

## Section 3 Future Developments in UMIGYO

### (1) Points of UMIGYO Promotion

- In order to make sure that wide-ranging economic ripple effects can be produced under agreement among stakeholders, it is important for each initiative to involve many people of concern, such as by establishing a council consisting of those concerned with fisheries, government officials, and, if necessary, private companies in and outside of the community.
- For the purposes of improving the income of fishers and other relevant parties and creating local employment, it is necessary to create a practical and sustainable UMIGYO plan based on the future vision of the community with the roles of people of concern appropriately assigned among them.
- It is important to ensure that each initiative seeks to make the best use of the fishing port and local resources with the understanding and cooperation of the local community by optimizing the scale of facilities in accordance with the actual condition of fisheries in the community and improving the environment for utilization of the fishing port through the restructuring and orderly arrangement of fishing port facilities and site.
- For attracting people to fishing communities, it is necessary to ensure sufficient safety for visitors to those communities.

### (2) Upcoming Initiatives to Promote UMIGYO

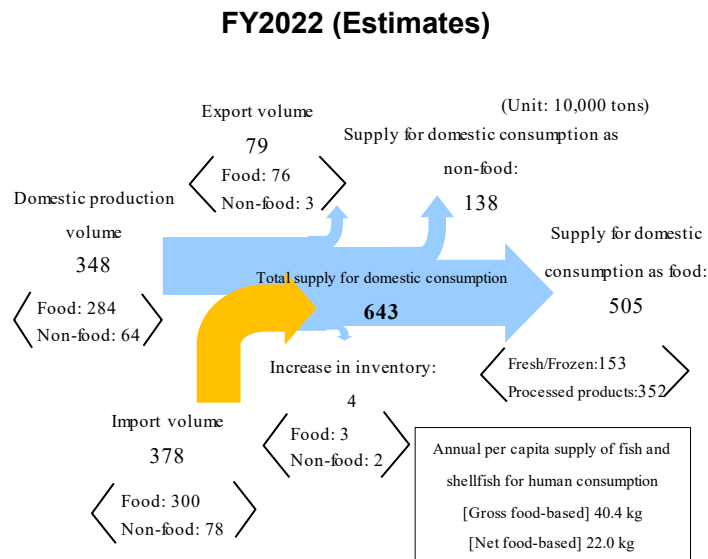
- In order to ensure that parties concerned with fisheries can launch UMIGYO-related initiatives in their areas so as to move forward toward achieving the goal of reaching 500 initiatives newly implemented for UMIGYO, etc. in fishing ports, initiatives to disseminate and raise awareness about UMIGYO will be promoted, including the creation of a framework for cooperation with local governments and private companies, etc., the creation of opportunities for children to come into contact with the sea, the dissemination of the concept and appeal of UMIGYO to people in and outside of Japan, and the fulfillment of diversified consumer needs.
- The Fisheries Agency solicited districts to take part in “Districts to Engage in Promoting UMIGYO” and determined 54 districts in March 2024. From this time onward, the Fisheries Agency will individually advise those districts, provide them with information on the promotion of UMIGYO, and promote, on a demonstrative basis, the formulation of a new UMIGYO initiative plan through the establishment and operation of a council consisting of people of concern.
- Information will be shared with a wide range of people of concern interested in UMIGYO, such as local governments, persons related to fishery cooperative associations or fisheries, and private companies and organizations, and excellent examples of initiatives for UMIGYO will be disseminated and horizontally deployed by, for example, holding meetings of the “National Council for UMIGYO Promotion” attended by such people of concern.
- In accordance with the Act on Development of Fishing Ports and Grounds, which was amended in 2023 to allow, among other matters, the long-term rental of fishing port facilities and the long-term exclusive use of fishing port waters, etc., on the premise that no obstruction would be caused to the use of fishing operations, initiatives for UMIGYO that sufficiently utilize fishing ports, such as the diffusion of projects utilizing fishing port facilities, will be promoted.
- In order to ensure that visitors to fishing communities can use fishing ports with reassuring, the earthquake-proofing and tsunami-proofing of fishing port facilities and the development of evacuation routes will be promoted among other matters to facilitate the implementation of measures, etc., for the disaster prevention and disaster mitigation of fishing ports and fishing communities, in preparation for massive damage caused by natural disasters that are becoming more devastating and more frequent, such as large-scale earthquakes and tsunamis. In addition, since infrastructures such as fishing port facilities are aging, measures oriented toward preventive maintenance will be promoted to address this issue of aging.

# Chapter 1 Trends in the Supply-and-Demand and Consumption of Fish and Fishery Products in Japan

## (1) Supply-and-Demand Situation in Fish and Fishery Products

- The total supply of domestic consumption of fish and shellfish was estimated at 6.43 million tons for FY2022 (converted on a fresh-fish basis, estimate), of which 5.05 million tons (79%) were for human consumption (food) and 1.38 million tons (21%) for feed and fertilizer (non-food).
- The self-sufficiency rate of fish and shellfish in FY2022 was 56% (estimate).

### Japan's Production and Consumption Structure of Fish and Fishery Products



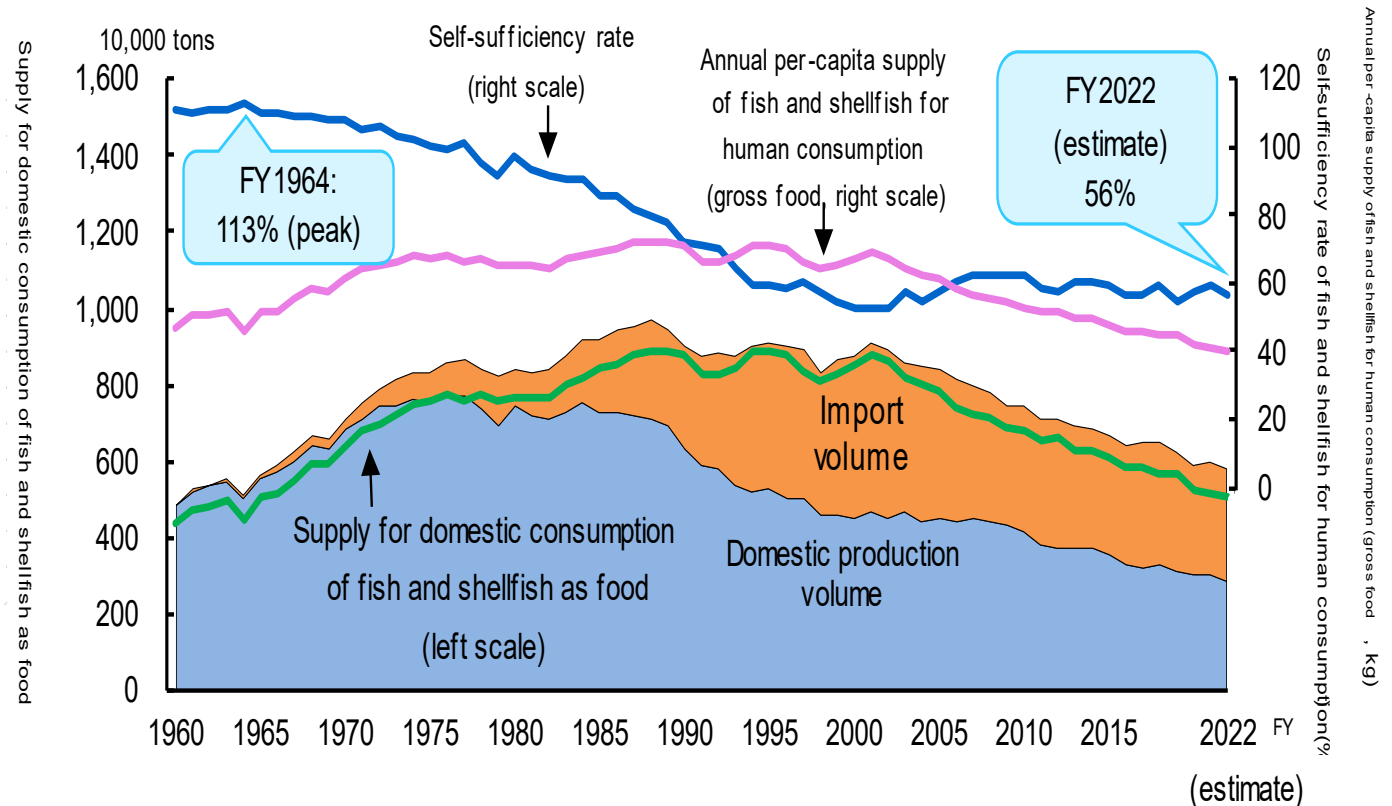
Source: Food Balance Sheet (the Ministry of Agriculture, Forestry and Fisheries)

Notes: 1) The figures are after conversion on a round-fish basis (except for net food-based supplies) and do not include marine algae or the whaling industry's catch.

2) Conversion on a round-fish basis means the conversion of a volume involving different product forms according to items, such as import volume and export volume, into an equivalent volume based on round fish by using the coefficient prescribed for each product form.

3) The term "gross food" refers to the amount of fish and shellfish for human consumption, including disposal volume. The term "net food" refers to the amount of only the edible parts obtained after excluding, from gross food, the parts subject to disposal in ordinary eating habits (such as fish heads, internal organs, and bones).

