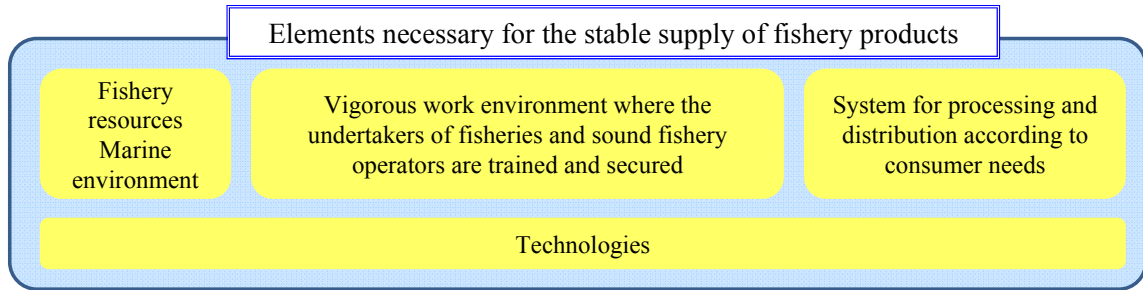


# Chapter 1 Highlight 1: New Efforts to Maintain a Stable Supply of Fishery Products

## Section 1. Toward Securing the Stable Supply of Fishery Products

○ In order to improve the capacity to supply domestic fishery products, Japan should develop fishery resources and a rich marine environment to nurture them, a vigorous work environment where the undertakers of fisheries and sound fishery operators are trained and secured, a system where fishery products are processed and efficiently distributed according to consumer needs, and technologies supporting all of these. Supporting these efforts are fishing villages and other regional communities, and the infrastructure for fishery product production and provision.

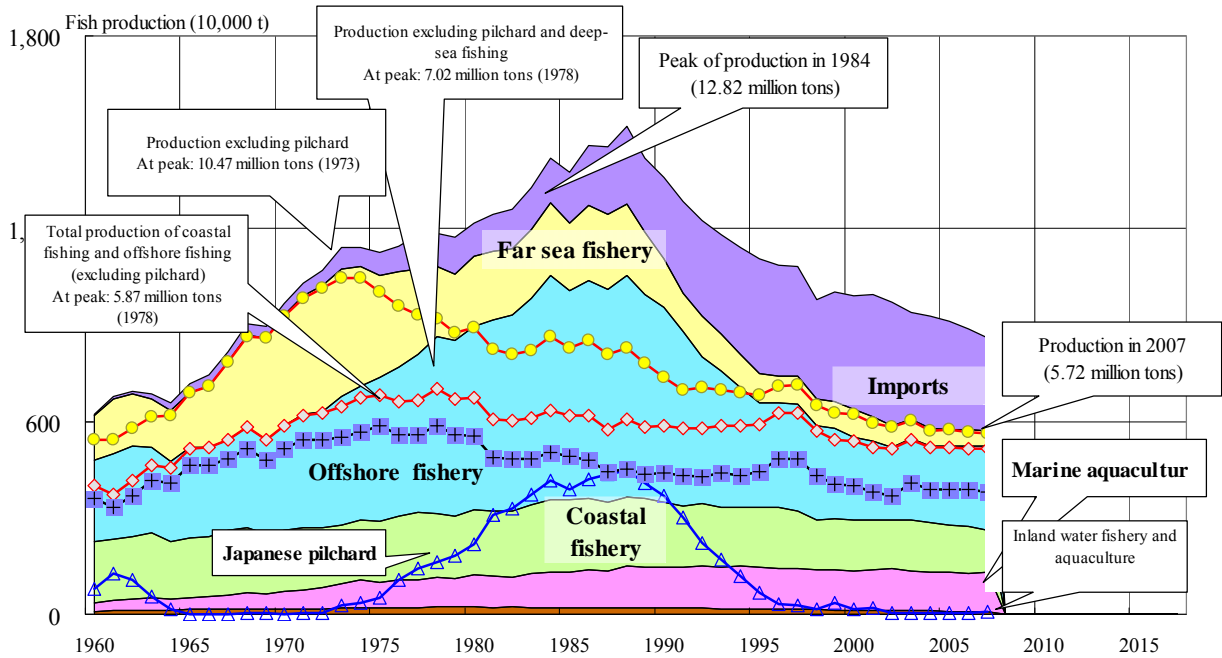


## Section 2. Factors and Structures Affecting the Stable Supply of Domestic Fishery Products

### (1) A Slump in Resources Levels

○ Japan’s fish catches have halved from their peak due to Japan’s withdrawal from fishing grounds in foreign countries’ 200-mile fishing zones and a fast decline in Japanese pilchard stocks that repeat fluctuations in a large cycle.

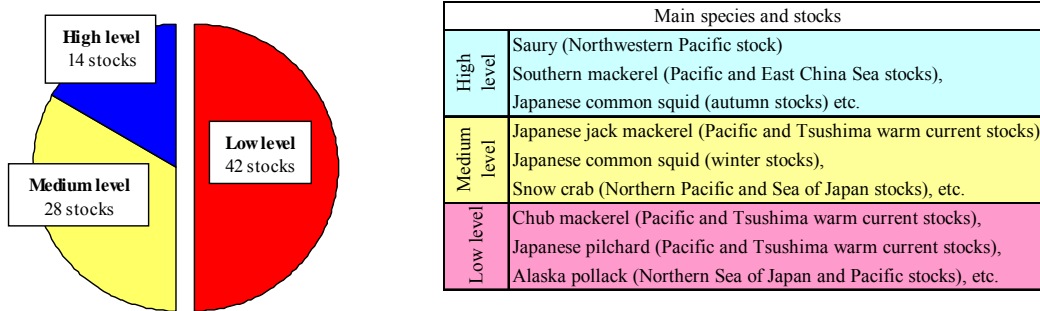
Changes Japan’s Fish Production and Imports



Sources: “Annual Fishery Production Statistics,” Ministry of Agriculture, Forestry and Fisheries; “Trade Statistics,” Ministry of Finance

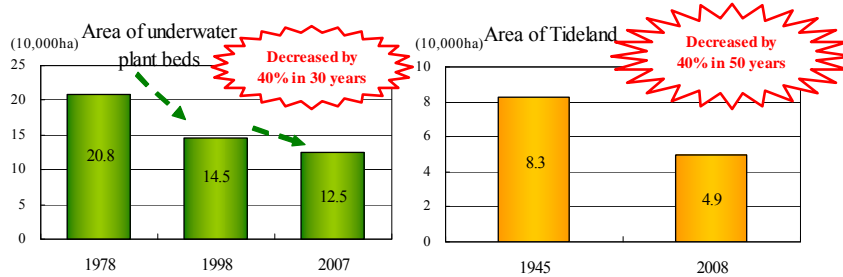
- Half of the fishery resources subject to assessment in the waters surrounding Japan are at low levels. Various factors are behind the decline in resources, including changes in the marine environment such as temperatures, a decline in seaweed beds and tidelands for the spawning and growth of fish through coastal development, and overfishing exceeding recovery potential for some resources.
- It is important to secure the management of resources, the preservation of seaweed beds and tidelands, and the rational use of fishery resources

