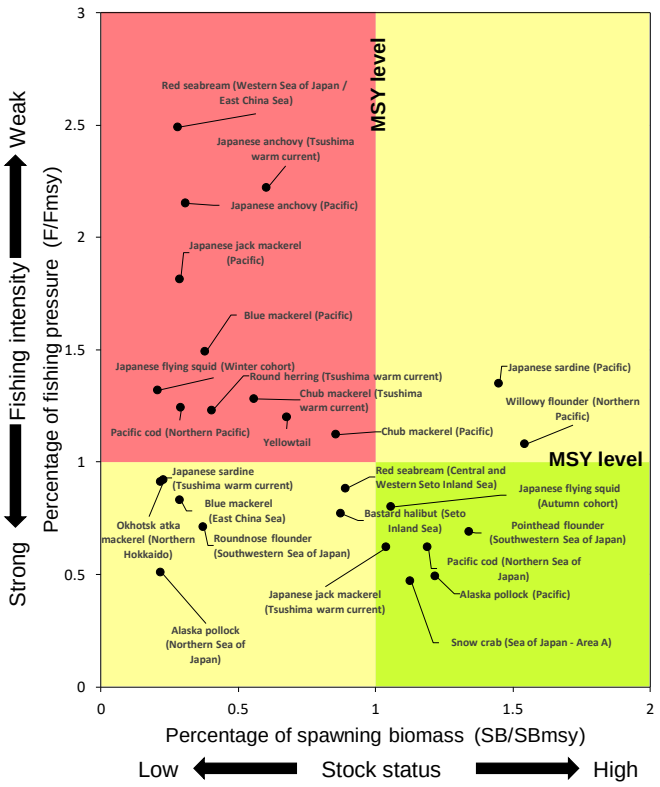
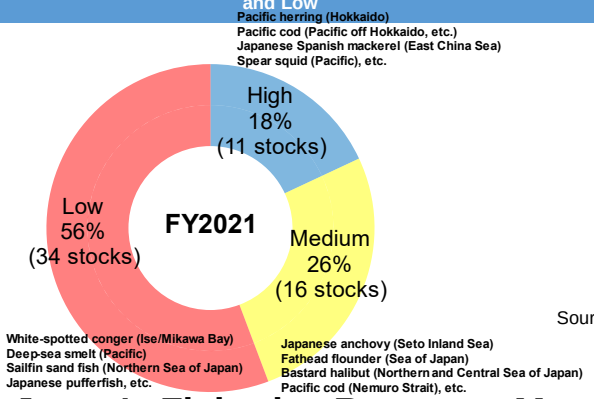
(1) Fisheries Resources in the Waters Around Japan

- To manage fisheries resources, it is important to take appropriate measures on both sides of stock status and fishing intensity based on its stock assessment.
- In FY2021, the number of fisheries species subject to stock assessment was expanded from 119 to 192.
- Among this, stock assessment based on MSY (Maximum Sustainable Yield) was expanded from 14 stocks of 8 fisheries species to 26 stocks of 17 fisheries species. For 61 stocks of 42 fisheries species, stock assessments were conducted with three levels of stock conditions of high, medium, and low.

Stock Assessment Based on MSY



Stock Assessment With Three Levels of Conditions of High, Medium, and Low



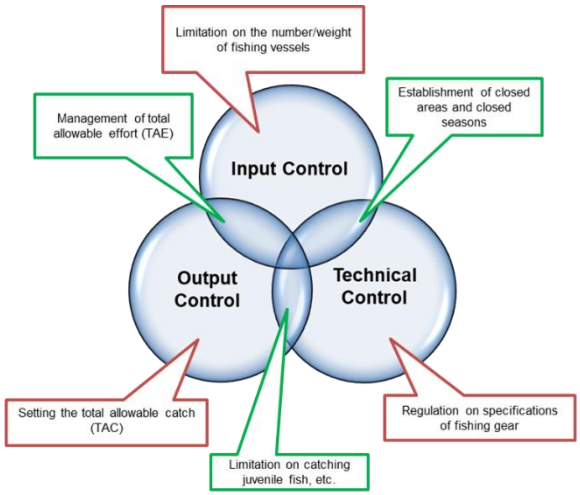
Source: Prepared by the Fisheries Agency, based on Marine Fisheries Assessment and Evaluation for Japanese Water (the Fisheries Agency and Japan Fisheries Research and Education Agency)

(2) Japan's Fisheries Resource Management

i. Japan's Fisheries Resource Management System

- Techniques for resource management are primarily classified into 1) input control, 2) technical control, and 3) output control. These methods are appropriately used and combined in Japan to properly manage resources, taking into account the characteristics of fisheries, the number of fishers, the status of stocks, etc.
- Shellfish and algae harvesting, set-net fishing, aquaculture, and inland water fisheries are managed under the fishery rights system. Offshore and distant fisheries are managed on the basis of a fishing permit system.
- Under the new Fishery Act enforced in December 2020, fisheries resources are to be managed with a goal to achieve the MSY basically through TAC (Total Allowable Catch) management.
- To transform the fisheries industry into a growth industry, it is important to maintain, recover, and appropriately manage the fisheries resources. Internationally standard scientific and effective resource assessment and management are introduced.

Correlation Between Resource Management Methods



ii. Roadmap for Promoting the New Resource Management

○ To establish a new resource management system, the “Roadmap for Promoting the New Resource Management” was developed and published in September 2020. At present, the “processes” are being steadily implemented with the understanding and cooperation of fishers and other related parties.

○The roadmap aims to recover fisheries production to 4.44 million tons by FY2030 through the following measures: By the end of FY2023, 1) expanding the fisheries species subject to stock assessment to about 200 species; 2) putting 80% of fisheries production under TAC management; 3) introducing management based on IQs (individual quotas) to Minister-licensed fisheries, whose main targets are TAC species, in principle, and; 4) shifting the current voluntary resources management by fishers (Resource Management Plans) to “Resource Management Agreements” based on the new Fishery Act.

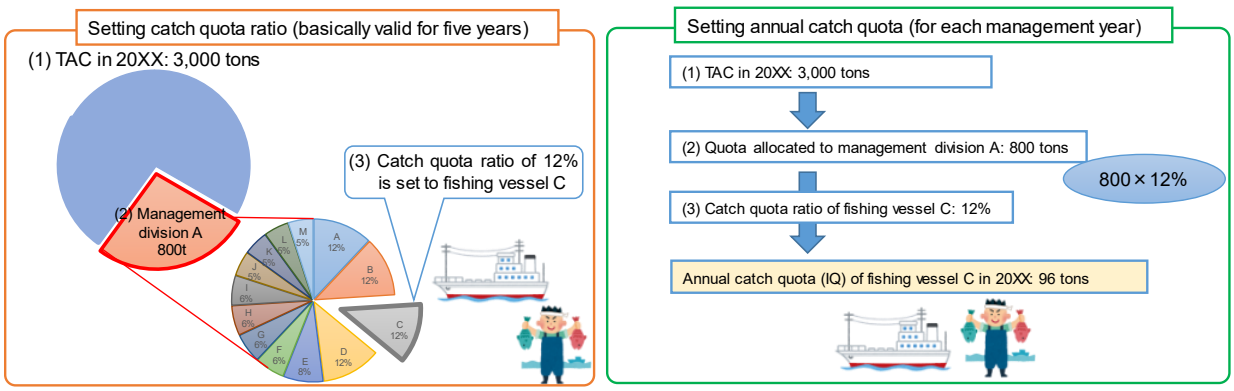
iii. Promotion of Management Based on TAC, IQs, and Resource Management Agreements

○ To expand TAC-managed species, new TAC-managed candidate species are considered for those that meet the following two conditions: 1) fisheries species with high production (mainly the top 35 species with the highest production); and 2) fisheries species for which stock assessment based on MSY is expected to be conducted in the near future.

○ IQs are introduced for, in addition to distant-water long-line fishery of southern bluefin tuna and Atlantic bluefin tuna, medium- to large-scale purse seine fishery of mackerels starting in the 2021 management year and Japanese sardine and bluefin tuna (large fish) starting in the 2022 management year, and also, middle-scale long-line fishery of bluefin tuna (large fish) starting in the 2022 management year.

○ With regard to Resource Management Agreements, for the resource management plans for Minister-licensed fisheries targeting current TAC species, preparations were made in FY2021 to start the initiatives based on Resource Management Agreements in FY2022. The plans for coastal fishery will also be gradually shifted to Resource Management Agreements certificated by the prefectural governors.