### Trends in the Self-Sufficiency Rate of Fish and Shellfish



Source: Food Balance Sheet (the Ministry of Agriculture, Forestry and Fisheries)

Note: Self-sufficiency rate (%) = (Domestic production volume / Total supply for domestic consumption) × 100  
Total supply for domestic consumption = Domestic production volume + Import volume - Export volume ± Increase/decrease in inventory

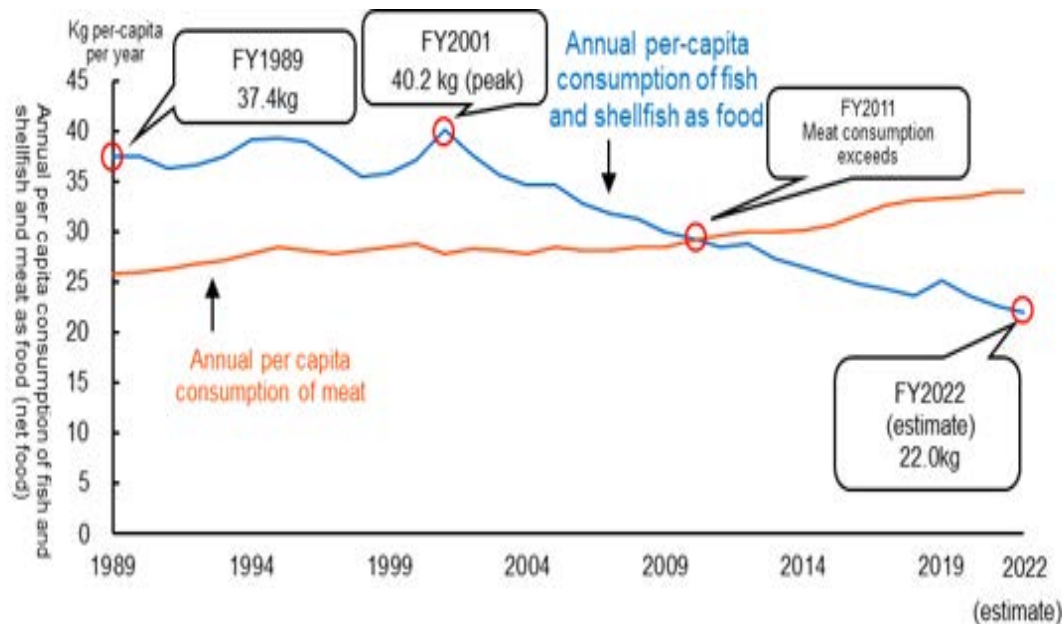


## (2) Status of the Consumption of Fish and Fishery Products

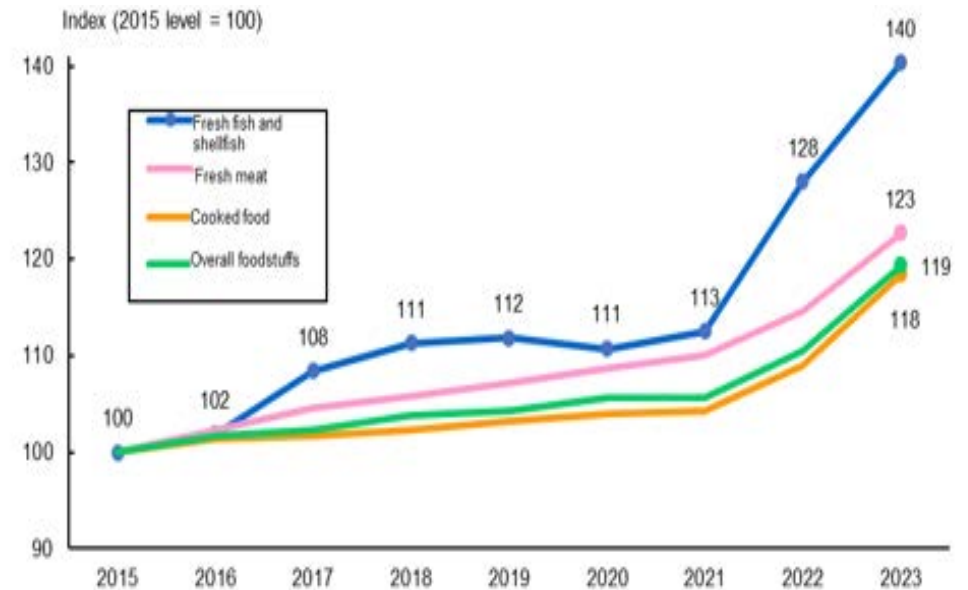
### i. Trends in the Consumption of Fish and Fishery Products

- Annual per-capita consumption of fish and shellfish (net food base) has been on a decreasing trend from the peak of 40.2 kg in FY2001 and lower than annual per-capita meat consumption since FY2011. It was 22.0 kg (estimate) in FY2022.
- In 2023, the annual per-capita purchase volume of fresh fish and shellfish declined by 4% from the previous year. Partly due to the impact of the increased prices of fish and fishery product imports, the Consumer Price Index for fresh fish and shellfish in the same year increased by 9% from the previous year.
- The factors that keep consumers away from purchasing many fish and shellfish include high prices and the time and effort required for cooking. Consumers' orientation is changing with growing orientation toward simplification and convenience in terms of eating.

Changes in Annual per Capita Consumption of Fish and Shellfish as Food (Net Food Base)



Trends in the Consumer Price Index for Foodstuffs



Source: Food Balance Sheet (the Ministry of Agriculture, Forestry and Fisheries)

Source: Prepared by the Fisheries Agency, based on the Consumer Price Index (the Ministry of Internal Affairs and Communications)

## ii. Initiatives for Expansion of Consumption of Fish and Fishery Products / Health Benefits of Fish and Fishery Products

- The Fisheries Agency has designated the 3rd day to 7th day of each month as “sakana no hi (fish day),” for the promotion of public and private initiatives for expansion of consumption of fish and shellfish. More than 800 fish day supporting members implemented various initiatives to expand the consumption of fish and fishery products, such as the sale of little-used/unused fish by mass retailers and the organizing of domestic natural fish fairs by restaurants, etc.
- In addition to Sakana-kun, the ambassador of the fish day, six fish-loving personalities from among those belonging to “Hello! Project” have been appointed as members of the fish day supporting team to disseminate information on the promotion of fish-eating.
- The Fisheries Agency has supported initiatives for the development/demonstration of highly convenient products, provision methods, etc., as well as initiatives for the establishment of value chains based on cooperation among parties involved in production, processing, distribution, and sale, such as initiatives to improve distribution, reduce costs, or achieve high added value.
- In order to establish the habit of fish-eating from an early age, it is important to create opportunities to develop familiarity with fish and fishery products through school lunches, etc. Furthermore, initiatives to realize local production for local consumption have been promoted in school lunches.
- Docosahexaenoic acid (DHA) and icosapentaenoic acid (IPA), which are omega-3 polyunsaturated fatty acids, abundant in the fat of fish meat and that of whale meat, have effects such as reducing LDL cholesterol and neutral fats. In addition, DHA is important for the development and function maintenance of the brain, etc.
- Fish protein is characterized not only as being a high-quality protein containing a good balance of the nine amino acids essential for human life, but also as being easily digestible and taken into the body compared to soy protein and milk protein.



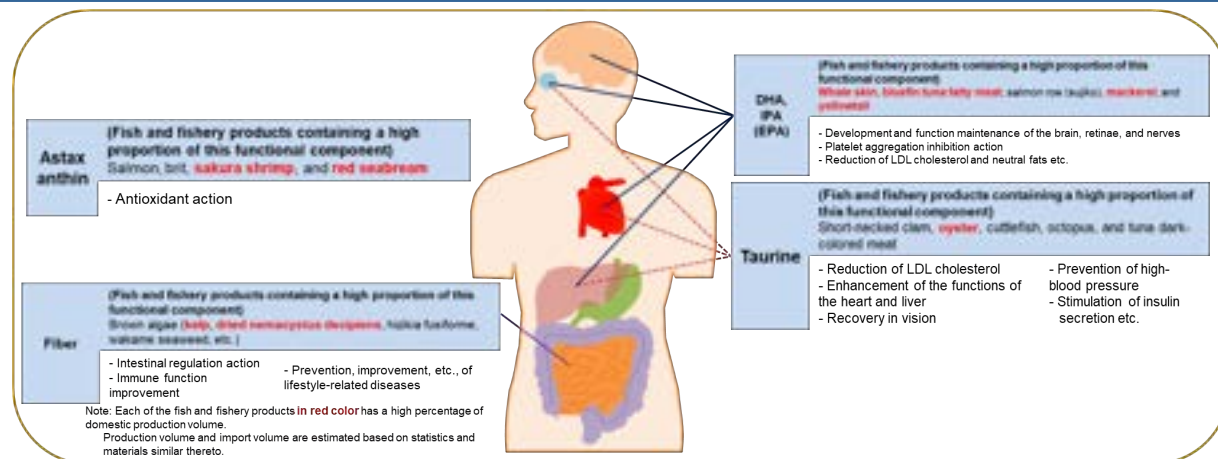
おいしい×サステナ=いい未来

さかなの日 Fish day logo



Appointment of the fish day supporting team

### Main Functional Components Contained in Fish and Fishery Products



Source: Prepared by the Fisheries Agency, based on references such as “Fisheries Handbook, Completely Revised” (2012; edited by Kazuo Shima, Fumitake Seki, Masachika Maeda, Shingo Kimura, Hiroki Saeki, Kazumi Sakuramoto, Yoshimi Suenaga, Nagano Akira, Tsutomu Morinaga, Nobuyuki Yagi, and Hideaki Yamanaka) and “Nutritional Science of Aquatic Food - Basics to Humans-” (2004; edited by Hiramitsu Suzuki, Shun Wada, and Masayo Miura)