### Status of Resource Levels in the Waters Surrounding Japan in FY2008 (Overview)



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

### Changes in the Area of Seaweed Beds and Tidelands



Sources: "Basic Survey on Natural Environment Conservation," Ministry of the Environment; Fisheries Agency surveys (2007)

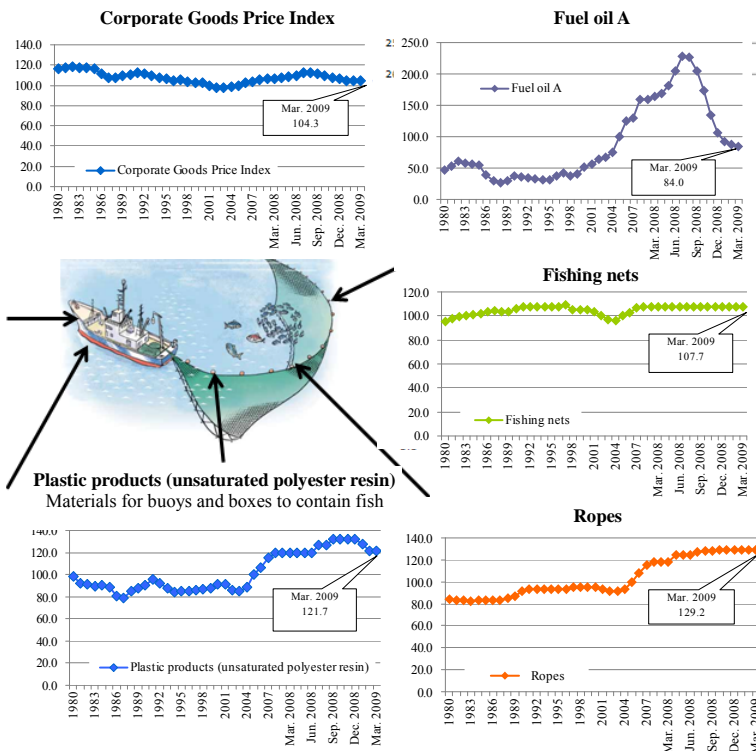
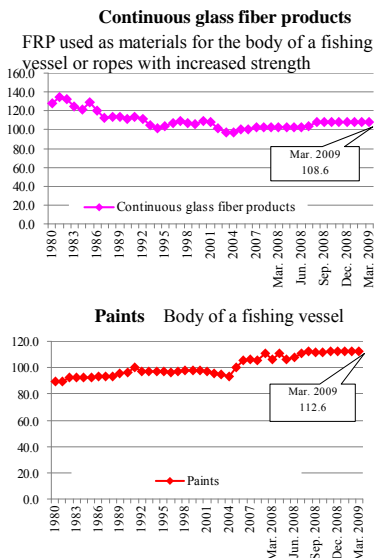
### (2) Fishery Production Growing More Vulnerable

- Fishing operation costs fluctuated wildly due to sharp hikes in fuel oil and production materials prices.

### Changes in Fisheries Production Material Price Indicators

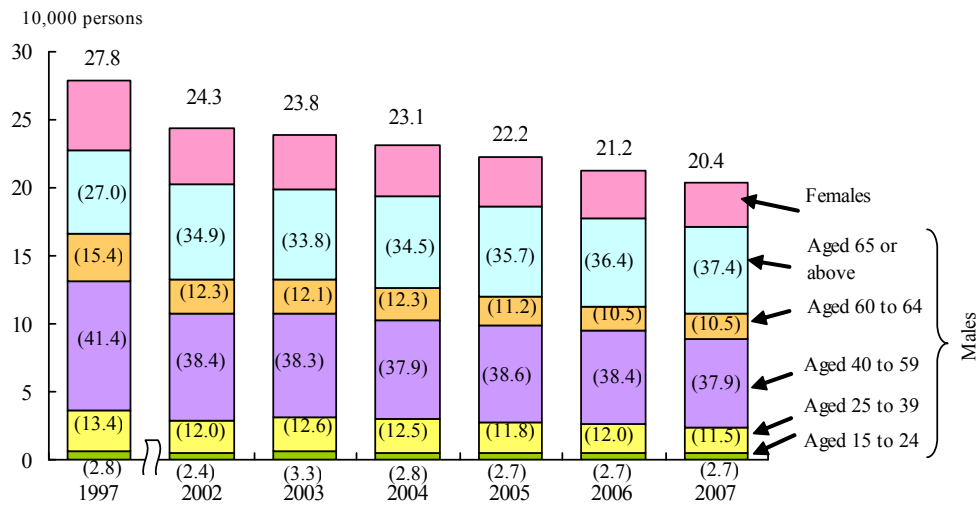
#### Changes in fisheries production material price index (2005 = 100)

Sources: "Price Indexes Annual" and "Price Indexes Monthly," Bank of Japan



- Fishery workers have been declining and aging. Japan's number of fishery workers in 2007 stood at 204,000. Of male fishery workers, those aged at or above 65 accounted for 37.4%. New fishery workers numbered 1,081.

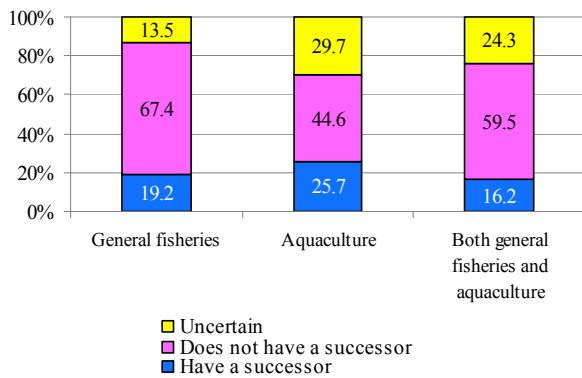
Changes in the Number of Fishery Workers



Sources: "Annual Fisheries Statistics" (1997), "Annual Fishery Labor Statistics" (2002), "Fisheries Census" (2003), and "Survey Report on Fishery Labor Trend" (from 2004), Ministry of Agriculture, Forestry and Fisheries

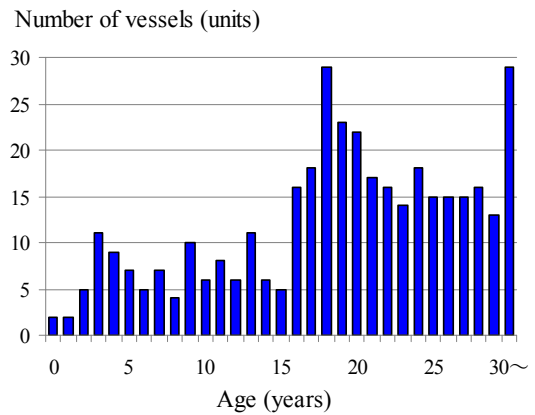
- Of fishery workers, those who say that they have a successor slip below 20%. It is feared that a shortage of young fishery workers will bring about a decline in the vitality of fisheries in the future.
- Replacements of fishing boats have failed to make progress due to the deterioration of fishing business performance. Fishing boats have been aging.

