



Keio Business School

Agriculture, Food, and Resilience in Japan

1. Introduction

Japanese agriculture has two profiles, one is that Japan has been historically based on agriculture in particular rice crops. It had been the base of Japanese economy as the main industry, and had formed the base of culture and environment of Japan. It is symbolized by the landscape of rice paddy and sometime Japan is called the country of “Fresh Rice Plant (Mizuho)”. The other is that Japan no longer relies on agriculture as the main industry in terms of the size of production, GDP, employment. Still how to develop agriculture is the important agenda for Japan. A serious problem of Japanese agriculture is its low productivity in terms of labor and total factor input. In response, policy makers have attempted to raise productivity by increasing the number of business oriented farmers or corporations equipped with larger scale land and IT. At the same time, policy makers pursue the free trade represented by the TPP (The Trans-Pacific Partnership)^[1] in which tariff rates should be reduced significantly to increase import on one hand, while promoting export of Japanese agricultural products on the other hand. Agriculture and foods play the key roles in disaster prevention. The 2011 East Japan Earthquake had afflicted the agricultural production and fisheries in East Japan. At the same time, health and wellbeing of people critically depends on agriculture and foods. Japanese agriculture should be transformed in a way to increase its productivity and employment to be competitive in global market, while it should conserve environment and support health and wellbeing of people.

2. Mr. Shimada and 3.11 East Japan Earthquake

Mr. Masayuki Shimada, in his mid-thirties, has been a leader of entrepreneur in Japan. Graduating from Hokkaido University of Education with a teacher license, he has established his education business in Hokkaido. Then he moved into Sendai in Miyagi Prefecture where he has established various business. In particular, he was focusing on agriculture and food business as shown

^[1] MAFF, Japan's International Economic Policy on Agriculture, http://www.maff.go.jp/e/policies/inter_relate/inter_econo/, 2016.

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by his activities related to “Marche Japon Project” in Sendai area. Marche Japon was initiated and supported by the MAFF (Ministry of Agriculture, Forest, and Fisheries Japan) in 2009 to promote sales of agriculture products in urban area by matching rural producers and urban consumers with face to face communication. Under the policy initiatives, various groups were created to plan and carry out Marche projects across Japan. Groups that were approved early by the government could receive subsidies from the government, while the late comers should go without subsidies^[2].

In typical example, these groups hold occasional events like festivals to sell agricultural products in urban area by renting open space near shopping mall or parking lots of residential buildings. The important roles of these groups are to realize festival for urban residents while making profit for each sellers. Mr. Shimada created a Marche in Sendai with his firm (Familiar) and other Sendai area firms.

In the midst of his working at his office, he faced the 2011 East Japan Earthquake. Directly after the hit of earthquake, he drove back to his home in Natori next to Sendai Airport. After a while, Tsunami came to his hometown and waves had reached just a few blocks before his home^[3]. He recalled the surrealistic image of a floating helicopter on the Tsunami wave over the area that was rice paddy and residential land while ago.

After he stayed at refuge in two days, he started his aid activities with his team along the coast including Minami-Soma, Yamamoto, Watari, Ishinomaki (**Figure 1**)^[4]. His team supplied 30,000 meals and 300 tons of relief supplies. In appreciating these efforts, his firm Familiar was awarded Japan Corporate Social Responsibility 2nd Prize^[5]. He recalled.

“It was just two days after the earthquake, no media and police services were available at refuge, I and my team had tremendous tension in providing meals and relief supplies to thousands of refugees. Food and water in refuge was so scarce that people waiting for the supply were seemingly excited with anger. Because of these continued efforts, my firm Familiar was to face financial distress. I even think of the possibility collapse. I did not care about it. Then there was a large amount of donation provided by people who wanted to help us. We made a near escape.”

^[2] Marche Japon, <https://www.marche-japon.org/about/> (in Japanese only). The purpose of marche is to match farmers and urban residents directly by face-to-face communication. Difficulties lie in 1. Farmers to participate in marche is limited with aging suppliers. 2. How to educate farmers in communicating with consumers. 3. How to establish cost effective transportation. How to locate and manage shops.

^[3] <https://www.city.natori.miyagi.jp/soshiki/soumu/311kiroku/index/eizou-mirai>

^[4] Toyo Keizai net, “Reality of Volunteers in Damaged Area (translation)” (被災地ボランティアの現実、炊き出しなど支援に奔走する仙台の生鮮食品販売会社社長に聞く【震災関連速報】 <https://toyokeizai.net/articles/-/6580?page=2>

^[5] 5-th CSR Prize (第5回市民が選ぶ CANPAN CSR大賞2011) http://blog.canpan.info/csaward_2011/

3. Creation of New Food Supply Business

In helping refugees, Mr. Shimada had been convinced with the importance of agriculture and food for wellbeing of the people. His belief about disaster recovery was summarized as follows. First, food and water as well as good eating habit are the keys to maintain people's health and well-being. Second, to create jobs with new business is vitally important for society in the regions afflicted by severe disaster. Third, people who suffered most is the handicapped, aged, children, and weak people in society, a recovery plan should be formed to help them.

With combining his business experience and insights, he planned to create new business in the area of Sendai which was severely damaged by Tsunami. He focused on two locations, one is Tagajo-Shichigahama and the other is Natori district. He participated in the committee as a member to draft Tagajo Recovery Plan (2011)^[6]. Tagajo is suburban small city connected to Sendai^[7]. It is a city of residents who work in Sendai and industrial base relying on Sendai Port facilities and hub of roads connecting Sendai to North and East of Sendai. Historically, Tagajo was an old regional capital of North-East Japan with government facilities since the 7th century.

In addition to the damage of Tsunami, Tagajo was facing the hollowing business. In particular, Sony Technology Center decided to close significant part of laboratory and manufacturing plant in Tagajo. In response, creation of new business in Tagajo was required for the recovery plan. City government created "San-Mirai Tagajo Recovery Industrial Park" to invite enterprises. It was criticized by many because the similar industrial parks in Japan failed to attract new enterprises. Mr. Shimada, then his firm was renamed as "One Table", decided to locate its factory to produce new type of "jelly food" for the stock of disaster.

4. Bosai Jelly (Disaster Prevention Jelly)

Mr. Shimada has been engaged in various projects including agriculture, education, restaurants, retail. He emphasizes Bosai (防災 : disaster prevention) as the main concern of his business.

^[6] <https://www.youtube.com/watch?v=EgvTPm0TPJc>

^[7] Tagajō is a city located in Miyagi Prefecture, Japan. As of 1 June 2019, the city had an estimated population of 62,435, and a population density of 3,171 persons per km². The total area of the city is 19.64 square kilometres. The city was named after Taga Castle, the capital of Mutsu Province from the Nara period. Wikipedia.

“Rural part of Japan, especially in areas afflicted by disaster, new venture business is extremely difficult. The more we conduct marketing research, the more we are convinced of difficulties with new business. In response, instead of marketing, entrepreneurs should create business based on his experience, instinct, and knowledge in full scale. Belief and credo of an individual entrepreneur were vital in creating new business.”^[8]”

“When the 3.11 earthquake hit Japan, people in refuge should suffer from poor nutrition and shortage of water. Typical food reserve in refuge is “dry bread” that is stored by local governments and many enterprises. The problem is that dry bread is hard for the aged and children to swallow without water. It has only carbohydrate as nutrition and caused poor health conditions of them. Without heating facility of gas or electricity, we cannot cook “boil-in-the-bag precooked food (retort).” So I came to the conclusion it should be jelly type food in tube.”

“I have searched for the state of the art technologies to make perfect nutrition and tasty jelly and fill it in aluminum bag to last as long as five years without deterioration. Five years of retention period is required by local governments. I have succeeded in these inventions and produce the “Life Stock” jelly brand.” (Figure 2)

He wishes to make it popular as food reserves at refuge, food for aged and infants, and so on. He also plans to sell it in emerging market where water or electricity is in short supply. He even thinks that this life stock jelly is suitable for foods for astronauts in space where water is not ample, cooking is not possible. With this regard, his firm One Table and JAXA (Japan Aerospace Exploration Agency) have made a contract of co-development of Life Stock.^[9]

5. Roku Farm Atalata

In September 2013, Mr. Shimada and other partners had established a new commercial facility “Roku Farm Atalata” in Natori. It is a commercial complex with bakery, restaurants, soba noodle shop, English nursery school and others. The purpose of facility is to promote recovery from the earthquake with creating new jobs, helping agriculture and fisheries, enlightening people with disaster prevention. He claims that this facility represents the idea of diversification of primary industry like agriculture into sixth industry^[10]. The location in Mori-sekinoshita which is 15 minutes distant by

^[8] Jigyo Koso(Project Design Online), 2018 September, “Local Venture, Business de Fukko wo Kennin, HIsaichi kara Umareta, Sekaihatuno Bichikusyoku (Lead recovery by Business, World First Life Stock invented in Afflicted Area. <https://www.projectdesign.jp/201809/local-venture/005342.php>

^[9] JAXA, “Bosai Space Food” <https://aerospacebiz.jaxa.jp/solution/j-sparc/projects/onetable/interview/>

^[10] Diversification into sixth industry means that people in primary industry (agriculture, forest, and fisheries (1)) should extend its business into secondary industry (manufacturing (2)), and tertiary industry (sale and services (3)). Agricultural economist, Imamura Naraomi coined the word of Sixth Industry with implying $1+2+3=6$. Six is the number “Roku” in Japanese.

train from Sendai station, is the newly developed residential area in Natori along with Masuda River. A huge shopping mall of AEON retailing group (total floor space 117,000 m² with AEON supermarket and 172 tenants) is close to Atalata. Total investment cost of Rokku Farm 660 million yen was provided by bank in the form of project finance. Mr. Shimada has played the central role of producer of Roku Farm and his One Table provides consulting and management services for the operation of Roku Farm. He claims that we implement Roku Farm with the following principles.