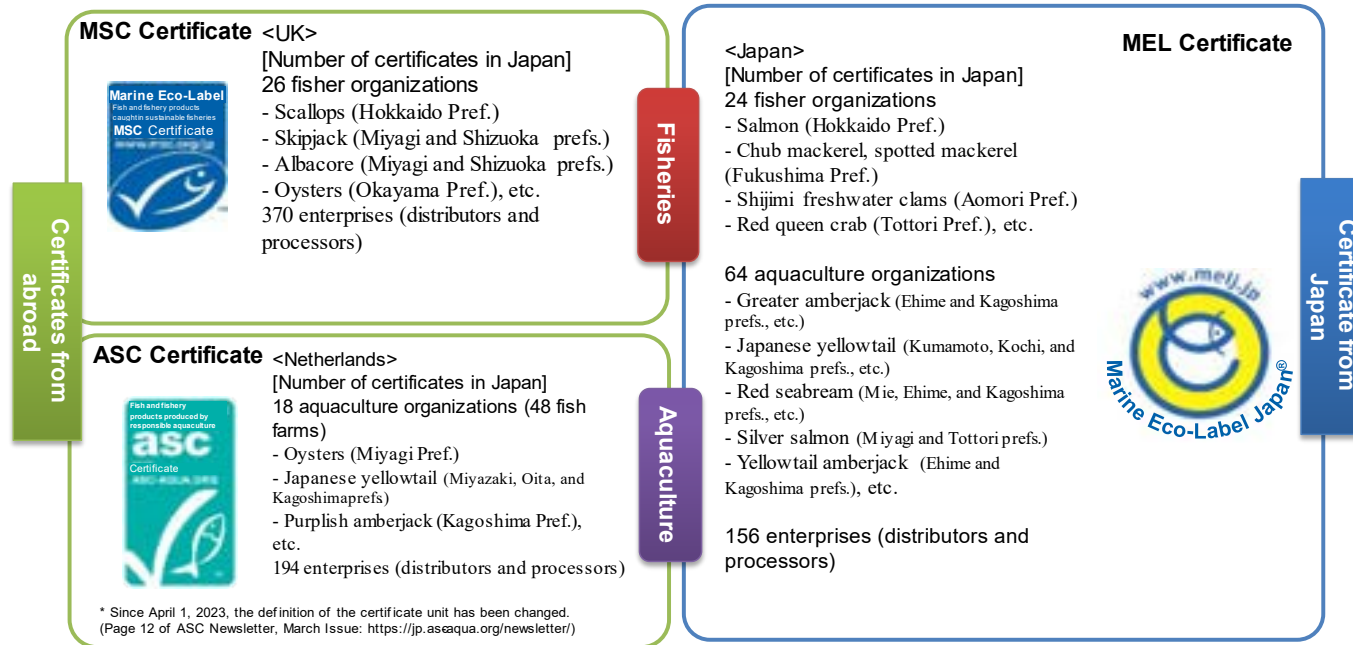


### (3) Initiatives to Ensure Information Provision to Consumers and to Protect Intellectual Property



- There are various marine eco-labels around the world that certify resource management and environmental initiatives. In Japan, MSC, ASC, and MEL are mainly used, and their use has been promoted.
- Other systems of providing information to consumers and protecting intellectual property include the obligation to label the place of origin under the Food Labeling Act, the disclosure of notified information under the system for food with function claims, and geographical indication (GI) protection system.

#### Main Marine Eco-Label Certificates Used in Japan



\* The number of certificates is that as of March 31, 2024 (according to the Fisheries Agency).

#### Examples of GI-registered products



Nagasaki Karasumi



Hamanaka Youshoku Uni



Awajishima 3nen Torahugu

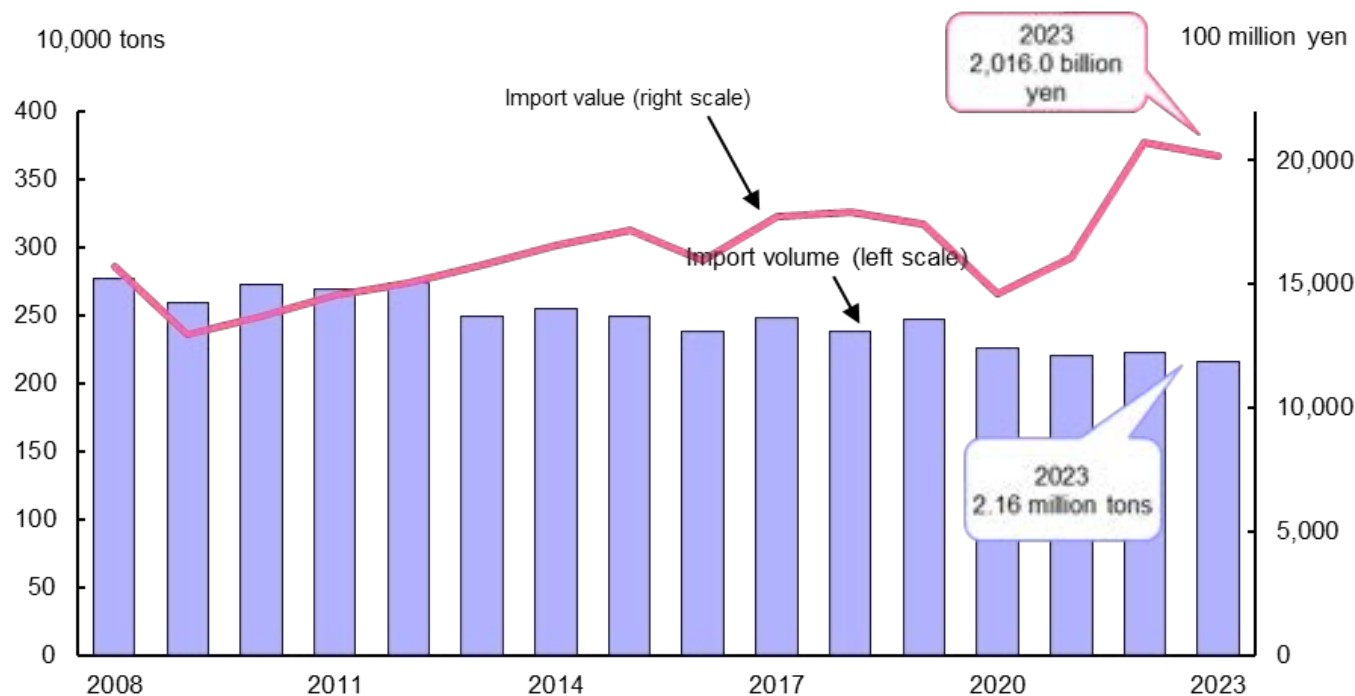
## (4) Trends in the Trade of Fish and Fishery Products



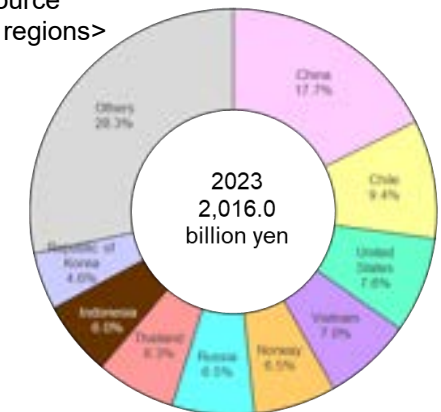
### i. Trends in Importation of Fish and Fishery Products

- The import volume of fish and fishery products (on a product weight basis) decreased by 3% from the previous year to 2.16 million tons in 2023. The import value decreased by 3% from the previous year to 2,016.0 billion yen.
- Major import source countries/regions are China, Chile, and the United States. Major import items in terms of import value are salmon and trout, skipjack and tuna, and shrimp.

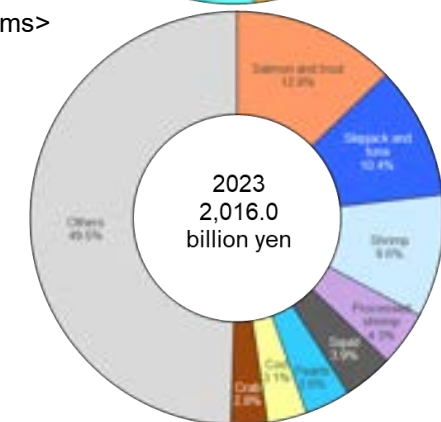
#### Trends in the Import Volume and Import Value of Fish and Fishery Products, Import Source Countries/Regions, and Breakdowns



<Import source countries and regions>



<Import items>



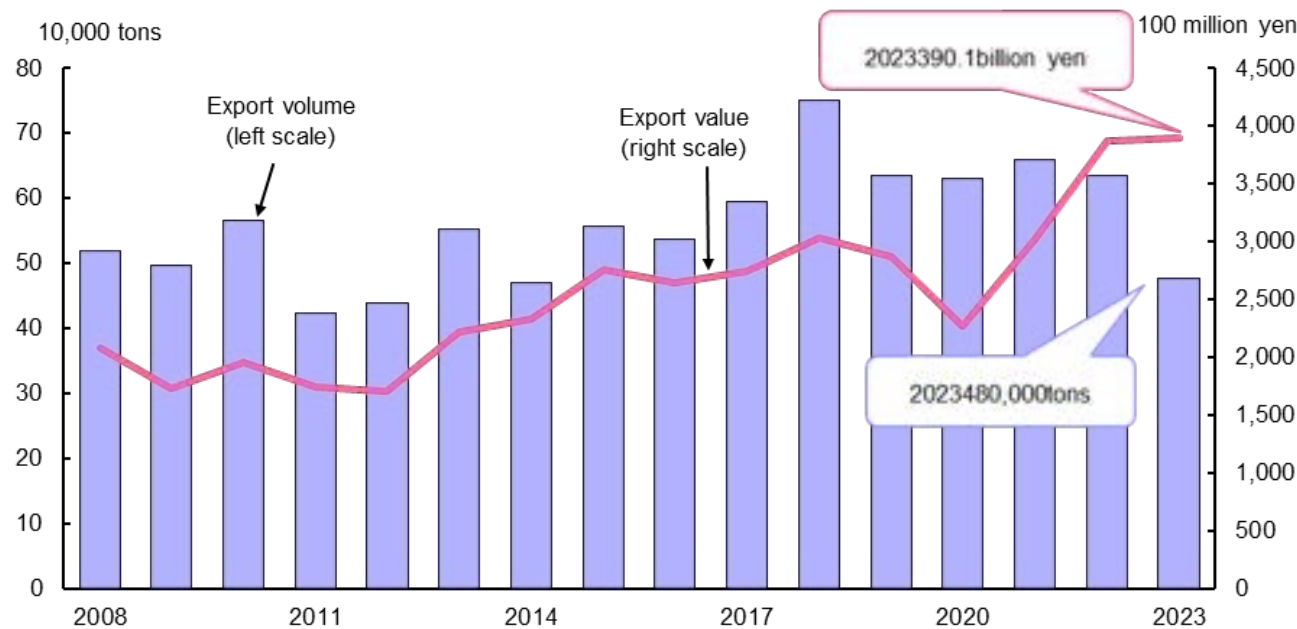
Source: Prepared by the Fisheries Agency, based on the Foreign Trade Statistics (the Ministry of Finance)

Share in the total import value of agricultural, forestry, and fishery products and food: 16%

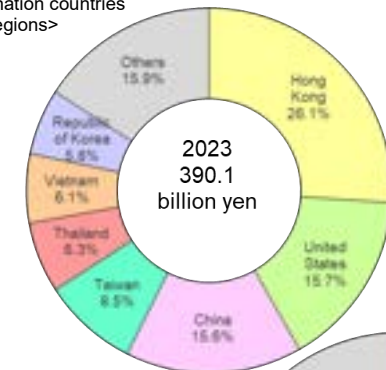
## ii. Trends in Export of Fish and Fishery Products

- The export volume of fish and fishery products (on a product weight basis) decreased by 25% from the previous year to 0.48 million tons in 2023. The export value increased by 1% from the previous year to 390.1 billion yen.
- Major export destinations are Hong Kong, the United States, and China. Although the value of export to China had accounted for 22% of the total export value in 2022, this percentage decreased to 16% in 2023 due to China's suspension of import of fish and fishery products from all of the prefectures of Japan after the commencement of discharge of ALPS treated water into the sea on August 24, 2023.
- Major export items are scallops, pearls, and yellowtail in terms of export value. Although the export ratio of scallops to China had previously exceeded 50%, its ratio to the total export value declined.
- The target for export of agricultural, forestry, and fishery products and food to reach 5 trillion yen (including fishery products of 1.2 trillion yen) by 2030 was established in March 2020. Priority items of fish and fishery products are yellowtail, sea bream, scallops, pearls, and Nishikigoi.
- In light of the tightening of import restrictions by China, Hong Kong, etc., the diversification of export destination countries and regions has been supported.