Presence or Absence of a Successor



Source: "Present Situation and Problems of Fisheries as Indicated by Questionnaire Survey of Fishery Workers," Norinchukin Research Institute

Average Age of Offshore Trawlers



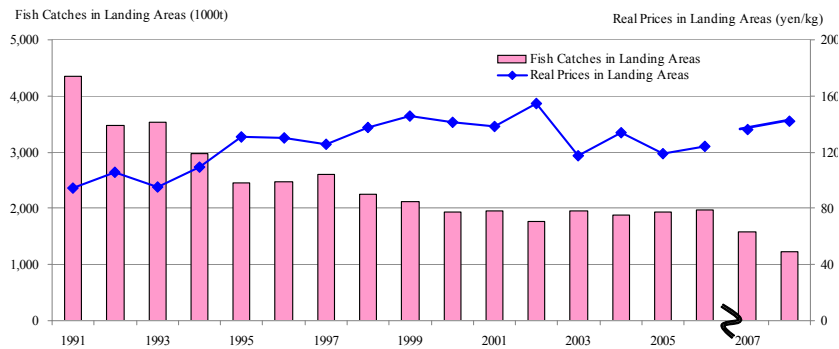
Source: Fisheries Agency (January 2008)

- Japan should enhance fisheries by developing and securing fishery operators that can withstand materials price fluctuations as seen over the recent years and by realizing efficient and highly profitable fisheries.

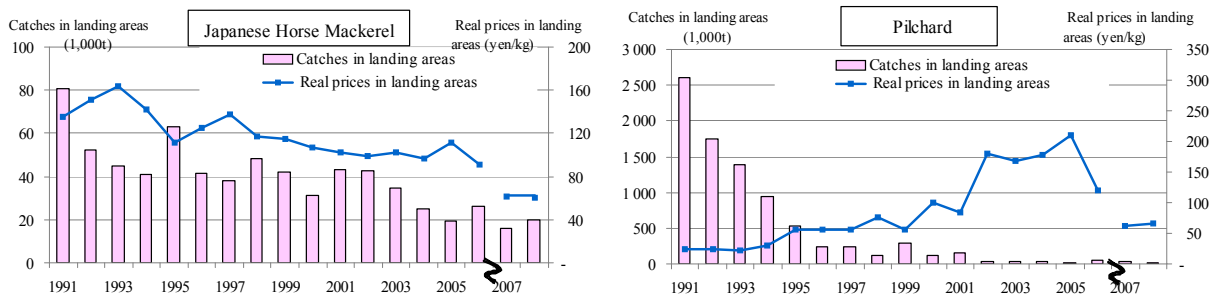
### (3) Changes in the Pricing and Distribution of Fishery Products

- Fish prices usually fall on a rise in fish catches and rise on a fish catch decline. While fish catches declined from 1991 to 2006, no major hikes were seen in fish prices. Price gaps were seen between species.
- Various factors have combined in a complicated way to cap fish prices, including an increase in cheaper fishery product imports, mismatches between demand and production, and the growing presence of mass retailers requiring fish producers to keep prices at certain levels.

Changes in Fish Catches and Real Prices in Landing Areas



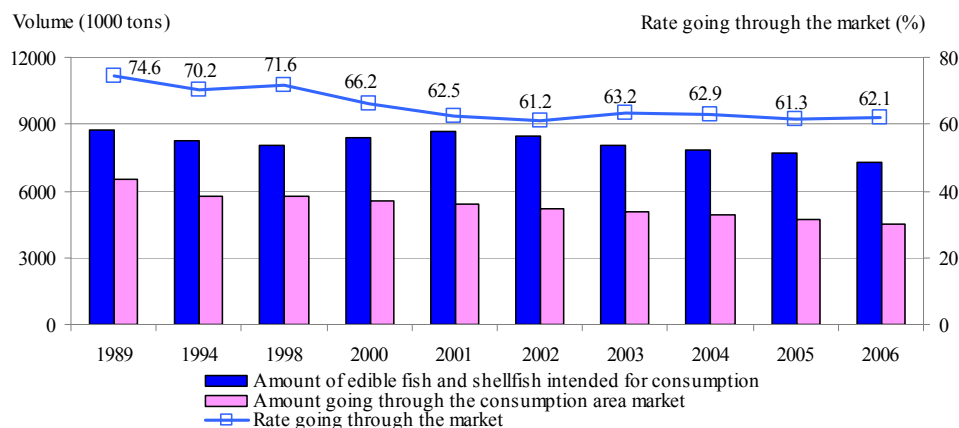
Changes in Japanese Horse Mackerel and Pilchard Catches and Real Prices in Landing Areas



Source: Prepared by Fisheries Agency based on “Fishery Product Distribution Statistics” by Ministry of Agriculture, Forestry and Fisheries

- Fishery products are distributed through two markets – a landing area wholesale market and a consumption area market. The wholesale market allows various fishery products from various landing areas to be auctioned for appropriate pricing under the basic principles of openness, equity, and fairness and provided to consumers promptly, efficiently, and stably.
- Amid the diffusion of freezing and processing technologies, an increase in output from fish farms, the development of distribution and information technologies, and other changes, transactions on wholesale markets handling domestic products and their share of overall fishery product trades in Japan have gradually declined.

Changes in Wholesale Market Transactions and Their Share of Overall Fishery Product Trades in Japan



Source: “Wholesale Market Data (FY2008)”

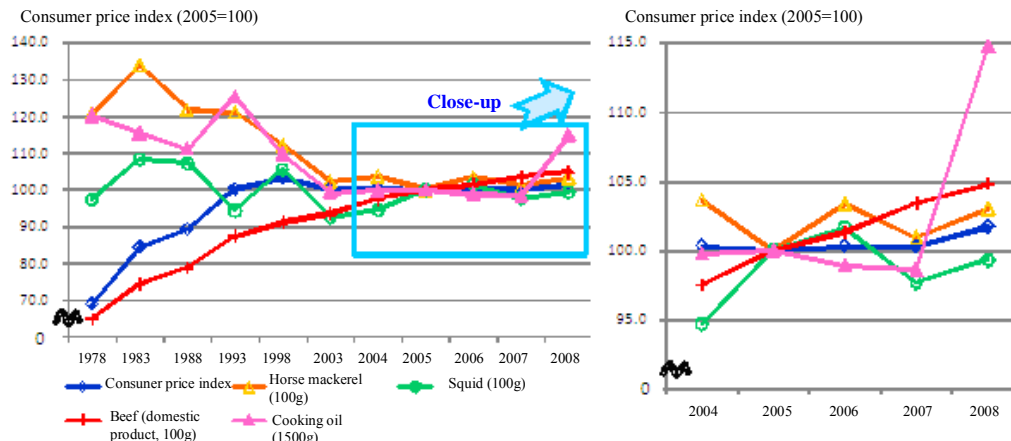
### (Changes in Consumption Trends)

- As consumers have increased their inclination for lower prices and simplicity, they have shifted from products for limited-volume, wide-variety production, seasonal products, fresh goods, and complete fish to products for large-volume, limited-variety production, non-seasonal products available throughout the year, frozen goods, and fillets.

### (Relationship between Cost Hikes and Retail Prices)

- While fishery product consumption has been declining, it is feared that any addition of production and distribution cost hikes to fishery product prices will reduce the frequency of consumers' fish purchases. Therefore, it is difficult to substantially raise retail prices.

