

FY2015 Trends in Fisheries

FY2016 Fisheries Policy

White Paper on Fisheries: Summary

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FY2015 Trends in Fisheries

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FY2016 fisheries policy overview

Chapter 1 Special feature: Development of dynamic fishing communities and fisheries business management

Section 1 Significance of fisheries in community development and fishing communities supporting fisheries

(1) Status of fishing communities

(Fishing communities located all along the coastline)

- The Japanese people have been blessed with the bounties of the sea over the past few thousand years.
- Fishing communities have been formed all along Japan's long, indented coastline at an average interval of 5.6 km.

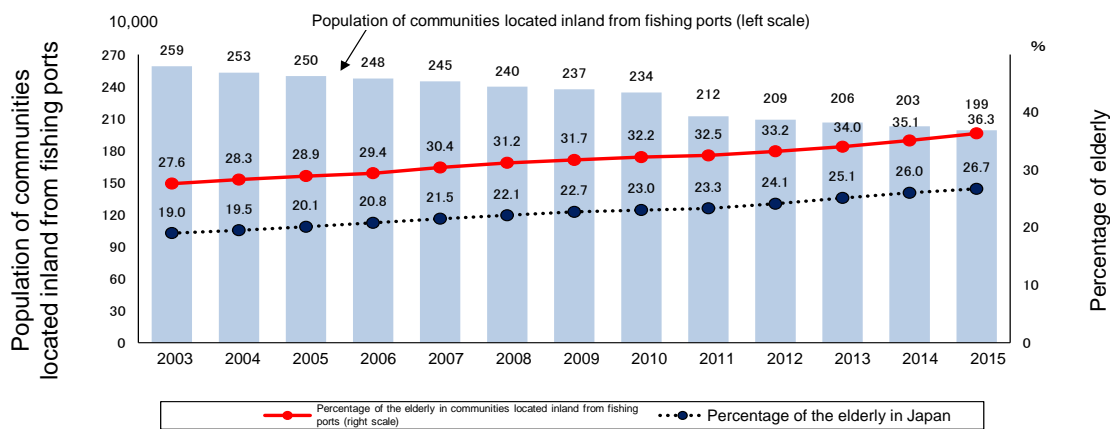
(Locations of fishing communities)

- About 20% of communities located inland from fishing ports are in isolated island areas and more than 30% in peninsula areas.
- More than 50% of communities located inland from fishing ports are on narrow terrains at the feet of mountains or cliffs and about 25% on steep terrains. They are all vulnerable to disasters such as earthquakes and tsunamis.
- *: Communities located inland from fishing ports, each with a population of less than 5,000, and more than two fishing households

(Fishing community residents)

- As of 2015, about 2 million people or about 1.6% of Japan's total population live in communities located inland from fishing ports.
- People aged over 65 constitute 36.3% of the population in those communities, with the percentage exceeding 50% in many, most of them small.
- Thanks to measures such as regional development programs, however, communities with a relatively young population are dotted here and there both in isolated island areas and in peninsula areas; the situation varies from place to place regardless of locations.

Fishing Communities Population and Percentage of Elderly



Source: The population of communities located inland from fishing ports and their percentages of the elderly were compiled by the Fisheries Agency while Japan's percentage of the elderly is derived from the national census (carried out by the Ministry of Internal Affairs and Communications in 2005 and 2010) and population estimates (made by the Ministry of Internal Affairs and Communications in other years)

Note 1: The percentage of the elderly refers to that of people aged over 65 in the total population.

Note 2: The population of communities located inland from fishing ports and their percentages of the elderly (2011-2015) do not include data on three prefectures (Iwate, Miyagi and Fukushima)

(2) Fisheries and fishing communities

(The fishing industry as a regional key industry)

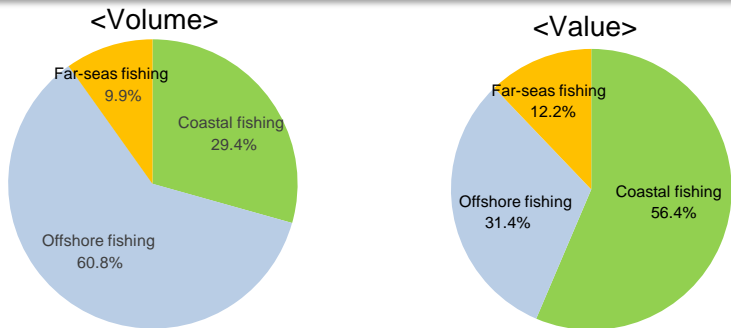
- Fisheries are a key industry supporting regional economies of fishing communities, where employment opportunities are limited. Especially in isolated island areas, more than 70% of the primary industry output comes from fisheries.
- Fisheries and other related industries such as fishing gear, ship equipment, fuel, fish processing, distribution, restaurants and accommodation play a vital role in regional economies all together.
- The fishing industry has a broad reach. It's a key industry that provides significant employment opportunities and profits to each region.

(3) Roles of far-seas, offshore and coastal fisheries in regional economies

(Far-seas and offshore fisheries catching a massive amount of fish and coastal fisheries catching fish unique to each ocean area)

- A relatively few species of fish (skipjack tuna, tuna, etc.) are caught and frozen in large quantities by far-seas fishing, and primarily pelagic fish, also in large quantities, by offshore fishing. There are many related industries located in and around major ports for far-seas and offshore fishing, which often constitute fisheries cities (though they are limited to specific areas).
- Fishing communities all over the country are engaged in coastal fishing, catching a variety of species ranging from pelagic fish to local fish, which are unique to each region. Their average prices are generally high.
- Coastal fishing does not lead to concentration of related industries, but it provides a variety of fish, playing a vital role in supporting regional economies.

Shares of Far-seas, Offshore and Coastal Fishing in Terms of Volume and Value



Source: Volume is derived from the 2014 Fisheries and Aquaculture Production Statistics (compiled by the Ministry of Agriculture, Forestry and Fisheries) and value, from the Fisheries Agency's Fishing Port Status Overview 2012.

Note: As the production value of marine fishing by section has been excluded from the Fisheries and Aquaculture Production Statistics since 2007, the production value is based exclusively on those landed in the fishing ports specified in the Fishing Port Status Overview (not including those landed in other ports and harbors).

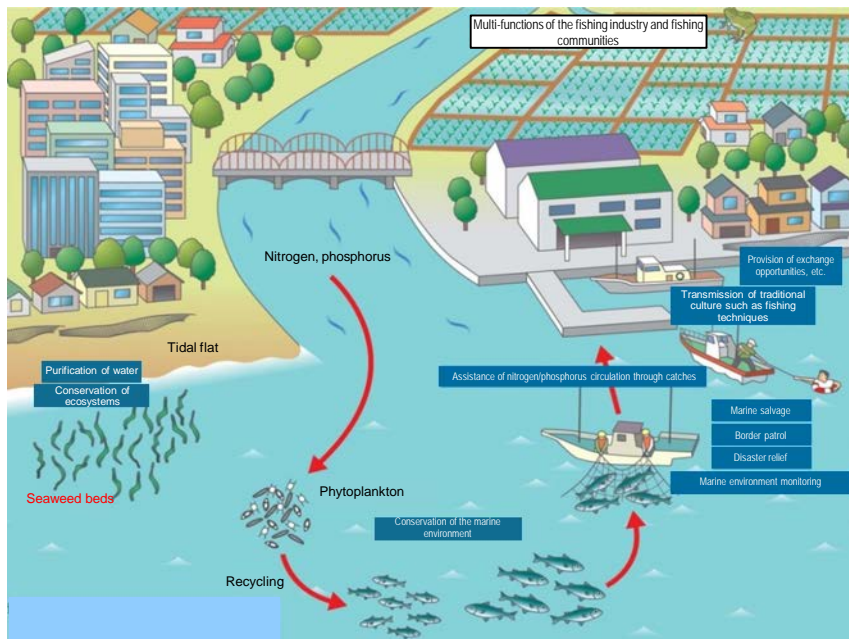
(Coastal fishing, which plays a major role in providing employment to fishing communities)

- 79% of all fishery workers and about 94% of fisheries management bodies are engaged in coastal fishing including aquaculture.
- The smaller the fishing community, the higher the percentage of fishing households.
- Fisheries consisting primarily of coastal fishing play a key role in providing employment to fishing communities that have poor industrial infrastructure.

(4) Fisheries and fishing communities with multiple functions

- Fisheries and fishing communities have multiple functions such as conserving the environment, safeguarding the lives and properties of the public, providing exchange opportunities and developing local communities.
- Part of their value, which can be quantified, is estimated at 9.2 trillion yen a year.
- These multiple functions are only possible with the presence of people engaged in robust fisheries, the benefits from which extend to the public as well as to all fishers.

*: Study on the Evaluation of Multiple Functions (issued by the Fisheries Agency in March 2003)



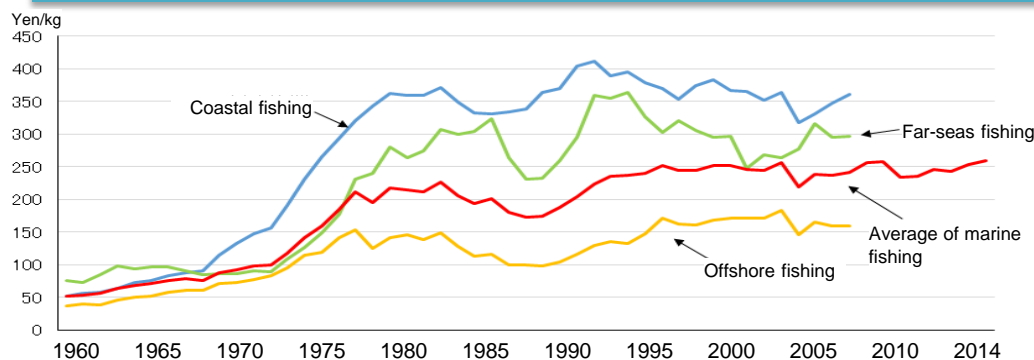
Source: Prepared by the Ministry of Agriculture, Forestry and Fisheries based on a report by the Science Council of Japan (excerpts from those on the fishing industry and fishing communities)

(1) Changes in circumstances relating to fisheries production

(Post-war development of fisheries and the turning point)

- Japan's fisheries developed rapidly in the post-war period, driven by rapid economic growth; powered fishing boats were introduced and fishing grounds expanded from coastal waters to distant waters, which boosted fisheries production.
- In the late 70s and the early 80s, however, social and economic conditions surrounding Japan's fisheries production changed dramatically - a surge in fish prices, once the growth engine of fisheries, slowed down and the establishment of the 200-nautical mile economic zones forced far-seas fishing fleets to give up fishing grounds and to operate at reduced rates.

Long-term Trends in Average Fish Prices for Far-seas, Offshore and Coastal Fishing



Source: Prepared by the Ministry of Agriculture, Forestry and Fisheries based on the Fisheries and Aquaculture Production Statistics.

Note 1: Estimated, with the marine fishing production value divided by its production volume

Note 2: The production value by sector has not been available since 2007.

(Resource management efforts and changes in the status of resources)

- In the early 80s, the need to manage and utilize fisheries resources in the waters around Japan in a sustainable manner was strongly recognized, leading to full-fledged resource management.
- More and more businesses are working on resource management in recent years, with each fisheries management body participating in several resource management frameworks. In general, fishers are stepping up efforts to manage resources.
- The status of fisheries resources in the waters around Japan has fluctuated significantly over the medium- and long-term, which is particularly true for species such as Japanese sardine. Moreover, rising sea temperatures and changes in their distribution are having an impact on fish distribution and resource levels.