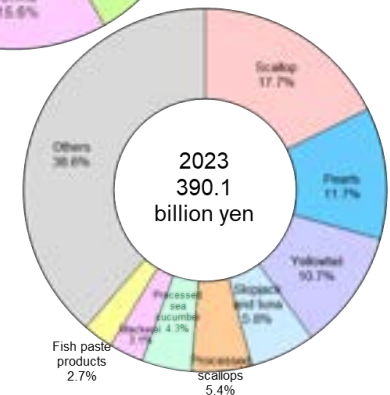
### Trends in the Export Volume and Export Value of Fish and Fishery Products, Export Destination Countries/Regions, and Breakdowns of Items



<Export destination countries and regions>



<Export items>



Share in the total export value of agricultural, forestry, and fishery products and food: 29%

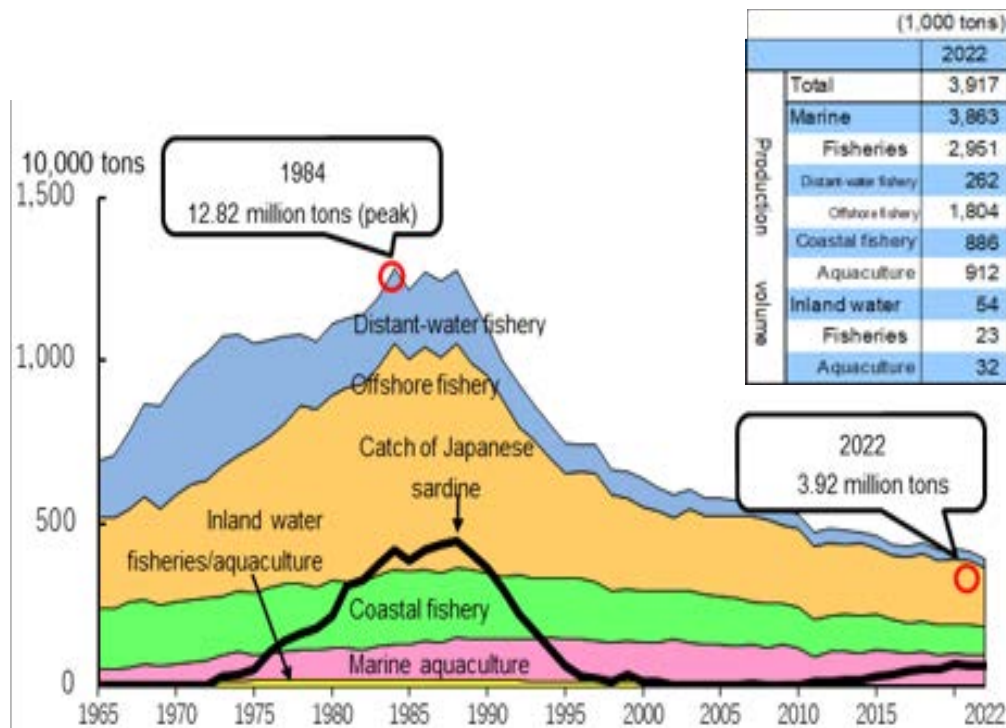
Source: Prepared by the Fisheries Agency, based on the Foreign Trade Statistics (the Ministry of Finance)

# Chapter 2 Trends in Japan's Fisheries

## (1) Trends in Domestic Fisheries and Aquaculture Production

- The volume of domestic fisheries and aquaculture production decreased by 240,000 tons from the previous year to 3.92 million tons in 2022, of which that of marine fisheries decreased by 230,000 tons from the previous year to 2.95 million tons. In particular, the volume of mackerel, skipjack, etc. decreased. The volume of marine aquaculture decreased by 10,000 tons to 0.91 million tons. The volume of inland water fisheries and aquaculture increased by 2,000 tons to 50,000 tons.
- The production value of domestic fisheries and aquaculture increased by 205.8 billion yen from the previous year to 1,600.1 billion yen in 2022, of which that of marine fisheries increased by 114.1 billion yen to 916.1 billion yen, that of marine aquaculture increased by 74.9 billion yen to 543.3 billion yen, and that of inland water fisheries and aquaculture increased by 16.8 billion yen to 140.7 billion yen.

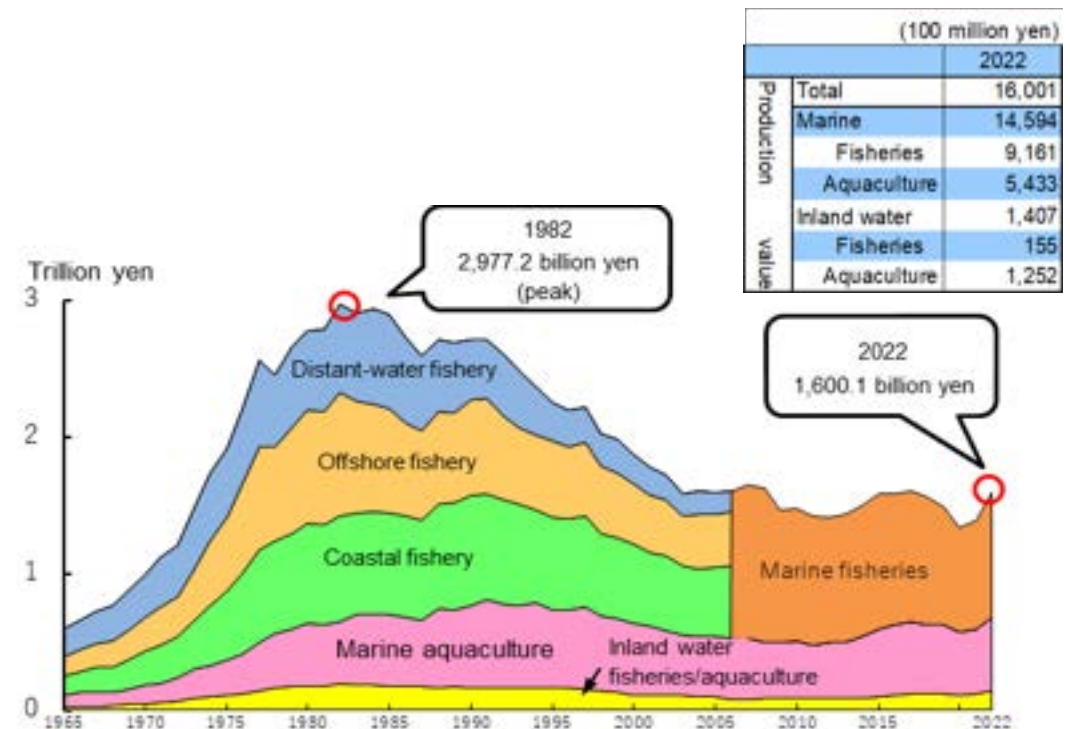
### Trends in the Production Volume of Fisheries and Aquaculture



Source: Fisheries and Aquaculture Production Statistics (the Ministry of Agriculture, Forestry and Fisheries)

Note: For the production volumes of "distant-water fishery," "offshore fishery," and "coastal fishery," which are breakdown items of the production volume of fisheries and aquaculture, surveys of the catches of fishing vessels by tonnage group were discontinued in 2007. Therefore, the figures for 2007 to 2010 are estimates. For surveys in 2011 and beyond, the catch of each type of fisheries that belongs to "distant water fishery," "offshore fishery," or "coastal fishery" is added up.

### Trends in the Production Value of Fisheries and Aquaculture



Source: Prepared by the Fisheries Agency, based on the Fishery Output (the Ministry of Agriculture, Forestry and Fisheries)

Notes: 1) The fishery production value was obtained by adding the juveniles production value to the fishery output (a value estimated by multiplying the production volume of fisheries and aquaculture by the wholesale prices in the landing area, etc.).

2) Compilation of production value by sector of marine fisheries was discontinued in 2007.





## (2) Trends in Management of Fisheries and Aquaculture

### i. Trends in Management of Fisheries by Fishing Vessels

- The average fishing income of private management bodies engaged in coastal fisheries using vessels increased by 560,000 yen from the previous year to 2.52 million yen in 2022. The business income including non-fishing income in the same year was 2.78 million yen. In the same year, the average fishing income of private management bodies (maritime fisheries) whose core fishery workers were aged under 65 years was 5.43 million yen.
- Corporate management bodies engaged in fishing vessel fisheries have been experiencing deficits in average fishery income. Operating losses, including non-fishery losses, posted were 2.73 million yen in FY2022.
- Fuel oil prices remain at high levels with unstable fluctuations due to the impact of the Russia-Ukraine situation, rapid yen depreciation, etc., in addition to a drastic increase in fuel oil prices following, among other factors, the recovery of economic activities from their global-scale stagnation attributable to COVID-19 infections.
- Measures have been taken against sharply increasing fuel oil prices by supporting the Fishery Management Safety Net Construction Project and fishers' introduction of energy-saving devices.