### Changes in the Consumer Price Index (Nationwide)



Source: "Consumer Price Index," Ministry of Internal Affairs and Communications

### (Need for Enhancing Sales Capacity at Fish Landing Areas)

- Fish landing areas should enhance their sales capacity through efforts to take advantage of little-used resources for developing commercial products by increasing added value and introducing advice from downstream-sector consumers and outside experts.

### (4) Changes in Fishery Business Performance

- Business performance is relatively stable for small trawlers, scallop farmers, and large fixed-net operators that feature stable catches of relatively higher priced fishery products. Coastal squid fishing and far sea longline tuna fishing operations are vulnerable to fuel price fluctuations.

### (5) Flexible Responses to Changes in Social and Consumption Structures

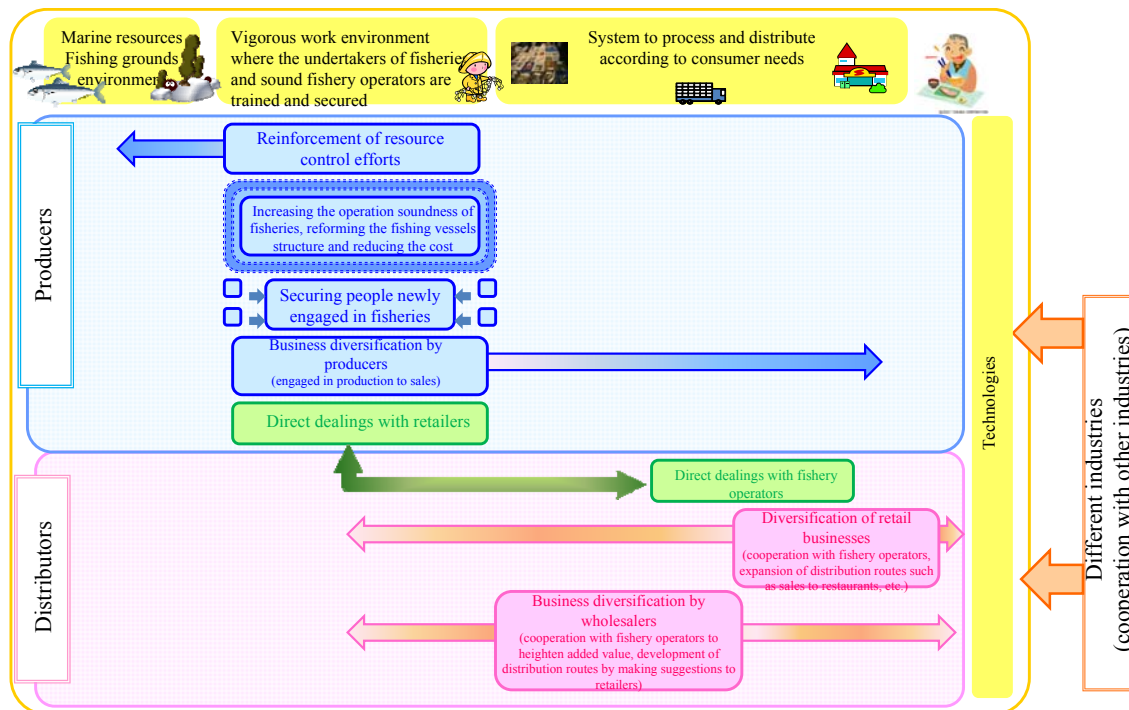
- Japan's fishery product production, processing, and distribution structures should respond flexibly to changes in social and consumption structures.

### Section 3. Toward Enhancing Fisheries

#### (1) What Japan's Fisheries Are Being Asked to Do

- As changes in the fish supply structure through falling fishery production and growing fishery imports have been coupled with changes in the consumption structure, the division of labor among producers, processors, and distributors has been changing.

Roles of Producers and Distributors Supplying Fishery Products



#### (2) Specific Cases

##### a. Toward Improvement of Domestic Production Capacity – Producers' Efforts

- Efforts to use resources sustainably have made progress, including fishery workers' management of resources and the introduction of the eco-label system. Structural fishing boat operation reforms have been implemented at various locations to improve profitability. Efforts have been made to train people undertaking fishing.

Leaving common fresh water clam resources in Lake Shinji to the next generation [Shimane Prefecture]

Management of common fresh water clam resources through restrictions on daily harvests, harvesting operation hours and locations, and a four-day workweek system. Lake bed cultivation and planting have been implemented throughout the lake. There are many successors.

Eco-label system expected to contribute to the sustainable use of resources

Snow crab resources in the Sea of Japan have been increasing thanks to fishermen's voluntary controls. In September 2008, snow crab and flathead flounder fishing operations by the Kyoto Prefecture federation of trawling fishermen received certification under an overseas eco-label system. In December 2008, red snow crab fishing operations in the Sea of Japan received the first certification under Japan's eco-label system.



Production and distribution reforms to invigorate local fisheries [Hachinohe, Aomori Prefecture]

In April 2008, a mini-fleet of a carrier with search functions and a net fishing boat with transportation functions was adopted to reduce crewmembers and fuel costs.



As students come to know the condition of fishing through fishing experiences, their dreams to become fishermen grow [Ibaraki Prefecture]

At a Kaiyo High School and Ose fisheries cooperative in Ibaraki Prefecture, a local fisheries experiment station and a local education board cooperate in conducting practical fishing training programs to develop future fishermen.



## b. Domestic Fish for the Dining Table – Business Diversification and Cooperation of Fish Producers, Distributors, and Retailers

- Fish producers conduct retail operations to make consumers aware of their products' value. Distributors and retailers join hands with fish producers to enhance sales of domestic fishery products. There are a growing number of such activities.

### Fish producers convey seasonal tastes to consumers [Saeki, Oita Prefecture]

Ten fishery workers in charge of fixed-net fishing, yellowtail and amberjack farming and Japanese flounder farming have founded a company, creating a joint fish processing facility to develop and produce local fish dishes. They also attend cooking training sessions.



### Fish producers convey the taste of familiar fish to consumers [Gamagori, Aichi Prefecture]

Company P has acquired the right to take part in a fish landing area market. It now buys fish through auctions and cooperates with fish producers to improve market prices. It devises methods to cook unused fish and proposes them at its retail shops. Fish producers have tried to keep fish fresh, contributing to improving fish prices.



### Pursuing a multifaceted distribution system to meet the diversification of eating habits [Sendai, Miyagi Prefecture]

A distribution center has been created outside the market to allow shippers to send goods directly to retailers through electronic commerce. Voice-entry and other systems have been introduced. Personnel costs and working hours have been reduced.



### Retailers' cooperation with fish producers through direct transactions (Shimane Prefecture)

The JF Shimane fishery cooperative has started direct transactions with food retailer I. The retailer purchases all catches at designated fixed nets in Shimane Prefecture once a month. The diversification of distribution channels is expected to shorten the distance between fish producers and consumers.



### Using outsiders to improve business capacity and fish prices [Atami, Shizuoka Prefecture]

Fishery Company A has cooperated with Company N to improve business operations. When the pre-fixed minimum prices are not achieved, Company A buys all the products. Fishermen pack products according to their own unified standards for sales through channels explored by Company N. Fish prices have risen and earnings have improved.



