average catch in value per operator (10,000 yen)	Production volume (10,000 tons)
Marine fisheries/aquaculture		132,417 (100%)	15,638 (100%)	1,181	552 (100%)
Institutional Category	Minister-licensed fisheries	1,209 (0.9%)	4,010 (25.6%)	33,169	200 (36.1%)
	Prefectural governor-licensed fisheries	31,675 (23.9%)	3,631 (23.2%)	1,146	352 (63.9%)
	Others (fisheries based on fishery rights, etc.)	99,533 (75.2%)	7,997 (51.1%)	803	
Operational Category	Coastal fisheries	125,434	9,257	738	246
	Marine aquaculture	23,067	5,005	2,170	115
	Other coastal fisheries	102,367	4,252	415	132

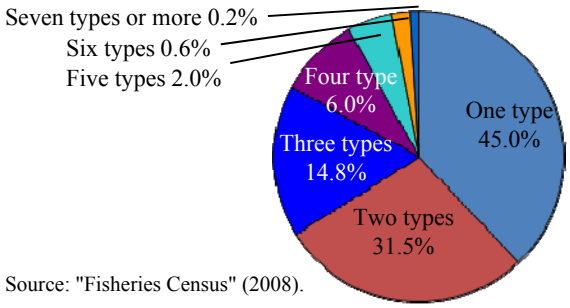
Source: "Fisheries Census" (2003) for the number of fishery operators and the catch in value, and "Annual Statistics of Fishery and Aquaculture Production" (2008) for the production volume. Since the survey system was reviewed, the figures for 2003 are used for the number of fishery operators and the catch in value.

(Fishery business is diverse and depends on the region and type of fishery)

○ Since fisheries target seasonally diverse fishery resources, more than 50% of fishery operators conduct business combining two or more types of fisheries.

○ Even for the same type of fisheries, the target fish species, the fishing method, and the fishing vessel size differ considerably depending on the regions.

Number of the Types of Fisheries Operated by One Fishery Operator



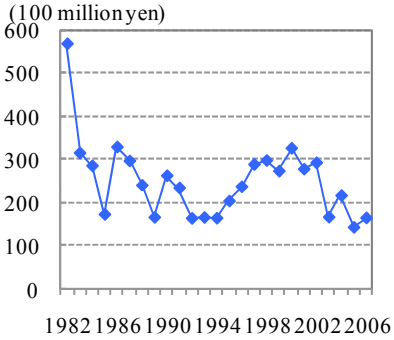
Source: "Fisheries Census" (2008).

(Fishery income changes substantially each year)

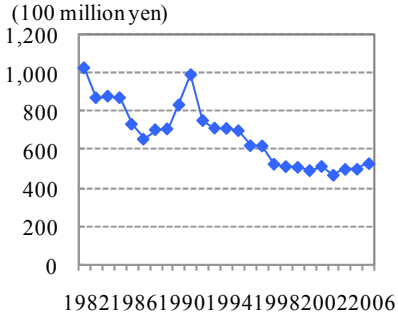
○ Due to fisheries' characteristic of catching wild fishery resources, the fishery production value by type of fisheries changes substantially each year, making fishery business management unstable.

Changes in the Fishery Production Value by Major Fish Species

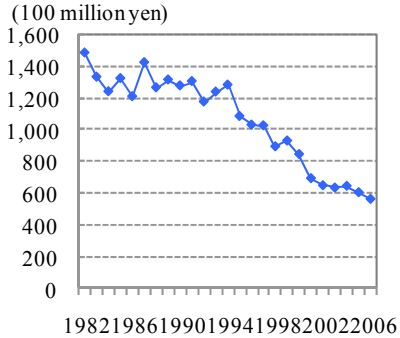
Saury stick-held dip net



Offshore trawl (one-boat operation)



Squid angling



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

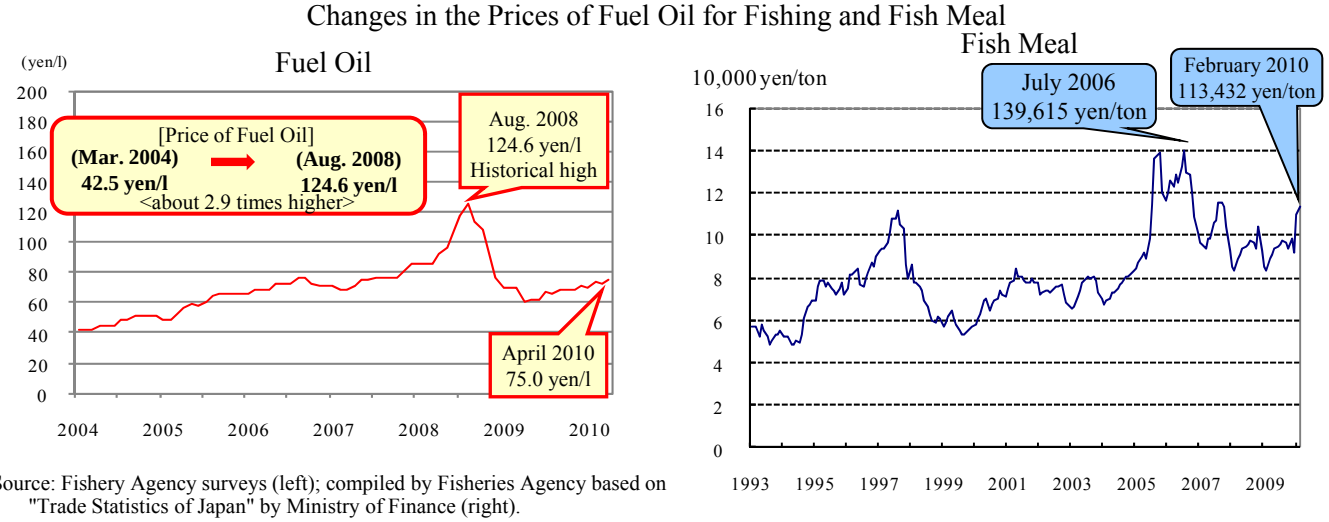
(Business costs have increased due to the price hike of fuel oil and fish meal)

○ The price of fuel oil, which accounts for a large proportion of fishing costs, has wildly fluctuated in recent years, reflecting the international supply and demand balance and the inflow of speculative funds, posting a record high in August 2008.

○ The price of fish meal, which is the main ingredient of compound feed for aquaculture and for which Japan mostly relies on imports, has also been fluctuating violently on the back of demand growth in China and other countries around the world.

○ Since 2010, a project for building a safety net for fishery business management has been implemented. The safety net is aimed to provide compensation using money contributed by fishery/aquaculture operators and the government, when the price of fuel oil or compound feed for aquaculture rises beyond a predetermined level.