#### Trends in Management of Private

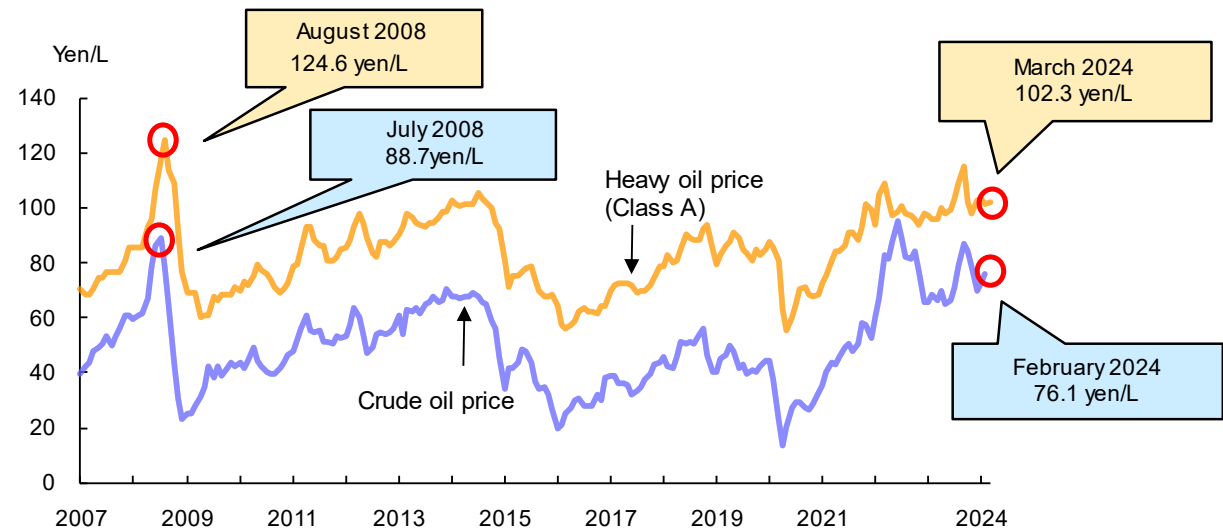
(Unit: 1,000 yen)

	<Coastal fishery by fishing vessels>		<Aged under 65 years>	
	2021	2022	2021	2022
Business income	2,168	2,778	4,308	6,005
Fishing income	1,964	2,522	3,861	5,428
Fishing revenue	6,235	7,138	22,302	22,893
Amounts received from various systems (fisheries)	823	1,166	2,560	2,345
Fishing expenditure	4,271 (100.0)	4,616 (100.0)	18,442 (100.0)	17,466 (100.0)
Employee wages	531 (12.4)	608 (13.2)	4,792 (26.0)	5,038 (28.8)
Fishing vessel and fishing gear expenses	339 (7.9)	373 (8.1)	1,462 (7.9)	1,002 (5.7)
Repair costs	397 (9.3)	434 (9.4)	1,404 (7.6)	1,200 (6.9)
Oil costs	668 (15.6)	748 (16.2)	3,139 (17.0)	2,882 (16.5)
Selling charges	375 (8.8)	442 (9.6)	1,176 (6.4)	1,232 (7.1)
Depreciation	678 (15.9)	676 (14.6)	1,907 (10.3)	1,858 (10.6)
Others	1,282 (30.0)	1,335 (28.9)	4,562 (24.7)	4,253 (24.4)
Non-fishing income	204	256	447	577

Source: Prepared by the Fisheries Agency, based on the Statistical Survey Report on Fishery Management and the Census of Fisheries (the Ministry of Agriculture, Forestry and Fisheries)

Notes: 1) The figures for coastal fishery by fishing vessels are weighted-averaged using the number of private management bodies using fishing vessels with outboard motors or powered fishing vessels of less than 10 tons in the Census of Fisheries, based on the results of fishery by fishing vessels in the survey on private management bodies under the Statistical Survey Report on Fishery Management.  
2) The category "Aged under 65 years" refers to those private management bodies (maritime fisheries) whose core fishery workers were aged under 65 years, and the figures for this category are weighted-averaged using the number of private management bodies according to age groups in the Census of Fisheries, based on the results of fishery by fishing vessels in the survey on private management bodies under the Statistical Survey on Fishery Management (counted based on reclassified items).

#### Trends in Fuel Oil Prices



Source: Prepared by the Fisheries Agency

## ii. Trends in Management of Aquaculture

- The average fishing income of private management bodies engaged in marine aquaculture increased by 2.28 million yen from the previous year to 10.62 million yen in 2022.
- While the import price of fish meal had been on the increase with its demand growing in developing countries, it has further increased since December 2020 owing to, among other factors, the recovery of economic activities from their global-scale stagnation attributable to COVID-19 infections. In 2023, an additional rise in the price was also caused by the El Nino phenomenon, etc.
- Measures have been taken against the sharply increasing formula feed price, including the development of new formula feed for aquaculture with a low level of fish meal used and the Fishery Management Safety Net Construction Project.

Trends in Management of Private Management Bodies Engaged in Aquaculture

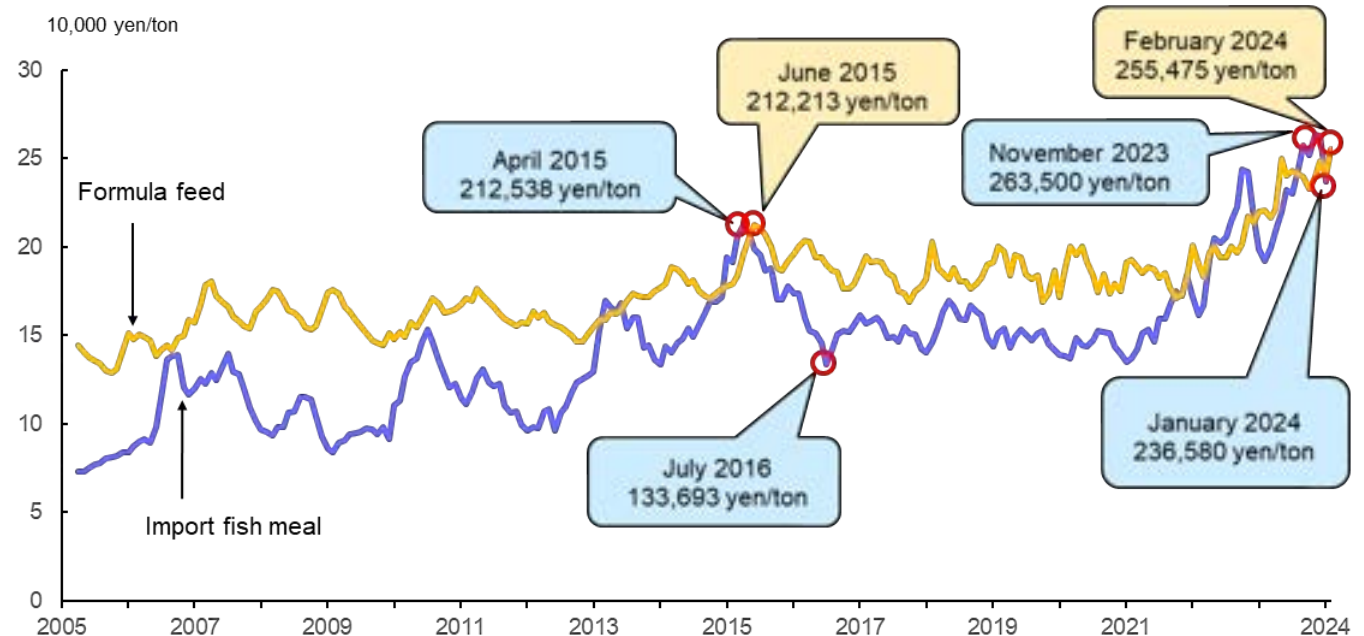
(Unit: 1,000 yen)

	2021	2022
<b>Business income</b>	<b>8,537</b>	<b>10,787</b>
<b>Fishing income</b>	<b>8,336</b>	<b>10,616</b>
Fishing revenue	35,142	40,299
Amounts received from various systems (fisheries)	3,376	2,198
<b>Fishing expenditure</b>	<b>26,806 (100.0)</b>	<b>29,683 (100.0)</b>
Employee wages	3,860 (14.4)	3,818 (12.9)
Fishing vessel and fishing gear expenses	1,276 (4.8)	1,395 (4.7)
Repair costs	1,661 (6.2)	1,870 (6.3)
Oil costs	1,472 (5.5)	1,754 (5.9)
Feed costs	4,863 (18.1)	5,087 (17.1)
Seedlings costs	1,027 (3.8)	1,379 (4.6)
Selling charges	1,357 (5.1)	1,708 (5.8)
Depreciation	3,645 (13.6)	3,815 (12.9)
Others	7,643 (28.5)	8,857 (29.8)
<b>Non-fishing income</b>	<b>201</b>	<b>171</b>

Source: Prepared by the Fisheries Agency, based on the Statistical Survey Report on Fishery Management and the Census of Fisheries (the Ministry of Agriculture, Forestry and Fisheries)

Note: The figures are weighted-averaged using the number of private management bodies by fisheries species in the Census of Fisheries, based on the results of the survey on private management bodies under the Statistical Survey Report on Fishery Management.

Trends in the Prices of Formula Feed and Fish Meal

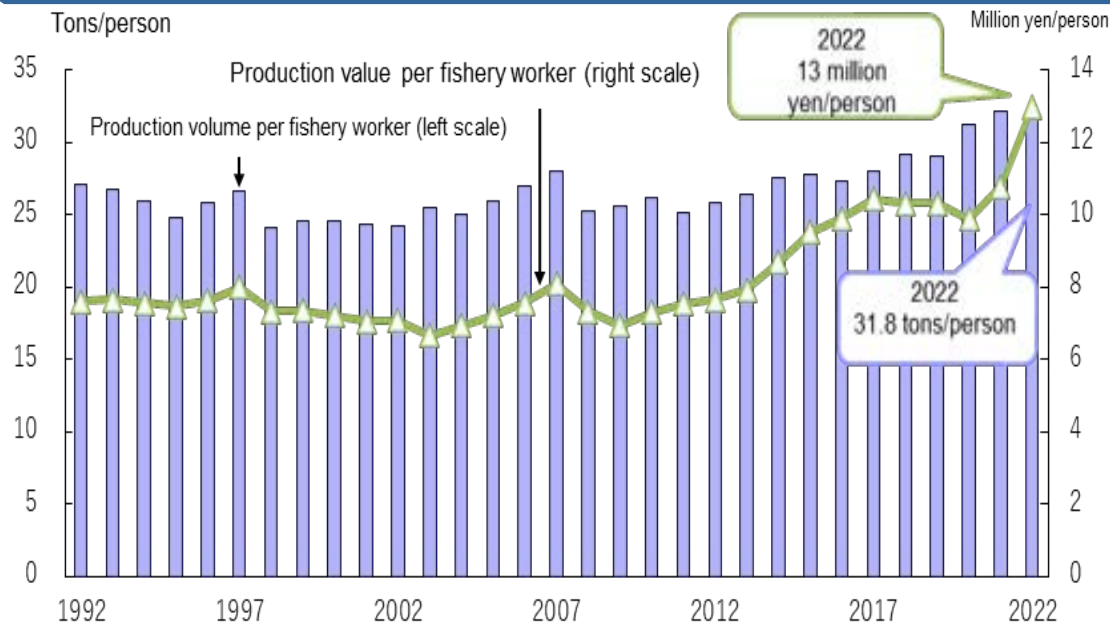


Source: Based on the Foreign Trade Statistics (regarding fish meal; the Ministry of Finance) and according to the Japan Fish Feed Association (regarding formula feed up to June 2013) and the Fisheries Agency (regarding formula feed from July 2013)