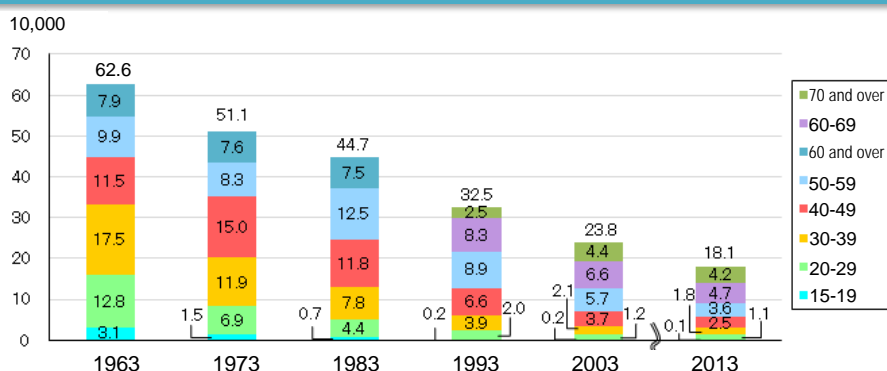
(Increasingly intertwined with the global economy)

- Japan's shift to the floating system and the appreciation of the yen against dollar after the Plaza Accord boosted imports of fish and fishery products, which in turn exposes the domestic fishing industry to fierce competition.
- Fluctuations in crude oil and fishmeal prices have had a major impact in recent years on the costs of domestic fisheries production.
- With Japan's fishing industry increasingly intertwined with the global economy, it should be noted that fisheries business management should take international circumstances into account.

(Aging of fishers and the shortage of successors)

- As fewer young people take over the family businesses at fishing households, coupled with a declining birthrate, the number of young fishers has decreased significantly over the past 50 years up to 2013, which is not necessarily the case with elderly fishers. As a result, the workforce is aging.
- However, in recent years, young fishers are gradually increasing in number, slowing down the aging of the workforce.

Long-term Trends in Number of Fishers



Source: The Census of Fisheries (conducted by the Ministry of Agriculture, Forestry and Fisheries)

Note 1: The "60-69" and "70 and over" brackets are not available before 1983.

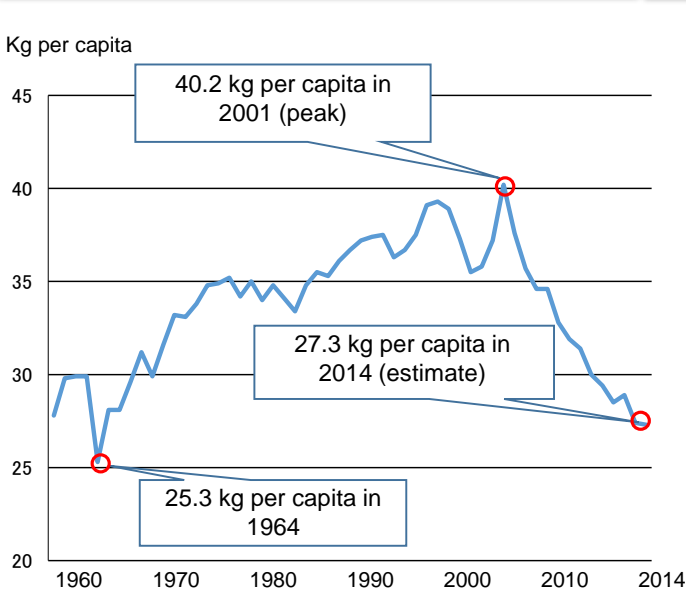
Note 2: The data for 2013 includes previously excluded groups (those who lived in non-coastal cities, towns and villages) as it was compiled by fisheries management bodies; it's not consistent with the data for 2003.

(2) Changes in circumstances relating to fish and fishery product consumption

(Domestic consumption of fish and fishery products per capita and demographic changes)

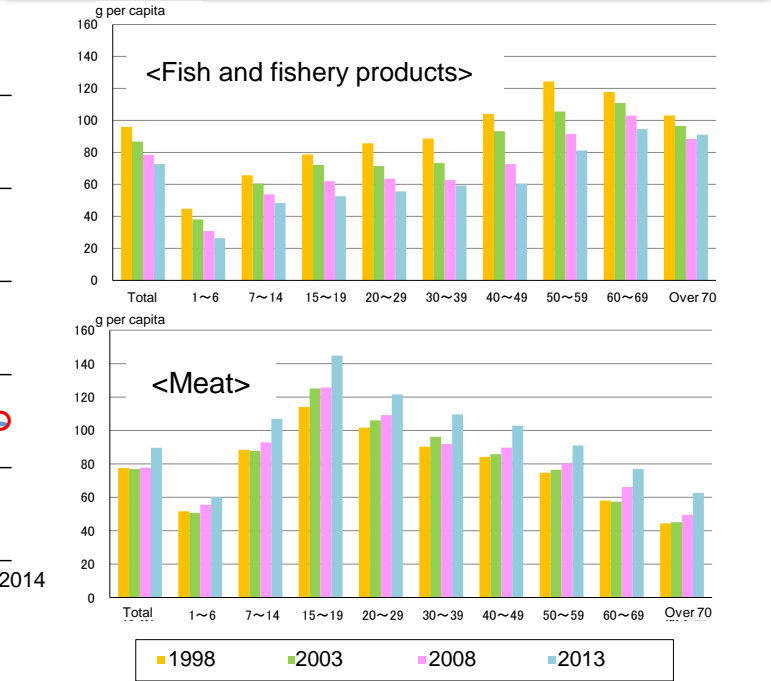
- In the past, domestic consumption of fish and fishery products per capita surged, driven by rapid economic growth, followed by a gradual increase. However, it peaked in 2001 and decreased rapidly thereafter. The year 2014 saw a per capita consumption of 27.3 kg, which is on par with the levels in the first half of the 1960s.
- A closer look at fish and meat intake by age bracket reveals that younger generations prefer meat to fish; people in their 40s and under consume significantly less fish than those in their 50s and over. Likewise, fish consumption by people of all ages declined in the past 15 years while their meat consumption increased.
- Japan's decreasing population is another factor leading to less fish consumption.

Long-term Trends in Annual per Capita Consumption of Fish and Fishery Products



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

Changes in Daily per Capita Fish and Meat Intake by Age Bracket



Source: The National Nutrition Survey (conducted by the Ministry of Health and Welfare) for 1998, and the National Health and Nutrition Survey (conducted by the Ministry of Health, Labour and Welfare) for 2003 and beyond

(Changes in consumption behavior)

- As the real income of the household has declined, the spending on food products shows a downward trend. Price-conscious consumption with focus on economy is increasing.
- Many consumers, meanwhile, have a willingness to increase fish consumption in their diet.
- As consumers' lifestyles are changing, their needs are diversifying.

(The world's rising consumption of fish and fishery products)

- Globally, health-conscious consumers are increasing, animal protein consumption is on the rise (especially in emerging countries) and seafood distribution systems are improving, boosting consumption of fish and fishery products - a trend that is expected to continue.

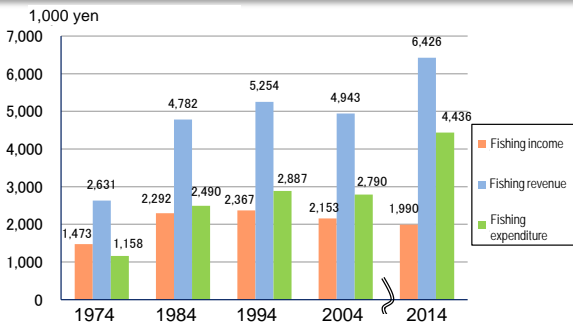
(Increasing foreign tourists to Japan)

- The number of foreign tourists to Japan has been on the rise in recent years; they have a strong interest in Japanese food including sushi.
- Fishing communities and their traditional culture are another factor that attracts tourists.

(3) Changes in circumstances surrounding fisheries business management

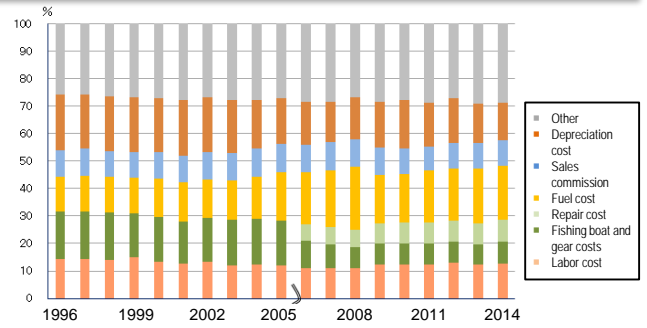
(Long-term trends in coastal fishing management)

- The income of coastal fishing households has been decreasing gradually since 1994.
- Fuel costs account for about 20% of fishing expenditures while the percentage of depreciation costs has been decreasing over the long term, with investments in facilities becoming sluggish.



Source: Prepared by the Fisheries Agency based on the Fisheries Economy Report (Category: Fishing households, prepared by the Ministry of Agriculture, Forestry and Fisheries) for up to 1994, and the Fisheries Management Report (also prepared by the Ministry of Agriculture, Forestry and Fisheries) for 2004 and beyond.

Note: As the survey system was revised in 2006, the results in and before 2004 are not consistent with those in 2014.



Source: Prepared by the Fisheries Agency based on the Fisheries Economy Report (Category: Fishing households, prepared by the Ministry of Agriculture, Forestry and Fisheries) for up to 2000, and the Fisheries Management Report (also prepared by the Ministry of Agriculture, Forestry and Fisheries) for 2001 and beyond.

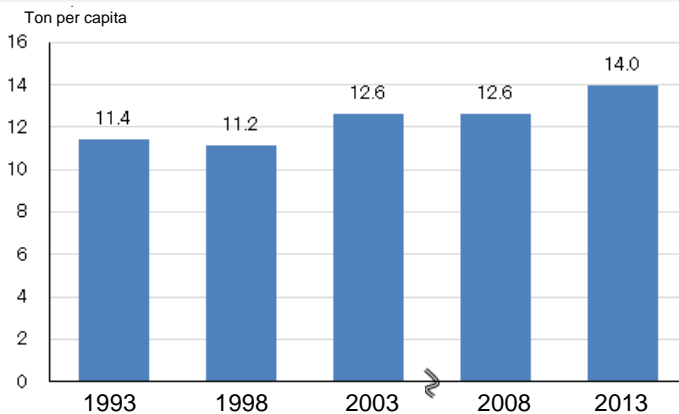
Note 1: "Repair costs" and "fishing gear and vessel costs" are grouped in the same category in the years before 2005.

Note 2: As the survey system was revised in 2006, the results in and before 2005 are not consistent with those in 2006 and beyond.

(Changes in the productivity per fisher)

- The coastal fishing production per fisher has been increasing gradually, resulting in improvements in the productivity per fisher.
- While individual fishers benefit from improvements in productivity, fisheries as a whole should boost production to ensure a stable supply of fish and fishery products. It's imperative that the productivity be improved while managing resources properly and securing fishers.

Trends in Coastal Fishing Production per Fishers



Source: Prepared by the Fisheries Agency based on the Fisheries and Aquaculture Production Statistics (compiled by the Ministry of Agriculture, Forestry and Fisheries) and the Census of Fisheries (conducted by the Ministry of Agriculture, Forestry and Fisheries)

Note 1: Estimated, with the coastal fishing production volume divided by the number of those engaged in coastal fishing (self-employed only)

Note 2: Fishers in Note 1 do not include those working on fishing boats 10 tons and over and those engaged primarily in aquaculture.