Changes in the Prices of Fuel Oil for Fishing and Fish Meal

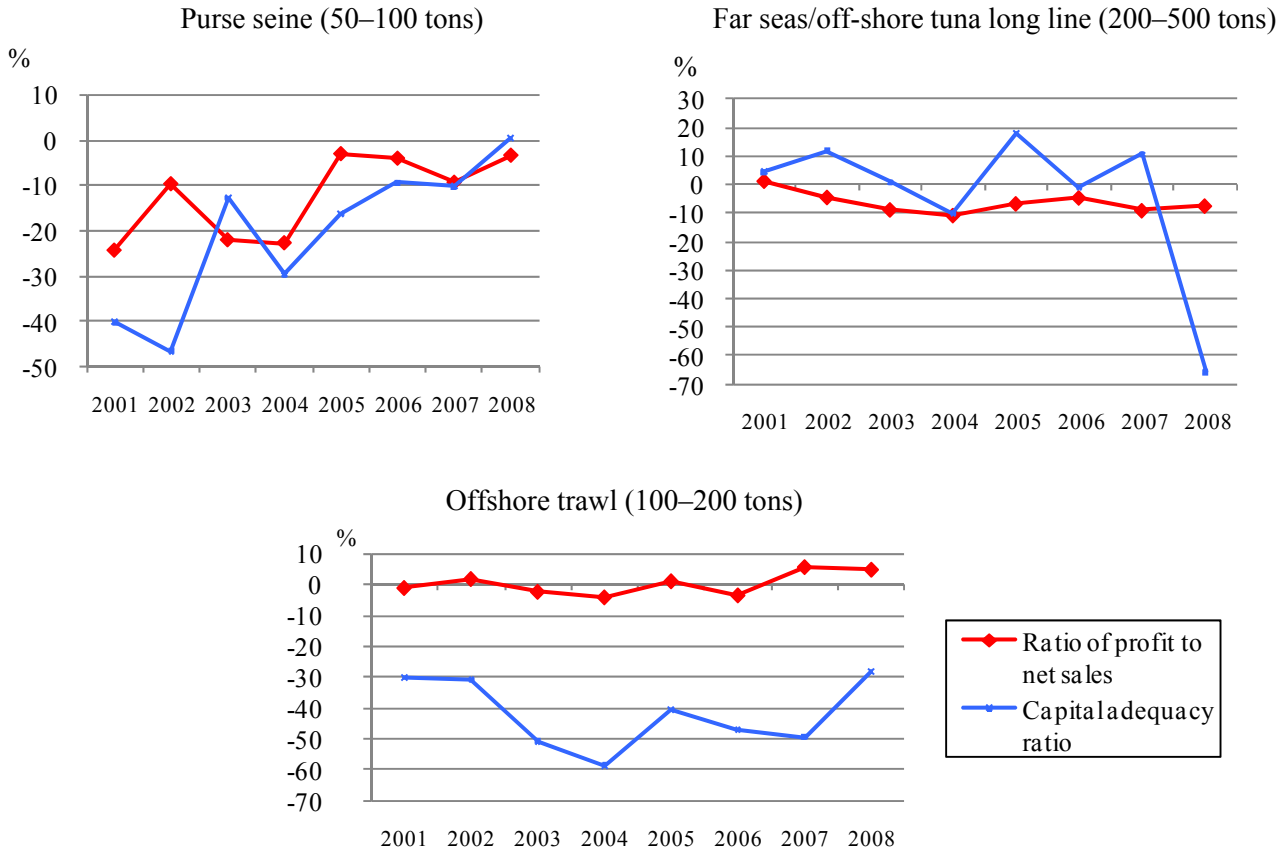


Source: Fishery Agency surveys (left); compiled by Fisheries Agency based on "Trade Statistics of Japan" by Ministry of Finance (right).

(Corporate fishery operators are lacking management vitality)

○ Looking at the business management status of corporate fishery operators, the ratio of profit to net sales and the capital adequacy ratio are both in the negative territory for many fishery categories.

Business Management Status of Corporate Fishery Operators



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

(Status of marine accidents of fishing vessels)

○ The number of fishing vessels involved in marine accidents in 2009 was 812, increasing by 80 vessels over the previous year. The number of people killed or missing in the accidents in 2009 was 68, decreasing by 28 persons from the previous year.

○ The most frequent cause for fishing vessel accidents was a collision, which was mostly attributable to human error, such as insufficient watch keeping and inappropriate ship handling.

(Status of accidents involving fishing vessel crew)

○ In 2009, the number of people killed or missing due to falling into the sea in cases other than marine accidents involving fishing vessels stood at 90, increasing by 10 people over the previous year.

○ In addition, the occurrence rate of work-related accidents of fisheries is still high compared to other industries, and 43% of work-related accidents have occurred during fishing operations.

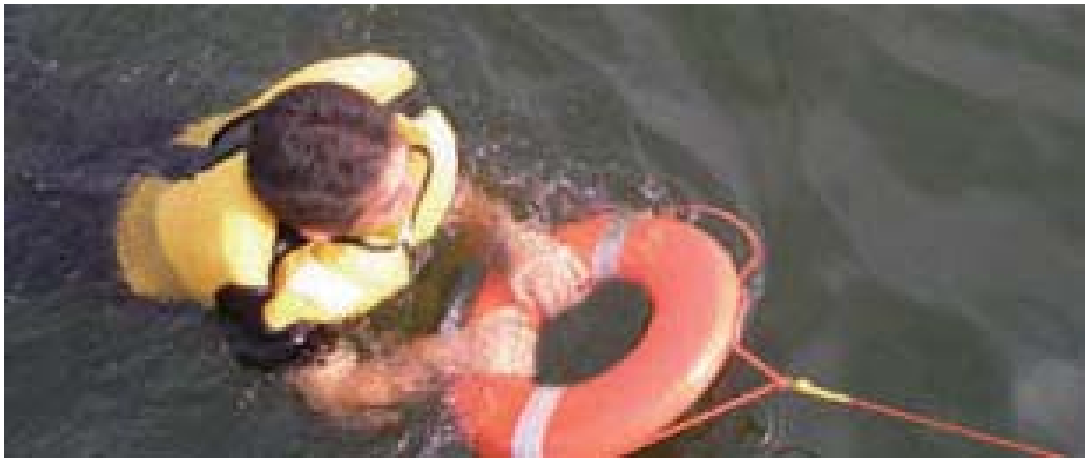
Occurrence Rate of Work-Related Accidents Involving Vessel Crew and Onshore Workers (FY2008)

Industry category	Accident occurrence rate (per 1,000 persons)
All industries	2.3
Fisheries	14.7
Forestry	29.9
Mining	14
Construction	5.3
Port operations	6.3
Onshore cargo handling	7.9

Source: Calculated based on "Summary of Reports on Accidents and Diseases of Vessel Crew (Article 111 of the Mariners Act)" by Ministry of Land, Infrastructure and Transportation and statistics by the Ministry of Health, Labor and Welfare.