Image of Introducing IQ Management



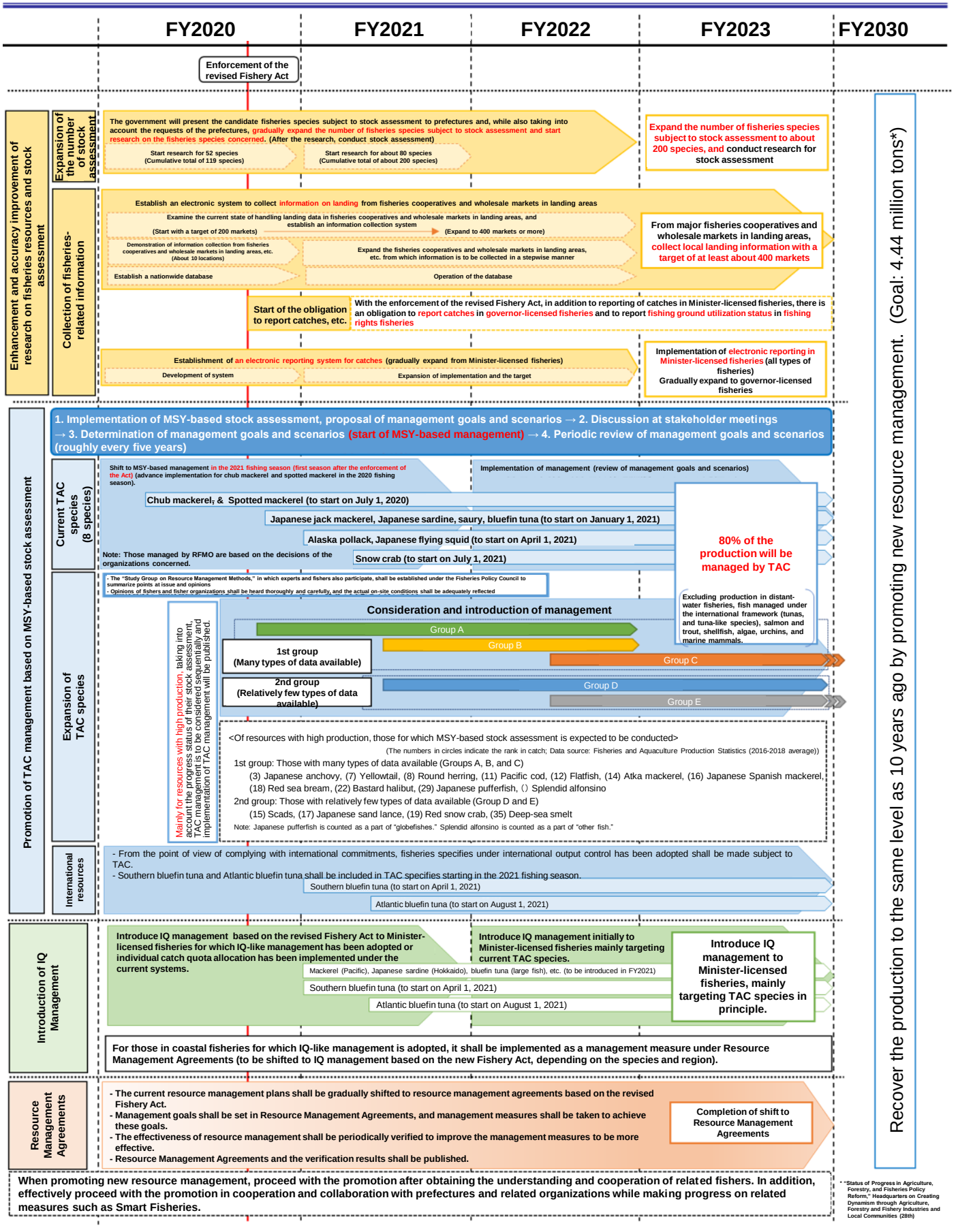
iv. Pacific Bluefin Tuna Resource Management

○ For Pacific bluefin tuna, with agreement of the Western and Central Pacific Fisheries Commission (WCPFC), the catch limit was set for large fish (30 kg or more) and small fish (less than 30 kg) and the TAC was distributed among divisions controlled by the Minister and prefectures.

○ Regarding recreational fishing, for the period from June 1, 2021 to May 31, 2022, gathering and catching of small fish is prohibited and when large fish are gathered or caught, fishers are obligated to report the number and weight of fish and the fishing area where they are caught to the Fisheries Agency.

○ In recreational fishing, a risk has arisen that the reported number of larger fish caught may exceed the level initially expected and resource management, including fishers, may be obstructed. Therefore, gathering or catching large fish is also prohibited for the period from August 21, 2021 to May 31, 2022.

Roadmap for Promoting the New Resource Management



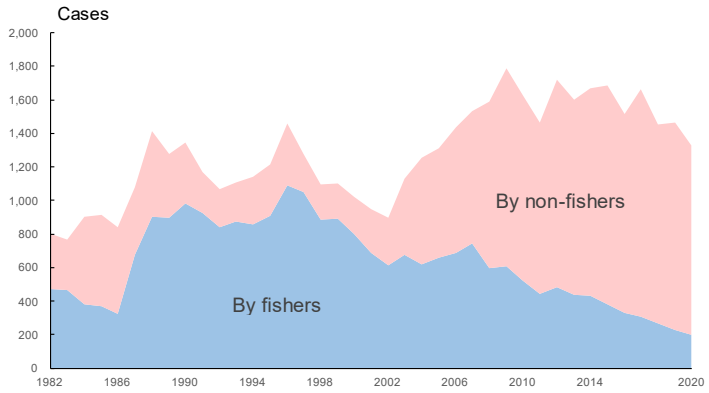
(3) Approaches to Practical, Effective Resource Management

i. Prevention of Poaching and Fishery Control in Coastal Areas of Japan

○ The number of arrests for violation of fisheries laws and regulations was 1,426 in 2020 (of which 1,368 in coastal waters and 58 in inland waters). The number of poachings conducted by non-fishers has increased and become more aggressive and sophisticated.

○ Based on the new Fishery Act, abalones, sea cucumbers, etc. are designated as “Specified Aquatic Animals and Plants,” and the gathering or catching of them is prohibited in principle, except for gathering or catching based on a fishery right or permission. A person who violates the prohibition is punished by imprisonment with work for not more than three years or a fine of not more than thirty million yen. The same penal provision applies also to a person who transports, retains, or acquires specified aquatic animals and plants knowing that they have been illegally gathered or caught.

Trends in the Number of Arrests for Violation of Fisheries Laws and Regulations in Japan’s Marine Regions



Source: Prepared by the Fisheries Agency

Outline of Strengthened Punishment Based on the New Fishery Act

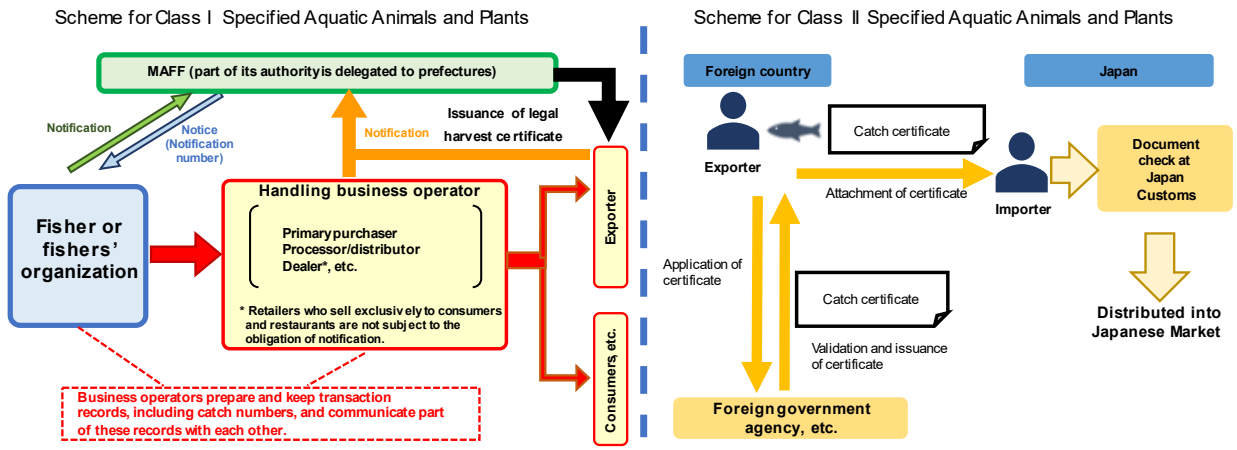
	Violation of prohibition on gathering or catching Acceptance of poached products	Fishing without a license	Infringement of a fishery right
Before the revision		Imprisonment with work for not more than three years A fine of not more than two million yen	A fine of not more than 200,000 yen
		↓	↓
After the revision	Imprisonment with work for not more than three years A fine of not more than 30 million yen	Imprisonment with work for not more than three years A fine of not more than three million yen	A fine of not more than one million yen

ii. Introduction of the Scheme for Proper Distribution of Fishery Products against IUU Fishing

○ In 2020, Act on Ensuring the Proper Domestic Distribution and Importation of Specified Aquatic Animals and Plants was established, with the aim of preventing laundering of illegally gathered or caught fish and fishery products into the distribution channel. The Act shall require notification by fishers, etc. who handle specified aquatic animals and plants to the relevant administrative organization, communication of catch numbers, and preparation and keeping of transaction records.