Note 3: The number of fishers before 2003 does not include those living in non-coastal cities, towns and villages.

Section 3 Activation of fishing communities through promotion of fisheries

(1) Improvement of incomes and enhancement of fisheries business management capabilities to keep up with changing circumstances

(The need to improve independent management capabilities)

- Fishery managers should proactively improve their management bases and the profitability of their businesses, which is particularly true for the coastal fishing industry with weak foundations.
- Proactive efforts to improve and maintain management capabilities will attract motivated personnel, which leads to further improvements in capabilities, creating a virtuous cycle.

[Case example: Inventive approaches to set net fishing management (Kadoshima Teichi Co., Ltd., Nanao City, Ishikawa Prefecture)

- Kadoshima Teichi Co., Ltd. takes a variety of inventive approaches to improve the profitability, such as brain destruction to maintain freshness, direct selling and fish processing.
- In addition, the company is creating a lively working environment to secure a workforce and nurture successors while manualizing set net fishing techniques to help employees acquire expertise.
- These approaches are highly valued for their contribution to creating employment and revitalizing the regional economy. They culminated in the winning of the Prime Minister's Award in 2014 (Hometown Development Grand Prize).



(Challenges unique to each region and management body)

- To enhance management capabilities, fish catches or prices should be increased to boost incomes while reducing fishing expenditures. Challenges in achieving these, however, are unique to each region and management body.
- While it's very important to learn from good practices, they should be customized to meet the needs of each region and management body rather than being incorporated as-is.

(Seashore Revitalization Plan to boost incomes)

- The Seashore Revitalization Plan aims to boost fishing incomes by at least 10% in five years with voluntary efforts to come up with measures, map out action plans and implement them.
- The government supports the Seashore Revitalization Plan with its fisheries policy measures.
- The Seashore Revitalization Plan varies in its content while it's imperative that each region and fisher deals with the challenges in a voluntary and independent manner.

The Seashore Revitalization Plan's Specific Measures

[Examples of income-boosting measures]

Expanding production while managing resources

- Boosting catches: Release of fry, extermination of predators, eradication of coarse seaweeds, tillage of the seabed, application of fertilizers (fertilizer blocks), strengthening of resource management, etc.
- Developing new fishing grounds: Aquaculture, set net fishing, introduction of new species for aquaculture, etc.

Increasing the price and added value of fish

- Quality improvement: Immediate killing, brain destruction, standardized post-catch treatment (blood draining, etc.), standardized temperature control (using ice shavings, etc.), quick freezing, improvement and manualizing of processing and aquaculture techniques, standardized meat quality, reduction of transport time through review of operations, etc.
- Hygiene control: Use of sterilized seawater, foolproof measures to prevent food poisoning, etc.

Aggressive marketing of new products

- Product development: Development of new products using little-used and unused fish, etc.
- Expansion of shipment: Review of sales channels, market integration, etc.
- Expansion of consumption: Direct selling, school lunch catering, partnerships with cooperatives, event sponsoring, export promotion, etc.

[Examples of cost reduction measures]

Taking energy-saving measures

- Improving fishing boat maintenance
- Introducing fuel-efficient engines, new fishing gear and processing machines
- Reducing the total weight of fishing boats by reducing the amount of loading

Streamlining management through partnerships

- Reduction of working time through review of operations, reduction of the number of fishing boats on the sea, etc.
- Reduction of labor cost, fishing gear cost, repair and maintenance costs through partnerships, etc.



[Case example: The regional brand “Goto Princess,” which delivers Goto’s delicacies – The Seashore Revitalization Plan of Kamigoto-cho, Nagasaki Prefecture]

- The Seashore Revitalization Plan of Kamigoto-cho, Nagasaki Prefecture, involves an integrated approach, from production to distribution and marketing, designed to expand consumption.
- Complying with uniform standards, certified fishers sell fish and fishery products directly in the market under the “Goto Princess” brand. At the same time, consumer packs are offered to households while the brand is promoted and advertised through participation in events.



[Case example: Product development leveraging new technology and region-wide efforts to promote sales - The Seashore Revitalization Plan of Tajima, Hyogo Prefecture]

- The Seashore Revitalization Plan of Tajima, Hyogo Prefecture, involves product development leveraging new technology and region-wide efforts to promote sales, all designed to increase fish prices, expand sales channels and promote consumption.
- Efforts are under way to add higher value to snow crabs and firefly squids (both of which are well known nationwide), hold events, conduct direct sales in the market and encourage exchanges between local communities and cities. The aim is to revitalize not only the local fishing industry but also the entire region.



Photo by the Tajima Offshore Trawl Fishery Subcommittee

(Cooperative and collaborative efforts to enhance management capabilities)

- For fisheries management bodies, employee shortages are one of the factors undermining their management. Cooperative and collaborative efforts to secure a workforce through streamlining operations can improve the profitability and reduce costs, which in turn is expected to enhance management capabilities.
- Such cooperative and collaborative efforts should be part of fishers' voluntary efforts.

[Case example: Cost reduction through joint operation in far-seas skipjack pole and line fishing]

- Two skipjack fishing boats jointly operate to reduce costs. Measures to improve the management efficiency include pooling of the total value of landings, joint exploration of fishing grounds, sharing of materials and cooperation in securing a workforce.

(Encouragement of corporate participation in fisheries)

- A growing number of companies with sufficient capital are participating in fisheries (such as bluefin tuna farming, which requires significant investment) while becoming members of local fisheries cooperatives through investments in existing fish farmers and establishment of subsidiaries.
- Win-win partnerships between fishers, communities and companies are key for smooth participation. Mutual trust should be developed between these parties in this regard.

[Case example: A construction company's set net fishing management (Hanko Construction Ltd., Ama-cho, Shimane Prefecture)]

- Hanko Construction, which operates in Ama-cho (Shimane Prefecture), entered into fisheries about 20 years ago to maintain the local fishing industry, which plays a major role in the regional economy.
- The company's set net fishing business provides employment to incoming residents and young people; about 90% of more than a dozen staff working in the business unit are those who relocated to Ama-cho, with each playing a key role in the unit.
- The company also branched out into livestock farming, contributing a lot to the regional economy.



Photo by Hanko Construction

(2) Promotion of fisheries leveraging local resources

(Fishing communities' local resources)

- Fishing communities have various local resources such as fishery products, landscapes, markets, festivals, food culture and leisure spots such as bathing beaches, each of which should be leveraged to activate themselves.
- Specific approaches include promoting sales of fish and fishery products, exchanging with people from other communities, or both. Each community's location, etc., should be taken into account when leveraging local resources.
- Some local resources remain unnoticed and therefore should be tapped, with their characteristics taken into account.

Examples of Fishing communities' local resources

Category	Major resources
Fisheries	Fresh and processed fish and fishery products, fish market, various types of fisheries and aquaculture, traditional fisheries, fish processing industry, etc.
Nature and landscapes	Landscapes, funaya boat garage houses, temples, Shinto shrines, seas, rivers, lakes, seashores, beaches, tidal flats, organisms, etc.
Recreation	Bathing beaches, marinas, fishing ponds, marine sports, recreational fishing, recreational clamming, etc.
Culture and tradition	Traditional events, festivals, morning markets, regular markets, local lifestyles, local dishes, fishermen's cooking, shipbuilding skills, local knowledge on sea and climate, folk stories, anecdotes, etc.
Renewable energy	Wind, wave, solar, biomass, algae, rivers (hydropower), etc.
Other	Warm seawater baths, salt and seaweed baths, thalassotherapy, deep seawater, etc.

[Case example: The sushi train restaurant Saikaimaru, which leverages its location in the fishing port (The Ishikawa Prefecture Fisheries Cooperative's Saikai branch)]

- To revitalize the port, the Ishikawa Prefecture Fisheries Cooperative's Saikai branch and a local set net fishing company jointly opened a sushi train restaurant in the fishing port, an approach that is relatively unusual in Japan.
- The restaurant is visited by many customers from Ishikawa and other prefectures thanks in part to synergies with a direct sales shop.



Photo by the Ishikawa Prefecture Fisheries Cooperative's Saikai branch

[Case example: Dried sardine production leveraging resources unique to an island]

- Dried sardine production in Ibuki Island (Kagawa Prefecture) leverages its location in the center of the fishing ground, sourcing freshly caught sardine.
- The fisheries cooperative, the local government and tourism businesses are working together to revitalize the region by promoting a food culture based primarily on dried sardine.



A fishing boat in operation off the coast of Ibuki Island
Photo by the Ibuki Fisheries Cooperative

(Growing out of “catch-only” fisheries while collaborating with other industries)

- There have been growing efforts in recent years to add higher value to catches and promote understanding of fishing operations through hands-on experience. Improvement of added value is achieved when consumers are aware of those efforts and also the needs of consumers are properly reflected in fishing operations.
- The fishing industry, therefore, should grow out of “catch-only” fisheries and communicate producers’ efforts to consumers through distribution of products while keeping track of the needs of the market.
- The fishing industry, moreover, should closely collaborate with other related industries such as distribution, retail, food-service, tourism and exports to produce results. In fact, many distributors and processors are eager to collaborate with local fishers, and so are related industries.

[Case example: Making hands-on experience in fisheries accessible through collaboration with a hotel

(Hibiki Suisan Co., Ltd., Karatsu City, Saga Prefecture)]

- Hibiki Suisan, which is engaged in small-scale set net fisheries, collaborates with a hotel run by the local government to offer hands-on experience in set net fishing. The fish caught are served at dinner, which is well received by the participants.
- The “hands-on experience” course does not interfere with fisheries operations; it rather contributes to stabilizing the company’s management.



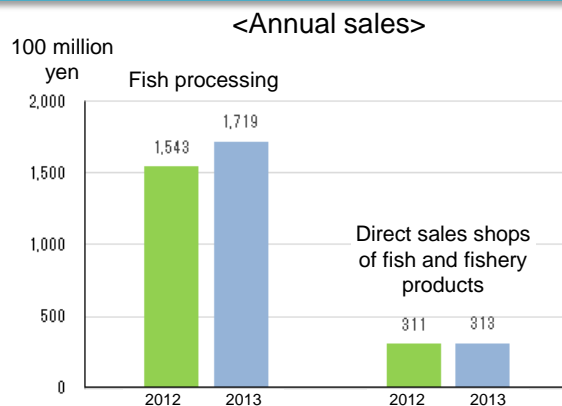
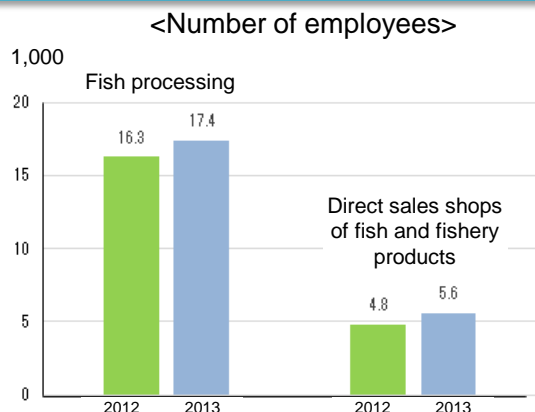
Photo by Hibiki Suisan

(Development of AFFrinnovation* in fisheries)

- The production and sales of processed fish products, and the sales of direct sales shops by fisheries management bodies, etc., increased 10% year on year to about 200 billion yen in 2013. They are bolstering their management by branching out into fish processing.
- Fisheries, however, lag behind agriculture in terms of AFFrinnovation partly because of preconceptions that developing processed foods and setting up direct sales shops are not easy.
- AFFrinnovation does not necessarily involve new technologies and capital investments; it can be achieved with ingenuity, such as capitalizing on traditional processing techniques.
- A full-fledged AFFrinnovation, however, requires reviews and decisions on the business scale, sales channels, financing, etc. It’s also important to design a feasible production system, taking into account fish catching operations.
- AFFrinnovation by leveraging local resources is an effective way to activate local communities. If it’s too challenging, one option for fishers would be to closely cooperate with related industries such as fish processing and distribution.