### iii. Improvement in the Productivity and Income of Fisheries and Aquaculture

- The production value of fisheries and aquaculture per fishery worker in Japan was 13.00 million yen.
- The “Seashore Revitalization Plan,” under which each district considers and implements measures aimed at revitalizing its fishing communities by increasing the income of fishers by at least 10% in five years, has been implemented in 588 districts as of the end of FY2023.
- As of the end of FY2023, the “Wide-Area Seashore Revitalization Plan,” in which efforts are made to enhance wide-ranging competitiveness, has been implemented in 147 districts.
- On the basis of the Wide-Area Seashore Revitalization Plan, etc., support has been given to, among other matters, the lease-based introduction of fishing vessels, the restructuring of facilities in landing areas, the introduction of fishing devices, etc. which can enhance productivity or realize labor-saving or energy-saving, and the development of fishing port facilities.
- The “Comprehensive Strategy for the Transformation of Aquaculture Into a Growth Industry” was formulated in July 2020 to fully engage in the promotion of aquaculture with strategic aquaculture items set out and comprehensive strategies developed to cover processes from production to sale and export, and thereby switching to market-in type aquaculture has been promoted.

#### Productivity per Fishery Worker



Source: Prepared by the Fisheries Agency, based on the Census of Fisheries (number of fishery workers for 1993, 1998, 2003, 2008, 2013, and 2018), the Survey on Movement of Fishery Structure (number of fishery workers in 2019 and beyond), the Survey of Persons Engaged in Fishery (number of fishery workers for other years), the Statistics on Fishery and Aquaculture Production (production volume), and the Fisheries Output (production value) (the Ministry of Agriculture, Forestry and Fisheries)

Example initiatives implemented under the Seashore Revitalization Plan by Konagai District, Isahaya City, Nagasaki Prefecture



Oyster grilling hut



Commercialized oyster ekiben (train lunch)

Large circular sinking/floating preserve for a large-scale offshore aquaculture system

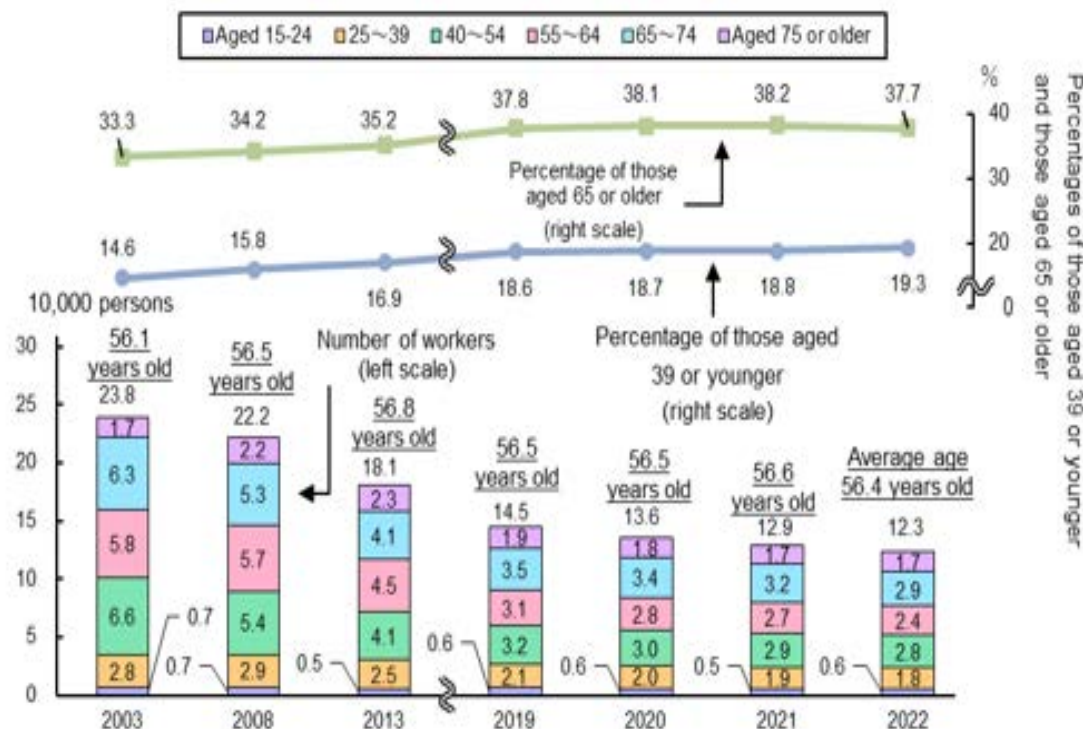




### (3) Trends in Workers in Fisheries

- The number of fishery workers has been consistently declining, reaching 123,100 in 2022.
- The number of new fishery workers was 1,691 in FY2022. The government, etc., provides support for initiatives that seek to secure new fishery workers, such as employment counseling sessions, internship, and long-term training on fishery operation sites.

#### Trends in the Number of Fishery Workers



Sources: Census of Fisheries (2003, 2008, and 2013) and Survey on Movement of Fishery Structure (2019 and beyond) (the Ministry of Agriculture, Forestry and Fisheries)

Notes: 1) A "fishery worker" refers to a person aged 15 or older who has been engaged in offshore fishery operations for at least 30 days in the past year.

2) For 2008 and beyond, the surveys were conducted on the fishery management body (employer) side and included those residing in non-coastal municipalities who had not been previously included. Therefore, those surveys are not in line with the 2003 survey.

3) The figures for "Average age" are estimates based on the median of each of the age groups (for the age group "Aged 75 or older," "80" is used) according to the Survey on Movement of Fishery Structure and the Census of Fisheries.

#### Trends in the Number of New Fishery Workers



Source: Estimated by the Fisheries Agency, based on surveys conducted by prefectures on new fishery workers



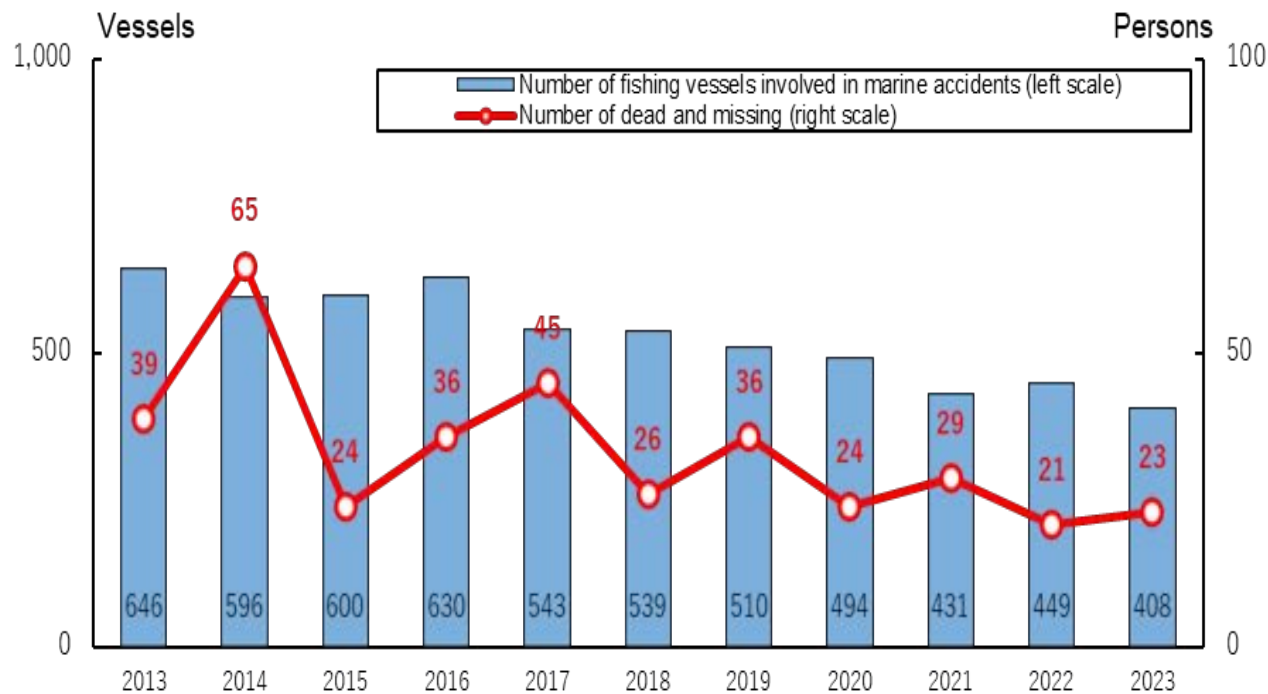
Sessions to encourage high school students to work in fisheries (guidance on fisheries)



## (4) Trends in Fishery Working Environments

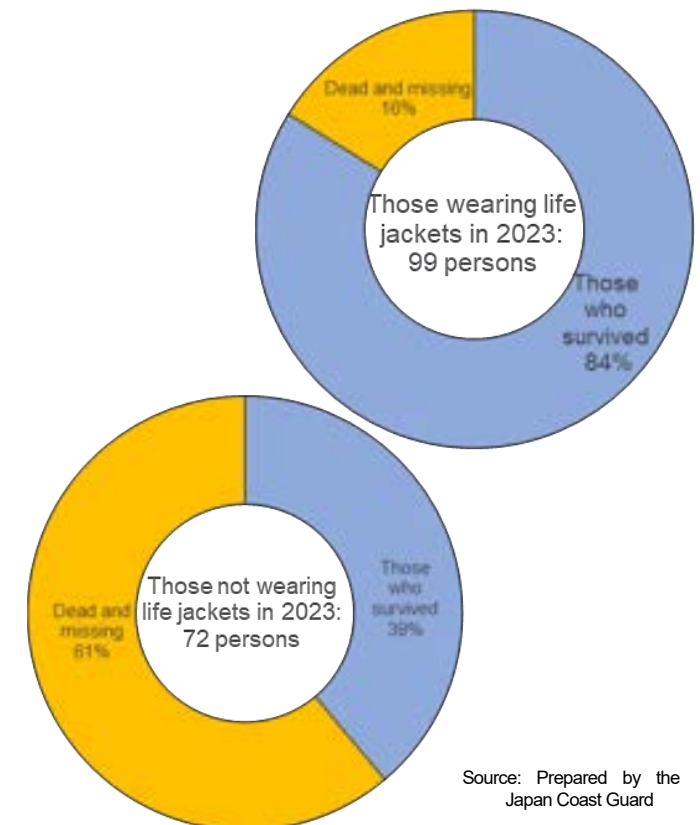
- In 2023, the number of fishing vessels involved in marine accidents was 408, and the number of dead and missing reported in those accidents was 23.
- Excluding those related to marine accidents, 62 fishers fell overboard in 2023,\* 38 of whom were dead or missing.  
(\*: The number of persons who fell overboard here refers to the number of persons on board vessels who fell into the sea for reasons other than marine accidents such as collision and capsizing.)
- Life jackets are vital for the survival of those who fall overboard (an approximately 2.2 times better survival rate). In principle, all persons on board outside the cabin are required to wear life jackets.