○ The Act is scheduled to enter into force in December 2022. Towards smooth implementation of the scheme, information about the scheme is being widely disseminated and promoted through utilization of briefing sessions, posters, and leaflets, etc.

Outline of the System for Proper Distribution of Fisheries Products



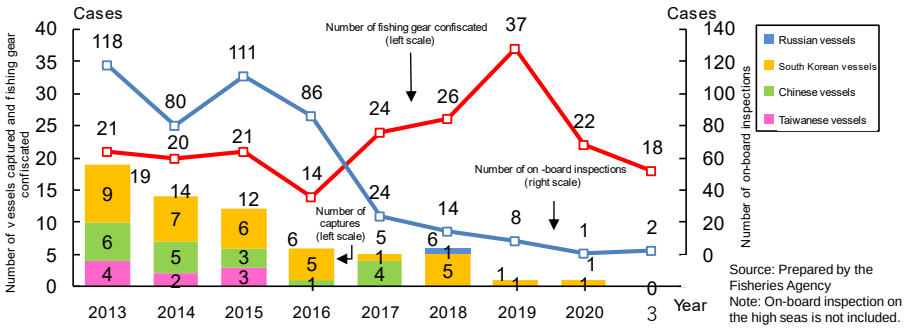
Note: There are penalties against violation of the obligations of notification, communication, transaction record, attachment of certificate for import/export, and others.

iii. Monitoring and Inspection of Foreign Fishing Vessels

○ In 2021, the Fisheries Agency conducted two on-board inspections and the number of confiscations of illegal fishing gear totaled 18.

○ Cross-border fishing by Chinese and North Korean fishing vessels around the Yamato bank of the Sea of Japan, is not only illegal, but also obstructs safe operation by Japanese fisheries, and is therefore quite problematic. The Fisheries Agency conducts enforcement activities by fisheries inspection vessels with a focus on that area, and responds in cooperation with the Japan Coast Guard. In 2021, the Fisheries Agency issued expulsion orders to 582 Chinese fishing vessels in total.

Trends in the Number of Foreign Fishing Vessels Captured or Inspected, etc.



Source: Prepared by the Fisheries Agency
Note: On-board inspection on the high seas is not included.

Fisheries inspection vessel of the Fisheries Agency forcing a Chinese fishing vessel to exit from Japan's EEZ

(4) Measures to Actively Enhance Fisheries Resources

○ The government decided to implement juveniles release, etc. as part of resource management and prioritize it by: 1) conducing stock assessment for releases on which it has been done in the past, and no longer does it on those that have achieved the objectives of resource creation/development or for which the effectiveness is not recognized; and 2) for the highly effective resource creation/development methods and the fisheries species covered, properly sharing the roles with prefectures and for widely migratory fisheries species such as bastard halibut and Japanese pufferfish, promoting the initiatives in which multiple prefectures jointly release juveniles.

○ Stocks of salmon (chum salmon) have declined in recent years due to the low return rate of released juvenile fish. It is also pointed out that changes in marine environments due to climate change also affect the survival of juvenile fish after reaching the sea. The government is therefore providing support for the initiatives to improve the release methods to respond to the environmental changes.

(5) Trends in Fishing Ground Environments

i. Promotion of Preservation and Recovery of Seaweed Beds and Tidal Flats and Improvement of Fishing Ground Environments

○ It is important to raise the productivity of the entire ecosystem by preserving seaweed beds and tidal flats and recovery of their functions. The national government promotes wide-area measures that combine the creation of seaweed beds and tidal flats by local governments and the conservation activities of fishers and others.

○ Growth of marine algae and multiplication of zooplankton and phytoplankton that are food for fish and bivalves, etc. require nutrient salts such as nitrogen and phosphorus supplied from the land and the bottom of the sea, etc. Nutrient salts are decreasing in some sea areas, and in the Seto Inland Sea, the nutrient salt management system that enables supply and management of nutrient salts was introduced by the "Act on Special Measures Concerning Conservation of the Environment of the Seto Inland Sea," revised in June 2021.

○ To rejuvenate the Ariake Sea and Yatsushiro Sea, etc., measures such as conservation/improvement of environment and rejuvenation of fisheries resources are taken based on the Act on Special Measures Concerning Rejuvenation of Ariake Sea and Yatsushiro Sea, etc.

Column **Damage to Fisheries along the Hokkaido Pacific Coast**

Red tide started appearing along the Hokkaido Pacific coast around mid-September 2021 and the damage to the fisheries of sea urchin and salmon, etc. happened. The government, in cooperation with Hokkaido prefecture and research institutions, has been supporting the development of wide-area monitoring technologies, the development of a method to predict the occurrence of red tide by elucidating its mechanism, the research on the toxicity of the plankton causing red tide to aquatic organisms, and the initiatives to restore fishing grounds, etc.

A large number of sea urchins that died at the bottom of the sea

Salmon with white gills that is presumed to have died from a lack of oxygen

(Photo provided by Hokkaido)

ii. Impact of Climate Change and Countermeasures

- Climate change affects fisheries resources and fisheries/aquaculture through rising sea water temperatures due to global warming. It has caused bountiful catches of Yellowtail in Hokkaido prefecture, and a northward shift of the distribution area of Japanese Spanish mackerel and spawning beds of chub mackerel.
- As mitigation measures for climate change, initiatives toward carbon neutrality are also promoted in the fisheries sector, including electrification of fishing vessels, conversion to hydrogen fuel cells, and exploring the potential of blue carbon (carbon stored in marine ecosystems) as a carbon sink.
- As an adaptive measure, development of the method of releasing juvenile salmon that can adapt to changes in marine environments and aquaculture species with tolerance to high temperature are promoted.

iii. Plastic Litter in the Ocean

- Marine plastic litter affects not only the environment and ecosystems, but also fisheries operations, such as by intermixing with fish catches.
- There are several measures taken by the Fisheries Agency, such as: 1) formulating guidelines to promote well-planned disposal of used fishing gear; 2) considering development of fishing gear that uses environmentally friendly materials and promoting recycling; 3) promoting the bringing back of marine litter by fishers; and 4) researching the impact of microplastics on marine organisms, etc.

Prototype and demonstration of floats using marine biodegradable plastics
(Photo provided by the Clean Sea and Beach Foundation)

(6) Damage to Fisheries Caused by Wildlife and Mitigation Measures

- Reports have come out about damage to fisheries caused by wildlife such as Steller sea lions and *Ascidiella aspersa*. The government provides support investigate and collect information on the status of the wildlife, development of technologies to reduce damage, and capturing measures.
- The cost of damage to fisheries caused by Steller sea lions was reduced from about 2 billion yen in FY2013 to about 0.55 billion yen in FY2020.
- The government is promoting measures to address feeding damage by great cormorants and largemouth bass in inland waters.