* AFFrinnovation refers to agricultural, forestry and fisheries workers’ efforts to raise their income by processing and selling their products in an integrated manner to create added value.

Number of Employees Working at Processing Plants and Direct Sales Shops Run by Fisheries Management Bodies, Fisheries Cooperatives, etc., and Their Annual Sales



Source: Research on AFFrinnovation (by the Ministry of Agriculture, Forestry and Fisheries)

[Case example: Community development by the local specialty mozuku seaweed (The Katsuren Fisheries Cooperative, Okinawa Prefecture)]

- To boost demand for *mozuku* seaweed (*Nemacystus decipiens*), the Katsuren Fisheries Cooperative and 12 local bodies including Co-op Okinawa jointly developed a new product based on *mozuku* dumplings that are on the market.
- With their roles clearly defined, the product is being distributed through their sales channels. Thanks to collaboration with local traditional arts, moreover, it has become popular in the local market while finding its way into overseas markets. It's also contributing to expanding local production for local consumption, developing local industries and promoting educational/cultural activities.



Photo by the Katsuren Fisheries Cooperative

(Efforts to expand production for local consumption)

- Local production for local consumption is growing while it's becoming increasingly challenging to pass fishing communities' food culture on to future generations.
- Local production for local consumption, which benefits both consumers and fishers, should be promoted further.

[Case example: Let's eat Kushima fish (The Kushima Fish Consumption Promotion Group, Kushima City, Miyazaki Prefecture)]

- The Kushima Fish Consumption Promotion Group, a cross-organizational group, is encouraging consumers in Miyazaki and other cities to eat Kushima fish.
- These efforts are producing results, gathering views and opinions directly from consumers and promoting partnerships with related industries.



(Efforts to expand exports)

- As the consumption of fish and fishery products is growing worldwide while slowing down in Japan, it's essential that exports be promoted to expand the market.
- It's therefore important to understand the needs of each overseas market and keep supplying products that meet their requirements.
- It's also important to develop sales channels in cooperation with distributors, etc. Another effective measure is to promote cooperation among fishers to ensure a stable supply of products.

[Case example: Export promotion through a unified brand originating in Ishinomaki (The Hitakaminokuni Group, Ishinomaki City, Miyagi Prefecture)]

- Six fisheries processors in Ishinomaki City established the unified brand "Hitakaminokuni" to promote exports of high-value-added products produced from fish caught in the Sanriku region.
- As they jointly developed processing techniques and packages to meet the needs of overseas buyers, exports to Hong Kong, Taiwan are growing steadily.



(Exchanges with urban residents and foreign tourists)

- To accommodate urban residents and foreign tourists, quality services (lodging, wining and dining, sightseeing, etc.) should be in place and their safety needs to be ensured.
- The local fishing industry and other related industries should make concerted efforts to develop systems to accommodate them.

[Case example: Development of a local community through concerted efforts to attract foreign tourists (Kagoshima Prefecture)]

- Kagoshima Prefecture focuses on attracting tourists from East Asia while cooperation between local industries including fisheries is progressing to meet the diversifying needs of tourists.
- Attractions unique to Japan and popular among foreign tourists include the "Sushi School," which offers hands-on experience in making sushi, and the "Makurazaki Soup Stock Class," where participants enjoy the flavor and taste of dried skipjack soup stock (*dashi*), the very basis of Japanese food.



(1) Relocation to fishing communities

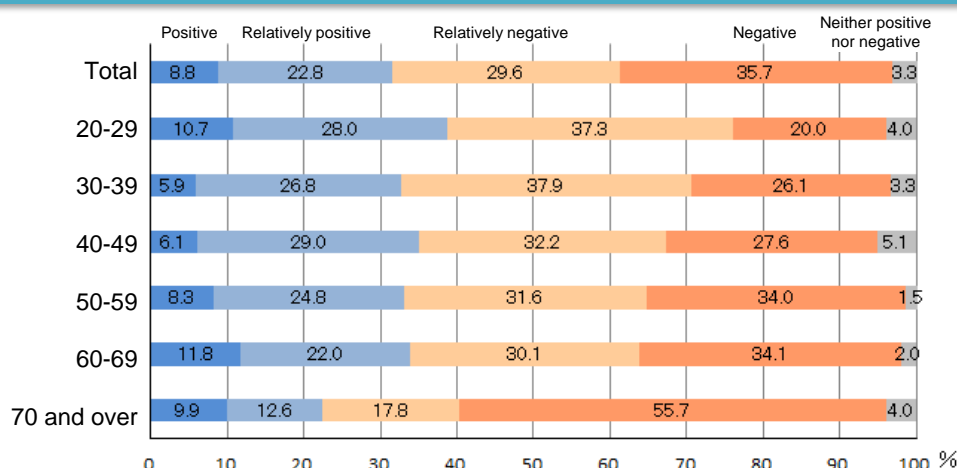
(Dynamic fishing communities and those who activate local communities)

- It's important that local communities be maintained from one generation to the next and their economic activities including fisheries be promoted.
- While some community development efforts are producing results, fishing communities as a whole are aging with the population decreasing. It is therefore essential to encourage relocation to fishing communities and revitalization through creation of a dynamic and livable environment.
- Motivated human resources playing a key role in designing development measures, taking into account the state of affairs, are needed to activate local communities. In addition, those who put the measures into practice should be recruited widely to establish an appropriate system for implementation.

(Growing preference for rural life)

- The poll shows that about 32% of the population, especially young people, want to live in the countryside; about 50% of them think that agricultural, mountain and fishing communities provide a better environment for raising children.
- A growing number of people are relocating to the countryside through U-, I- and J-turns.

Urban Residents' Desire to Settle in Countryside



Source: Public Opinion Survey on Agricultural, Mountain and Fishing Communities (released by the Cabinet Office in August 2014)

Note: Based on answers from 1,147 respondents who live in "urban areas" or in "relatively urban areas"

(Acceptance of people relocating to fishing communities in which fisheries play a key role)

- Those who relocate from urban to rural communities need to find jobs and earn enough income to support their lives.
- Fisheries and other related industries are expected to provide employment for those who relocate to fishing communities, which can be beneficial for both parties, given that some communities are faced with workforce shortages.
- There have been many cases where people relocating from other communities provide a spark for concerted efforts to develop local communities.

[Case example: Concerted efforts to support "I-turn" female and male divers (The Ashika Fisher School, Shima City, Mie Prefecture)]

- In the Shijima area (Shima City, Mie Prefecture), where women's and men's dive fishing is conducted in summer and gill net fishing in winter, the Ashika Fisher School was established in cooperation with neighboring communities to accept those who want to enter into fisheries. They are guided and trained by skilled fishers on fishing techniques and rules, with support for daily life provided.
- The school also launched fish processing and marketing to help women divers earn steady income and settle into local communities.



Photo by the Primary Industry Future Fund

(New technologies to reduce fishery labor)

- Various technologies are being developed to improve working conditions and reduce labor in fisheries, which together is expected to encourage participation in fisheries and secure successors.

(2) Empowerment of women with greater roles

- While fisheries have been traditionally considered men's work, women play a major role in onshore fisheries works.
- The percentage of women in fisheries cooperatives' regular/board members remains low; they have limited opportunities to participate in key decision-making processes in fishing communities.
- As women are key players in fishing communities, it's essential that their perspectives as consumers and ordinary citizens be incorporated to activate fisheries and fishing communities. Some of them are starting new businesses while they are expected to play a greater role in their communities.
- Greater support should be provided for women and a change in communities' consciousness is needed to help them balance work and life. At the same time, they should themselves have a sense of responsibility for the future of their communities.

[Case example: The Oarai-machi Fisheries Cooperative's Mom's Shop (The women's section of the Oarai-machi Fisheries Cooperative, Ibaraki Prefecture)]

- The women's section of the Oarai-machi Fisheries Cooperative opened "Mom's Shop" in 2010, where little-used fish are sold to stabilize fish prices and fishery business management.
- Overcoming damage caused by the Great East Japan Earthquake, the shop is thriving more than ever, and so is the entire port.



Photo by the Oarai-machi Fisheries Cooperative

(3) Roles of fisheries cooperatives in activating local communities

- Fisheries cooperatives are expected to play a leading role in activating local communities through promotion of fisheries while coordinating local fishers' interests.

[Case example: The fisheries cooperative's program to provide hands-on experience in fisheries (The Kaminokae Fisheries Cooperative, Nakatosa-cho, Kochi Prefecture)]

- The Kaminokae Fisheries Cooperative plays a leading role in a program that provides hands-on experience in fisheries, thereby promoting fisheries and revitalizing the local community; exclusive fishing grounds for the program were set up in consultation with local fishers.
- Facilities for the program, equipped with a kitchen, are also in place along with concerted efforts to promote fisheries and revitalize the local community.



Photo by Manten Tosa

(4) Development of safe fishing communities where people can live in peace

(Improvement of disaster prevention capabilities and promotion of disaster reduction measures)

- While Japan is geographically vulnerable to earthquakes, tsunamis and climate hazards, fishing communities are particularly prone to natural disasters. Infrastructure for prevention and reduction of disasters should thus be improved to ensure the security of life.
- Multiple protection against tsunamis using breakwaters and seawalls is an efficient and effective way to protect life and property. The government constructs breakwaters and seawalls that are resistant to tsunamis, along with evacuation routes to high ground, to improve the disaster prevention capabilities of fishing ports and communities and to promote disaster reduction measures.

(Development of infrastructure to encourage young people to settle in local communities)

- Infrastructure such as sewage should be in place to encourage young people and women to settle in local communities.
- Existing roads should be improved as cars are indispensable for their daily and business life.
- Fishing communities should keep improving their infrastructure and related facilities as they still lag behind towns and villages in terms of living environment.

(Maintenance of infrastructure in the face of declining population)

- Within the next 20 years or so, about half of all port facilities and as many as 70% of coastal protection facilities in Japan will be over 50 years old.
- The Fisheries Agency, therefore, mapped out the Action Plan to Prolong the Life of Our Infrastructure, with efforts under way to shore up the existing infrastructure.
- Effective, efficient maintenance should be implemented to extend the life of existing infrastructure and reduce its life-cycle cost.

(5) To pass Japan's fishing communities on to future generations

- In order to protect Japanese food culture "Washoku" for future generations, it should be recognized that fishing communities play roles in supplying a variety of seafood through fisheries and that those communities have to be maintained through the generations.
- The public should support each community's independent and voluntary efforts while the government should support them as needed.