## (3) Conclusion

- In order to lead the people to make effective use of resources, Japan should improve its capacity to provide fishery resources through the introduction of new technology and ideas and should use domestic fishery resources to provide safe and reliable products that meet consumer needs.
- To this end, Japan should promote the management of resources and develop more profitable fisheries by training and securing fishery operators through energy-saving and labor-saving fishing operations and the replacement of fishing boats. These efforts should be used to build a vigorous work environment. Fishery products' added value should be increased and the distribution efficiency improved.
- Each change for the better should be allowed to spread as a large wave throughout Japan. Japan's fisheries have reached a turning point. A bright future for Japan's fisheries will depend on current efforts.

## Chapter 1 Highlight 2: The Japanese Dining Table as Seen by Children

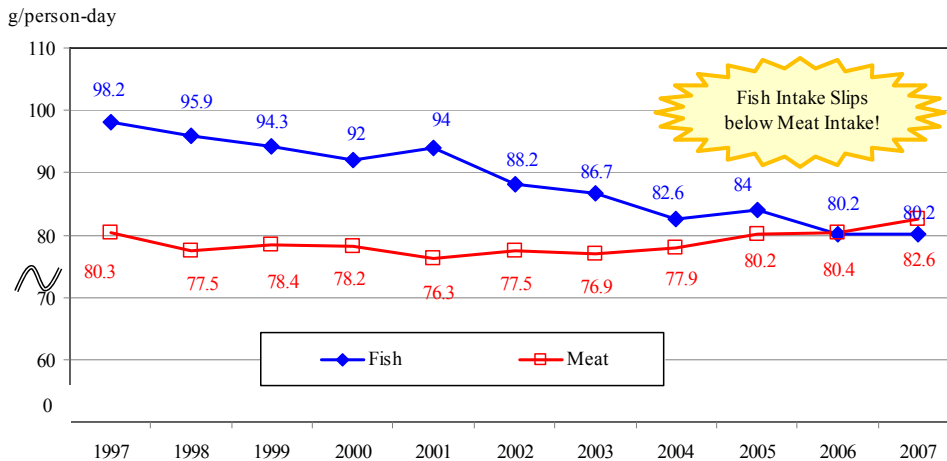
### -- The Future of Fish-Eating Habits that Nurture Children --

#### Section 1. A Growing Shift Away from Fish and the Impact of Children's Shift Away from Fish

##### (1) Fish Intake Slips below Meat Intake

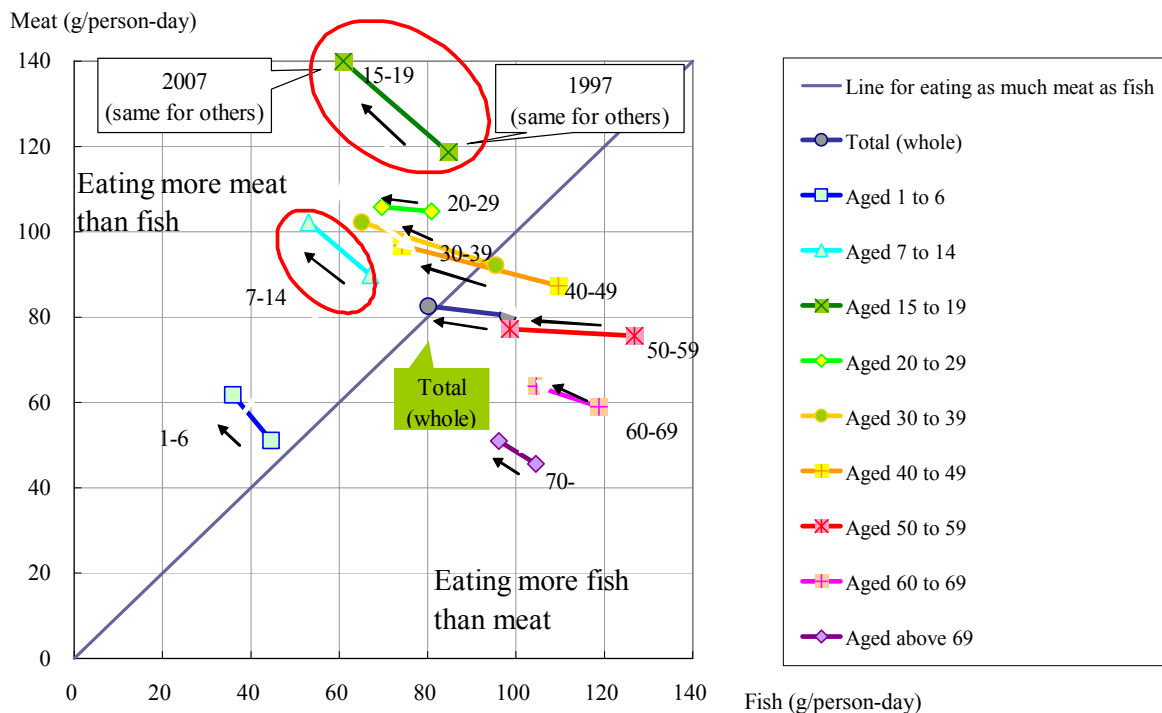
- A shift away from fish has been taking place. While fish intake has continued on a downtrend, meat intake has leveled off. In 2006, fish intake ended up slipping below meat intake.
- Fish intake has declined for all ages. From 1997 to 2007, fish intake decreased by more than 20% for the 1 to 19 age group and by more than 30% for the 30 to 49 age group.

Changes in Fish and Meat Intake (through the years)



Sources: "National Nutrition Survey" (1995-2002) and "National Health and Nutrition Survey Report" (from 2003), Ministry of Health, Labour and Welfare

Changes in Fish and Meat Intake (comparison between age groups)



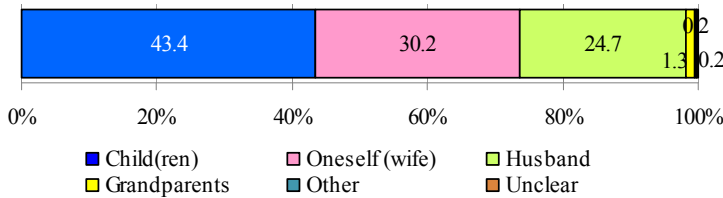
Sources: "National Nutrition Survey" (1997) and "National Health and Nutrition Survey Report" (2007), Ministry of Health, Labour and Welfare

## (2) Why the Shift Away from Fish is Accelerating

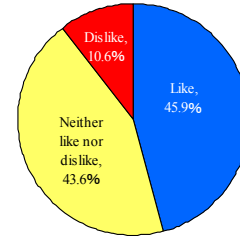
### a. Environmental Changes Involving Children's Eating Habits

- Not all children dislike fish. Sushi is very popular among children.
- The reasons cited for disliking fish are as follows: "There are bones." "Fish are difficult to eat." "Eating fish is time-consuming." "I dislike fishy smells."

Who is the first to say "let's eat sushi"?