<Steller sea lions>

Feeding damage to catches by Steller sea lions

<Great cormorant>

<Largemouth bass>

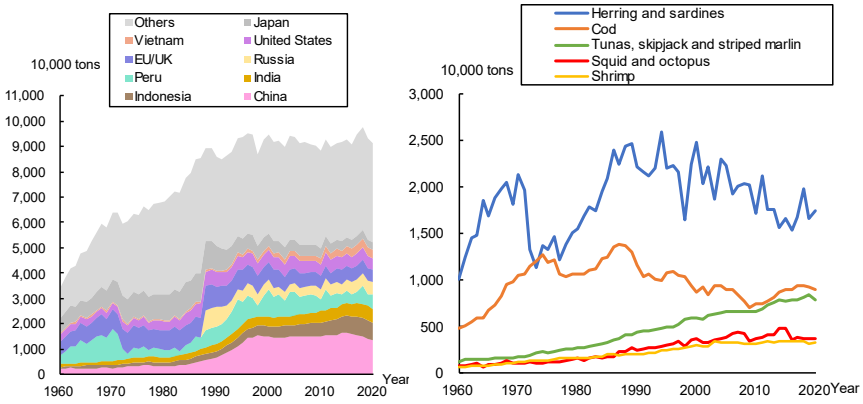
(1) Production of World Fisheries and Aquaculture

○ In developed countries and regions including the EU/UK, the United States, and Japan fishery catches have remained almost flat or seen a declining trend. In contrast, it has increased in developing countries, including Indonesia and Vietnam.

○ By fisheries species, herring and sardine account for the largest portion, at 19%. Tuna, skipjack, striped marlin, and shrimp are on an increasing trend over the long term.

○ The ratio of world fisheries resources being caught within sustainable levels is on a gradually decreasing trend, and was 66% in 2017. 34% were therefore overfished.

Trends in World Fisheries Catch by Country and by Fisheries Species

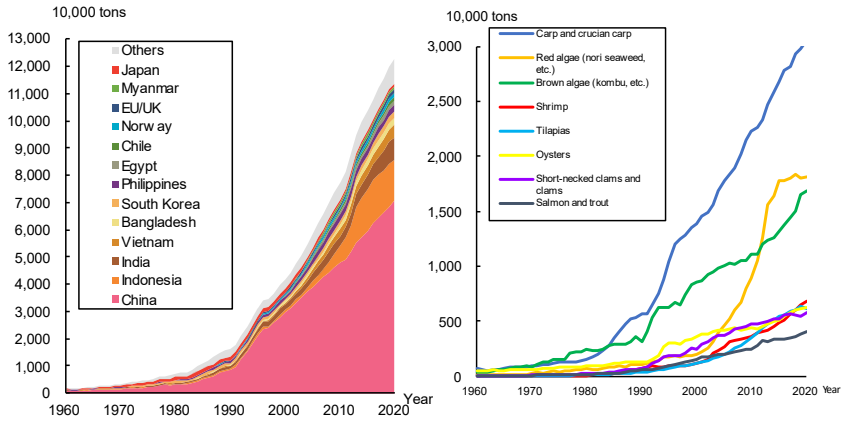


Source: Prepared by the Fisheries Agency, based on the Fishstat (Global capture production) (FAO) (other than Japan) and the Fisheries and Aquaculture Production Statistics (the Ministry of Agriculture, Forestry and Fisheries) (Japan)

○ The aquaculture yield has been significantly increasing in China and Indonesia.

○ By fisheries species, carp/crucian carp, and algae have the largest share, and their increases have been significant in recent years.

Trends in World Aquaculture Catch by Country and by Fisheries Species

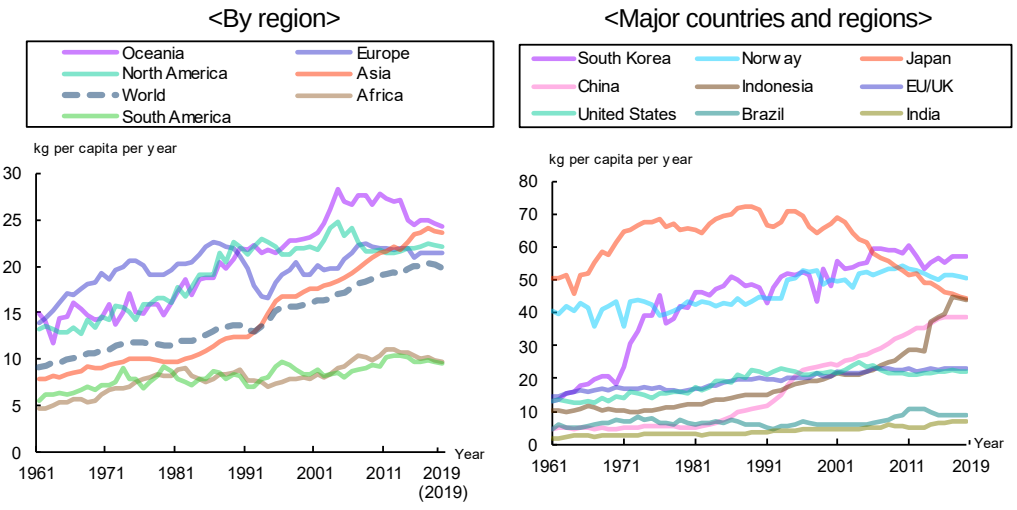


Source: Prepared by the Fisheries Agency, based on the Fishstat (Global aquaculture production) (FAO) (other than Japan) and the Fisheries and Aquaculture Production Statistics (the Ministry of Agriculture, Forestry and Fisheries) (Japan)

(2) World Consumption of Fish and Fishery Products

○ The world's annual per-capita consumption of fish and fishery products as food nearly doubled in 50 years, whereas Japan's annual per-capita consumption of them has fallen to the level of about 50 years ago.

Trends in the World's Annual Per-Capita Consumption of Fish and Fishery Products as Food (gross food based)



Sources: FAOSTAT (Food Balance Sheets) (FAO) (other than Japan) and Food Balance Sheet (The Ministry of Agriculture, Forestry and Fisheries) (Japan)
Note: "Gross food" refers to the quantity of fish and fishery products for human consumption, including disposal volume.

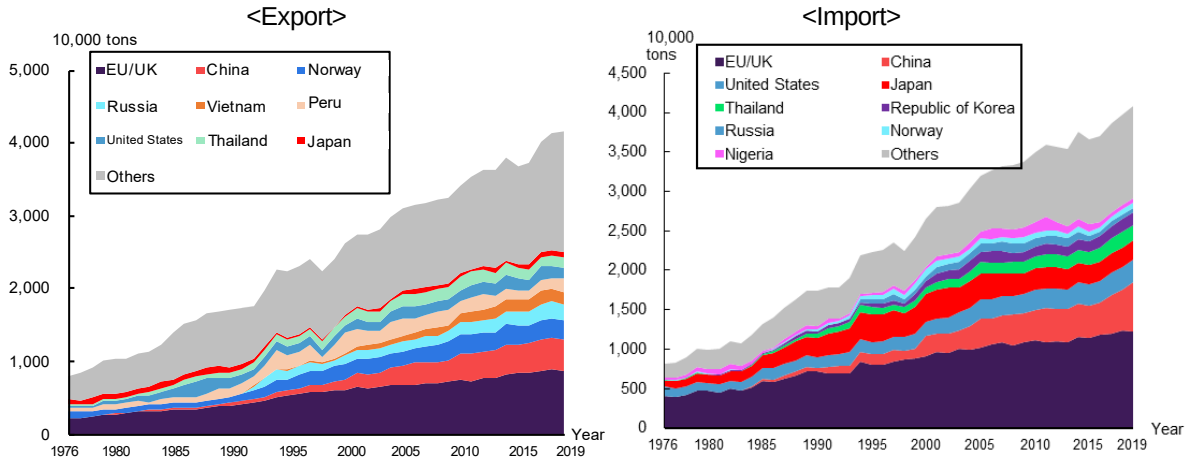
(3) International Situation Surrounding the World Trade of Fish and Fishery Products

○ Global trade volume of fish and fishery products has increased with the growing demand for them. At least 30% of the world's fisheries and aquaculture production is for export.

○ Establishment of disciplines on fisheries subsidies has been discussed in the WTO rule negotiations. Japan's position is that prohibited fisheries subsidies should be limited to subsidies that truly cause overcapacity and overfishing.

○ The RCEP, in which Japan, ASEAN member countries, Australia, China, Republic of Korea, and New Zealand participate, has come into effect.

Trends in the Trade Volumes of Fish and Fishery Products



Source: Prepared by the Fisheries Agency, based on the Fishstat (Global fish trade) (FAO)
Note: The volume of EU imports and exports includes the volume of trade within the EU.