Chapter II Trends in Japan's Fisheries Since FY2014

Section 1 Trends in fisheries resources and the fishing ground environment

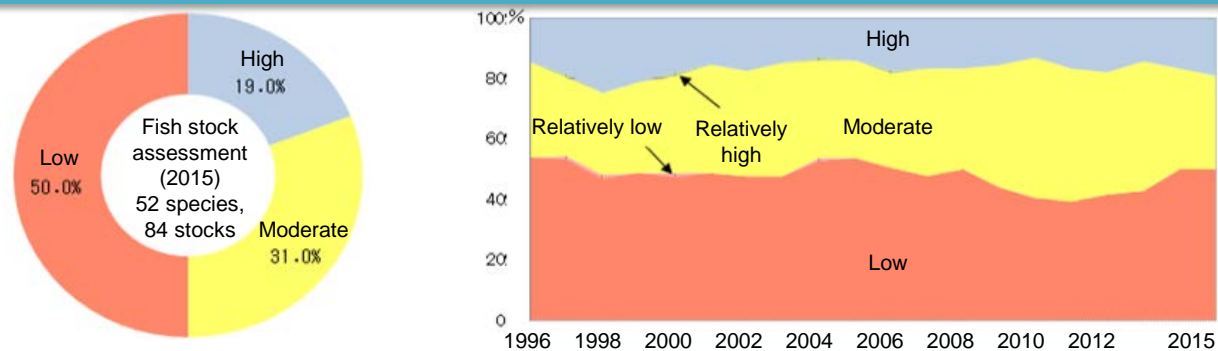
(1) Significance of resource management

- Fisheries resources - which involve spawning, growing and generation changes in the natural reproductive system - can be sustainable with proper catch management. Put simply, proper resource management is essential for the sustainable use of fisheries resources.
- The UN Convention on the Law of the Sea stipulates that biological resources in EEZs be managed and conserved by respective coastal countries and those in the high seas, by the countries concerned, through their mutual cooperation. Coastal countries including Japan have a major responsibility in resource management.

(2) Status of the fisheries resources in the waters around Japan

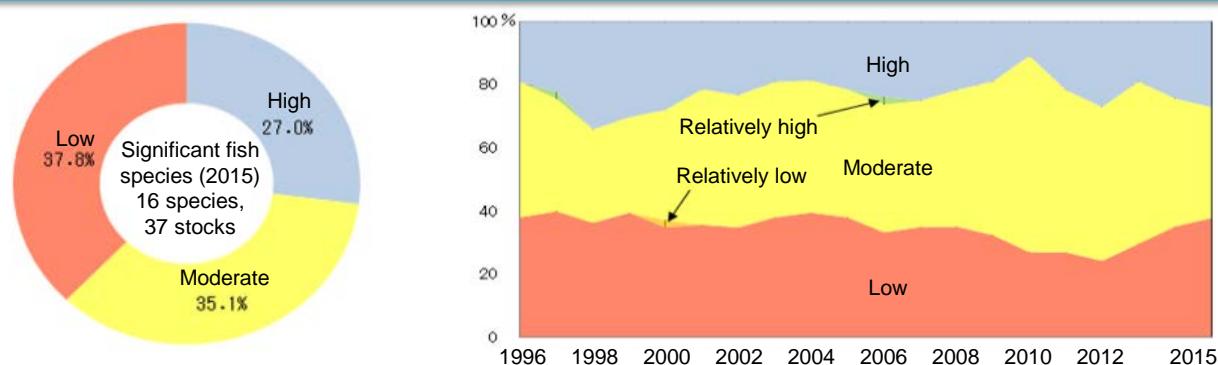
- The results of the FY2015 stock assessment (for 84 stocks of 52 species) show that stocks are high in 16 groups (19%), moderate in 26 groups (31%) and low in 42 groups (50%) . While the status of each stock changes from year to year, 40-50% of the total has been low and about 20% high, with the rest assessed as moderate in recent years. Fisheries resources, as a whole, vary depending on species and groups, showing no specific trend.
- As for 37 stocks of 16 species that are significant for the lives of people, stocks are high in 10 groups (27%), moderate in 13 groups (35%) and low in 14 groups (38%). About 60-70% of significant species are assessed as moderate or high in terms of stock levels.
- Some of the fisheries resources in the waters around Japan are caught by neighboring counties and regions. The resources, therefore, should be managed, taking into count the impact of their catches, while soliciting their cooperation.

Status and Trends in Resource Levels in Waters around Japan (84 Stocks of 52 Species)



Source: Fish Stock Assessment in the Waters around Japan (Japan Fisheries Research and Education Agency, Fisheries Agency), etc.

Status and Trends in Resource Levels in Waters around Japan (37 Stocks of the 16 Major Species)



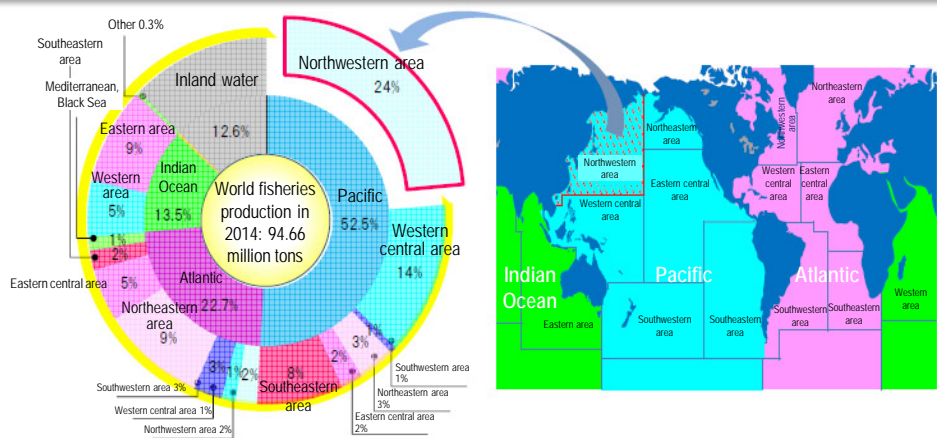
Source: Fish Stock Assessment in the Waters around Japan (Japan Fisheries Research and Education Agency, Fisheries Agency), etc.

Note: The 16 significant species are Pacific saury, Alaska pollock, horse mackerel, Japanese sardine, chub mackerel, southern mackerel, Japanese flying squid, snow crab, Pacific cod, round herring, anchovy, red snow crab, Atka mackerel, Japanese amberjack, red seabream and tiger puffer

(3) Characteristics of Japan’s fisheries

- The Northwest Pacific, which includes the waters around Japan, is one of the world’s major fishing grounds with extremely high levels of biodiversity.
- There have been fisheries since ancient times in Japan, which is surrounded by the bountiful sea. There are so many fishers and fishing boats operating, most of them small. In the inland waters, a variety of fisheries unique to each area operate.

World’s Major Fishing Grounds



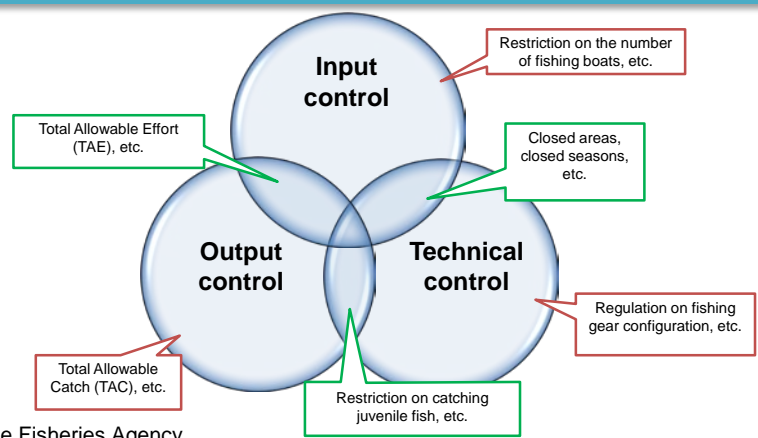
Source: FAO Fishstat (Capture production)

(4) Japan’s fisheries resource management system

(Fisheries management system for appropriate resource conservation)

- Resource and fisheries management consists primarily of 1) input control, where fishing pressure is controlled at the outset, 2) technical control, which exhibits special management effects such as juvenile fish protection, and 3) output control, where fishing pressure is controlled at the end through setting of TAC (Total Allowable Catch), etc.
- A variety of methods are combined in Japan to properly manage resources, taking into account the characteristics of fisheries, the number of fishermen, status of targeted stocks, etc.

Correlation Between Resource Management Methods



Source: The Fisheries Agency

(Fishing rights and the fishing permit system)

- Fishing rights refer to rights for conducting specific types of fishing in permitted waters exclusively within specified periods. They are granted by prefectural governors, covering coastal set net fishing, aquaculture, shellfish fishing, seaweed harvesting and other types of fishing of stationary aquatic animals.
- Far-seas and offshore fishing is subject to permits administered by the Minister of Agriculture, Forestry and Fisheries or prefectural governors.

(TAC system)

- The TAC system, where total allowable catches are set to control catches, has been in place in Japan since 1996. Currently, Pacific saury, Alaska pollack, jack mackerel, Japanese sardine, mackerel (chub mackerel and southern mackerel), Japanese common squid, and snow crab are subject to the system.
- Taking into account a report prepared in 2014 by the ad hoc Task Force on Fisheries Resource Management, the government considers expansion of the TAC system to cover other species that are essential for the lives of people. In particular, Pacific cod is being reviewed for inclusion in the system.

(Resource management based on the IQ system)

- In Japan, TAC allocated to each fishery is further divided by ocean area and period based on fisher's voluntary agreements, etc., to coordinate operations and maintain stable catches.
- The IQ (Individual Quota) system allocates TAC to individual fishers or boats. The system should be implemented taking into account its effects on each species along with the challenges involved. Southern bluefin tuna, Atlantic bluefin tuna and red snow crab (caught in the Sea of Japan) are currently subject to the IQ system.
- IQ-based fishing trials on mackerel in the Northern Pacific, involving some large- and medium-sized purse seine fishing boats (pursing by one boat), started in October 2014 and were expanded in October 2015 to include all boats, the results of which will be discussed and reviewed.

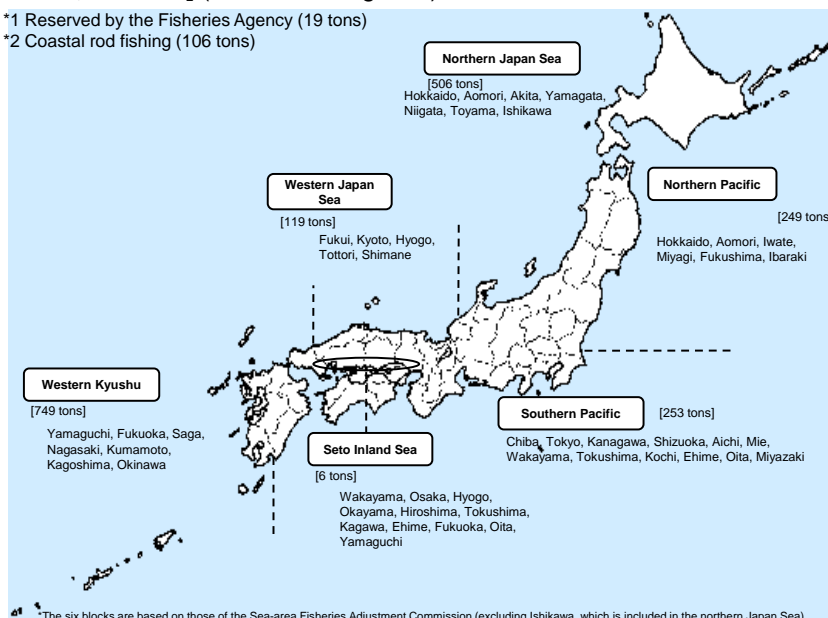
(Management of Pacific bluefin tuna resources)

- As there is a growing need to tighten the management of Pacific bluefin tuna resources, Japan began to manage them in 2010 according to agreements made at the Western and Central Pacific Fisheries Commission (WCPFC).
- Agreements made at the WCPFC in 2015 involve reduction of the catch of small fish by 50% in 2015 and beyond from the average annual catch between 2002 and 2004. To ensure compliance with this measure, in addition to the management of large- and medium-sized purse seine fisheries, the government asked those engaged in coastal fishing for cooperation. Quotas were set in January 2015 for coastal fishing (trawl fishing, set net fishing, etc.) carried out in six blocks nationwide while discussions are under way to enhance the legal basis of the management.