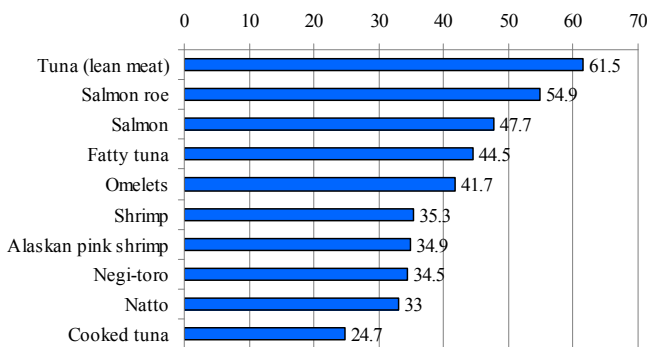
Do children like or dislike fish dishes?



Source: "Survey on Recognition of and Contacts with Sushi," Mizkan Group Corp.

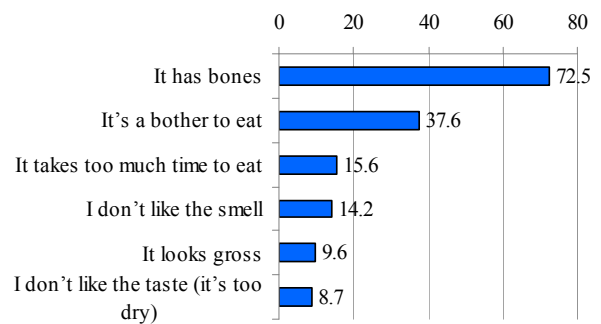
Source: "Survey on Consumption Including Fishery Products," Japan Fisheries Association

Sushi fish favored by children



Source: "Survey on Recognition of and Contacts with Sushi," Mizkan Group Corp.

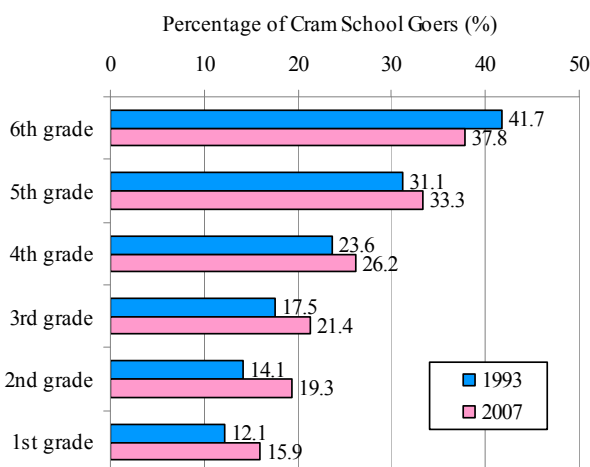
Reasons for disliking fish



Source: "Survey on Consumption Including Fishery Products," Japan Fisheries Association

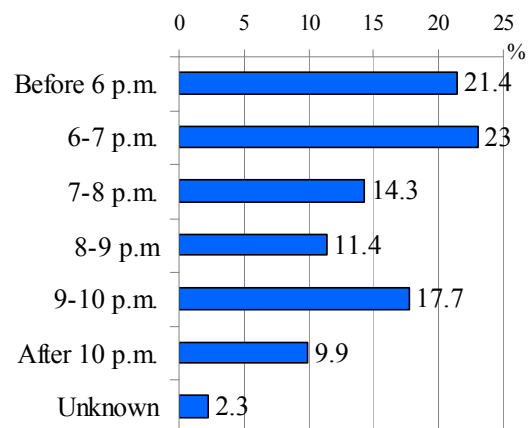
- The percentage of children going to cram schools has increased. Of all children, 27.6% go to cram schools or take lessons and return home at or after 9 p.m. Opportunities have declined for children to eat together with other family members. The percentage of children who eat without their parents or alone has risen.

Changes over Time in the Percentage of Cram School Goers by Grade



Source: "Fact-finding Survey Report on Children's Learning outside Schools" (2008), Ministry of Education, Culture, Sports, Science and Technology

Time for Returning Home from Cram Schools or Lessons

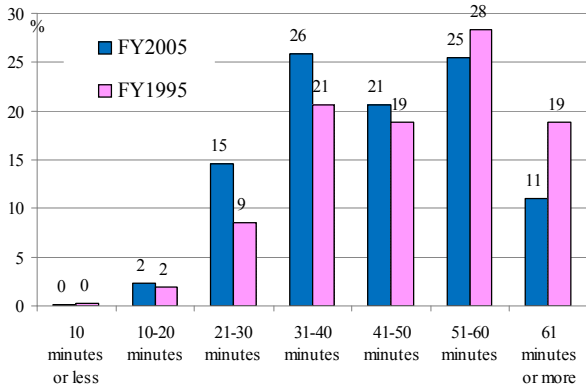


Source: "Fact-finding Survey Report on Regional Education Capacity" (2006), Ministry of Education, Culture, Sports, Science and Technology

b. Environmental Changes Involving Parents' Eating Habits

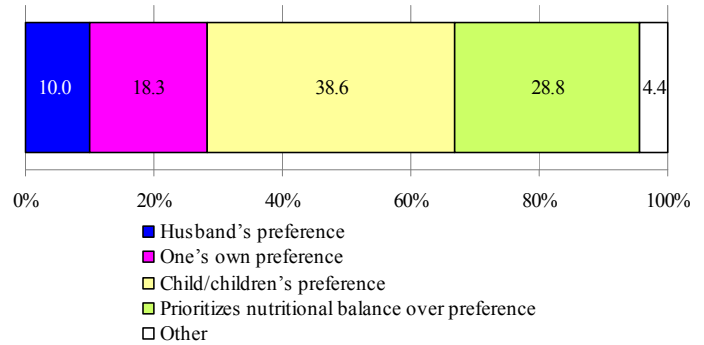
○ As the time for cooking has declined, people have tended to shift away from fish that are considered difficult to cook. The percentage of those who cannot clean a fish is higher for younger generations. Some people may complain that post-cooking cleanup for fish is a bother and that it is difficult to deal with fish food scraps. Parents tend to provide dishes meeting children's preference for meat rather than fish. These factors might have reduced the chances for parents to cook fish at home.

Dinner Cooking Time



Source: "Fact-finding Survey Report on Students' Eating Habits" for FY1995 and FY2005, National Agency for the Advancement of Sports and Health

Who is Given Priority in the Selection of Dinner Dishes?

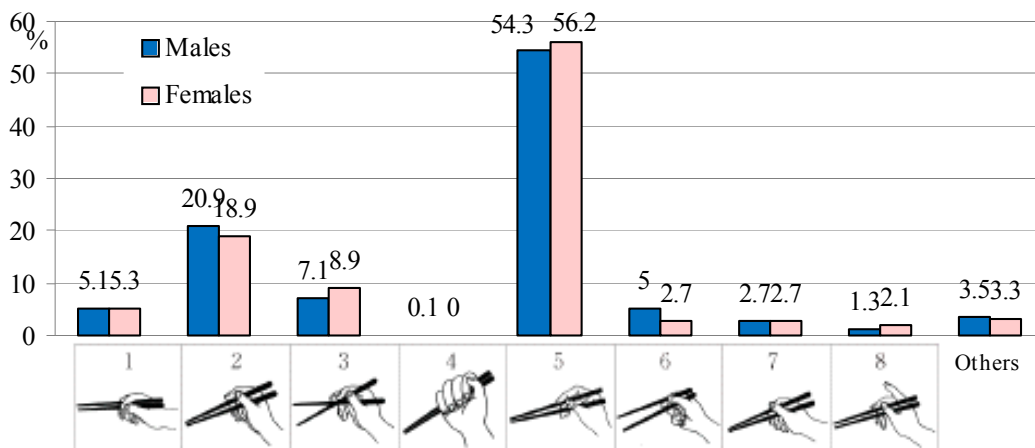


Source: "Survey on Consumption Including Fishery Products," Japan Fisheries Association