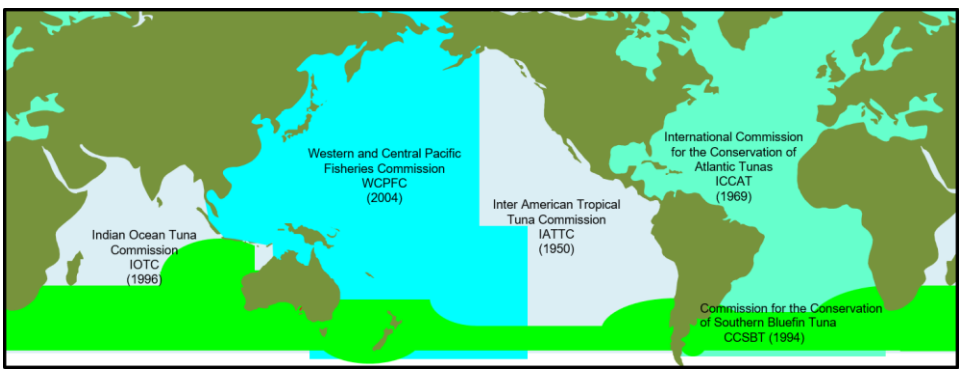
(4) International Resource Management

i. Trends in Tuna Regional Fisheries Management Organizations

○ The global tuna and tuna-like species resources are managed by five regional fisheries management organizations (RFMOs), and Japan is a member of all of them.

○ The 2021 annual meeting of the Western and Central Pacific Fisheries Commission (WCPFC) agreed on the following for Pacific bluefin tuna: 1) increase the catch limit of big fish to 15%, 2) extend the measure to increase the upper limit of the carry-over ratio of underused catch limit from 5% of the catch limit to 17% for three years, 3) create a measure to allow the transfer of catch limits of smaller fish to that of larger fish to be a continuing measure and allow the transfer by converting the catch limit of larger fish to 1.47 times that of smaller fish, with the upper limit set to 10% of the catch limit of smaller fish for the next three years.

Tuna Regional Fisheries Management Organizations (tRFMOs) and Waters Covered

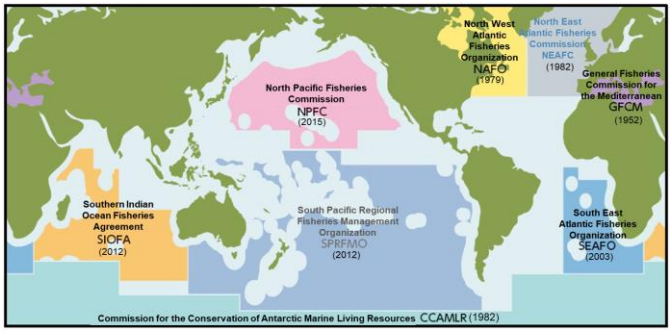


Note: The years in parentheses are the years in which the relevant treaties take effect.

ii. Trends in Regional Fisheries Management Organizations for Pacific Saury, Chub Mackerel, etc.

- The North Pacific Fisheries Commission (NPFC) manages fishery resources on the high seas of the North Pacific, such as Pacific saury, chub mackerel, and North Pacific armorhead.
- The 2021 annual meeting agreed to set a TAC of saury on the high seas at 198,000 tons for 2021 and 2022 (40% reduction from 2020) and that member countries shall reduce their TAC on the high seas by 40% from the catch in 2018.

Major Regional Fisheries Management Organizations Managing Other Resources than Tuna and Skipjack, and Waters Covered



Notes: 1) Currently, Japan is neither a member of the SPRFMO nor of the NEAFC. Japan withdrew from the GFCM in 2020.
2) The years in parentheses are the years in which the relevant treaties take effect.

iii. Developments Toward Eliminating IUU Fishing

- Regional fishery management organizations have been promoting initiatives toward preventing, deterring, and eliminating IUU fishing* internationally and have established a list of fishing vessels and carriers that have engaged in IUU fishing and the use of the catch documentation scheme.
- Consultations with relevant countries and regions have been held as attachment of certificates issued by a foreign government agency, etc. shall be required when fish and fishery products under high risk of IUU fishing are imported, based on the Act on Ensuring the Proper Domestic Distribution and Importation of Specified Aquatic Animals and Plants established in December 2020.

(*) IUU fishing: Illegal, Unreported, and Unregulated fishing

iv. Bilateral Relations in Fisheries

- Due to the relationship between the Japanese and Russian governments, fishing vessels of both the countries are operating under conditions decided through negotiations.
- The Japanese and Korean governments have not reached agreement about operation conditions for mutual fishing access, and therefore mutual consultations are still underway.
- The Japanese and Chinese governments have not reached agreement about operation conditions for mutual fishing access, and therefore mutual consultations are still underway. To prevent illegal cross-border fishing by Chinese and other fishing vessels around the Yamato bank in the Sea of Japan, the Fisheries Agency deploys fisheries inspection vessels with a focus on that area, and responds in cooperation with the Japan Coast Guard.
- Japan and Taiwan continue the operation rule of the previous year (2020).
- In the EEZs of the Pacific Island countries, the severity of fishing conditions continues to increase due to fishing fee hikes, establishment of marine protection areas, and the like. Efforts are being made to secure stable overseas fishing grounds through overseas fishery cooperation, etc.

(5) Developments Concerning Whaling

- Japan withdrew from the International Convention for the Regulation of Whaling (ICRW) at the end of June 2019, and resumed commercial whaling of large whales in July of the same year.
- Necessary measures are being taken based on the “Basic Policy of Measures for Ensuring the Sustainable Use of Whales” formulated in October 2020.
- Scientific research on whales will continue to take place, including cooperation with international organizations such as the International Whaling Commission (IWC), to contribute to the management of whale stocks based on scientific knowledge.

Species Subject to Whaling, Catch Quota, and Number Caught (2021)

	Mother-ship whaling		Shore-based whaling	
	Bryde's whale	Sei whale	Minke whale	Baird's beaked whale
Catch quota	187	25	120	76
Number of whales caught	187	25	91	33
Reserved by the Fisheries Agency	0	0	14	0

(1) New Long-term Plan for the Development of Fishing Ports and Fishing Grounds

○ A new Long-term Plan for the Development of Fishing Ports and Fishing Grounds is a five-year plan to be established based on the "Act on Development of Fishing Ports and Grounds" in order to promote the development of fishing ports and fishing grounds in a comprehensive and planned manner.

○ The priority issues of the new Long-term Plan for the Development of Fishing Ports and Fishing Grounds decided by the Cabinet in March 2022 include: 1) transforming fisheries into a growth industry by improving the production capacity of the landing areas and promoting export; 2) ensuring sustainable fisheries production by improving the ability to respond to changes to marine environment and disaster risks; and 3) increasing the attractiveness and income of fishing communities through the promotion of "UMIGYO" and active participation of diverse human resources.

Key Points of the New Long-term Plan for the Development of ~~New~~ Fishing Ports and Fishing Grounds

Current status/issues

○ The environment surrounding fisheries remains quite severe due to changes in the marine environment associated with climate change and increasingly severe natural disasters, etc., in addition to a decline in fishery resources, aging of fishers, and falling populations in fishing communities.

○ It is necessary to respond to new and changing social situations such as green production and digitization by advancing new resource management, a shift to aquaculture production in line with demand, and export promotion, etc.

Priority issues

- Transformation of fisheries into a growth industry — by improving the production capacity of the landing areas and promoting exports.
- Ensuring sustainable fishery production — by improving the ability to respond to changes to marine environments and disaster risks
- Increasing the attractiveness and income of fishing communities — through the promotion of "UMIGYO" and active participation of diverse human resources

Implementation goals and vision

i. Strengthen the production/distribution functions of base fishing ports

◆ Reorganize/strengthen fishing port functions and create major fishing ports that can supply high value-added fish and fishery products at low cost

ii. Form an aquaculture production base

◆ Create a base for stable aquaculture production that can meet demand, both in Japan and overseas.

i. Strengthen the production capacity of fishing grounds adapted to environmental changes

◆ Accurately grasp marine environments and create fishing ground/production systems with sustainable fishery production capacity adapted to environmental changes.

ii. Improve the ability to respond to disaster risks

◆ Create flexible and strong fishing port/community systems against disasters. Sustainably fulfill the functions of fishing ports into the future.

i. Activate fishing communities through "UMIGYO"

◆ Develop UMIGYO in fishing ports and fishing communities to generate local community prosperity, income, and employment.

ii. Actively participate in diverse human resources supporting local fisheries

◆ Develop fishing port/community environments in which diverse human resources, regardless of age, gender, and nationality can actively participate

(Common issue) Response to changes in social situations (promotion of greening, formation of a digital society, response to lifestyle changes)