(Measures for safe operations of fishing vessels)

○ In order to reduce the number of people who are killed or go missing due to fishing vessel accidents or falling into the sea, the government promotes the dissemination of the Guidelines for Promoting Use of Life Jackets by Fishers, which was publicized in October 2008, and also promotes the spreading of the use of life jackets and awareness raising on safe operations through such measures as holding seminars on safe operations.



Life jacket training/seminar
(Sea-rescue practice)

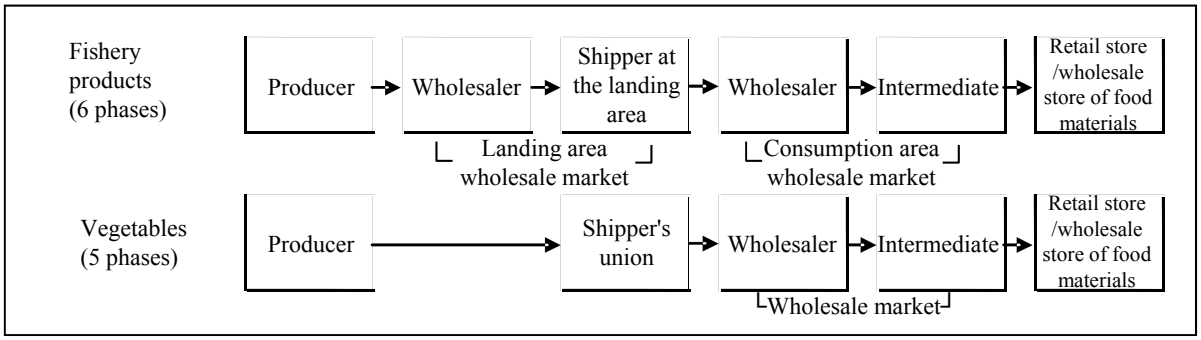
(3) Developments Surrounding Fishery Product Distribution and Processing

(Trends of consumption area markets)

○ Fishery products are characterized in that the production volume changes considerably since the catch landing is affected by weather and fishing conditions, fish are caught in small volumes of diverse species, and the use of the same kind of fish differs depending on size and freshness.

○ Accordingly, a multiple-phase distribution system via the landing area wholesale market and the consumption area wholesale market has been developed for fresh fishery products.

Distribution Channels for Fresh Fishery Products and Vegetables

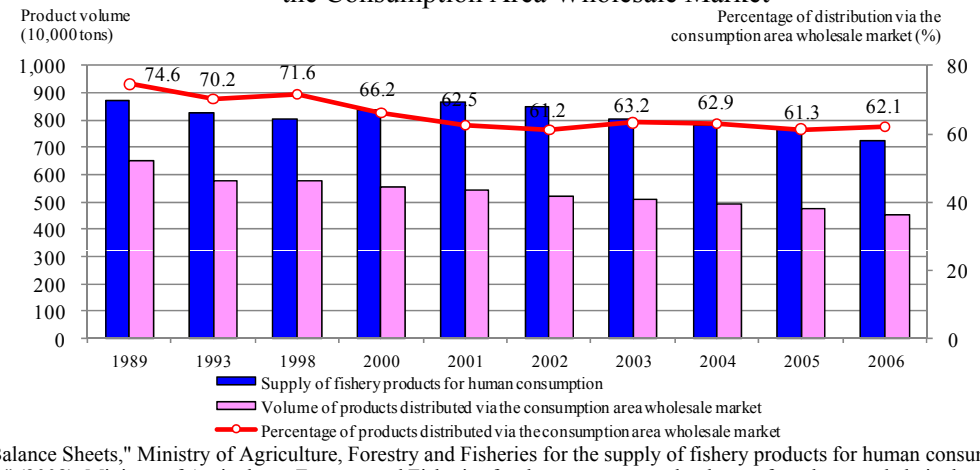


Note: The 6-phase distribution of fishery products is limited to fresh fishery products. Other distribution channels include those for imported products, frozen products, farmed products, and processed products.

○ Distribution via the consumption area market accounts for the largest share, 60%, of all fishery product distribution, but the share of such distribution channel has been declining over the years due to the shift of the main place for purchasing fishery products from small, fresh-fish retailers to supermarkets, and the increase in distribution in the form of processed products and frozen products.

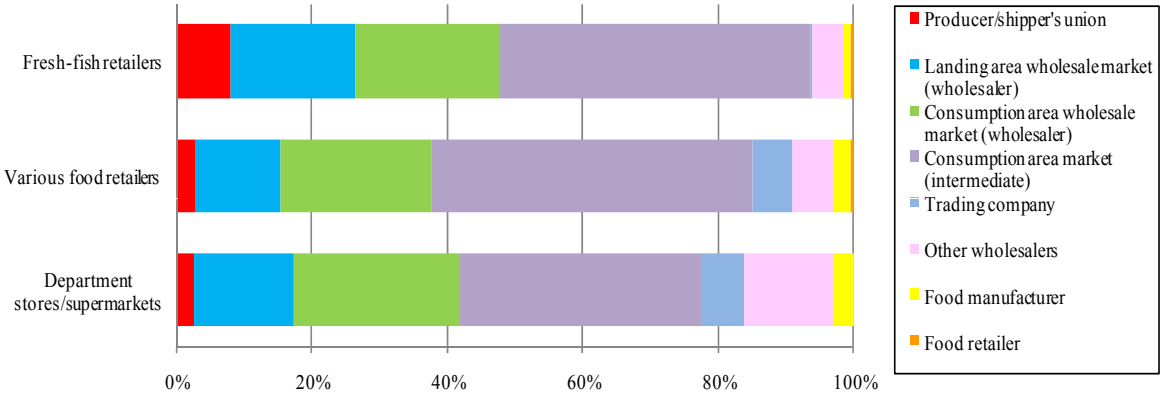
○ There have been moves in consumption area wholesale markets to enhance the market function by such measures as requirements of large supermarkets, and to cooperate with local supermarkets.

Changes in the Product Volume and the Percentage of Fishery Products Distributed via the Consumption Area Wholesale Market



Source: "Food Balance Sheets," Ministry of Agriculture, Forestry and Fisheries for the supply of fishery products for human consumption; and "Wholesale Market Data" (2008), Ministry of Agriculture, Forestry and Fisheries for the percentage and volume of products traded via the consumption area wholesale market.