(3) Impact of Children's Shift Away from Fish

- Recent findings say that functional factors DHA (docosahexaenoic acid) and EPA (eicosapentaenoic acid), which are contained in fish fat and only minimally synthesized in human bodies, can play a key role in the developing brains of fetuses and children.
- Fine motor skills are required for eating fish because bones have to be removed. Only a half of students studied were able to hold chopsticks in a way that has long been considered functional (see figure 5 below). Fish dominate New Years' dishes. The shift away from fish is feared to reduce the opportunity for parents to convey Japan's traditional eating habits to their children.
- The frequency of children's contact with the sea and fish has declined. Opportunities have decreased for children to know the good taste of very fresh fish, how to clean a fish and their relationship with fish and fishermen.
- Over the long run, it is feared that children's shift away from fish will affect the fishing industry's pursuit of sustainable development.

How to Hold Chopsticks for Eating (elementary school students)

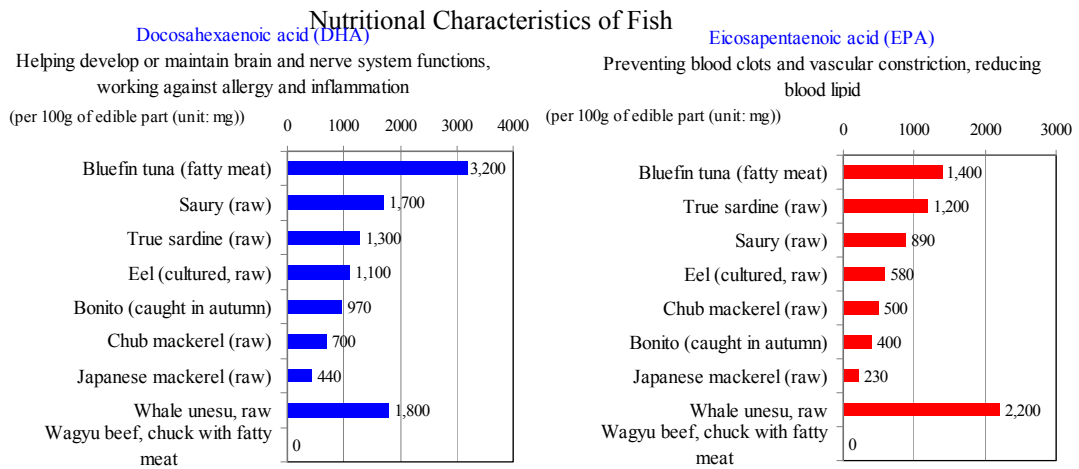


Source: "FY 2005 Fact-finding Survey Report on Students' Eating Habits," National Agency for the Advancement of Sports and Health

## Section 2. Sound Eating Habits Developed through Family, Enterprise, Local Community, and School Ingenuity and Efforts -- Fish for Children --

### (1) Information on New Value

- Fish are rich in DHA, EPA, taurine, calcium, and iron.
- Information on nutritional characteristics should continuously be given to consumers.



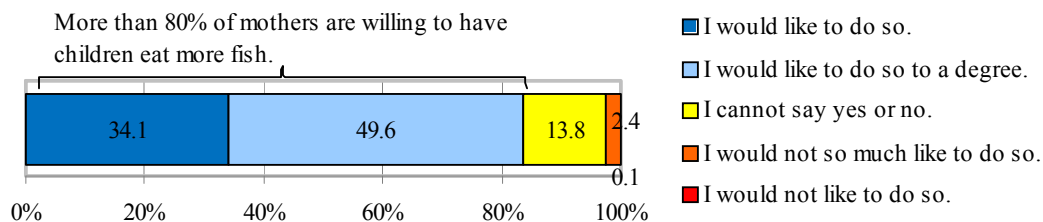
Functional components	Major functions	Major seafood containing functional components
Taurine	Adjusting blood pressure, eliminating cholesterol, improving liver functions, maintaining eyesight	Squid, oyster, octopus, abalone, scallop, prawn, salmon
Calcium	Forming bone, adjusting blood pressure and nerve systems	Small fish
Iron	A main component of blood erythrocyte (hemoglobin), helping maintain human body functions	Laver, hizikia, lam

Source: Table of Standard Japanese Food Components (5th edition)

### (2) Diffusion Cooking Methods for Home Cooks and Reducing Their Burden

- More than 80% of mothers are “willing to increase the opportunities for children to eat fish.”
- It is important to diffuse knowledge about dishes, eating habits, and cooking methods. Fish-handling methods, and semi-finished and finished fish dishes should be provided. Cooking information should be given through face-to-face sales and new fish dishes should be proposed.

#### Are You Willing to Get Your Child to Eat More Fish?



Source: “Survey on Consumption Including Fishery Products” (2008), Japan Fisheries Association

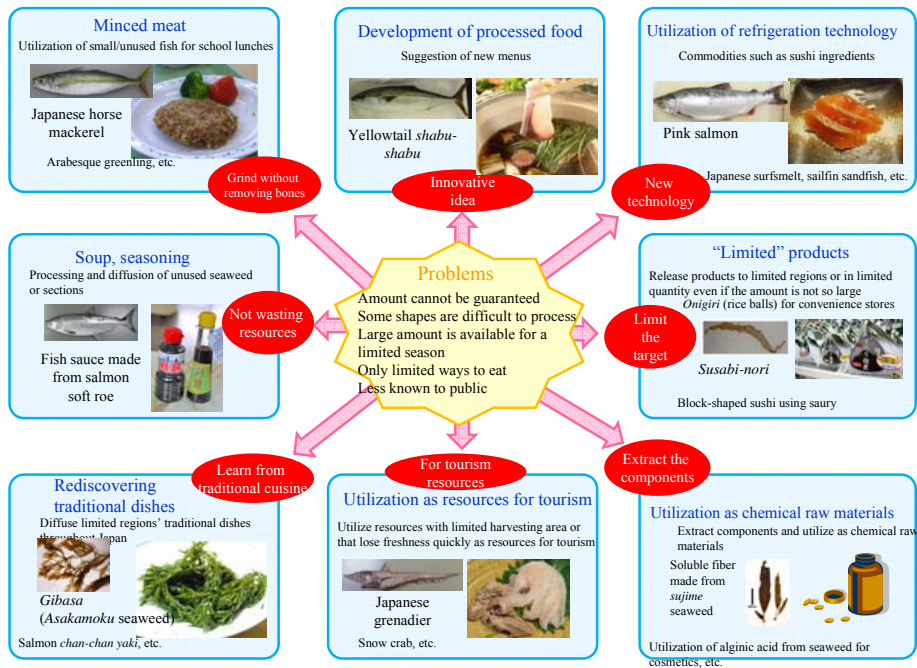


Food education seminars by fish experts

### (3) Proposals Sought from Fish Landing Areas

- Fish landing areas are expected to add value to fish and undertake the primary processing of fish. It may be effective for fish landing areas to provide their traditional fish cooking and eating methods. These areas are also expected to develop new products using abundant and little-used fishes.