Main outcome goals

- □ Percentage of transaction volume of fish and fishery products handled under the comprehensive sanitary control system at base fishing ports for distribution
  45% (2021) ⇒ Roughly 70% (2026)
- □ Percentage of fishing ports that have established an early recovery system for fisheries after the disaster among base fishing ports for distribution
  27% (2021) ⇒ Roughly 70% (2026)
- □ Number of new initiatives such as "UMIGYO" implemented at fishing ports
  Roughly 500 for five years

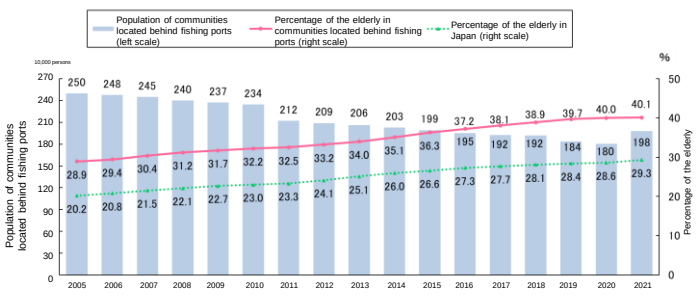
(2) Current Status and Role of Fishing Communities

○ Many fishing communities are situated in advantageous locations for fishery production but are vulnerable to natural disasters. The population is rapidly aging and decreasing, with the percentage of the elderly at 40%.

○ The fisheries industry and fishing communities fulfill multifaceted functions such as: 1) conserving the natural environment; 2) safeguarding the lives and property of the public; 3) providing exchange opportunities; and 4) developing and maintaining local communities.

○ The government supports conservation of seaweed beds and tidal flats, maintenance, conservation, and improvement of inland water ecosystems, and efforts by fishers and others to contribute to the fulfillment of multifaceted functions such as marine rescue, and border and water monitoring.

Population and Percentage of the Elderly in Communities Located Inland from Fishing Ports



Source: Prepared by the Fisheries Agency (population and percentage of the elderly in communities located behind fishing ports), and "Population Estimates" (percentage of the elderly in Japan; the figures for the years in which a census was taken are based on census population) (the Ministry of Internal Affairs and Communications)

Note: The population of communities located behind fishing ports and their percentages of the elderly for 2011-2020 do not include data on three prefectures (Iwate, Miyagi, and Fukushima).

(3) Development of Safe Fishing Communities Where People Can Live in Peace

○ To prepare for the great damage caused by large-scale earthquakes/tsunamis and increasingly severe and frequent natural disasters, it is necessary to promote advance disaster prevention/mitigation measures in fishing ports and fishing communities. Multiple protective measures for fishing communities using breakwaters and seawalls, the construction of tsunami-resistant breakwaters and seawalls, the preparation of evacuation routes have been promoted.

○ Infrastructure such as fishing port facilities is aging. The government promotes measures to address aging infrastructure based on plans that incorporate measures for preventive maintenance.

Column **Floating and Drifting of Pumice Stones due to the Eruption of the Fukutoku-Okanoba Submarine Volcano**

In August 2021, submarine eruption of Fukutoku-Okanoba (a marine volcano in the Ogasawara Islands, located approximately 50 km south of Iwo Island) was confirmed. The ejecta from the eruption formed a new island 1 km in diameter, and large amounts of floating substances such as pumice stones were observed on the sea surface around the volcano.

These large amounts of pumice stones headed eastward with the ocean current, and from early October, started arriving at the islands of Okinawa and Amami one after another, drifting to the fishing ports and causing engine problems in fishing vessels. This affected fisheries because many fishers in Okinawa and Kagoshima Prefectures had to refrain from operations due to the pumice stones floating offshore. Furthermore, some expressed concern about the impact on the fishing ground environment in the future.

From late November, floating/drifting pumice stones were also observed in the Izu Islands. In the areas on the Pacific side of Honshu, including Kanto, many fishing port managers installed/prepared oil fences to prevent pumice stones from entering fishing ports.

The pumice stones that floated and drifted to Okinawa and Kagoshima Prefectures seriously obstructed navigation and mooring of vessels by drifting into navigation channels and anchorages in fishing ports. Therefore, fishing port managers made use of the disaster recovery program, etc. to collect, transport, and dispose of this debris. In addition, pumice stones also washed up on beaches, and not only fishing port managers, but also those concerned with fisheries and volunteers in local areas participated in the unified efforts of the region to collected them.

The Ports and Harbours Bureau of the Ministry of Land, Infrastructure, Transport and Tourism and the Fisheries Agency cooperated in compiling effective technologies for collecting drifting pumice stones, and the results were published and disseminated.

While progress has been made in work to collect pumice stones, disposal and utilization remain issues.



Fishing port of Hentona in Okinawa Prefecture: (Left) State of congestion due to floating/drifting of massive amounts of pumice stones (Middle) Port before pumice stone removal work (Right) Port after pumice stone removal work

(4) Revitalization of Fishing Communiti

○ In order to revitalize fishing communities, it is important to fully understand and make the most of their local resources to increase the number of visitors and facilitate interaction.

○ The government supports the activity of “Seaside Stay” which tourists can enjoy the traditional life experience and the interaction with people in the fishing communities.

○ By the activities of Seashore Revitalization Plans and the Wide-Area Seashore Revitalization Plans, it is expected to be able to revitalize the fishing communities through the development of fisheries.

○ Vacant water area and lands in fishing ports resulted from the functional reorganization and consolidation of fishing are utilized for aquaculture and factory-direct store selling fishery products, such as “UMIGYO”, and it will contribute to the revitalization of fishing communities.

(1) Conditions of the Restoration/Reconstruction from the Earthquake's Damage in the Fisheries Industry

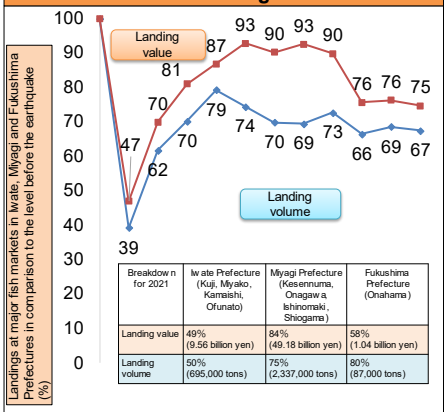
○ Since the Great East Japan Earthquake struck in March 2011, fishing port facilities, fishing vessels, aquaculture facilities, fishing grounds and other facilities had been restored in the affected areas. The government will continue work to restore and reconstruct the fisheries industry of the affected areas.

○ Restoration of fishing port facilities and fishery processing-related infrastructure such as fishery processing facilities has mostly completed, but recovery of landing and sales in the fishery processing industry remains an issue.

○ The government continues to support initiatives such as landing recovery by removing debris in fishing grounds, recovery/development of markets in the fishery processing industry, and switching of raw materials for processing.

Summary of Restoration/Reconstruction of the Fisheries Industry Following Great East Japan Earthquake (as of March 2022)

1. Landings



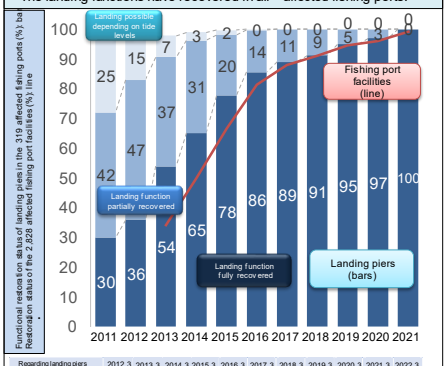
Breakdown for 2021	Iwate Prefecture (Kuji, Miyako, Kamaishi, Ofunato)	Miyagi Prefecture (Kesennuma, Onagawa, Ishinomaki, Shiogama)	Fukushima Prefecture (Onahama)
Landing value	49% (9.56 billion yen)	84% (49.18 billion yen)	58% (1.04 billion yen)
Landing volume	50% (695,000 tons)	75% (2,337,000 tons)	80% (87,000 tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Landing value (100 million yen)	801	375	560	649	695	743	722	741	719	606	610	598
Landing volume (1,000 tons)	463	181	285	325	367	345	323	322	336	307	317	312

* The 2010 values are those for March 2010 through February 2011, and the values for other years are those for February through January of the following year.

2. Fishing Ports

- The landing functions have recovered in all affected fishing ports.