“To promote recovery from the Earthquake, we need new jobs. In particular, we increase the jobs for the handicapped. We use the following system to promote jobs of the handicapped. While our firm One Table is in charge of planning and consulting, there is another entity Tohoku Fukko Project (Tohoku Recovery Project) that was established on law for the non-profit-organization, “general incorporated institute (Ippan-Syadan-Hojin). This mostly employs the handicapped, Currently it employs 20 handicapped and 5 supporting staffs for the handicapped The work of the handicapped is regarded as the off-site job based on the service contract that One Table makes with Tohoku Fukko Project. Those handicapped people provide various services including cooking, cleaning and maintaining the site facilities, Tohoku Fukko Project receives subsidies from the government based on employment of the handicapped.

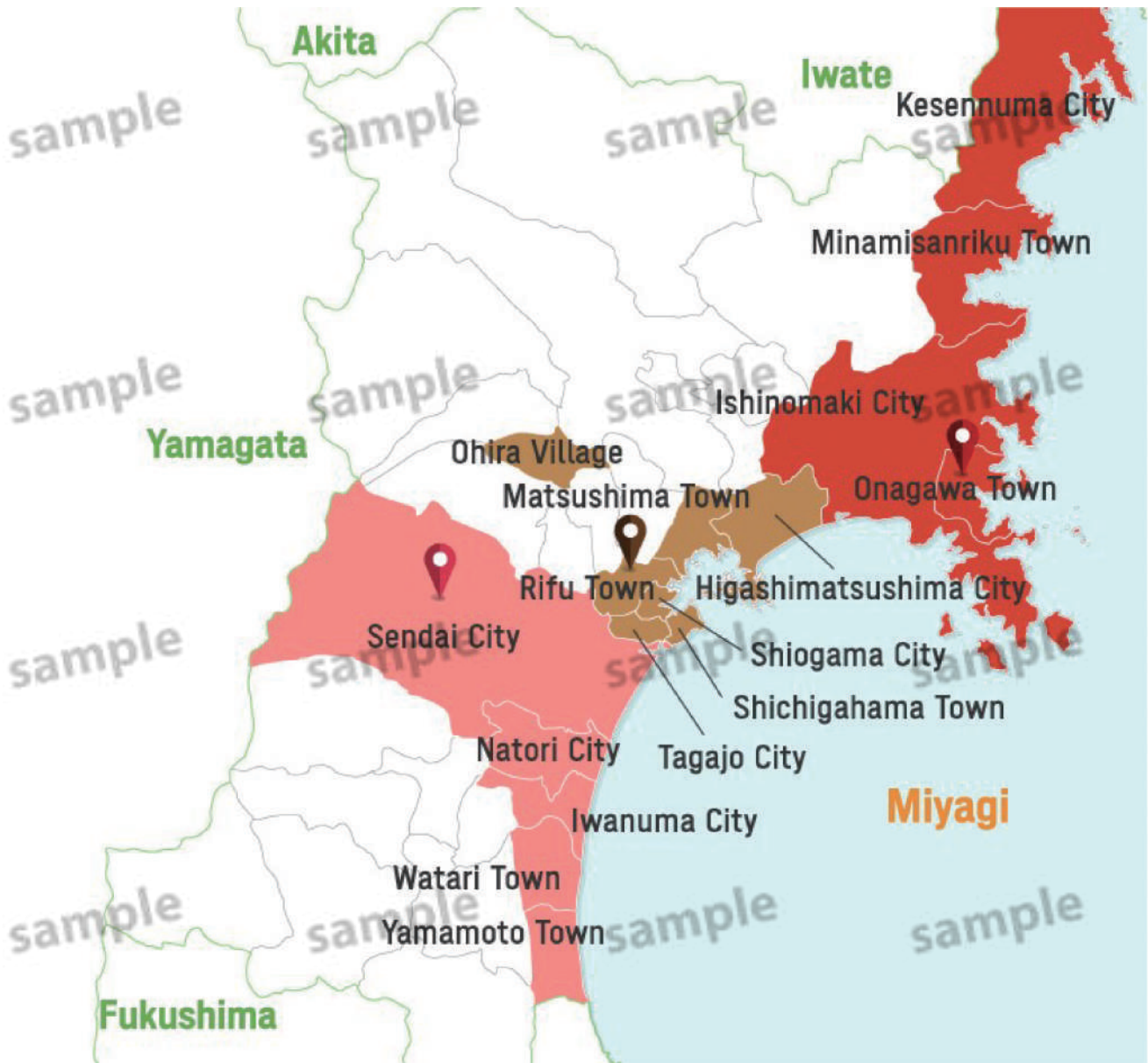
By establishing a service contract between business firm like One Table and general incorporated association like Tohoku Fukko Project, we can increase performance of each entities as well as efficiency of the handicapped. Accordingly the handicapped people can earn more. I believe that PPP (Private Public Partnership) is the base for our activities. Subsidies to business and social security payment are not enough for the handicapped. They need higher wage by raising contribution to production.

After restructuring of directions and control of Roku Farm Atalata, now One Tables is in charge of its operation with employment 112 and Tohoku Fukko Project 25.

6. Future Problems

Mr. Shimada, in the midst of his thirties, continues to work and impress many people. But what he should do next. And how does he integrate his various group activities. Does he convince people with his “Life Stock “ jelly? Does Roku Farm Atalara continue to survive? Is his belief in the combination of agriculture and fisheries with manufacturing and selling paid off? These are yet clear.

Figure 1 Map of East Coast of Japan



Source: Tokyo 2020 Organization

https://tokyo2020.org/assets/img/pages/special/torch/olympic/detail/map_miyagi_en.jpg?revision=20

Figure 2. Life Stock Sample



Source photo by the author.

Figure4. Roku Farm



Photo Roku Farm Atalata,

Upper:

<https://image.jimcdn.com/app/cms/image/transf/dimension=504x10000:format=jpg/path/s88d4889403f47e58/image/i9ad951553dd1ea38/version/1486160496/image.jpg>

Lower: by author

Appendix, Japanese Agriculture

This appendix is based on excerpt from Ministry of Agriculture, Forestry and Fisheries Japan, 2014, *FY2013 Annual Report on Food, Agriculture and Rural Areas in Japan, Summary* and other publicly available data.

Excerpt

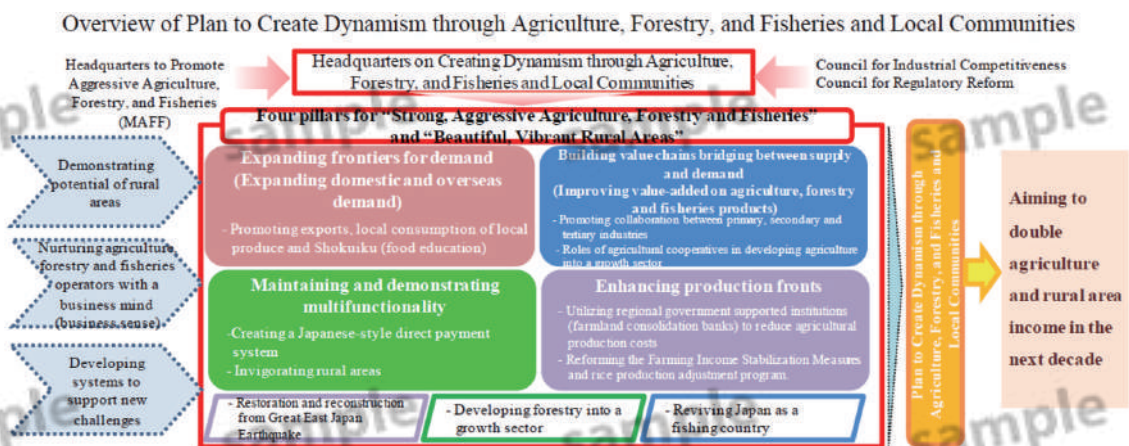
Four reforms including establishing Regional Government Supported Institutions and revising Farming Income Stabilization Measures

○ As conditions surrounding agriculture and rural areas are growing severer, revitalizing agriculture and rural areas is an urgent challenge. Therefore, the government and ruling parties have considered specific measures to this end.

○ As the MAFF Headquarters to Promote Aggressive Agriculture, Forestry and Fisheries compiled priority measures in December 2013, the Prime Minister-headed Headquarters on Creating Dynamism through Agriculture, Forestry, and Fisheries and Local Communities decided on the Plan to Create Dynamism through Agriculture, Forestry, and Fisheries and

Local Communities, a grand design for agriculture policy reform.

○ The plan calls for rebuilding agriculture policy under four pillars to double agriculture and rural area income in the next decade, creating “Strong, Aggressive Agriculture, Forestry and Fisheries” and “Beautiful, Vibrant Rural Areas” on which young people can place hopes.

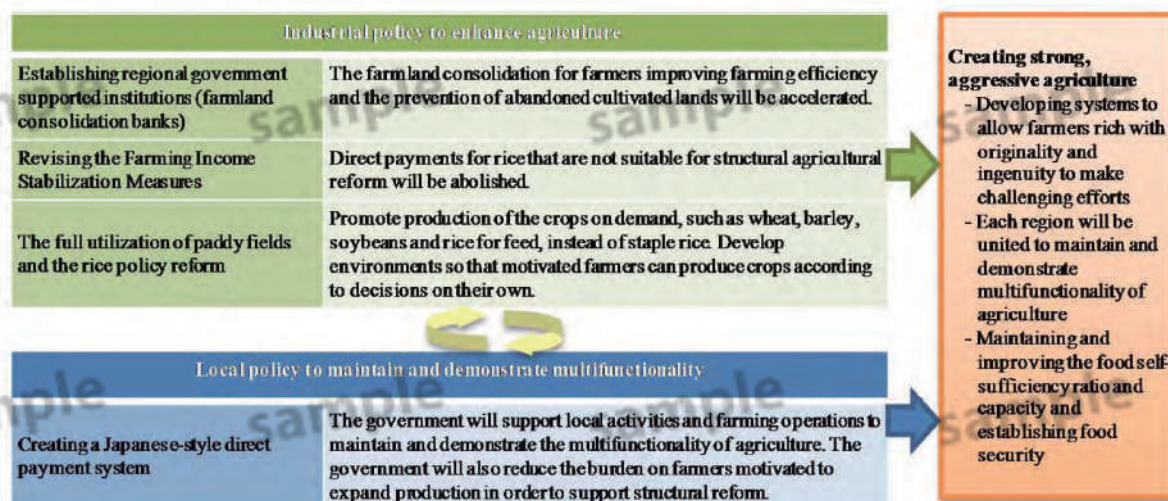


New agriculture and rural area policy to promote the Plan – 4 Reforms

○ Stakeholders should tackle challenges facing agriculture and rural areas with two key policies – an industrial policy for enhancing agriculture as industry and a local policy for maintaining and demonstrating the multifunctionality of agriculture and rural areas.