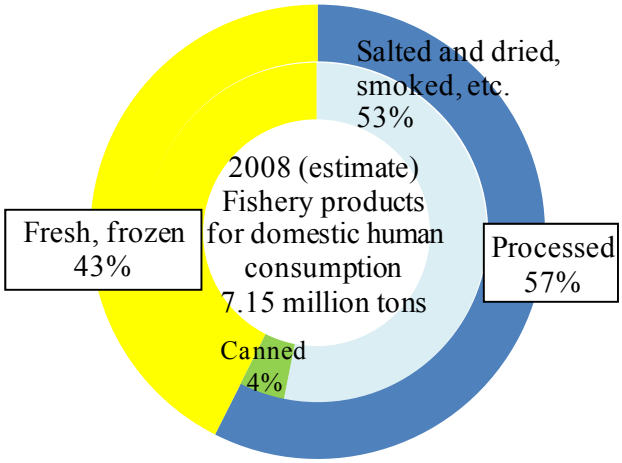
Comparison of Distribution Channels for Domestic Fishery Products (Fresh, Chilled, Frozen, and Salted) by Type of Retailer



Source: "Survey on Activities of the Food Industry" (FY2007), Ministry of Agriculture, Forestry and Fisheries.

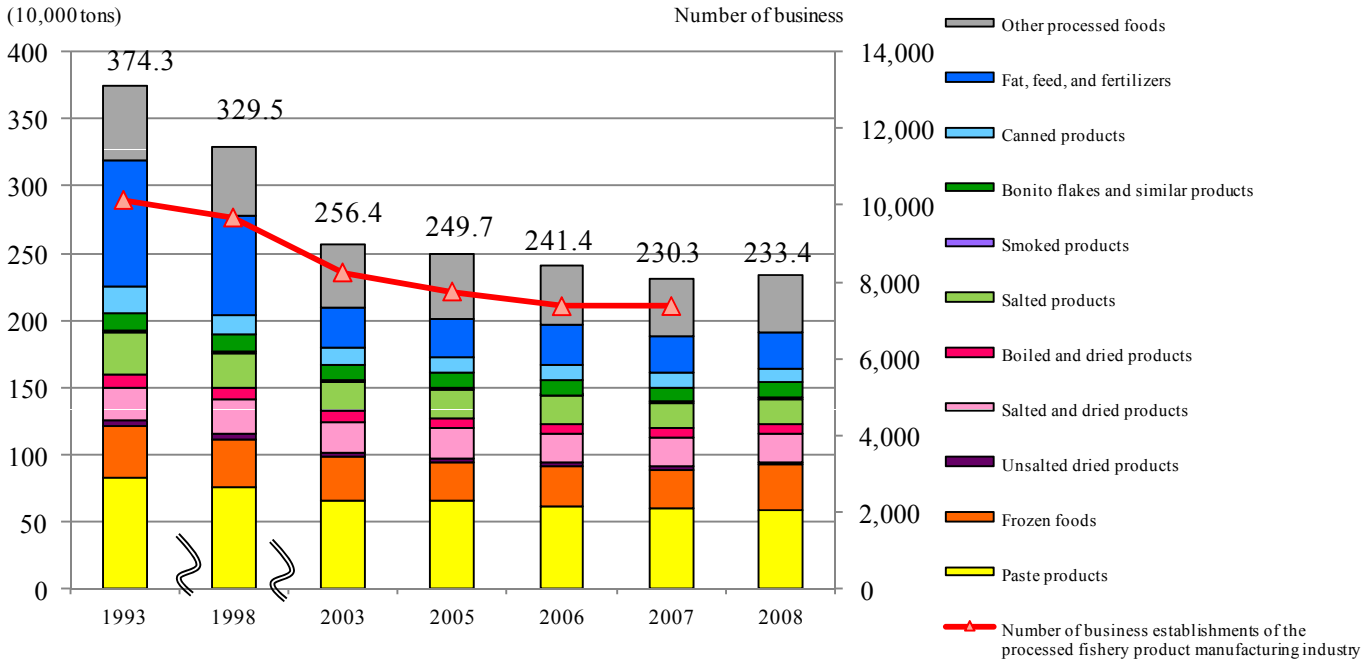
(Trends of the fishery processing industry)
○ The shipment value of the fishery processing industry in 2007 was 3.4071 trillion yen, accounting for 14% of the total shipment value of the food manufacturing industry (24.1963 trillion yen).
○ With 60% of fishery products for domestic human consumption being processed products, the fishery processing industry plays an important role also as a key industry in fishing regions.
○ The production volume of processed fishery products has been declining, reflecting the sluggish consumption of fishery products, a decrease in the number of business establishments concerned, and the destabilization of raw material supplies.

Breakdown of Supply for Domestic Consumption by Product Form



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

Changes in the Production Volume of Processed Fishery Products and the Number of Business Establishments for Manufacturing



Source: "Annual Statistics of Fishery and Aquaculture Production" and "Annual *Fishery Product Distribution Statistics*," Ministry of Agriculture, Forestry and Fisheries, "The Canners Journal," Japan Canners Association, "Yearbook of Aquatic Oil Statistics," Japan Aquatic Oil Association, and "Census of Manufacturers," Ministry of Economy, Trade and Industry.

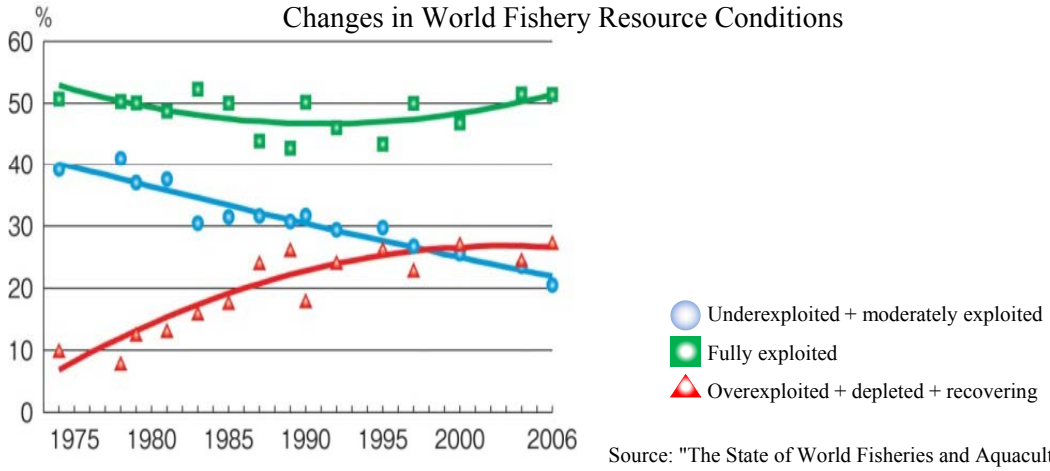
Section 3 Developments Surrounding Fishery Resources, Marine Environment, etc.

(1) Trend in Fisheries, Aquaculture and Fishery Resources in the Global Context

(Resources are deteriorating in the long term)

○ The United Nations Food and Agriculture Organization (FAO) reported that, in 2006, the percentage of marine fishery resources that are “underexploited or moderately exploited" decreased from the previous year to 20%, while the percentage of resources that are "fully exploited" and "overexploited or depleted or recovering" rose to 52% and 28%, respectively.