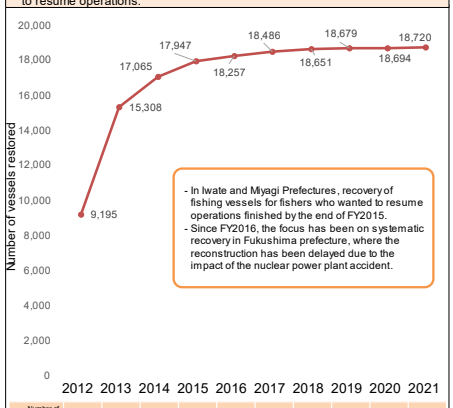


Regarding landing piers	2012.3	2013.3	2014.3	2015.3	2016.3	2017.3	2018.3	2019.3	2020.3	2021.3	2022.3
Landing function fully recovered (fishing port)	96	115	172	208	248	273	284	291	303	311	319
Landing function partially recovered (fishing port)	134	149	117	99	65	45	35	28	16	8	0
Landing possible depending on tide levels (fishing port)	81	48	23	9	5	1	0	0	0	0	0
Not restored (fishing port)	8	7	7	3	1	0	0	0	0	0	0
Fishing facilities that have been completely restored (facilities)			974	1,417	1,903	2,324	2,514	2,602	2,695	2,722	2,809

* Fishing port facilities mean piers, breakwaters, anchorages, roads, etc.
* The number of affected fishing ports is the total number for seven prefectures.

3. Fishing Vessels

- Systematic recovery of fishing vessels in Fukushima Prefecture that wanted to resume operations.

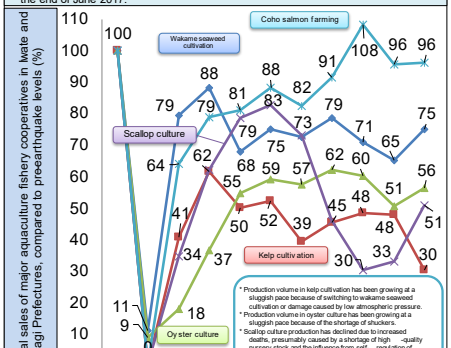


	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of vessels restored (included in the above)	9,195	15,308	17,065	17,947	18,257	18,486	18,651	18,679	18,694	18,720
Iwate	4,217	7,768	8,542	8,805	8,852	8,852	8,852	8,852	8,852	8,852
Miyagi	3,186	5,358	6,293	6,861	7,106	7,310	7,465	7,465	7,465	7,465
Fukushima	-	256	289	340	358	383	393	421	436	462

* The number of vessels for each year of 2012 through 2020 is that as of the end of March. The number of vessels for 2021 is that as of the end of December.
* The number of vessels restored is the total number for 21 prefectures.

4. Aquaculture

- All aquaculture facilities wishing to resume operations have been reconstructed by the end of June 2017.



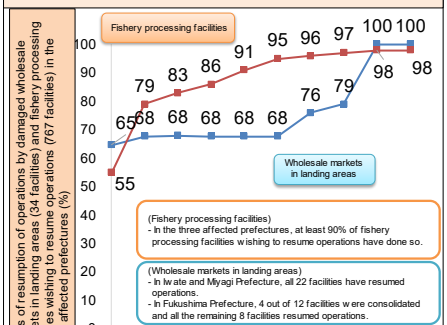
Unit: tons

	2010 fishing season	2011 fishing season	2012 fishing season	2013 fishing season	2014 fishing season	2015 fishing season	2016 fishing season	2017 fishing season	2018 fishing season	2019 fishing season	2020 fishing season	2021 fishing season
Wakame seaweed cultivation *1	34,439	3,742	27,379	30,414	29,354	25,799	25,002	27,047	24,462	22,473	25,841	
Kelp cultivation *2	13,817	0	5,633	8,502	6,904	7,205	5,433	6,250	6,674	6,616	4,174	
Oyster culture *3	4,031	354	719	1,476	2,207	2,386	2,316	2,503	2,423	2,042	2,270	
Scallop culture *4	14,873	56	5,130	9,245	11,677	12,313	10,871	6,810	4,476	4,895	7,576	
Coho salmon farming *5	14,750	0	9,448	11,619	11,978	13,007	12,159	13,486	15,982	14,111	14,191	

*1 Fishing season is February through May. *2 Fishing season is September through the following May. *3 Fishing season is March through August.
*4 Fishing season is March through August. *5 Fishing season is April through the following March.

5. Processing and Distribution Facilities

- At least 90% of fishery processing facilities wishing to resume operations have resumed them.

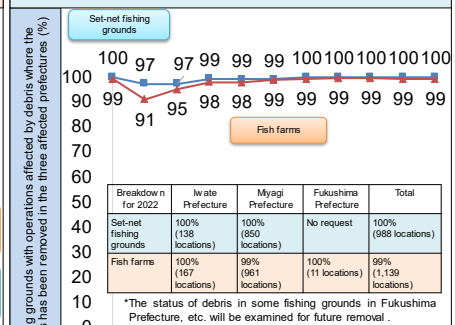


	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fishery processing facilities (facilities) that have resumed operations *1	418	645	672	705	729	749	754	754	755	755
Wholesale markets in landing areas (facilities) that have resumed operations *2	22	23	23	23	23	23	26	27	30	30

*1 The figure for 2012 is that as of the end of March, the figures for 2013 through 2017 are those as of the end of December, the figure for 2018 is that as of the end of September, and the figures for 2019 through 2021 are those as of the end of December.
*2 The figure for 2012 is that as of the end of April, the figure for 2013 is that as of the end of December, the figures for 2014 through 2019 are those as of the end of February, and the figure for 2020 is that as of the end of January 2021. Wholesale markets in Fukushima Prefecture were consolidated from 12 to 8 facilities, all of which resumed operation in 2020. As a result, the status of resumption of operation reached 80%.

6. Debris

- Debris removal has been completed in most set-net fishing grounds and fish farms where operations were affected by debris.



Breakdown for 2022	Iwate Prefecture	Miyagi Prefecture	Fukushima Prefecture	Total
Set-net fishing grounds	100% (138 locations)	100% (850 locations)	No request	100% (988 locations)
Fish farms	100% (167 locations)	99% (961 locations)	100% (11 locations)	99% (1,139 locations)

*The status of debris in some fishing grounds in Fukushima Prefecture, etc. will be examined for future removal.

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fishing grounds with operations affected by debris (locations) *1	Set-net fishing grounds	958	1,003	1,004	987	992	990	988	988	988	988	988
	Debris removed (included in the above)	958	975	976	980	988	988	988	988	988	988	988
	Fish farms	804	1,071	1,101	1,100	1,129	1,131	1,135	1,135	1,136	1,139	1,139
	Debris removed (included in the above)	801	973	1,045	1,077	1,103	1,116	1,124	1,128	1,130	1,134	1,134

* The number of locations where operations are affected changes as a result of inflow or outflow of debris to or from the fishing grounds due to meteorological or oceanographic phenomena.
* The figures for each year are those as of the end of March (as of the end of January 2022 for 2022 only).

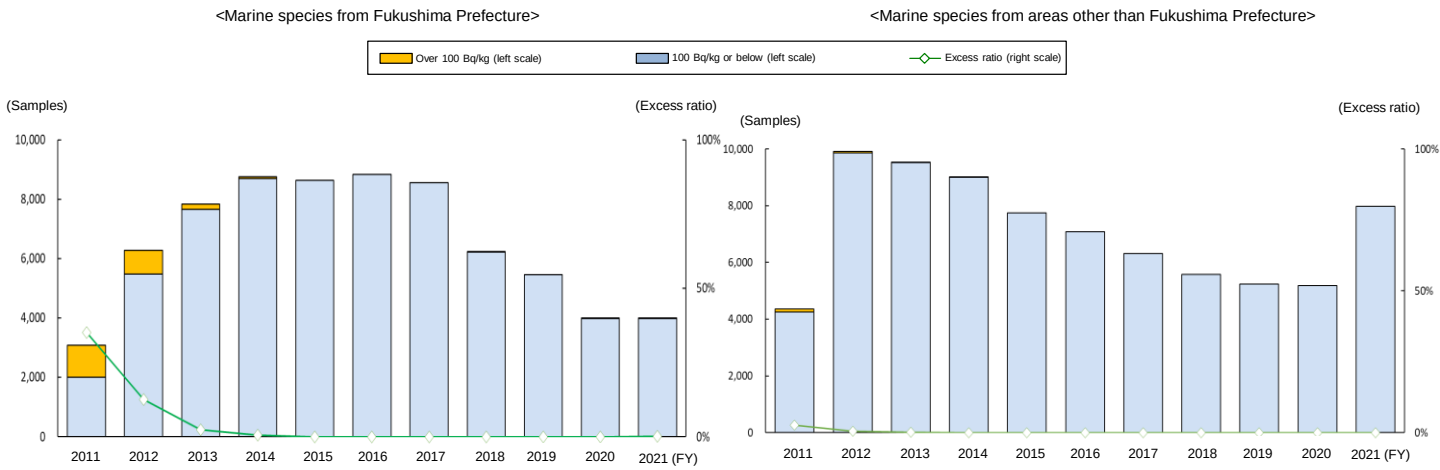
(2) Response to the Impact of the Accident at TEPCO's Fukushima Daiichi Nuclear Power Plant

i. Monitoring of Radioactive Materials in Fishery Products

○ The national government, in cooperation with prefectural governments and fisheries cooperatives concerned, monitors radioactive materials in fishery products. The results are published.