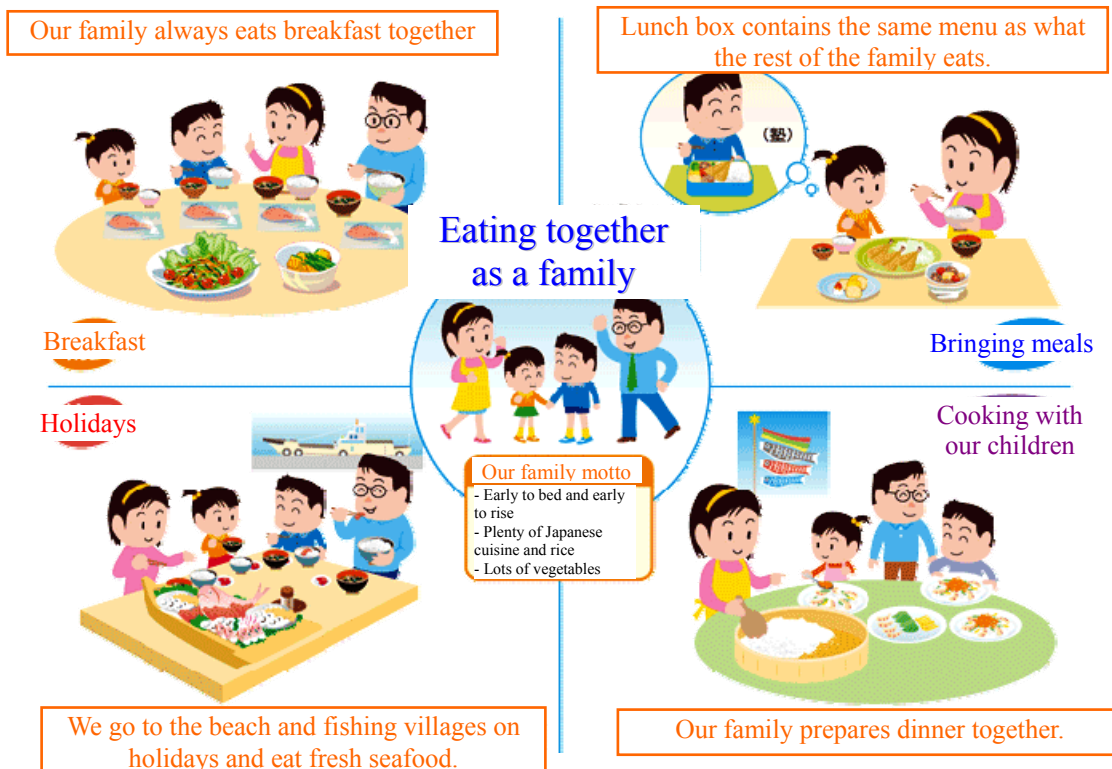
#### Cases of New Efforts



### (4) Eating Together to Preserve the Fish-Eating Culture -- Techniques to Deepen Family Relationships

- Eating together means that family members take their meals together. Families and local communities may have to increase their techniques and efforts to promote eating together in a manner to meet social changes including the increase in double-income households and cram school goers.

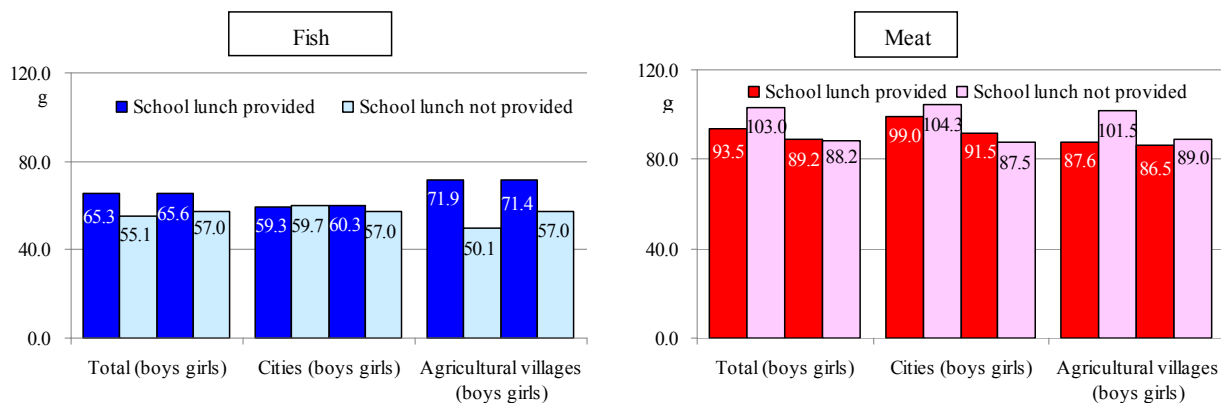
#### Examples of “Eating Together”



## (5) Domestic Fish for School Lunches

- School lunches are designed to promote a proper understanding of meals and desirable eating habits and secure the healthy growth of students through nutritionally balanced meals. Recent school lunches cover local farm and fishery products and local dishes to promote food education for the conveyance of local farming, fishing, and eating cultures to children.
- School lunches are believed to play a key role in increasing children’s fish intake. Landing areas and local communities are expected to enhance their cooperation and relationships to increase techniques and efforts to improve processing and cooking methods for relatively cheap and nutritionally rich seasonal fishery products and less used fish, and to develop fish dishes that children like.

Daily Meat and Fish Intake (elementary school students)



Source: “FY2007 Survey Report on Eating Conditions for Students,” National Agency for the Advancement of Sports and Health

## (6) Fish-Eating Culture Learned through Various Experiences

- Nonprofit organizations and fishermen have taken leadership roles in implementing programs to provide fishing experience, environmental learning, and other opportunities for children to have contact with the sea. These programs allow children to realize fishermen’s efforts and ingenuity, the joy of harvesting, and nature’s support for our meals, and to thank nature for such support.

### Providing marine harvests from Hachijojima Island to many children [Tokyo]

The women’s division of the Hachijojima fishery cooperative federation has taken a leadership role in producing minced fish for school lunches using nonstandard Japanese horse mackerel and flying fish that had been little used. The minced fish are delivered to elementary schools in Tokyo. The division has devised fish hamburgers that have been popular among children. Pictures of the island and samples of fish for mincing are sent to schools to promote students’ understanding about fishing.



### Nurturing children’s understanding about eating in a “Food Country” [Obama, Fukui Prefecture]

The city of Obama has enacted a “food town building ordinance” to position food education as a key policy, and opened the “Kids’ Kitchen” cooking course using local food materials. Children are being led to clean locally harvested jack mackerel and bigfin reef squid by themselves.



## (7) Conclusion – The Future of Fish-Eating Habits that Nurture Children

- We are responsible for ensuring children’s sound eating habits, understanding Japan’s rich “fish-eating culture,” and conveying the culture to children, supporting the next generation.
- Families should cooperate with efforts to nurture children’s eating habits, while enterprises, local communities, and schools should support a new environment for what children eat. These efforts are expected to help build the future of fish-eating habits that nurture children.