Changes in World Fishery Resource Conditions



Source: "The State of World Fisheries and Aquaculture (SOFIA) 2008," FAO.

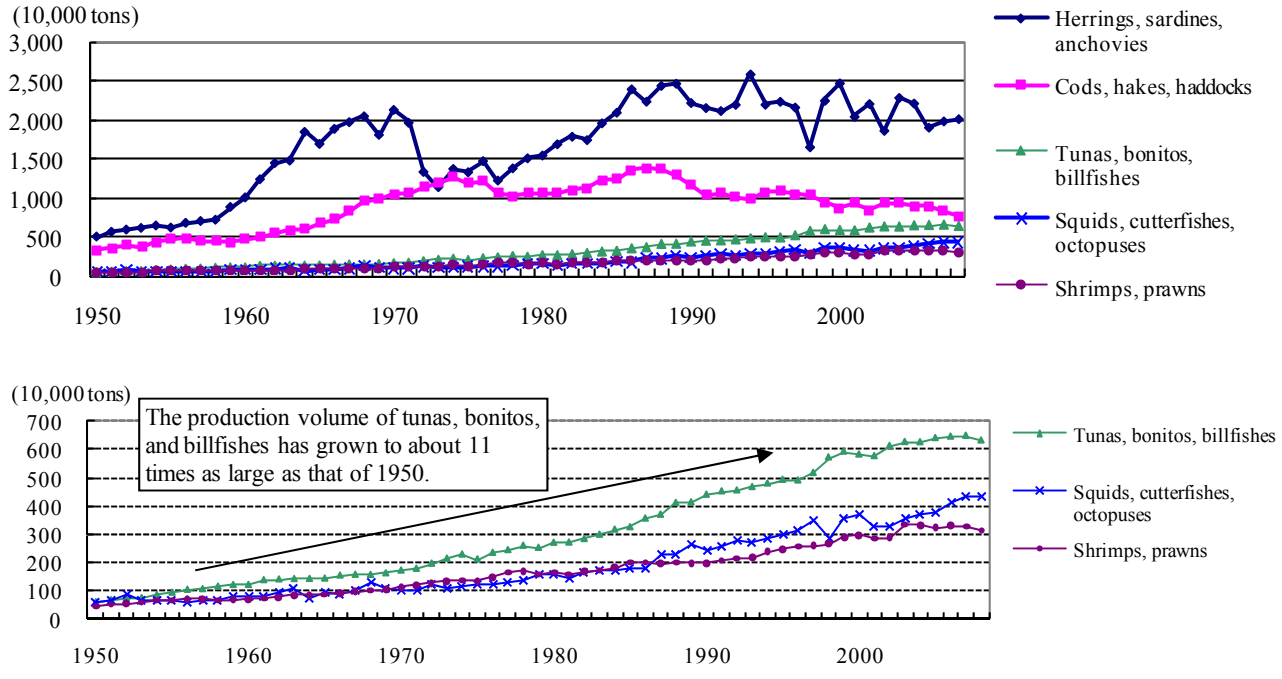
(Catch volume by major fish species)

○ In 2008, herrings, sardines, and anchovies accounted for the largest fishery production volume in Japan at 20.14 million tons, which is 22.2% of the total world fishery production volume.

○ Except for cods, hakes, and haddocks, of which the catch volume is decreasing due to overfishing, etc., production volume has been increasing for all major fish species. In particular, the production volume of tunas, bonitos, and billfishes is now 11 times as large as that of 1950.

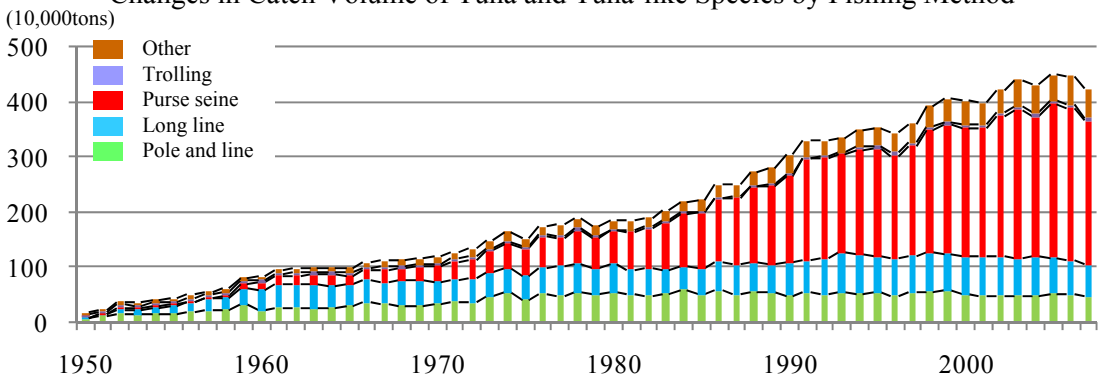
○ As for bonito and tuna, the volume of catches by purse seine has surged since the 1980s, growing to account for more than 60% of the total catch volume of those species by 2007.

Changes in Catch Volume by Major Fish Species



Source: "Fishstat (Capture Production 1950–2008)," FAO.

Changes in Catch Volume of Tuna and Tuna-like Species by Fishing Method

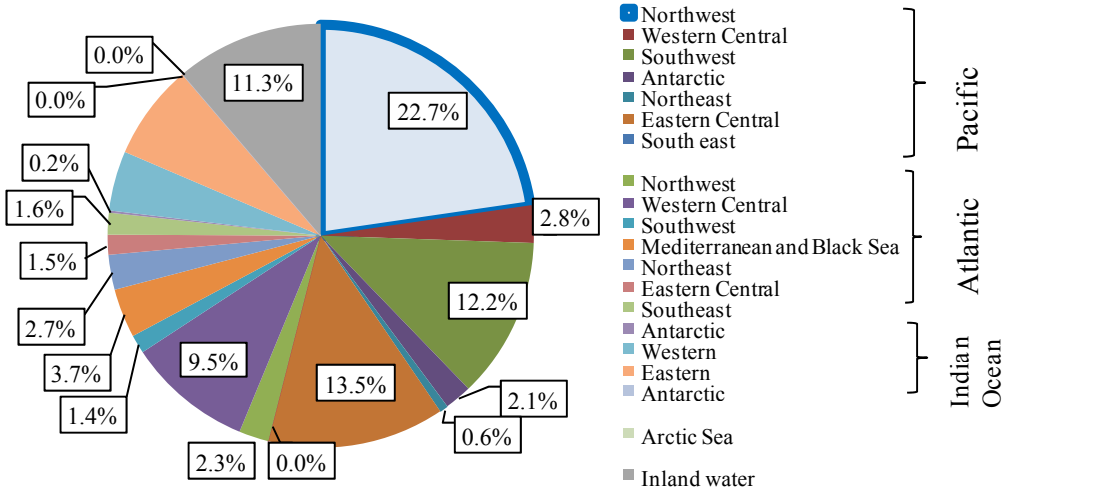


Source: Compiled by Makoto Miyake based on data provided by tuna RFMOs (2007).