○ Based on the Plan, the industrial policy will (1) establish regional government supported institutions (farmland consolidation banks), (2) revise the Farming Income Stabilization Measures, and (3) fully use paddy fields and reform rice policy, and the local policy will (4) create a Japanese-type direct payment system.

○ The four reforms should be promoted to develop systems to allow farmers rich with originality and ingenuity to make challenging efforts. Local communities should be united to promote the maintenance and demonstration of the multifunctionality of agriculture and rural areas, maintain and improve the food self-sufficiency ratio and potential and establish food security in order to create “strong, aggressive agriculture, forestry and fisheries.”



Global food supply/demand trends

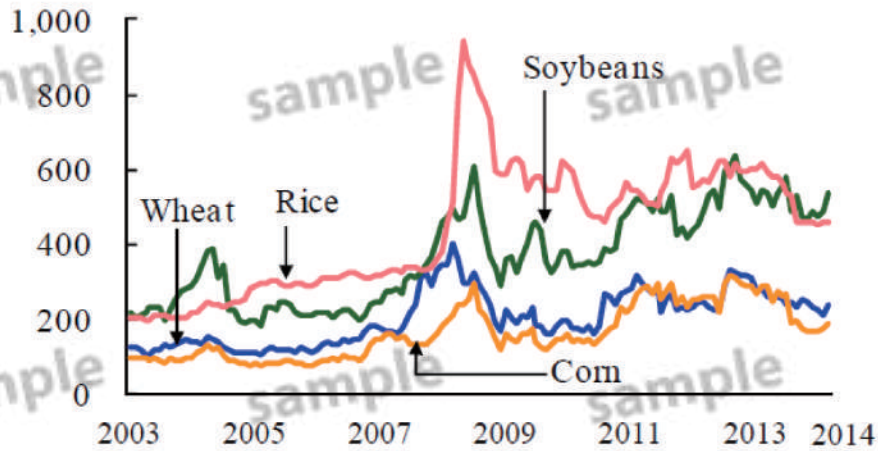
○ Among grain prices, international soybean and corn prices declined from record highs in 2012 in response to prospects for good harvest in the United States in 2013.

○ Global food demand is expected to increase 1.6-fold from 4.47 billion t. in 2000 to 6.93 billion t. mainly due to population and GDP growth.

○ Global grain output has increased thanks to the yield improvement through technology innovations while the harvested area has leveled off. In the future, the yield is expected to slow down growth. Over the medium to long term, the global food supply-demand balance is feared to tighten due to global population growth.

Changes in International prices of grains and soybeans

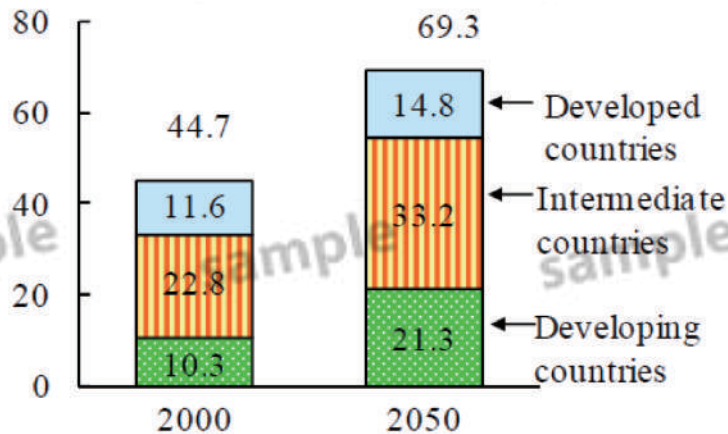
dollars per ton



Sources: The Chicago Board of Trade and the Rice Committee, Board of Trade of Thailand

Global food demand outlook

100 million tons



Source: MAFF, "Japan Long-term World Food Supply and Demand Projection for 2050"

Note: In accordance with World Bank data (per capita gross national income) for 2000, countries are divided into three groups -- developed countries (\$9,266 or more), intermediate countries (\$756-9,265) and developing countries (\$755 or less).

Efforts for establishing food security

- Unusually high temperatures and drought in the United States in FY 2012 led Japan to increase feed grain supplies (including corn) from South America and other regions. Even in FY 2013, Japan made further progress in diversifying feed grain supply sources.
- Japan depends on imports from some countries for most of its urea, phosphate ore, potassium chloride and other chemical fertilizer material supplies. The government will promote efforts to effectively use untapped domestic resources and correct compost consumption.
- As large-scale agricultural investments into developing countries triggered by global food price hikes provoked international concerns, Japan at the 2009 G8 Summit proposed promoting investments for harmonized benefits to recipient countries, local communities including small farmers, and investors. In 2010, relevant international agencies drew up the Principles for Responsible Agricultural Investment (PRAI). The Committee on World Food Security has commenced consultation to secure broader ownership of the Principles by relevant stakeholders.
- MAFF created the Food Security Guideline in case of Emergency, providing measures that it should take when food import interruptions or any other factor will affect food supply.
- The guideline puts in order measures to secure minimum necessary food supply for the people according to emergency levels.
- In February 2014, MAFF created the Guidebook of Household Reserves in case of Emergency based on the Guideline, indicating a list of household food reserves and how to reserve food.

Emergency levels and outline of measures

Level 0: The situation is likely to develop into a Level 1 or higher-level emergency situation

- Collecting, analyzing and providing food supply outlook information
- Utilizing reserves, diversifying imports, importing substitutes
- Promoting relevant people's efforts including shipping irregular goods and restricting their abandonment
- Research and surveillance on food price trends

Level 1: Supply of a specific good is expected to decline by 20% or more from the normal level

- Emergency production expansion (Emergency Act for Stabilization of National Life)
- Securing production materials (seeds, seedlings, fertilizers, agrochemicals) (Emergency Act for Stabilization of National Life)
- Securing appropriate distribution through such measures as correcting cornering (Act on Emergency Measures against Cornering and Speculative Stocking of Materials and Products Related to Daily Life, etc.)
- Regulating prices through such measures as setting standard prices (Emergency Act for Stabilization of National Life)

Level 2: The daily per capita supplied calorie level is likely to slip below 2,000 kcal

- Switching production to crops with higher calorie efficiency (Emergency Act for Stabilization of National Life)
- Utilizing lands other than existing farmlands
- Food allocation/rationing and price control (Act on Stabilization of Supply, Demand and Prices of Staple Food, etc.)
- Securing oil supply (Petroleum Supply and Demand Adjustment Act)

Major food and other reserves for emergency

[Water]

1 liter per day per person in drinking water, or 3 liters per day per person in drinking and cooking water



[Portable gas stove]

A heat source is required for warming food and simple cooking.



[Rice]

(Securing energy and carbohydrates)

A mainstay reserve item!
A 2 kg rice package can be used with water and a heat source to provide about 27 meals (according to the standard of 0.5 go or 75 grams for one meal)



[Canned food]

(Securing protein)

Canned food that can be eaten without cooking is convenient



Reserves should include massive food for everyday consumption

<Let's stock up on food for everyday consumption>

An effective reserving measure is stocking up on food for everyday consumption. Let's stock up extra preservative food for everyday consumption.

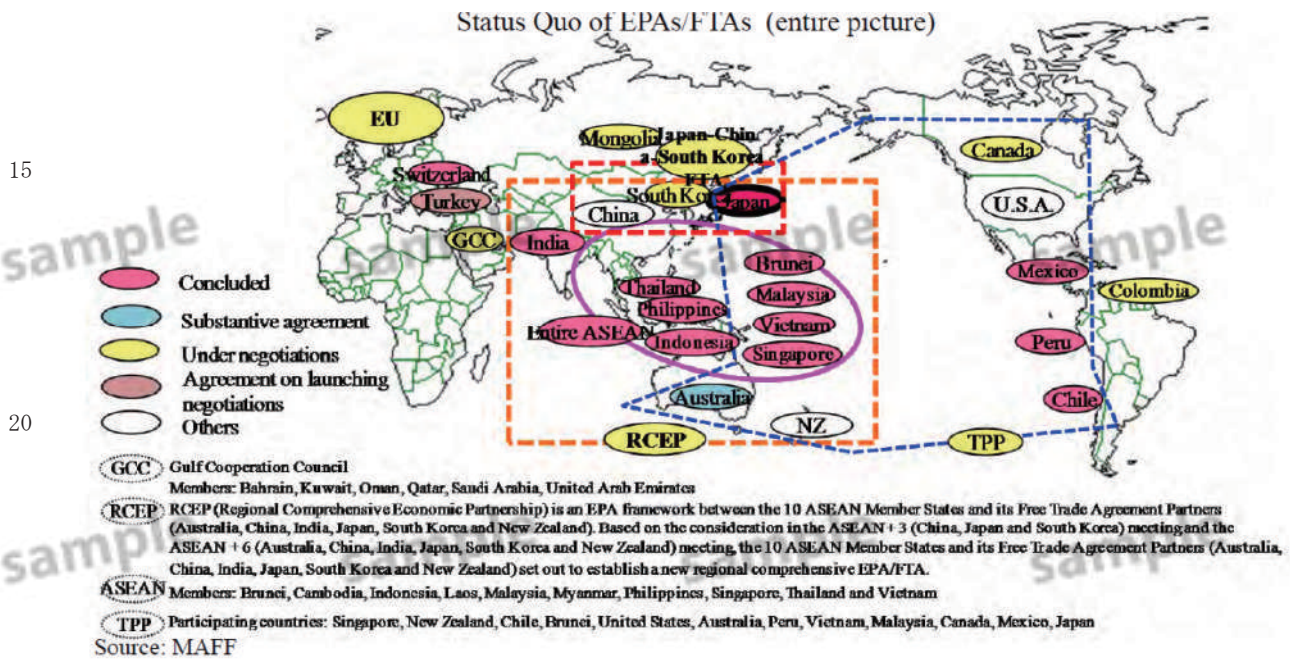
<Let's make up for consumption>

Let's consume reserves systematically with best-before dates taken into account and make up for consumption.