Management of Pacific Bluefin Tuna Catches by Coastal Fishing, etc.

[Total: 2,007 tons] (Coastal fishing, etc.)

*1 Reserved by the Fisheries Agency (19 tons)
*2 Coastal rod fishing (106 tons)



Source: Prepared by the Fisheries Agency

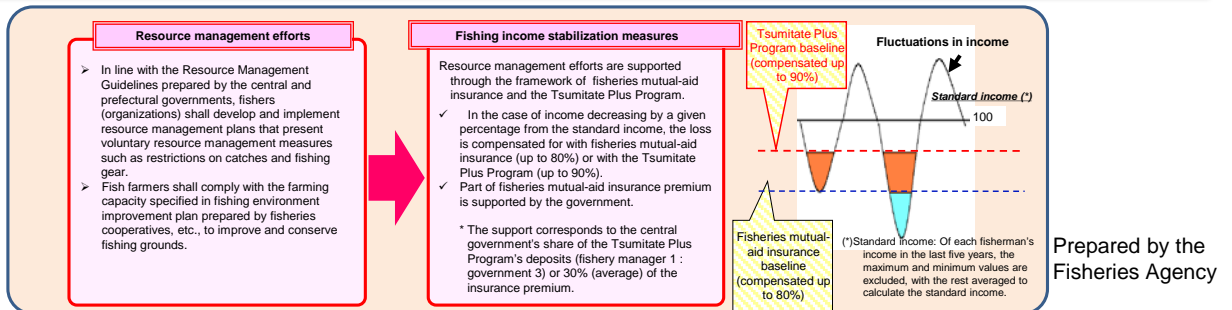
(Management of Japanese eel resources)

- As Japanese eel resource management is an urgent issue, conferences have been held with East Asian countries and a region involved in eel farming to limit the amount of initial input of eel seeds into aquaculture ponds. Accordingly, the government designated eel farming as “designated aquaculture” that requires the permission of the Ministry of Agriculture, Forestry and Fisheries for its operation in June 2015, in accordance with the Inland Water Fishery Promotion Act, to regulate the amount of initial input of eel seeds into aquaculture ponds.

(5) Fishers' voluntary resource management

- Japan's resource management consists of statutory regulations and fishers' voluntary management, which imposes limits on fishing periods, fish lengths, operating time, fishing areas, etc.
- The central and prefectural governments set the Resource Management Guidelines from 2011, based on which the groups of fishers developed and implemented their own resource management plans, putting together voluntary measures in addition to statutory regulations. The resource management and income stability measure is provided for fishers engaged in resource management.

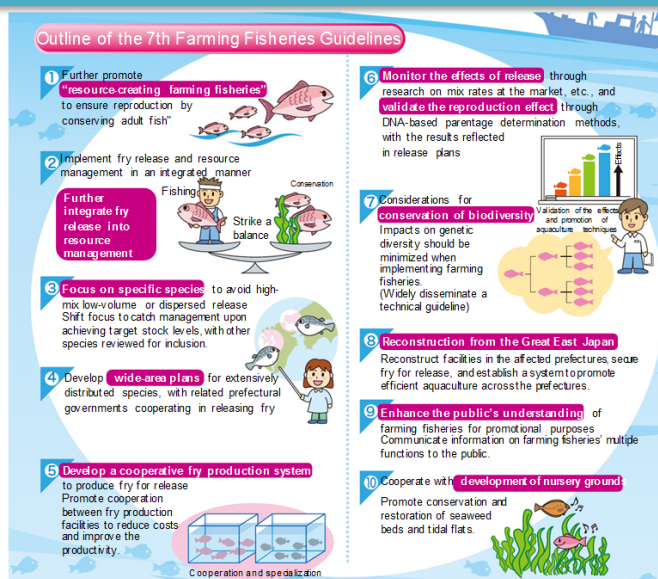
Resource Management and Income Stability Measure



(6) Measures to enhance fisheries resources

- A program is in place to raise fry to juvenile sizes for release, with about 80 species covered.
- The government set the 7th Farming Fisheries Guidelines in March 2015 for the period until 2021 to further promote "resource-creating farming fisheries," where a part of adult fish are conserved for the next generation reproduction.
- Inland water fisheries cooperatives, meanwhile, are working on programs to release sweetfish/eel fries and set up spawning beds, playing a major role in conserving and increasing inland water fisheries resources.
- The Frontier Fishing Ground Enhancement and Development Project is under way to enhance offshore fisheries resources by constructing conservation reefs and breeding grounds.

7th Farming Fisheries Guidelines



Prepared by the National Association for the Promotion of Productive Seas

(7) Fishing ground environment for enhancing fisheries resources (Impact of climate change on fisheries)

- While it's difficult to forecast the impact of global warming on marine ecosystems (specifically, the resulting physical changes in the environment), it's already having an impact on Japan's fisheries, which need to be closely monitored.
- Adaptation as well as mitigation measures are needed to tackle climate change. The National Plan for Adaptation to the Impacts of Climate Change, which was decided by the cabinet in November 2015, stipulates that impacts on fisheries resources be monitored and aquaculture species resistant to high temperature be developed.

(Conservation of seaweed beds and tidal flats)

- While seaweed beds and tidal flats play a major role in enhancing fisheries resources, they are declining due to coastal development, impact of rising sea temperatures, etc.
- The government announced in January 2016 the Seaweed Bed and Tidal Flat Vision, taking into account the results of discussions at the Seaweed Bed and Tidal Flat Vision Workshop; it provides basic approaches to creating and conserving seaweed beds and tidal flats in an effective and efficient way. Prefectural governments are expected to develop and implement their own visions based on the conditions of the waters over which they have jurisdiction.

Main Points of Seaweed Bed and Tidal Flat Vision

Four perspectives in creating and conserving effective, efficient seaweed beds and tidal flats in an effective and efficient way and implementation of conservation measures

1. Determination of the causes of decline

- The environmental factors such as seaweed bed distributions, water temperatures, tidal currents and sediment conditions are reviewed from a broad perspective to accurately determine the causes of decline.

2. Implementation of broad-based conservation measures, with software and hardware elements combined

- Taking into account the latest results of research, effective plans are developed, with software and hardware elements combined, to implement conservation measures.
- Target areas are determined, taking into account the characteristics of seaweed spores/seeds and bivalve larvae, which are transported widely by tidal currents.
- Conservation measures are prioritized by identifying the areas where spawning adult fish and larva/juvenile fish swarm.
- The identified areas are monitored continuously to develop a PDCA cycle for adequate implementation of the measures.

3. Proactive introduction of new technologies and findings

- New technologies developed by the private sector, research institutes, etc., are incorporated along with new findings.

4. Considerations in implementing conservation measures

- Local governments are expected to play a key role in establishing an implementation system while the central government's appropriate involvement is needed for measures involving multiple local governments.
- It's essential that local fishers, etc., voluntarily and sustainably conserve the concerned seaweed beds and tidal flats after the implementation of the measures.
- River-deposited sands are considered for use as materials for tidal flat development.
- Achievements following the implementation of the measures are summarized and communicated to the public to promote understanding of the measures.

Source: Fisheries Agency

(Environmental restoration of rivers, etc.)

- Environmental restoration measures should be promoted with focus on the linkage between forests, rivers and seas.
- The Guidelines on Promotion of Inland Water Fisheries, which is based on the Act on Promotion of Inland Water Fisheries (instituted in June 2014), provide comprehensive approaches to promoting inland water fisheries, such as restoration of fisheries resources and the fishing ground environment, and the sustainable development of inland water fisheries.
- Prefectural governments have mapped out their plans based on the act to restore inland water fisheries resources and the fishing ground environment.

(The *sato-umi* initiative expanding nationwide)

- “*Sato-umi*” refers to the waters where natural resources are exploited in a sustainable way, leading to increasing productivity and biodiversity. Accordingly, conservation and restoration programs are gaining momentum nationwide.
- With the Act on Special Measures concerning Conservation of the Environment of the Seto Inland Sea revised in October 2015, efforts are under way to create beautiful landscapes, enhance productivity and biodiversity, and develop a bountiful sea (*sato-umi*) with multiple values and functions while making human activity compatible with nature.

[Column: Floating marine plastic debris]

- Floating debris, mostly plastics, is polluting the sea while the amount of plastics dumped into the sea is increasing year by year. The international community should take immediate measures to address this problem.
- As most plastics are not decomposable, they cause ghost fishing and affect ship navigation. In addition, they are degraded by UV light, etc., into microplastics containing or adsorbing hazardous chemicals, which are ingested by organisms through food chains. They are likely to have an impact on marine ecosystems.
- In some areas, about 70% of floating marine debris is municipal waste that flows into the sea through urban rivers.
- G7 Leaders' Declaration following the Schloss Elmau Summit, which was held in June 2015, addressed for the first time floating marine debris as a global problem.



Photo by the Clean Sea and Beach Foundation

(8) Effects of wildlife and pests on fisheries

- Sea animals such as Steller sea lions are causing damage to fisheries, especially in the waters around Hokkaido. The government, therefore, set the Steller Sea Lion Management Guidelines in August 2014 to expel or drive away Steller sea lions inhabiting the Sea of Japan, allowing to get rid of them in a sustainable way for minimizing damage to fisheries.
- Common cormorants are breeding in inland waters while their distribution is expanding. They prey on freshwater fish and their massive amounts of droppings are causing damage to vegetation. The government, therefore, is stepping up measures to get rid of them based on the results of surveys on their habitats and the number of individuals; the objective is to halve their number before 2023 or earlier.

(9) Approaches to practical, effective resource management

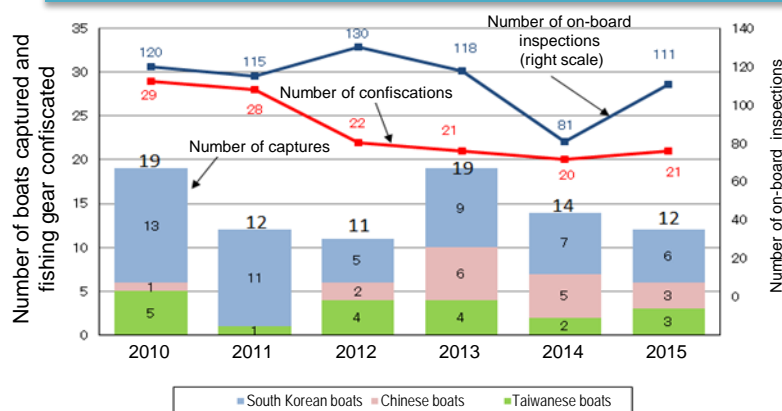
(Japan's fisheries regulations)

- The number of arrests for violation of fisheries laws and regulations stood at 1,767 in 2014 (1,680 in coastal waters and 87 in inland waters) .
- In Japan, authorized fisheries supervisors are engaged in regulatory activities in cooperation with the coast guard and police officers while fishers belonging to fisheries cooperatives patrol fishing grounds and report illegal fishing.