Trends in the Number of Fishing Vessels Involved in Marine Accidents and the Number of Dead and Missing Associated with Marine Accidents



Source: Prepared by the Japan Coast Guard

Survival Rates of Those Who Fell Overboard with and without Life Jackets



Source: Prepared by the Japan Coast Guard



## (5) Development and Utilization of Technologies for Promoting Smart Fisheries

- Development, introduction, and advancement of technologies related to efficiency-related initiatives utilizing ICT, IoT, AI, and drones in each of the stock assessment, fisheries/aquaculture, and processing/distribution sectors are promoted in order to conduct highly precise stock assessment and improve profitability through personnel/labor saving, with the aim of developing the fisheries industry into a growing industry in the face of its current condition involving issues such as the falling production volumes of fisheries and aquaculture and the decreasing number of fishery workers.
- The “Guidelines for Data Utilization in the Fisheries Sector” was formulated to promote the utilization of data.
- With the aim of creating “digital fisheries strategy bases” to utilize digital technologies in each of the stages from fish catching to distribution, processing, sale, and consumption in the entire region as one, 3 districts were selected as models in 2023.

### Case Example

#### Development of an Oceanic Observation System for Aquaculture (“Umilog®”) and Preparation of a Manual

In Mie Prefecture, the Mie Prefecture Fisheries Research Institute, Toba College of the National Institute of Technology, and a company in the prefecture jointly developed a monitoring system for IoT-based oceanic observation (named “Umilog®”), which enables real-time monitoring of elements related to fishing grounds. This system enables information collected by oceanic observation devices installed in kuro-nori (black laver) farms, such as the water temperature and the chlorophyll concentration, to be viewed with a smartphone application. With such information, for example, the nori farmer determines a farming start date and predicts the decoloring of cultured nori seaweed on the basis of plankton growth information. In this project, a “Manual for Utilization of IoT Observation Devices in Kuro-Nori Cultivation” was formulated for the purpose of enabling farmers to more effectively utilize the system.

Since marine observation devices are lightweight and easy to maintain, these devices are installed and maintained by farmers themselves.

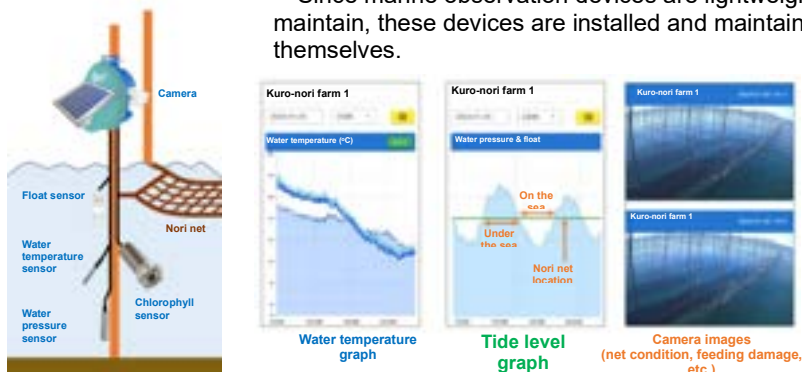


Image of Umilog®

### Case Example

#### Model District for Digital Fisheries Strategy Bases (Senshu Region, Osaka Prefecture)

In Senshu Region of Osaka Prefecture, the boat seine fishery of whitebait is conducted with Osaka Bay as its main fishing ground. In the region, the introduction of ICT into the post-landing bidding system has been promoted as an initiative for the digitalization of the fisheries industry. Digitalized bidding information is transmitted to fishers in operation through SNSs.

With real-time bidding information made available for open access, individual fishers have changed their fishing operations such that the volume of their catches is maintained at an appropriate level according to market prices. This has enabled them to reduce operating costs, etc. and to reform their operations such that they are more conscious, in their operations, of improving fish prices by maintaining quality including freshness, leading to the realization of an operational system of a four-day workweek. Such improved operational efficiency and fishing income, among other relevant factors, have helped secure new fishery workers of younger generations.



Digitalized bidding system



Input screen for digitalized bidding information

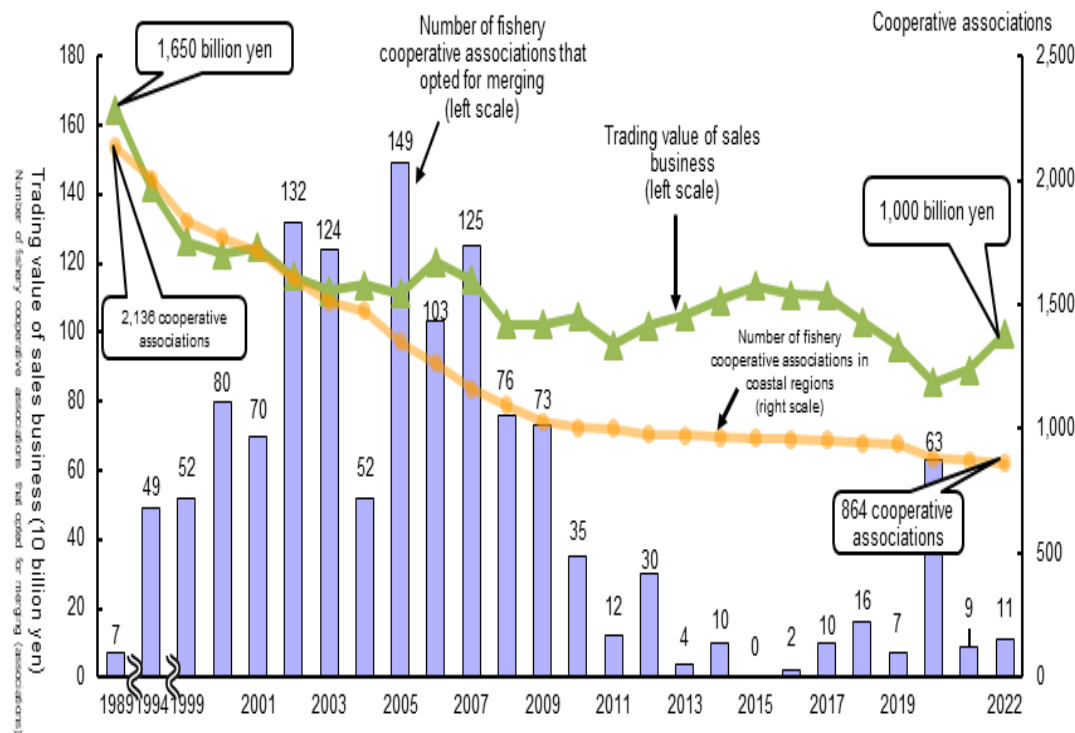
## (6) Trends in Land-Based Aquaculture

- Since April 2023, land-based aquaculture is classified as aquaculture requiring notification, and the number of businesses notified as such is 662 as of January 1, 2024.

## (7) Trends in Fishery Cooperative Associations

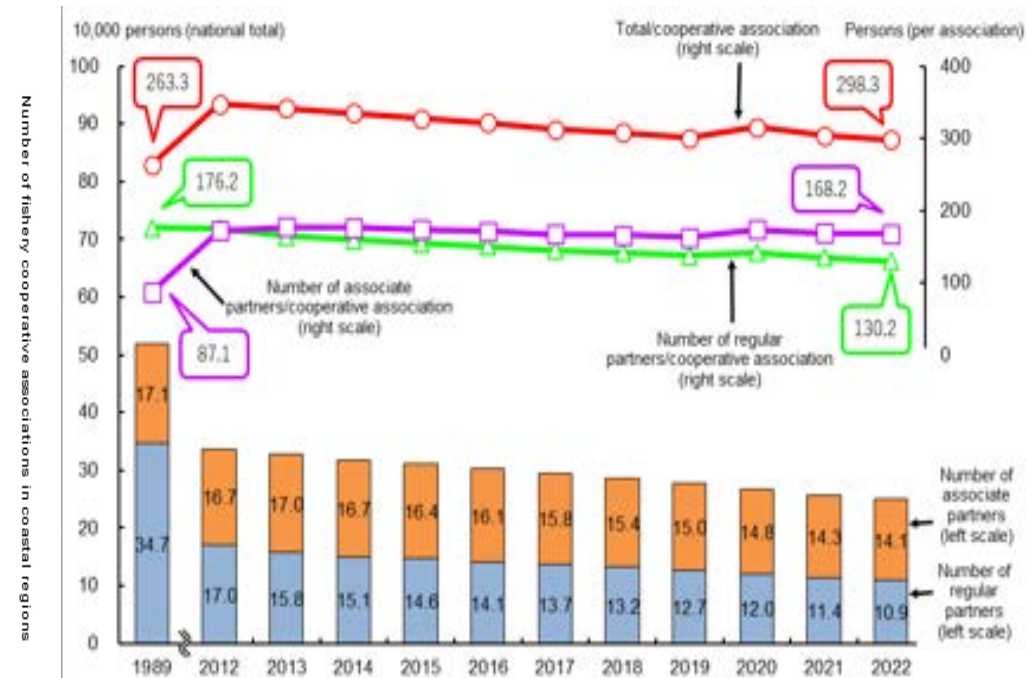
- A fishery cooperative association contributes to stabilization and development of fishery business management by implementing sales business, etc. It is an organization that plays a core role in supporting the regional economy and social activities of a fishing community, such as by using and managing fishery resources appropriately.
- The number of fishery cooperative associations (in coastal areas) as of the end of March 2023 was 864.
- The number of fishery cooperative association partners has been decreasing in line with a decline in the number of fishers. There is a need to strengthen cooperative associations' business and management foundation through mergers and to further reinforce their sales business.