Source: MAFF, "Guidebook of Household Reserves in case of Emergency"

Trends in agriculture trade negotiations

- Japan has signed economic partnership agreements with 12 countries and one region (as of the end of March 2014). Japan's EPA negotiations are ongoing with Mongolia, Canada, Colombia and the European Union, a Japan-China-South Korea FTA and RCEP (the Regional Comprehensive Economic Partnership). Japan confirmed the substantive agreement on the bilateral EPA negotiations with Australia at a bilateral summit meeting in April 2014.
- Japan has participated in the TPP (Trans-Pacific Partnership) negotiations since July 2013.
- On the Doha Round negotiations under the World Trade Organization, Ministers concluded the Ninth WTO Ministerial Conference in December 2013 with agreement on a package of: some parts of Agriculture, Agreement on Trade Facilitation, and Development and LDC issues.



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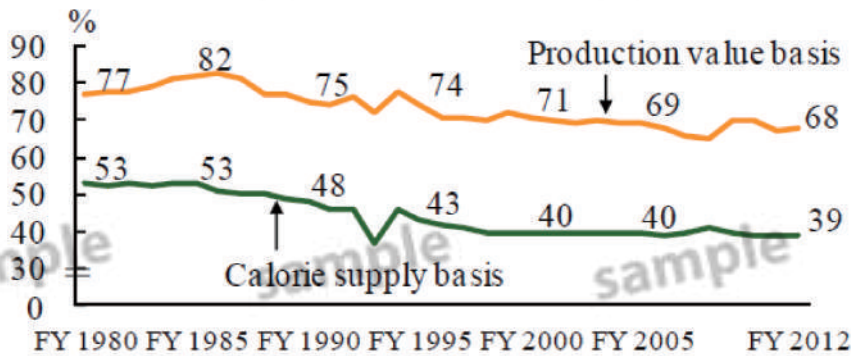
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Japan's food self-sufficiency ratio trends

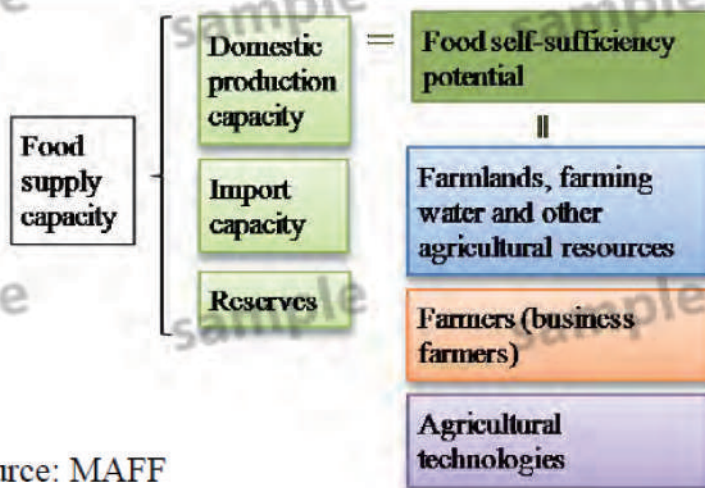
- The food self-sufficiency ratio on a calorie supply basis has stayed around 40% since FY 2000. The ratio in FY 2012 remained unchanged from 39% in the previous year as a rice demand decline coincided with an increase in wheat and soybean output.
- The food self-sufficiency ratio on a production value basis has stayed around 70% over recent years. The ratio in FY 2012 rose by 1 percentage point from the previous year to 68% due primarily to an increase in rice and beef production value.
- It is also important to maintain and improve the food self-sufficiency potential indicating latent food supply.

Japan's food self-sufficiency ratio trends



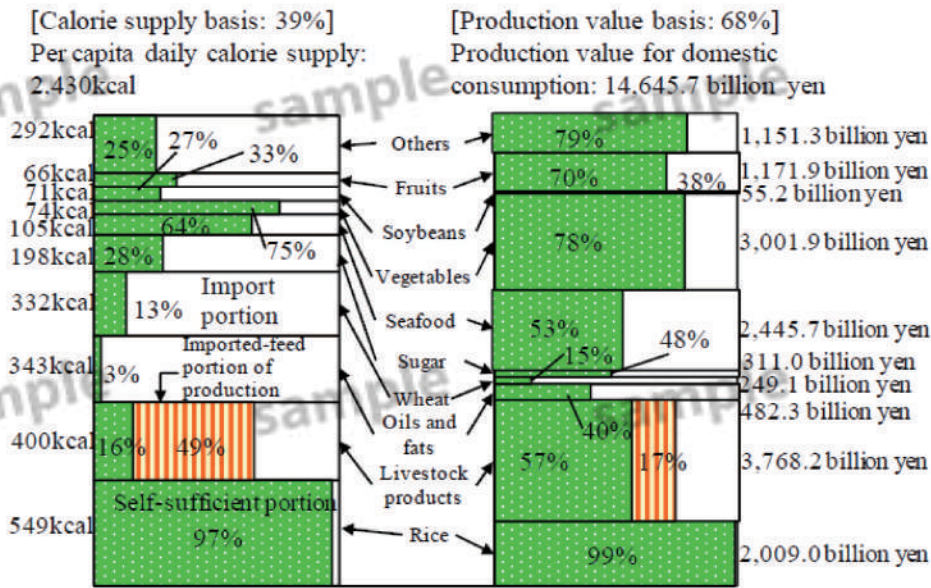
Source: MAFF, "Food Balance Sheet"

Concept of food self-sufficiency potential



Source: MAFF

Total food self-sufficiency ratios on calorie supply and production value bases (FY 2012)

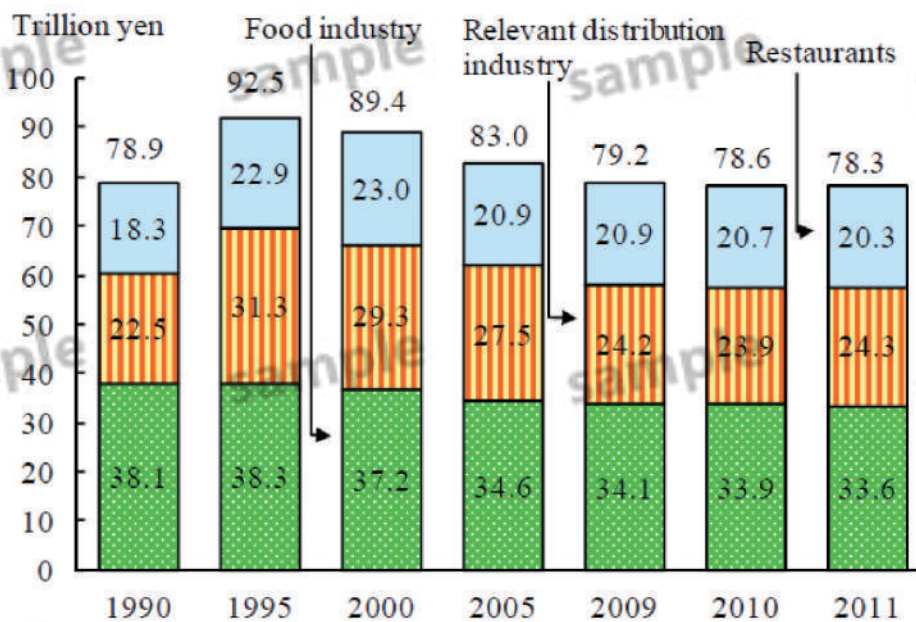


Source: MAFF

Food industry trends

- The domestic production value of the food industry has remained in decline since the late 1990s against the background of aging and the like.
- In order to achieve sustainable development amid the trend, the food industry should explore new domestic demand for nursing care foods (texture modified foods) and the global market which is expected to expand.
- The working team composed of food-related businesses tested a measure to extend food product delivery deadline (to move the deadline for delivery to retailers from the end of the first one-third of the best-before period to the end of the first half of the period for some beverages and confectionery products in certain regions) and identified a considerable effect of reducing food losses (by about 40,000 tons or some 8.7 billion yen for beverages and confectionery products with a best-before period of 180 days or more.)