○ Distribution of fishery products whose radioactive material monitoring results exceed the Japanese maximum levels in food (JMLs) is prevented through the cooperation of the national government, related prefectural governments, and fisheries cooperatives. The number of samples exceeding the JMLs was two for marine species and two for freshwater species in Fukushima Prefecture in FY2021. Other than Fukushima Prefecture, there have been no marine species samples exceeding the JMLs since September 2014, and no freshwater species sample exceeded the JMLs in FY2021.

Monitoring Results of Radioactive Materials in Fishery Products (as of the End of March 2022)



ii. Handling of Advanced Liquid Processing System (ALPS)-Treated Water

○ For the handling of water purified by ALPS (ALPS-treated water), the Basic Policy on handling of ALPS treated water at the TEPCO's Fukushima Daiichi Nuclear Power Station was decided in April 2021 by the government as a whole on the premise of ensuring safety and thorough implementation of measures against reputations. Subsequently, Report on the Interim Measures for the Handling of ALPS Treated Water at TEPCO's Fukushima Daiichi Nuclear Power Station in August, and an action plan was formulated in December.

○ The government aims for full-scale reconstruction of fisheries in the affected areas and makes unified efforts to develop an environment in which fishers across the country can operate fisheries with a sense of security. This is done by conducting new monitoring inspections of fish and fishery products for tritium and making sure to take thorough measures at each stage of production, distribution, processing, and consumption.

iii. Mitigating Reputational Damage and Response to Import Restrictions in Foreign Countries and Regions

○ The Fisheries Agency monitors radioactive materials in fishery products, and publishes the results to consumers in a timely manner. It also posts a Q&A on its website so that consumers can get correct information and easily understand it.

○ The monitoring results are published in English, Chinese, and Korean, and are used to lobby governments for the elimination of import restrictions. As a result, 42 out of the 54 countries and regions that had continued to impose restrictions on fishery product imports had withdrawn their import restrictions by the end of March 2022.

○ The government will take various opportunities to further encourage countries and regions that are continuing import restrictions to promptly lift them.

(Appendix) Main KPIs for Fisheries Policy

Sector	KPI	Status of progress (as of the end of 2021)	Plans in which KPIs are stated
Fisheries	Aims to recover the production to the same level as 2010 (4.44 million tons) by FY2030 (Reference: Production in 2018 was 3.31 million tons)	The production (excluding marine algae and marine mammals) in 2020 was 3.17 million tons, which was 71% of the goal.	Strategy for Sustainable Food Systems: MeaDRI (formulated in May 2021), Roadmap for Promoting the New Resource Management (decided in September 2020)
Aquaculture	Aims to achieve the artificial juveniles rate of 100% for aquaculture of Japanese eel and bluefin tuna, etc. and establish a sustainable aquaculture system without any burden on natural resources by switching all fish feed to formula feed by 2050.	The artificial nursery stock rate (eel, bluefin tuna, great amberjack, and yellowtail) in 2019 was 2.8%. The rate of formula feed in 2021 was 45%.	Strategy for Sustainable Food Systems: MeaDRI
Aquaculture	Aims to achieve the following production volume for strategic aquaculture items by 2030. - Yellowtail: 240,000 tons - Red sea bream: 110,000 tons - Bluefin tuna: 20,000 tons - Salmon and trout: 30-40,000 tons - New fisheries species (groupers, etc.):10-20,000 tons - Scallop: 210,000 tons (- Pearls (2027 goal): 20 billion yen)	The production volume in 2020 was as follows (% indicates comparison with the goal). - Yellowtail: 138,000 tons (57%) - Red sea bream: 66,000 tons (60%) - Bluefin tuna: 19,000 tons (93%) - Salmon and trout (coho salmon only): 17,000 tons - Scallops: 149,000 tons (71%) (- Pearls (2019): 16.2 billion yen (81%))	Comprehensive Strategy for the Transformation of Aquaculture Into a Growth Industry (formulated in July 2020, revised in July 2021)
Export	Aims to increase the export value of fish and fishery products to 0.6 trillion yen by 2025 and 1.2 trillion yen by 2030. (Of which the export value of priority export items in 2030 would be: - Yellowtails: 160 billion yen - Red sea bream: 60 billion yen - Scallops: 115 billion yen - Pearls: 47.2 billion yen)	The export value of fish and fishery products in 2021 was 301.5 billion yen, which was 25% of the 2030 goal.	The figures included in the goals for the export value of agricultural, forestry, and fishery products and food in the Basic Plan for Food, Agriculture and Rural Areas (decided by the Cabinet in March 2020) and the Basic Policy on Economic and Fiscal Management and Reform 2020/Follow-up on the Growth Strategy (decided by the Cabinet in July 2020); Comprehensive Strategy for the Transformation of Aquaculture into a Growth Industry
Entire fisheries industry	FY2032 Goals for the self-sufficiency rate of fish and fishery products: - Fish and fishery products for human consumption: 94% - Overall fish and fishery products : 76% - Marine algae: 72%	The self-sufficiency rate of fish and fishery products in FY2020: - Fish and fishery products for human consumption: 57% - Overall fish and fishery products : 55% - Marine algae: 70%	Basic Plan for Fisheries (decided by the Cabinet in March 2022)
Entire fisheries industry	Aims to establish technologies for electrification of fishing vessels and conversion to fuel cells, etc. by 2040.	Demonstration of fishing vessels using hydrogen fuel cells is planned in order to establish this technology.	Strategy for Sustainable Food Systems: MeaDRI

Structure of "FY2022 Fisheries Policy"

Overview

Focus of measures, fiscal measures, tax measures, financial measures, and policy assessment

I. Steady implementation of fisheries resource management, taking into account changes in marine environments

- Enhancement of research on resources and stock assessment
- Steady promotion of new resource management
- Enhancing fisheries enforcement and surveillance capability /poaching monitoring system
- Adaptation to changes in marine environments

II. Realization of transformation of fisheries into a growth industry, taking increasing risks into account

- Structural reform of fisheries
- Transformation of aquaculture into a growth industry
- Business management stabilization measures
- Export expansion and development of fishing ports and fishing grounds to support transformation of fisheries into a growth industry
- Inland water fisheries/aquaculture
- Human resource development
- Work safety measures

III. Promotion of activation of fishing communities that support the region

- Fishing community revitalization/activation
- Restoration/strengthening of management foundation of fishery cooperative organizations
- Development of measures for processing, distribution, and consumption
- Fulfilment of multifaceted functions of fisheries and fishing communities
- Conservation of fishing ground environments and maintenance of ecosystems
- Measures for disaster prevention/mitigation and building national resilience

IV. Measures to be promoted in a cross-sectoral manner for sustainable development of fisheries

- Strategy for Sustainable Food Systems: MeaDRI and fisheries policy
- Utilization of smart fishery technologies
- Carbon neutrality
- Measures against COVID-19 infection

V. Restoration/reconstruction from the Great East Japan Earthquake and overcoming the impact of the nuclear power plant accident

- Steady restoration/reconstruction in the earthquake/tsunami affected areas
- Overcoming the impact of the nuclear power plant accident in nuclear disaster-affected areas

VI. Requirements for the Comprehensive and Systematic Promotion of the Fisheries Policy

- Efficiently promoting measures through collaboration among relevant ministries and agencies
- Management and assessment of the progress of measures
- Implementing measures from a public point of view, taking into account the needs of consumers and the public
- Compiling and enhancing the use of statistics in line with policy needs
- Helping business owners and producers become independent and demonstrate originality and ingenuity
- Taking fiscal measures in an efficient and focused manner