Trends in the Number of Fishery Cooperative Associations in Coastal Areas, the Number of Fishery Cooperative Associations That Opted for Mergers, and the Trading Value of Their Sales Business



Source: Annual Report of Fishery Cooperative Associations (number of fishery cooperative associations in coastal regions) and Statistical Table of Fishery Cooperative Associations (trading value of sales business) (the Fisheries Agency), and data prepared by the National Federation of Fishery Cooperative Associations (number of fishery cooperative associations that opted for mergers).

Trends in the Number of Fishery Cooperative Association Partners



Source: Statistical Table of Fishery Cooperative Associations (the Fishery Agency)

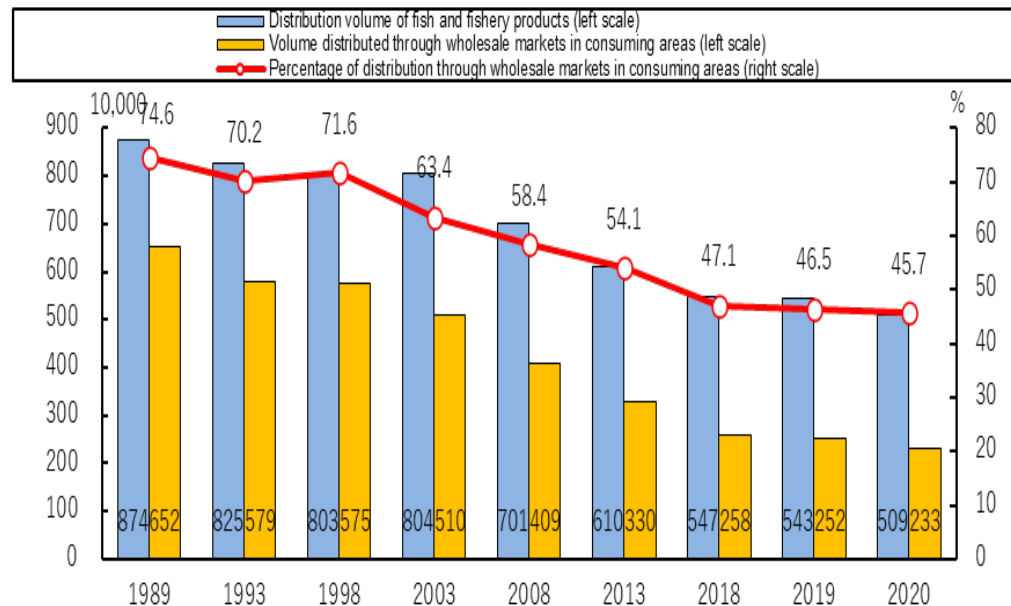


## (8) Trends in the Distribution and Processing of Fish and Fishery Products

### i. Trends in the Distribution of Fish and Fishery Products

- The number of wholesale fishery markets in landing areas had been flat in recent years, and that of wholesale markets in consuming areas decreased.
- The percentage of fish and fishery product distribution through wholesale markets in consuming areas has been on a decreasing trend, and non-market distribution has been increasing.
- Wholesale markets play a critical role in effectively distributing fish and fishery products. It is necessary to strengthen quality and sanitary control systems in anticipation of export and to maintain/strengthen market functions.

Trends in the Volume and Percentage of Fish and Fishery Product Distribution Through Wholesale Markets in Consuming Areas



Source: Wholesale Market Database (the Ministry of Agriculture, Forestry and Fisheries)

Trends in the Number of Wholesale Fishery Markets



Source: Wholesale Market Database (the Ministry of Agriculture, Forestry and Fisheries)

Notes: 1) Data for central wholesale markets are the data at the end of every fiscal year, whereas data for local wholesale markets are the data at the beginning of each fiscal year (up to FY2011) and at the end of each fiscal year (FY2012 and later).

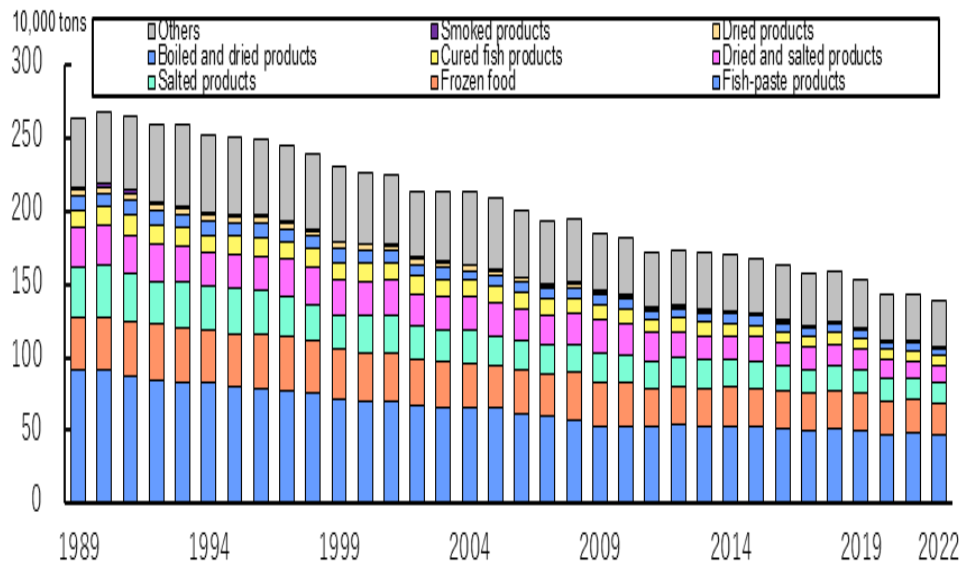
2) The amended Wholesale Market Act has been in force since June 2020. Accordingly, for data up to FY2019, a central wholesale market refers to a wholesale market which a prefecture, or a city, etc., with a population of 200,000 people or more, opened upon the authorization of the Minister of Agriculture, Forestry and Fisheries. A local wholesale market refers to a wholesale market which is other than central wholesale markets, has a wholesale area of at least a certain size (330 m<sup>2</sup> for a market in a landing area or 200 m<sup>2</sup> for a market in a consuming area), and was opened upon the permission of a prefectural governor. For data from FY2020 onward, a central wholesale market refers to a wholesale market authorized by the Minister of Agriculture, Forestry and Fisheries. A local wholesale market refers to a wholesale market authorized by a prefectural governor.



## ii. Trends in Fishery Processing and HACCP Compliance

- Approx. 70% of the total supply of fish and shellfish for domestic human consumption in Japan is supplied as processed fishery products.
- Among processed fishery products, the production volume of processed products for human consumption has been on a decreasing trend, but the production volume of fish paste products and frozen food has been flat.
- The lack of management vitality, shortage of employees, and difficulty in procuring raw materials are challenges for fishery processors, and support has been provided for initiatives such as the establishment of value chains that meet market needs through coordination of production, processing, distribution, and sale.
- When exporting fish and fishery products to the EU, the United States, etc., fishery processing facilities, etc., need to implement the HACCP (Hazard Analysis Critical Control Point) system and to conform to related facilities criteria, as required by the export destination countries and regions. The government supports the renovation of facilities to obtain the facility certification required for export to the EU and the United States.
- As of the end of FY2023, in the fishery processing industry, etc., the number of facilities certified to export to the EU was 119, and the number of facilities certified to export to the United States was 589.

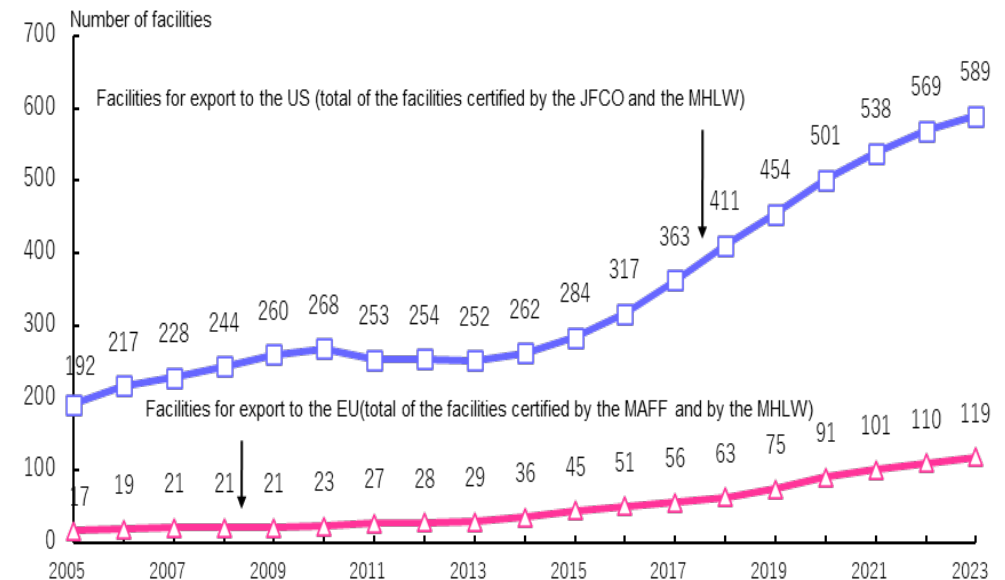
Trends in Production Volume of Processed Fishery Products for Human Consumption



Sources: Annual Report on Fish and Fishery Product Distribution Statistics (2009 and before), Census of Fisheries (2013 and 2018), and Fishery Processing Statistics Survey (other years) (the Ministry of Agriculture, Forestry and Fisheries)

Note: Processed fishery products refer to processed products for human consumption and fresh/frozen fish and fishery products which are produced with aquatic animals and plants used as their main raw materials (a raw material ratio of at least 50%). Toasted/Flavored seaweed, canned or bottled products, agar, and oils and fats are excluded.

Trends in the Number of Facilities Certified to Export to the EU/US in the Fishery Processing Industry, etc.



Source: Prepared by the Ministry of Agriculture, Forestry and Fisheries