Trends of domestic food industry production value



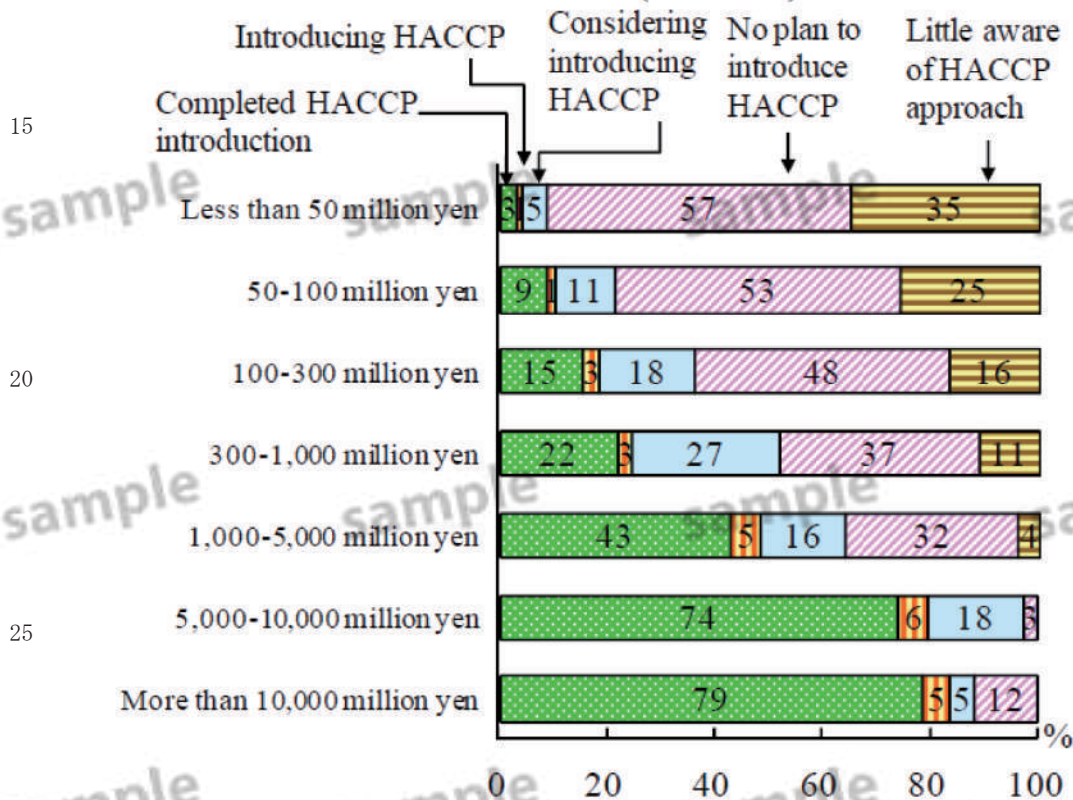
Source: MAFF, "Economic Accounts for Agriculture and Food Related Industries"

Efforts for improving food safety

- Risk management based on scientific evidence targeting throughout the food chain, from production to consumption, is essential to improve food safety.
- The GAP (Good Agricultural Practices) scheme has been promoted in the production phase. The number of GAP-introducing production regions has steadily increased.
- The HACCP (Hazard Analysis and Critical Control Point) introduction has been promoted. As the HACCP introduction rate was low among small and medium-sized enterprises, the Act on Temporary Measures for Enhancing the Control Method of the Food Production Process was revised in June 2013 to allow SMEs to steadily tackle improvement of food safety.

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HACCP introduction by companies broken down by food sales bracket (FY 2012)



Source: MAFF, "Survey on HACCP introduction in food manufacturing industry"

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Efforts to secure consumers' confidence

- From October 2013, reports stated that food ingredients were falsely labelled at hotels, department stores, etc. A meeting of relevant government ministries and agencies on food labeling and related problems compiled a policy for correcting food labeling to restore consumers' confidence.
- In June 2013, the Food Labeling Act was officially announced (for effectuation in two years) to integrate labeling provisions in three food labeling-related acts (the Food Sanitation Act, the Act on Standardization and Proper Quality Labeling of Agricultural and Forestry Products, and the Health Promotion Act) to secure safe food consumption and opportunities for ordinary consumers' voluntary, reasonable food selection.

Example of labeling under present law

Name	Snack confectionery		
Raw materials	Potato (non-genetically-modified), vegetable fat and oil, common salt, dextrin, lactose, protein hydrolysate (including wheat), yeast extract powder, powder soy sauce, seafood extract powder (including crabs and shrimps), spices, seasoning agents (including amino acid), egg shell calcium		
Content	81 g	Best-before date	Written on the right of this side
Preservation method	Avoid direct sunlight and hot/humid places for preservation		
Seller	XXXXX Co., Ltd. 39 Address	Manufacturer's mark	

Major nutrients per pack (81 g) (our analysis data)			
Energy	483 kcal	Carbohydrate	37.6 g
Protein	3.8 g	Sodium	330 mg
Fat	35.3 g	Salt equivalent	0.8 g

- JAS Act
- Food Sanitation Act
- JAS Act and Food Sanitation Act
- Health Promotion Act

Source: CAA

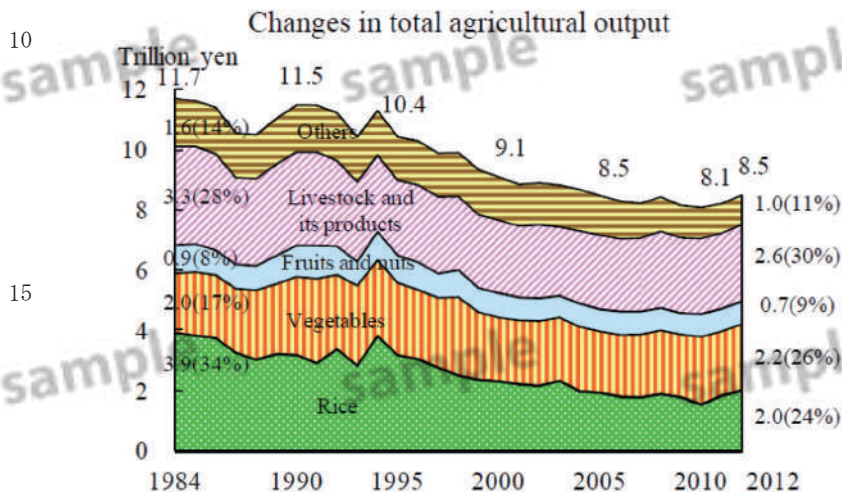
Efforts for creating strong, aggressive agriculture

Agricultural output and income trends

○ Japan's total agricultural output has trended down since 1984, standing at 8.5 trillion yen in 2012.

By item, vegetable output has increased from 1984, while rice, Livestock and its products and fruits and nuts output has trended down.

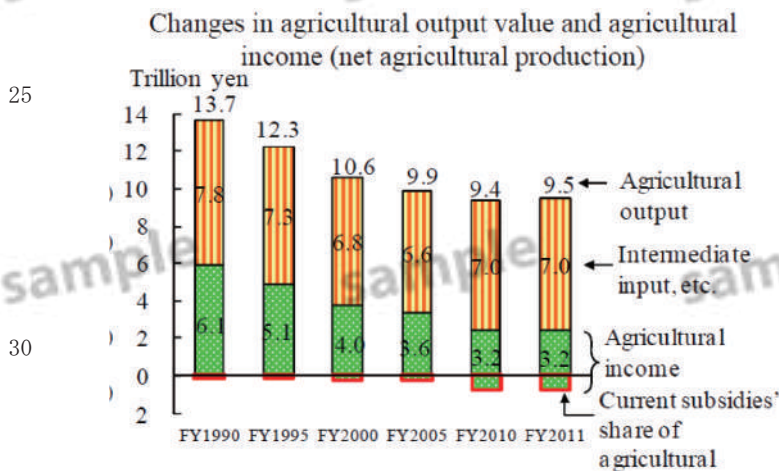
○ Agricultural income has trended down, standing at 3.2 trillion yen in FY 2011, about half the FY 1990 level. While the agricultural output value has trended down, the share for intermediate input, etc. has increased.



Source: MAFF, "Statistics of Agricultural Income Produced"

Note: 1) Others covers wheat and barley, miscellaneous cereals and pulses, potatoes and sweet potatoes, flowers, industrial crops, other crops and processed agricultural products.

2) In parentheses are percentage shares of total agricultural output.



Source: MAFF, "Economic Accounts for Agriculture and Food Related Industries"

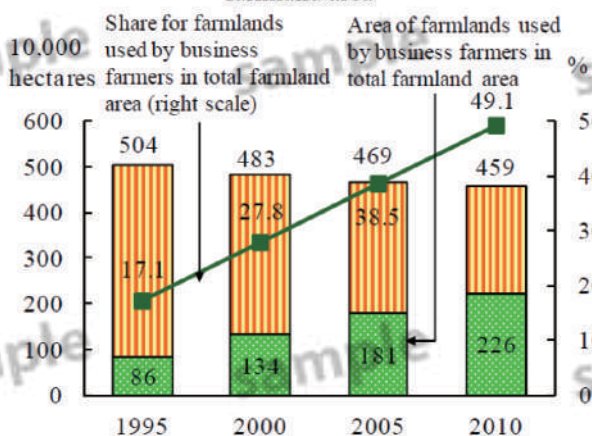
Note: "Intermediate input, etc." covers intermediate input (costs of goods (including materials) and services required for production), fixed capital consumption and indirect taxes.

Establishing regional government supported institutions for farmland consolidation

○ As the mobilization of farmlands has made steady progress, the share of farmlands used by business farmers in the total farmland area has increased, standing at 49% in 2010.

○ The abandoned cultivated land area has trended upward due mainly to the retirement of elderly farmers, standing at 396,000 ha, almost equal to the Shiga Prefecture area, in 2010. Particularly, abandoned cultivated land owned by land tenure non-farm households has increased, accounting for 46% of the total abandoned cultivated land area in 2010.