(Fishery production volume by waters)

○ Looking at the world fishery production volume by waters, the volume is the highest for the Northwest Pacific, which includes Japan's exclusive economic zone, accounting for 22.7% of the total volume in 2008.

World Catch Volume by Waters (2008)



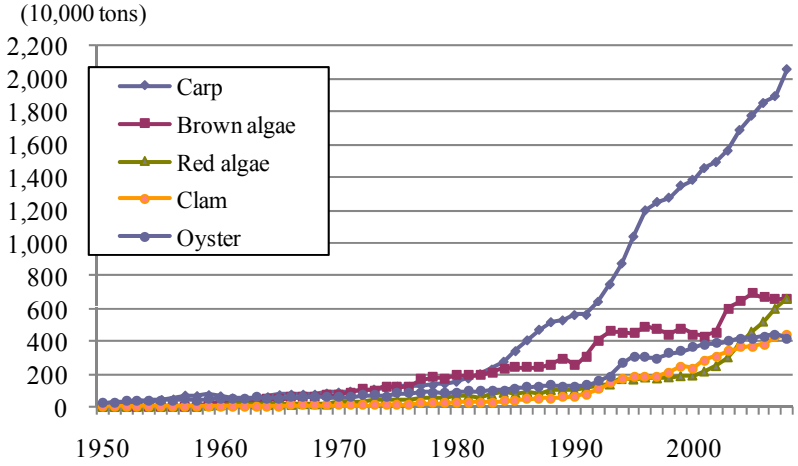
Source: "Fishstat (Capture Production 2008)," FAO.

(Aquaculture in the global context)

○ The percentage of aquaculture in the total world production of fisheries and aquaculture increased to 42.9% by 2008, reflecting substantial production growth in China.

○ Of the total world production volume of aquaculture in 2008, carp was the highest, at 20.59 million tons, accounting for 30.1% of the total.

Changes in the Aquaculture Production Volume by Major Species

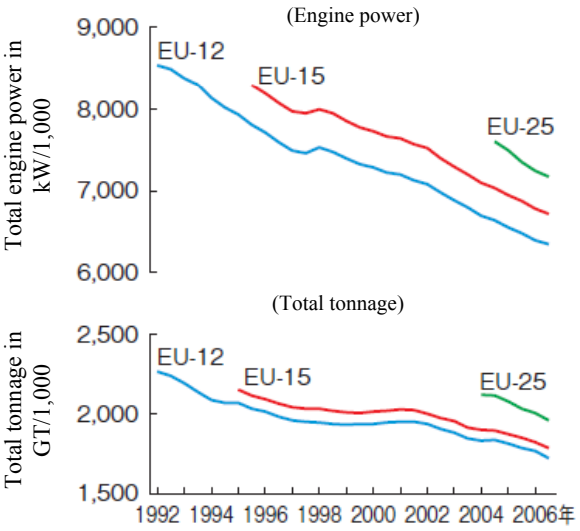


Source: "Fishstat (Aquaculture Production 1950–2008)," FAO.

(2) Development of Fishery Policy in Foreign Countries

○ The European Union has started discussions toward implementing a new Common Fisheries Policy (CFP), starting in 2013, given that 88% of major resources in the common fishing grounds are overexploited.
○ In 2010, the United States plans to introduce a catch-share program, aiming at preventing overfishing and at rebuilding fisheries and communities.
○ Cod resources in the Barents Sea in the northeast of Norway had also been used by Russia and EU countries and had been overfished. However, monitoring and enforcement efforts have been strengthened under Norway's initiative, successfully leading to a decline in the catch volume.

Changes in Fishing Vessel Capacity in EU



Source: "Facts and Figures on the CFP" (2008), Eurostat.

Stocks Subject to Overfishing in the United States

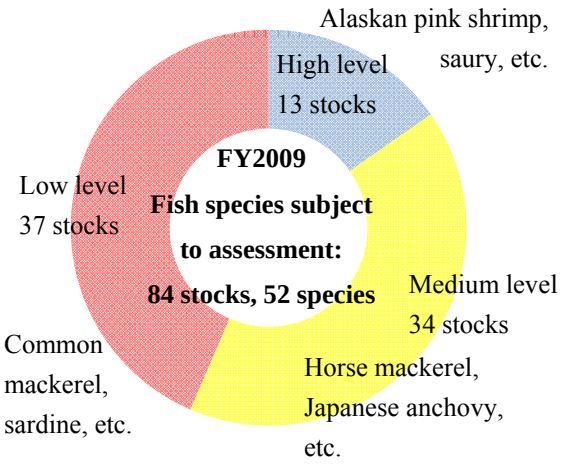
A total of 41 stocks are subjected to overfishing
(as of March 31, 2010)

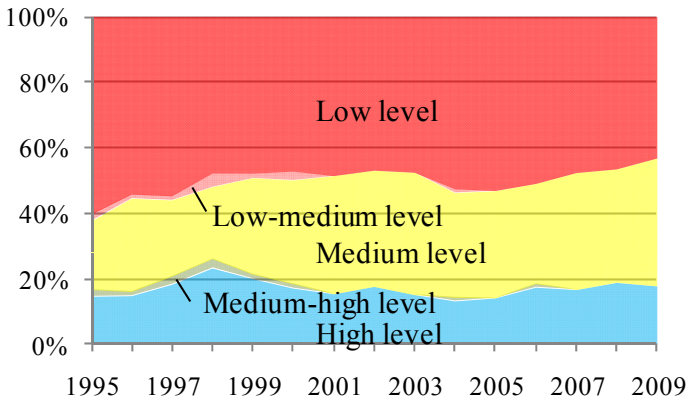
Source: Compiled by Fisheries Agency based on documents on the website of the U.S. National Oceanic and Atmospheric Administration.

(3) Fishery Resource Management in Waters Surrounding Japan

(Resource management in waters surrounding Japan)
○ In waters surrounding Japan, 40% of the fishery resources subject to assessment (37 of the 84 stocks) are at low levels. The estimated factors behind such decline in resources include changes in the marine environment, a decline in seaweed beds and tidelands for the spawning and growth of fish through coastal development, and overfishing exceeding recovery potential for some resources. In recent years, the percentage of resources at low levels declined slightly, and the percentage of those at high and medium levels slightly increased.
○ As of the end of March 2010, 50 resource recovery plans for 77 fish species, as well as 16 comprehensive resource recovery plans that focus on the fishery type in certain areas are being implemented.