(Regulation of foreign fishing boats)

- The Fisheries Agency conducts on-board inspections of foreign fishing boats operating in Japan's EEZ based on bilateral agreements to make sure they are in compliance with license terms. In addition, boundary waters are patrolled for illegal fishing.
- In 2015, the Fisheries Agency captured 12 foreign fishing boats and conducted 111 on-board inspections; the number of confiscations of illegal fishing gear (gill nets, crab traps, etc.) totaled 21.
- The government stepped up regulations and increased fines on foreign fishing boats in the light of the problem of Chinese coral fishing boats illegally operating in Japan's EEZ while lodging a strong protest to the Chinese government. As a result, illegal coral fishing boats have been on a sharp decline since the end of 2014, with a few boats sighted sporadically.
- Chinese fishing boats are operating more frequently near Japan's EEZ boundary. In the East China Sea, for example, advanced purse seine fishing is practiced more widely in addition to conventional trawl fishing. At the same time, tiger net fishing boats, etc., operating near Japan's EEZ boundary off the coasts of eastern Hokkaido and Sanriku began to increase rapidly in April 2015.

Number of Foreign Fishing Boats Captured or Inspected



Source: Fisheries Agency



The Fisheries Agency's patrol boat Hakuo Maru trying to attach itself to a fleeing tiger net fishing boat

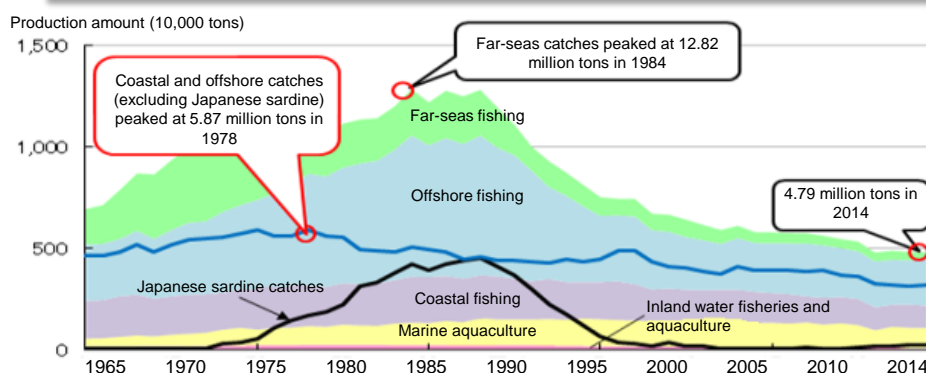
Section 2 Trends in Japan's fisheries

(1) Trends in fisheries and aquaculture

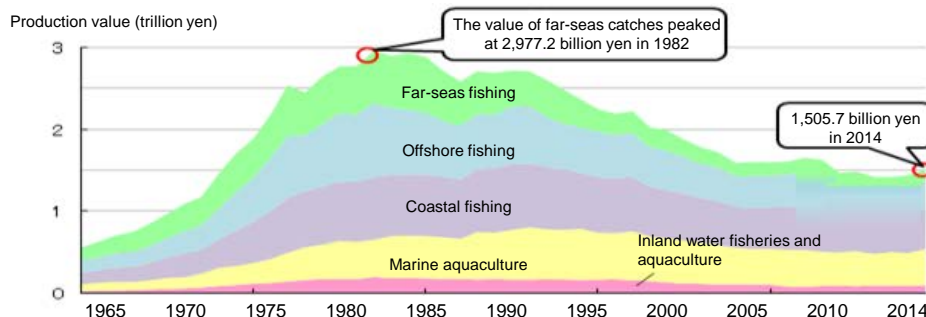
a) Domestic fisheries and aquaculture production

- The volume of domestic fisheries and aquaculture production leveled off at 4.79 million tons in 2014. Marine fisheries production increased 0.2% (or about 10,000 tons) year on year to 3.74 million tons; mackerel and saury increased while skipjack tuna and Alaska pollack decreased. Marine aquaculture production decreased 1% (or about 10,000 tons) to 990,000 tons; scallop and oyster increased while laver, Japanese amberjack and Wakame seaweed decreased. Inland fisheries and aquaculture production increased 5% (or about 3,000 tons) to 64,000 tons.
- The value of domestic fisheries and aquaculture production increased 5% (or 65.8 billion yen) year on year to 1,505.7 billion yen. Marine fisheries increased 2% (or 21.3 billion yen) to 969.3 billion yen. Marine aquaculture increased 9% (or 37.1 billion yen) to 443.5 billion yen. Inland water fisheries and aquaculture also increased 9% (or 7.3 billion yen) to 92.9 billion yen.

Trends in Production Volume and Value of Japan's Fisheries and Aquaculture



		1,000 tons
Production amount	Total	4,793
	Marine	4,728
	Fisheries	3,741
	Far-seas fishing	369
	Offshore fishing	2,274
	Coastal fishing	1,098
	Aquaculture	988
Production value	Inland water	64
	Fisheries	31
	Aquaculture	34



		100 million yen
Production value	Total	15,057
	Marine	14,128
	Fisheries	9,693
	Far-seas fishing	...
	Offshore fishing	...
	Coastal fishing	...
	Aquaculture	4,435
Production value	Inland water	929
	Fisheries	177
	Aquaculture	751

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

Note 1: The figures of "far-seas fishing," "offshore fishing" and "coastal fishing" shown above (2007-2010) are all estimates.

Note 2: Inland water catches refer to those in all rivers and lakes before 2000 and in 2003, 2008 and 2013; 148 rivers and 28 lakes in 2001 and 2002; 106 rivers and 24 lakes in 2004-2007; 108 rivers and 24 lakes in 2009-2012; and 112 rivers and 24 lakes in 2014. The volume of inland water aquaculture production in 2001 and beyond refers to the total production of trout, sweetfish, carp and eel while the catches in 2007 and beyond include those of other species cultured in Lake Biwa, Kasumigaura and Kitaura.

Note 3: The catches and production value of inland water fisheries in 2006 and beyond do not include those of recreational fishing.

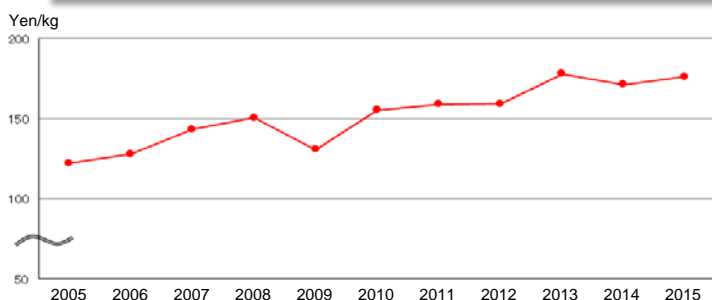
Note 4: The value of fisheries production is estimated by multiplying the volume of fisheries and aquaculture production by local wholesale prices.

Note 5: Coastal fisheries production by segment in terms of value has not been available since 2007.

b) Trends in fisheries business management

- Fish and fishery product prices vary according to the conditions of catches, which is particularly true for species caught in large quantities. Their average local price stood at 176 yen/kg in 2015.
- The average income of coastal fishing households increased about 100,000 yen year on year to 1.99 million yen in 2014, or 2.15 million yen including non-fishing income.
- Businesses engaged in boat fisheries reported more losses compared to the previous year while non-fishing profits (from fish processing, etc.) have been on the rise, up 25% year on year to 11.75 million yen in 2014.
- Fuel oil prices have fluctuated significantly over the past decade or so while they have been on the decline since July 2014.
- The fishing income of coastal aquaculture households fluctuates significantly, hovering between 3 million yen and over 5 million yen in recent years. It increased 350,000 yen year on year to 5.41 million yen in 2014.
- Imported fish meal prices remain high due to growing consumption by aquaculture (primarily in China) and livestock farming, coupled with a sharp decrease in fish meal production caused by declining anchovy resources in Peru.

Average Local Prices of Fish and Fishery Products

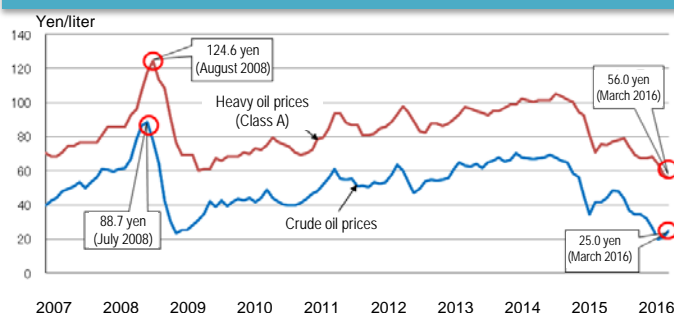


Source: Annual Report of Distribution Statistics on Fishery Products (The Ministry of Agriculture, Forestry and Fisheries) for 2005-2009, Fish and Fishery Product Distribution Survey (Fisheries Agency) for 2010-2015

Note 1: The average prices in 2005, 2006, 2007-2009 and 2010-2015 are based on the prices at 203, 197, 42 and 48 ports, respectively.

Note 2: The average price refer to the weighted average price of bluefin tuna (fresh and frozen), albacore (fresh and frozen), bigeye tuna (fresh and frozen), yellowfin tuna (fresh and frozen), skipjack (fresh and frozen), sardine, round herring, anchovy, horse mackerel, round scad, mackerels, saury, Atka mackerel and Japanese common squid (fresh and frozen).

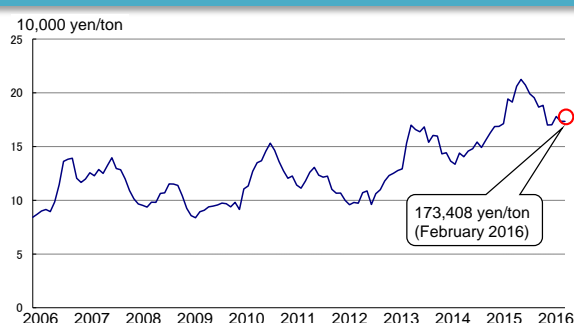
Trends in Fuel Oil Prices



Source: Prepared by the Fisheries Agency

Note: Heavy oil prices (Class A) refer to those at the Keihin District of the National Federation of Fisheries Co-operative Associations, surveyed at the beginning of each month by the Fisheries Agency.

Trends in Imported Fish Meal Prices

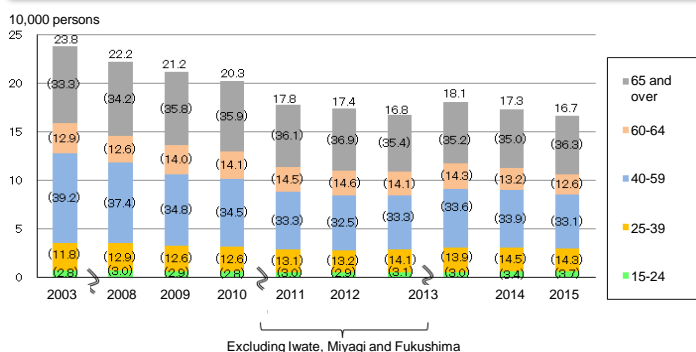


Source: Prepared by the Fisheries Agency, based on the Foreign Trade Statistics compiled by the Ministry of Finance

c) Trends in those engaged in fishery production

- The number of fishers stood at 166,610 in 2015, down 4% from the previous year, while those aged 15-24 totaled 6,170, increasing for two consecutive years.
- The number of new entrants into fisheries stood at 1,875 in 2014, about 70% of which are younger than 40.