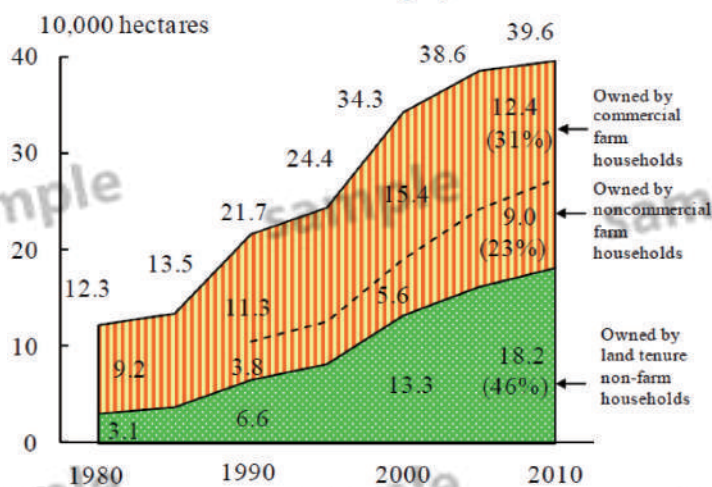
Share of farmlands used by business farmers in total farmland area



Source: MAFF surveys

Note: "Farmlands used by business farmers" are those managed by certified farmers (including specified agricultural corporations), farmers who reach the level of schematic plan made by municipal government, specified farming communities (from FY 2003) and community-based farm cooperatives (managing and operating farming integrally within respective communities) (from FY 2005) based on ownership, land-utilization rights or contracts.

Changes in abandoned cultivated land area by farm household category



Source: MAFF, "Census of Agriculture and Forestry"

Note: In and before 1985, farm households had not been divided into commercial and noncommercial farm households.

○ Regional government supported institutions will be established in each prefecture as a reliable intermediary manager of farmlands to accelerate farmland consolidation to business farmers.

○ Regional government supported institutions (1) rent farmlands, (2) improve infrastructure if necessary, (3) lease the land to business farmers, which contribute to expanding farm size and consolidating of their farmlands, in order to optimize local land use.

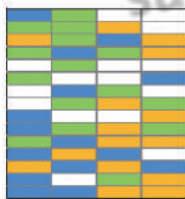
Scheme of Regional Government Supported Institutions



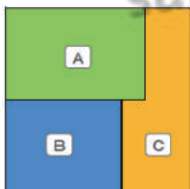
Source: MAFF

Image of farmland consolidation

Scattered farmland



Consolidation farmland for business farmers

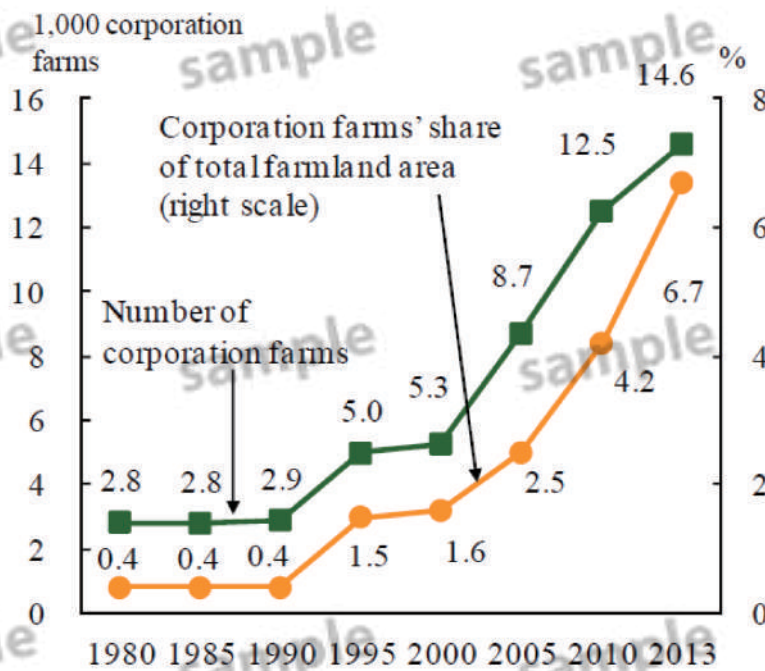


Reduce production costs through farmland consolidation

Trends of business farmers

- The number of corporation farms has increased and their share of the total farmland area has increased.
- The entry of farms into the agriculture sector is in progress at the quintuple pace after the revision of Agricultural Land Act took place on 2009. To be precise, 1,392 farms newly entered in four years (436 firms in about seven years before the revision).

Changes in the number of corporation farms and corporation farms' share of total farmland area



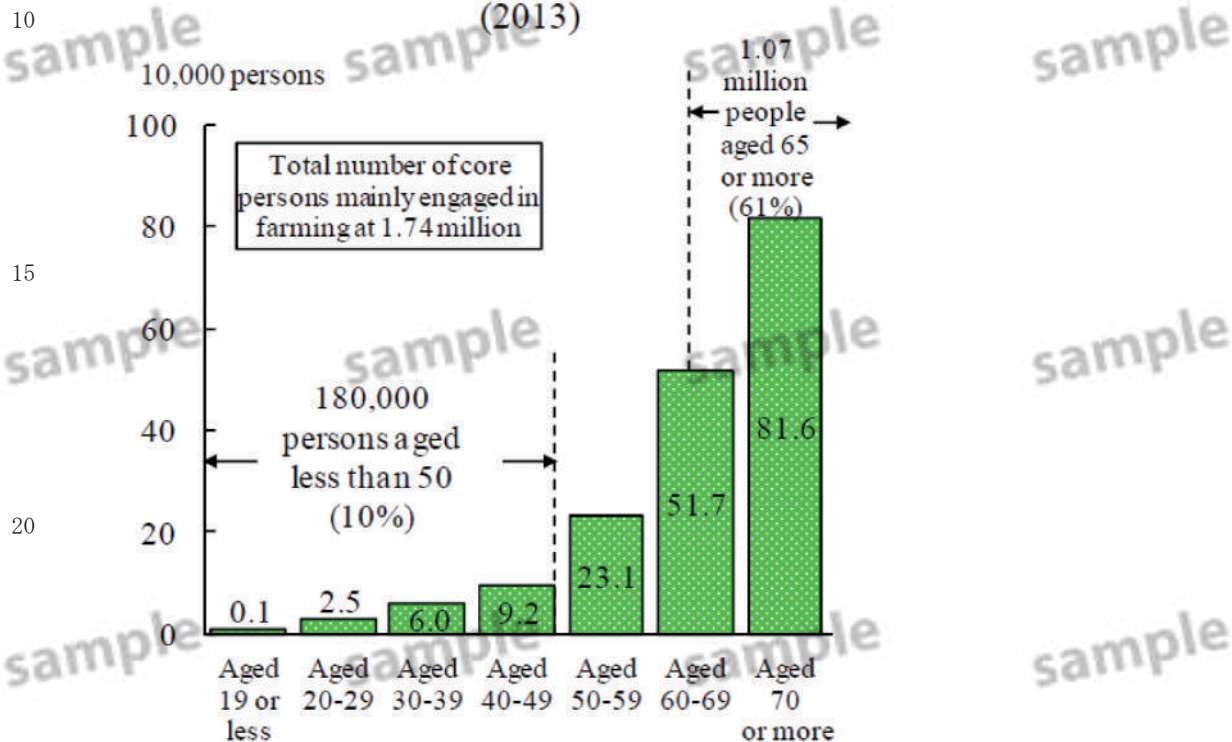
Sources: Prepared based on MAFF, "Census of Agriculture and Forestry," "Survey on Movement of Agricultural Structure" and "Statistics on Cultivated Area and Planted Area"

- Notes: 1) Corporation farms are those for sales among agricultural holdings other than farm households. They had been limited to corporations until 1990 and have included agricultural producers' cooperative corporations, agricultural cooperatives, special private corporations, etc. since 1995.
- 2) Corporation grass farms are covered for 2013.

○ As core persons mainly engaged in farming are aging, Japan's farming population is very unbalanced. Of these persons in 2013, those aged 65 or more accounted for 61% and those aged less than 50 for 10%.

○ The number of new farmers in 2012 totaled 56,000 (down 3% from the previous year). By type of employment, new entries numbered 3,000 (up 43% from the previous year) under the effects of new farmer promotion measures including the farming grant for young farmers. By age group, new farmers aged 39 or less accounted for 15,000 (up 6% from the previous year).

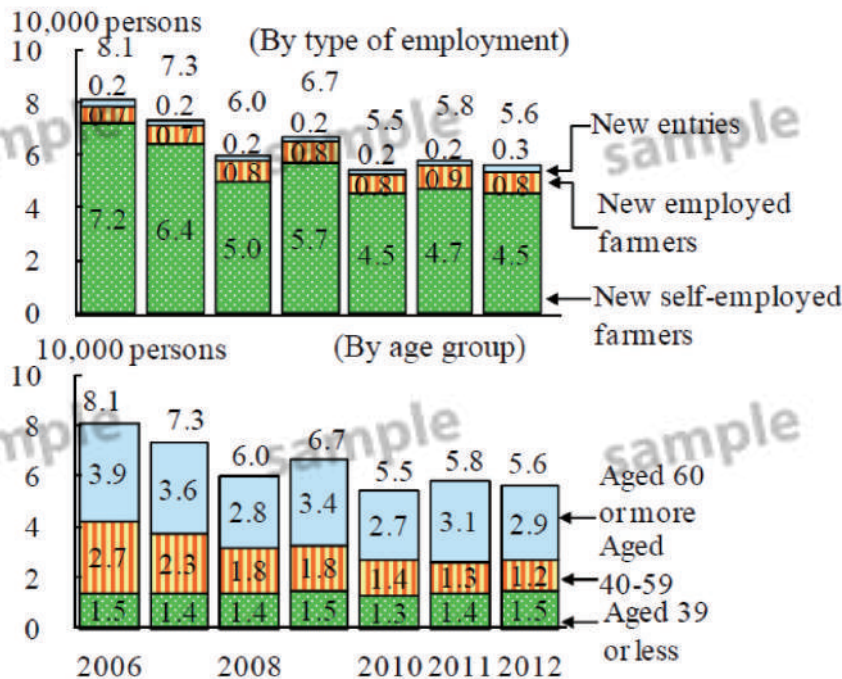
Core persons mainly engaged in farming by age group (2013)



Source: MAFF, "Survey on Movement of Agricultural Structure" (custom-ordered tabulation)

Note: "Core persons mainly engaged in farming" are those whose mainstay jobs are farming among population mainly engaged in farming (household members mainly engaged in self-employed farming).