Resource Levels of Fish Species Subject to Assessment (Left) and Changes in the Resource Levels (Right)





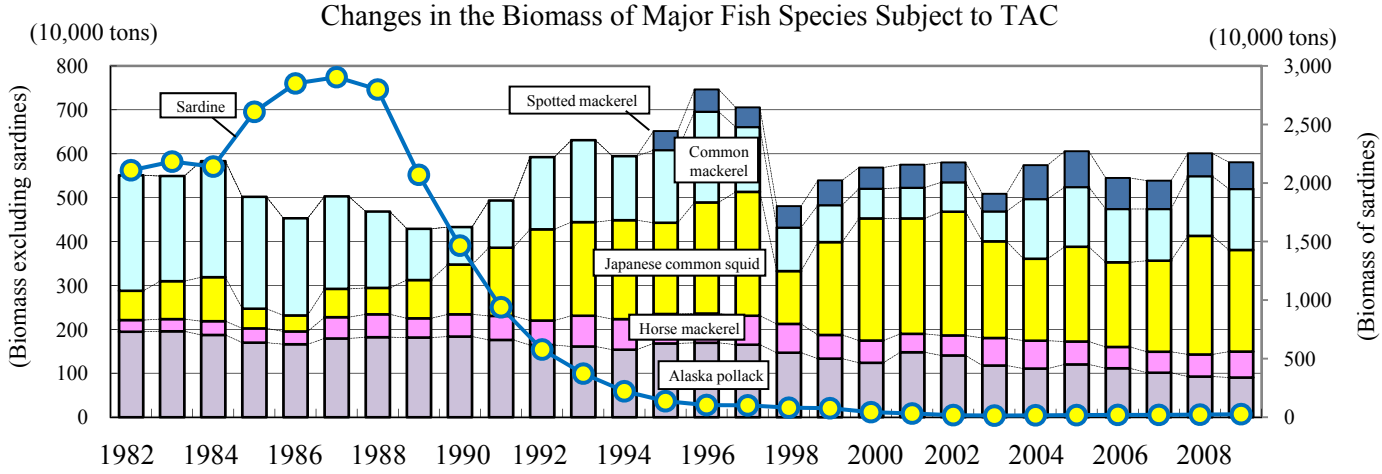
Source: "Assessment of Fishery Resources in Waters Surrounding Japan," Fisheries Agency and Fisheries Research Agency, etc.

(Changes in the Biomass and Resource Status of Major Fish Species Subject to TAC)

○ The total biomass of major fish species subject to the total allowable catch (TAC) has been relatively unchanged recently.

○ However, when focusing on the levels and trends of resources by species, many species are found to remain at low levels. Accordingly, further resource management efforts are required in the future.

Changes in the Biomass of Major Fish Species Subject to TAC



Source: Compiled based on "Assessment of Fishery Resources in Japan's Surrounding Waters" by Fisheries Agency and Fisheries Research Agency, etc.

Changes in the Resource Assessment Results for Species Subject to TAC

Species	Stock	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sardine	Pacific stock														
	Tsushima warm current stock														
Horse mackerel	Pacific stock														
	Tsushima warm current stock														
Common mackerel	Pacific stock														
	Tsushima warm current stock														
Spotted mackerel	Pacific stock														
	East China Sea stock														
Saury	Northwestern Pacific stock														
Alaska pollack	Northern Sea of Japan stock														
	Nemuro Strait														
	Southern Okhotsk Sea stock														
	Pacific stock														
Snow crab	Sea of Japan stock														
	Okhotsk Sea stock					Unknown									
	Northern Pacific stock	–	Unknown	Unknown											
	Western Hokkaido stock	–	–	–					Unknown						
Japanese common squid	Winter stock														
	Autumn stock														

Source: Compiled based on "Assessment of Fishery Resources in Japan's Surrounding Waters" by Fisheries Agency and Fisheries Research Agency, etc.

Note: High level Medium level Low level

Marine Eco-Label Japan: A Sign of Proper Resource Management That Links Producers and Consumers

Since consumers have few opportunities to learn about the resource management carried out at the fishing ground, there have been active moves among producers to acquire an eco-label certification indicating that their fishery products have been caught with fishing methods that enable sustainable use of fishery resources.

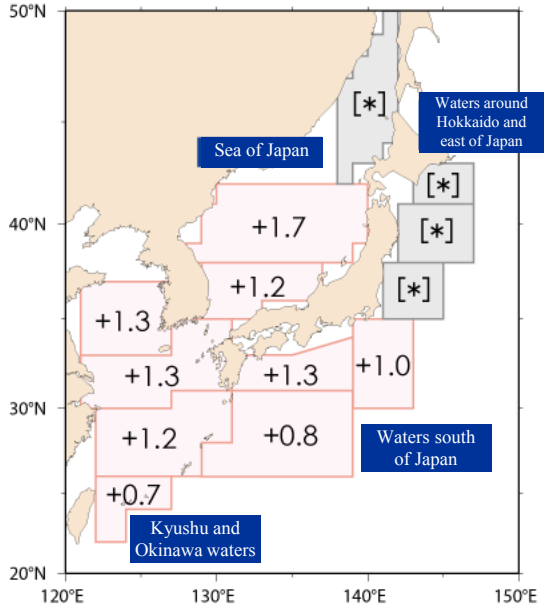
(4) Japan's International Relationships Concerning Fisheries

○ In the fishery product trade negotiations at the World Trade Organization (WTO), trade rules that contribute to the sustainable use of fishery resources, which are limited natural resources, need to be established given the stagnant status of the world's fishery resources.
○ Japan has concluded bilateral fishery agreements with South Korea, China, and Russia, and fishery activities can be conducted in each other's exclusive economic zones under predetermined conditions. Also, the operations of Japanese fishing vessels are secured through the conclusion of bilateral intergovernmental agreements and/or private-sector agreements on fisheries with Pacific island countries.

(5) Situation Surrounding Marine Environment, etc.

(Global warming and fisheries)
○ According to a report by the Intergovernmental Panel on Climate Change (IPCC), increased global warming is predicted to cause various phenomena, including frequent bleaching and extensive death of coral, a decrease in sea ice coverage both in the Arctic and Antarctic Oceans, and a rise in sea level caused by thermal expansion of the ocean.
○ A rise in the sea surface temperature has also been reported in waters around Japan, causing concerns about the impact of marine environment on biodiversity, such as the fishing grounds for migratory species, including saury, moving to the north, and the expanding distribution of southern-type algae.