Trends in Number of Fishers



Source: Census of Fisheries(The Ministry of Agriculture, Forestry and Fisheries) for 2003, 2008 and 2013, Report on the Trends in Fishery Employees (The Ministry of Agriculture, Forestry and Fisheries) for 2009-2012 and 2014-2015

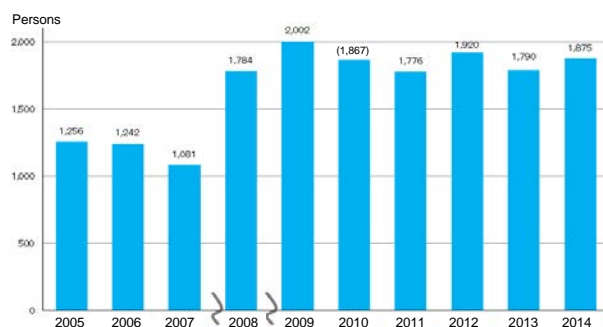
Note 1: "Fishers" refer to those aged 15 or older who have worked at sea in fisheries for more than 30 days in the past year.

Note 2: Numbers in parentheses refer to the percentages of each age bracket in the total workforce.

Note 3: The data for 2008 and beyond includes previously excluded groups (those who live in non-coastal cities, towns and villages) as it was compiled by employers (i.e., fisheries management bodies) ; it's not consistent with the 2003 Census of Fisheries.

Note 4: The data for 2011 and 2012 does not cover Iwate, Miyagi and Fukushima because of the aftermath of the Great East Japan Earthquake.

Trends in Number of New Entrants into Fisheries



Source: Results of questionnaires conducted by the Japan Fisheries Association for fisheries cooperatives (for 2005-2007), Census of Fisheries(The Ministry of Agriculture, Forestry and Fisheries) (for 2008), and estimates based on prefectural governments' surveys on new entrants (for 2009-2014)

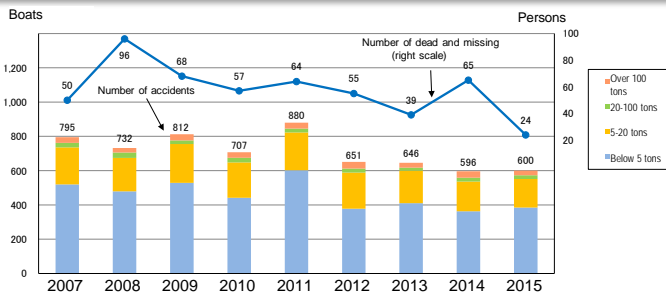
Note 1: As the surveys differ, the results of 2007 are not consistent with those of 2008. By the same token, the results of 2008 are not consistent with those of 2009.

Note 2: As Iwate, Miyagi and Fukushima were not surveyed in 2010 due to the Great East Japan Earthquake, estimates were made based on the total number of new entrants in 2009, taking into account nationwide trends excluding the three prefectures.

d) Provision of a safe working environment for fisheries

- Fishing boat accidents totaled 600 in 2015 while the reported number of dead and missing decreased by 41 to 24; they accounted for 28% of all marine accidents or 50% of the total number of the dead and missing reported.
- Fishers generally work onboard fishing boats, which in some cases results in accidental falls overboard; 72 fell overboard in 2015 (excluding those related to marine accidents), accounting for about 50% of the total number of those who fell overboard, of which 48 were dead or missing.
- The accident rate in fisheries is about six times higher than the average of all industries.
- A growing number of fishing boats are equipped with digital communication devices for transmission of information in times of emergency.
- As life jackets are vital to saving the lives of those who have fallen overboard, the government selects life jackets that are easy to wear and have little impact on fishery work while encouraging their use through fisheries organizations.

Number of Fishing Boat Accidents and Dead and Missing Reported



Source: Prepared by the Japan Coast Guard

Note: Excluding fishing boat accidents associated with heavy snow in the Sanin region (2 boats in 2010 and 215 in 2011)

Incidence of Accidents among Mariners and Onshore Workers

Industries	Incidence of disasters (per millage)
All industries	2.3
Forestry	26.9
Mining	8.1
Fisheries	13.5
Construction	5.0
Transportation (land)	8.4
Transportation (harbor loading and unloading)	-

Source: Summary of the Report on Mariners' Accidents and Illness (Article 111 of the Mariners Act), 2014 (The Ministry of Land, Infrastructure, Transport and Tourism)

Note 1: The figures are those of mariners (fisheries) and of onshore workers (other industries).

Note 2: The incidence of accidents among onshore workers is derived from statistics in the Workplace Safety Site of the Ministry of Health, Labour and Welfare and is based on calendar year.

Note 3: The incidence of accidents is based on the number of dead, injured or diseased with a four-day absence from work or longer.

Survival Rates of Those Who Have Fallen Overboard with and without Life Jackets



Source: Status of Marine Accidents and Preventive Measures, 2015 (The Japan Coast Guard)

Note: The average between 2001 and 2005

[Column: Watch for gusting wind including tornadoes at sea]

- Tornadoes occur not only on land but also at sea, and cause significant damage in a small area in a short time.
- It's critical to gather information before departure and during sailing to avoid gusting wind events such as tornadoes. Such information should be obtained as early as possible to change departure dates or revise sailing plans as needed.

(2) Trends in fisheries cooperatives

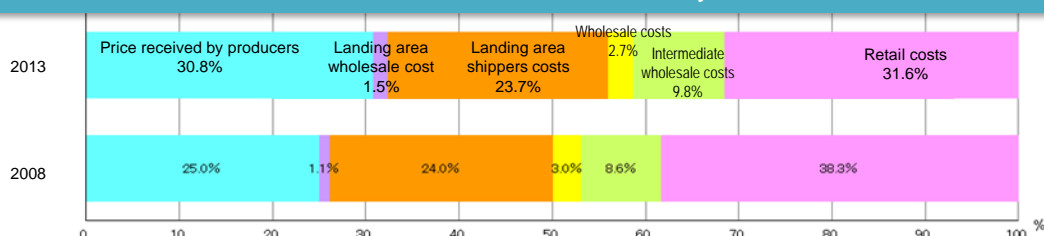
- Fisheries cooperatives play a major role in marketing products, dealing with credit and developing fishing communities. They also manage fishing rights, playing a proactive role in exploiting fish stocks in a sustainable way.
- While both the number of fishers and the production of fisheries have been on the decline, about 70% of the fisheries cooperatives in coastal regions reported losses in 2013. The total sales of all fisheries cooperatives increased by 4.7 billion yen from the previous year, but the loss amounted to 1.6 billion yen.
- As the number of members is decreasing, fisheries cooperatives should promote mergers between them. In 2014, 10 fisheries cooperatives in coastal regions opted for mergers; the number of fisheries cooperatives stood at 966 as of the end of March 2015.

(3) Trends in the distribution and processing of fish and fishery products

(Status of the distribution of fish and fishery products)

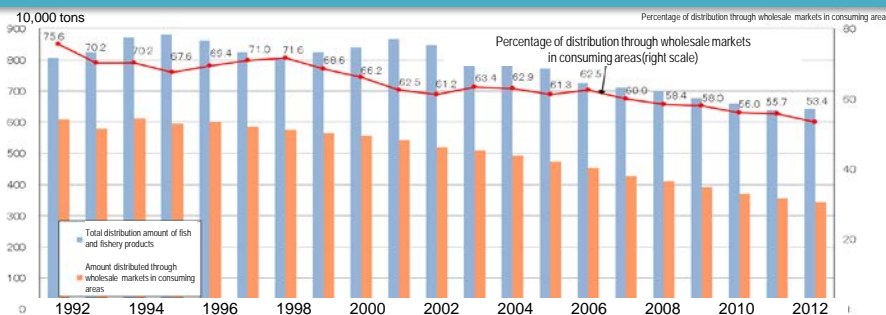
- Fresh fish are generally distributed through wholesale markets in landing areas and consuming areas.
- The percentage of distribution costs in retail prices has decreased in recent years while that of price received by producers is on the rise.
- As distribution outside of the wholesale markets is increasing these days, the amount of fish and fishery products distributed through wholesale markets in consuming areas has decreased to 53% of the total.
- The government is promoting the restructuring of wholesale markets to locate them more efficiently. As of the end of 2013, the number of wholesale markets in landing areas was 318, and that of wholesale markets in consuming areas 262, accounting for about 90% and 80%, respectively, of their 2002 levels.

Price Structure of Fish and Fishery Products



Source: Survey on Food Prices at Various Stages of Distribution (Survey on Fish and Fishery Product Costs) 2008 and 2013 (The Ministry of Agriculture, Forestry and Fisheries)

Volume Distributed Through Wholesale Markets in Consuming Areas and Its Percentage in Total



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

[Column: Relocation of the Tsukiji Market to Toyosu]

- Tokyo's Tsukiji Market, which opened in 1935, has been serving as the kitchen for Tokyoites while attracting lots of tourists from all over the world.
- As the market faces various problems (aging facilities, complicated traffic lines in the small premises, the need to improve the hygienic environment, etc.), however, it will be relocated to Toyosu in November 2016.
- The Toyosu Market, which is larger than the Tsukiji Market, has an advanced system for quality and temperature control, with the wholesale and intermediate wholesale areas are totally enclosed.



Rendering of the Toyosu Market, provided by the Tokyo Metropolitan Central Wholesale Market

(Status of the fishery processing industry)

- The production of processed fishery products has been on a gradual decline in recent years.
- The shipment value of the fishery processing industry stood at about 3 trillion yen in 2014, accounting for about 12% of the total shipment value of the entire food manufacturing industry.
- Most fish processing companies are small- to medium-sized enterprises with weak management bases. In particular, the number of small-sized fish processing companies are decreasing.
- About 60% of edible fish and shellfish distributed in Japan are for processing; the importance of processing is on the rise, driven by the consumers' needs for easy-to-cook foods and dining out.
- Decreases in catches and changes in their compositions make it difficult to procure an appropriate amount of right-sized raw materials, which is also the case with imports, as their prices are increasing and demand for fish and fishery products is growing worldwide.

(Introduction of HACCP)

- As implementation of hygiene management based on the HACCP principles is imposed on fishery products in the U.S., the EU, etc., fishery processing facilities need to introduce the HACCP principles when exporting fishery products to these countries.
- The government supports the holding of seminars about prerequisite programs and HACCP principles and renovation of fishery processing facilities for acquiring the HACCP authorization.
- In order to promote HACCP authorization for exports to the EU, the Fisheries Agency became an authorization body in addition to the Ministry of Health, Labour and Welfare, and started authorization activities in October 2014. The number of authorized facilities is 42 for the EU and 284 for the U.S. as of the end of March 2016.

(Marine Eco-Label Certification System)

- The Marine Eco-Label Certification System – where eco-labels are attached to products made from fish caught in a sustainable and eco-conscious way – is being adopted gradually, providing consumers with information that helps them select what to buy.
- Marine Eco-Label Japan (MEL Japan) started providing eco-label certification in 2007 while the Aquaculture Eco-Label (AEL) System has been in place since 2014 for certification of aquaculture practices. As of the end of March 2016, 23 products are certified at the production stage and 53 at the distribution and processing stage, with two aquaculture practices certified by the AEL system.
- On the overseas front, the Marine Stewardship Council (MSC) and the Aquaculture Stewardship Council (ASC) provide marine eco-label certification. As of the end of March 2016, Japan's two fishing practices are certified by MSC and 82 distributors and processors have obtained the CoC certification. In addition, oyster culture in the Tokura waters by the Shizugawa Branch of the Miyagi Prefecture Fisheries Cooperative obtained the aquaculture certification from ASC in March 2016 for the first time in Japan, while the CoC certification has been granted to 23 bodies so far.