Changes in new farmers



Source: MAFF, "Survey on Newcomers in Agriculture"
 Note: New entries in 2010 and survey results in 2011 and 2012 do not cover regions where surveys were impossible due to the Great East Japan Earthquake.

Women farmers accounted for 42% of core persons mainly engaged in farming in 2013, playing a key role in invigorating local agriculture and promoting AFFrinnovation through processing and marketing of agricultural products. Women farmers who take advantage of their wisdom for various activities and develop farming with high goals and visions are faring well at various locations in Japan.

○ In November 2013, the "Nougyou-Joshi Project" (Campaign for women farmers to be more active in agricultural business by cooperation with various industries to tap women farmers' knowledge and experiences) was launched for cooperation between women farmers and companies to develop new goods and services. At the end of FY 2013, 93 women farmers and 10 companies were participating in the project.

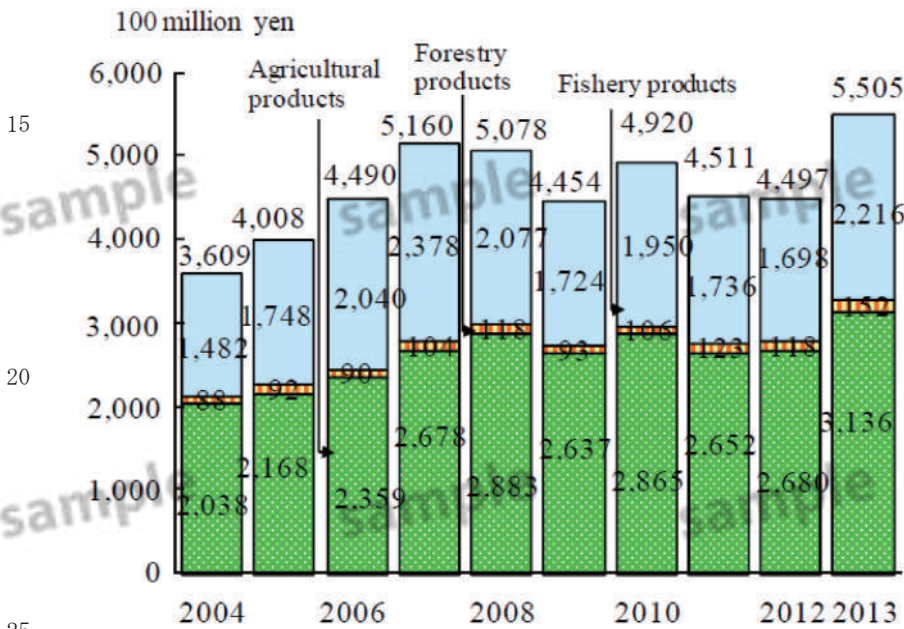
Initiatives for expanding agriculture, forestry and fishery products and foods exports

○ In 2013, exports of Japan’s agriculture, forestry and fishery products and foods increased 22% from the previous year to 550.5 billion yen, the highest record since 1955 when export statistics began to be compiled.

○ MAFF released the Strategy to promote export of agriculture, forestry and fishery products and foods in August 2013 to expand exports of Japan’s agriculture, forestry and fishery products and foods. In efforts to steadily implement the strategy, MAFF takes integrated approach of promoting the use of Japanese food as ingredients of world cuisines, expanding Japanese food culture and Japanese food industries internationally and promoting the export of Japanese food.

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Trends of agriculture, forestry and fishery products and foods exports



Source: Prepared by MAFF, based on MOF, “Trade Statistics”

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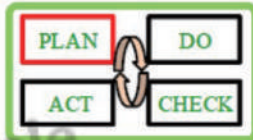
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Export expansion by the FBI strategy

- Promotion of the use of Japanese food as ingredients of world cuisines (Made **From** Japan)
- International expansion of Japanese food culture and Japanese food industries (Made **By** Japan)
- Promotion of the export of Japanese food (Made **In** Japan)

The Strategy to promote export of agriculture, forestry, and fishery products and foods

Expanding Japan's agriculture, forestry and fishery products and foods export value to 1 trillion yen by 2020



About 450 billion yen

Marine products 170 billion yen
Processed food 130 billion yen
Rice/processed rice products 13 billion yen
Forestry products 12 billion yen
Flowers 8 billion yen
Fruits/vegetables 8 billion yen
Beef 5 billion yen
Tea 5 billion yen

2012

Source: MAFF

1 trillion yen

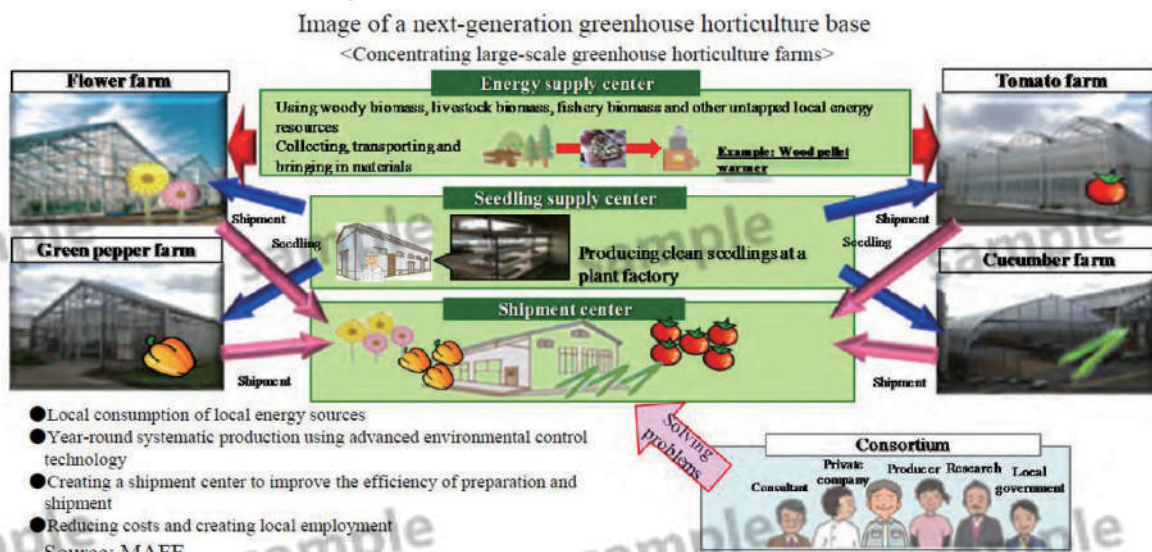
Marine products 350 billion yen
Processed food 500 billion yen
Rice/processed rice products 60 billion yen
Forestry products 25 billion yen
Flowers 15 billion yen
Fruits/vegetables 25 billion yen
Beef 25 billion yen
Tea 15 billion yen

2020

Improving production and distribution systems

○ In order to develop Japan's greenhouse horticulture towards the coming generations, MAFF will develop year-round systematic production arrangements through the expansion of greenhouse sizes for saving costs and the exploitation of information and communications technology for advanced environmental control and will promote next-generation greenhouse horticulture using woody biomass and other local energy resources for breaking free from dependence on fossil fuels.

○ The agriculture industry should develop new ideas using knowledge and know-how of other industries beyond its traditional framework to enhance its competitiveness. MAFF will promote cooperation between the agriculture and business sectors in agricultural production, distribution, business management and other areas.

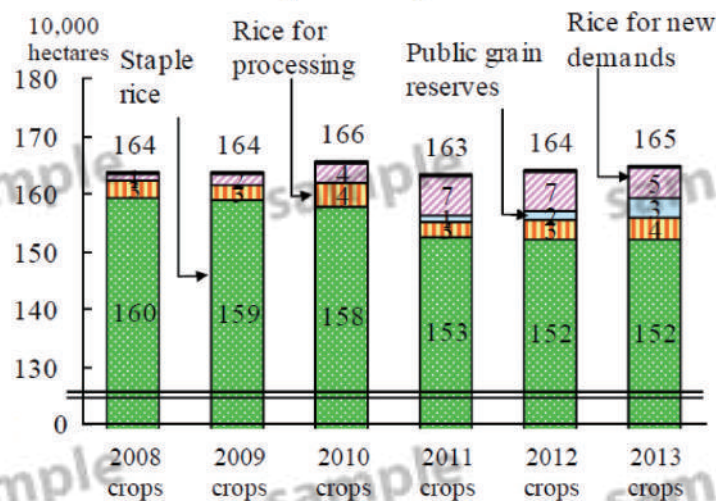


Production trends for major farm and livestock products

Rice

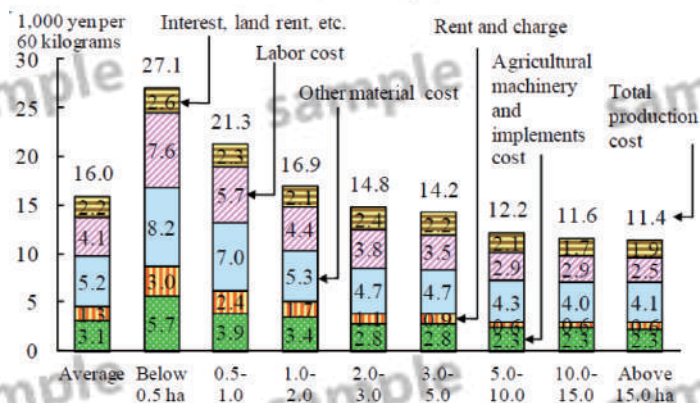
- Japan's total rice-planted area has levelled off at around 1.65 million hectares since 2008. A decline in staple rice has been offset by an increase in non-staple rice (including rice for feed and other new demands, and for processing).
- Rice for restaurants and home-meal replacements accounted for about 30% of staple rice output in FY 2012.
- The unit production cost of rice is lower for larger-scale production. The unit cost for the rice-planted area size of 15 hectares or more is 11,444 yen per 60 kilograms, 30% less than the average at 15,957 yen.