Long-Term Trends in Average Sea Surface Temperatures in Water around 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 per 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: "2009 Marine Health Examination—Long-Term Trends in Sea Surface Temperatures (in Seas off Japan)," Japan Meteorological Agency

(Tsunami damage caused by an earthquake originating off the coast of central Chile)
○ A tsunami hit Japan as a result of an earthquake that originated off the coast of central Chile at 15:34, on February 27, 2010 (JST). Aquaculture facilities for wakame seaweed, scallops, and oysters were damaged, particularly those on the Pacific coast in the Tohoku region.
○ Required measures, such as damage assessment and payment of insurance money, have been taken in order to help the affected fishery operators recover at an early stage.

Raft-type aquaculture facilities drifting after the tsunami (Iwate Prefecture)

(Fishery damage by alien fish species and common cormorants)

○ Fishery damage by common cormorants and alien fish species, including black bass and bluegill, has become a problem. The national and prefectural governments and related organizations have cooperated to promote countermeasures such as prevention or elimination.

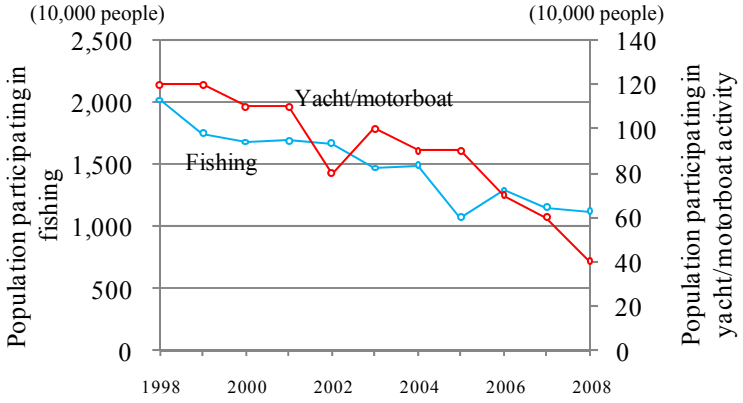
(Status of recreational fishing)

○ Fishing is an opportunity to increase one's interest in and understanding of the sea, fish, and fisheries.

○ Since a higher rate of resources are used in recreational fishing regarding some species than in fisheries, fishers' cooperation in resource management is essential.

○ In order to prevent recreational fishers from having accidents, steps need to be taken to raise their awareness and disseminate information about the observance of rules and manners for marine use.

Changes in Population Participating in Leisure Activities Related to Recreational Fishing



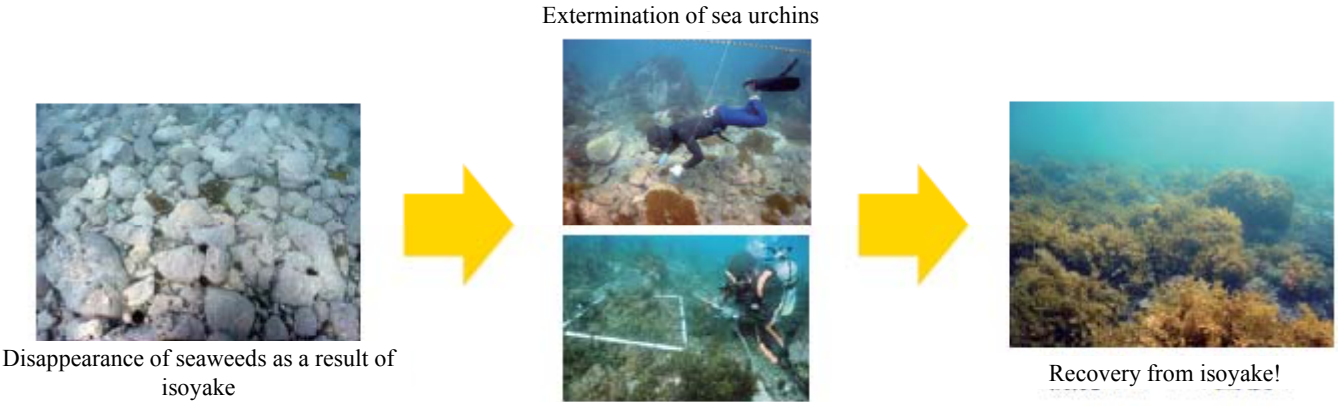
Source: "White Paper of Leisure," Japan Productivity Center.

(Conservation of seagrass and seaweed beds and tidalflats)

○ While seagrass and seaweed beds serve as important spawning and nursery grounds for aquatic animals, with a rise in water temperature, seagrass and seaweeds have decreased and *isoyake* (rocky-shore denudation) has occurred, which is a phenomenon where the beds become covered with crustose coralline algae.

○ The government finalized the guidelines for countermeasures against isoyake, identifying causes and summarizing concrete countermeasures, and promoted efforts to create seagrass and seaweed beds.

Seaweed Beds Recovered from Isoyake Following Efforts Led by Fishers



Disappearance of seaweeds as a result of isoyake
(Kuroshio Town, Kochi Prefecture)

Monitoring survey after the extermination

Recovery from isoyake!

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

(Holding of COP 10 of the Convention on Biological Diversity)

○ The main themes for the 10th Meeting of the Conference of the Parties (COP 10) to the Convention on Biological Diversity, which is to be held in Nagoya City, Aichi Prefecture in October 2010 include "a significant reduction of the current rate of biodiversity loss." Japan needs to actively disseminate information both within and outside Japan about Japan's fishery industry, which is contributing to biodiversity conservation around Japan.

Prize Winners in the FY2009 Agricultural, Forestry and Fisheries Festival (Fishery Section)

[Awarded the Emperor's Cup]

Youth Division, Toushi Branch, Toba Isobe Fisheries Cooperative
(Representative: Masayuki Hashimoto) Toba City, Mie Prefecture

Amidst a decrease in the catch volume of abalone and turban shell due to a loss of Arame (algae: Eisenia bicyclis) beds caused by isoyake, the youth division of the fisheries cooperative strove to restore Arame through trial and error while cutting costs by acquiring diver's licenses themselves and other measures. As a result, they established a method to plant Arame on natural stones and a method to prevent feeding damage by predators such as rabbitfish. Such methods are expected to be spread to other areas that also face the isoyake problem.

[Awarded the Prime Minister's Prize]

Fukutoku Taisei Co., Ltd.
(Representative: Yoshikazu Ota) Kumamoto City, Kumamoto Prefecture

Fukutoku Co., Ltd. developed a new product that offers the flavors of both fresh fish and minced fish by employing a new idea and technology to marinate, in vinegar, gizzard shad, which had been traded at a low price due to its rapidly losing freshness, and to combine it with minced pike eel and golden threadfin bream.

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

Mebaru, a group founded by women in a fishing community
(Representative: Masako Kuwahara) Saiki City, Oita Prefecture

From a desire to create a link between fishers and meals for consumers, women in the fishing community started to conduct direct sales of fishery products via a live-fish truck, and to manufacture and sell a local traditional dish called *gomadashi*, using fresh fish. They succeeded in establishing a new distribution style and starting a profitable business.