Changes in total rice-planted area including paddies subject to early harvests



Sources: MAFF, "Statistics on Cultivated Land and Planted Area;" MAFF surveys

Production cost of rice by rice-planted area size group (2012 crops)



Source: MAFF, "Statistical Survey on Farm Management and Economy, Production Cost of Rice and Wheat Variety"

Vegetables, Fruits

○ Imported vegetables account for 2% of household consumption and 30% of those for processing and manufacturing uses. In order to maintain and expand demand for domestically produced vegetables, domestic production for processing and manufacturing uses should be promoted.

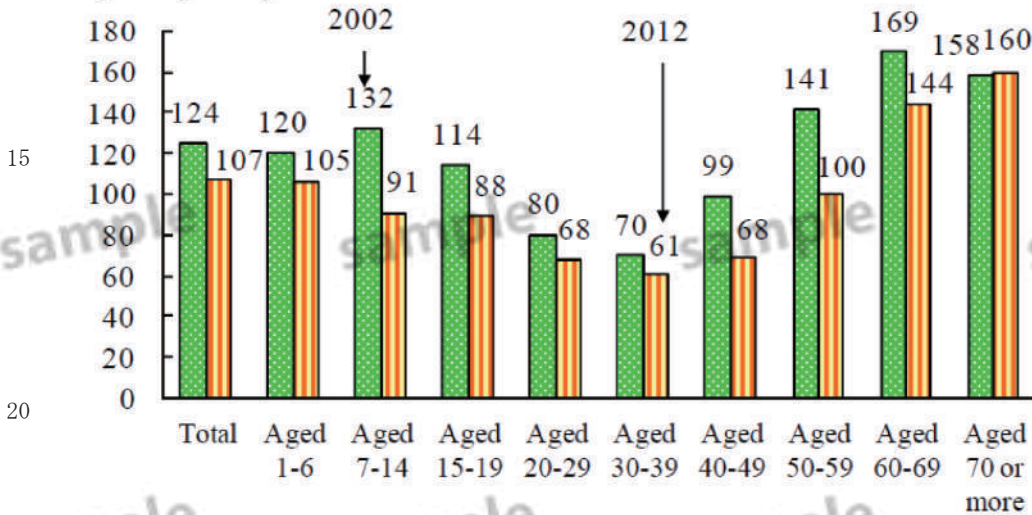
○ Fruit consumption has declined for all age groups other than the aged 70 or more group. The average fruit consumption for all age groups declined 14% in 10 years.

○ The development of and switching to varieties meeting consumers' various needs including tastiness and convenience for eating are important for expanding fruit consumption

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Changes in per capita daily fruit consumption by age group

grams per day



Source: MHLW, "National Health and Nutrition Survey"

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Flowers, Tea

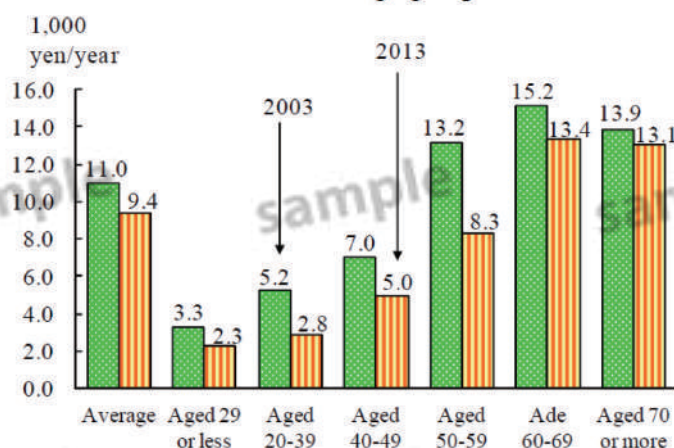
○ Japan's flower imports and exports in value have followed an upward trend. In 2012, imports increased 8% from the previous year to 54.5 billion yen and exports 22% to 8.6 billion yen.

○ Cut flower consumption has declined over the past decade. Consumption is particularly low for consumers aged below 30. The establishment of Flower Valentine and other new commemoration days and the diffusion of flower growing must be promoted to expand flower consumption.

○ Japan's domestic tea consumption has decreased over recent years. The tea growing area has decreased by 8% in 10 years from 2003 to 45,000 hectares.

○ The development of low-caffeine tea and other products meeting various needs, and research, development and diffusion efforts for new tea uses must be promoted to expand tea consumption.

Changes in cut flower consumption per household by householder age group



Source: MIC, "Family Income and Expenditure Survey (nationwide multiple-member households)"

Changes in the numbers of livestock farm households and animals being raised

(Units: households, animals, %)

		Dairy cattle		Beef cattle			Pigs	Broilers	Layers
		(Hokkaido)	(Excluding Hokkaido)	(Cows for breeding)	(Fattening cattle)	(Dairy cattle for beef)			
Number of livestock farm households	2003	9,200	20,600	84,500	14,400	7,740	9,430	2,839	4,340
	2013	7,130	12,200	53,000	10,000	5,810	5,570	2,420	2,650
	Change	-22.5	-40.8	-37.3	-30.6	-24.9	-40.9	-14.8	-38.9
Number of animals being raised	2003	863,500	855,300	642,900	729,800	1,101,000	9,725,000	103,729	137,299
	2013	806,800	616,600	618,400	789,800	873,400	9,685,000	131,624	133,085
	Change	-6.6	-27.9	-3.8	8.2	-20.7	-0.4	26.9	-3.1
Number of animals being raised per household	2003	93.9	41.5	7.6	50.7	142.2	1,031.3	36.5	31.6
	2013	113.2	50.5	11.7	79.0	150.3	1,738.8	54.4	50.2
	Change	20.6	21.7	53.9	55.8	5.7	68.6	49.0	58.9

Sources: MAFF, "Statistics on Livestock," "Statistics on Livestock Products Marketing"

Note: 1) Layers are those raised by households having 1,000 or more layers.

2) Broilers in 2013 are those raised by households with annual shipments totaling 3,000 broilers or more.

○ While the number of livestock farm households has declined over the past decade, the number of animals being raised per livestock farm household has increased.

○ While milk and milk product consumption has firmed over recent years, raw milk production has followed a downward trend. As beef, pork, chicken and hen egg consumption has firmed, production has leveled off.

○ MAFF has supported the stable supply expansion for raw milk for cheese for which demand has increased over recent years.

○ Livestock farming is structurally vulnerable to feed price fluctuations as feed costs account for as much as 40-50% of total production costs for cow and 60-70% for pigs and hen. Therefore, MAFF will expand the domestic production and utilization of feed and promote farming business stabilization programs meeting the characteristics of livestock categories.

Changes in livestock production and consumption

(Units: 1,000 tons, %)

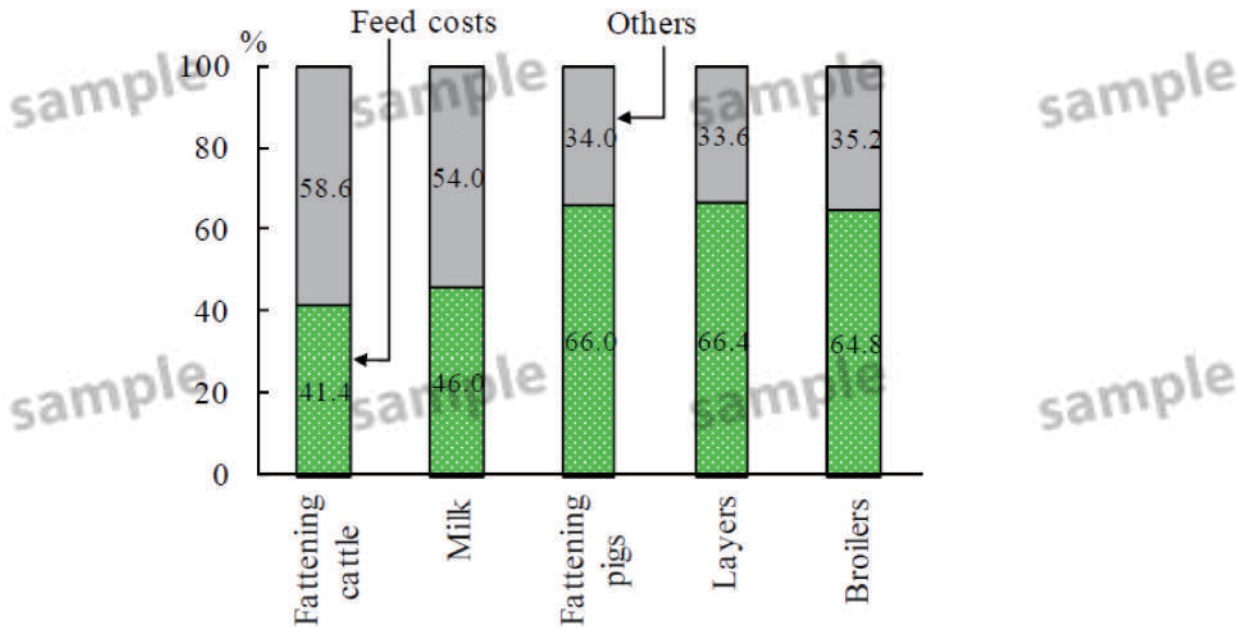
		Milk, milk products	Beef	Pork	Chicken	Eggs
Production	2002	8,380	520	1,246	1,229	2,529
	2012	7,608	514	1,295	1,457	2,507
	Change	-9.2	-1.2	3.9	18.6	-0.9
Imports	2002	3,783	763	1,101	662	120
	2012	4,191	722	1,141	736	123
	Change	10.8	-5.4	3.6	11.2	2.5
Consumption	2002	12,170	1,333	2,350	1,898	2,647
	2012	11,718	1,227	2,447	2,204	2,629
	Change	-3.7	-8.0	4.1	16.1	-0.7

Source: MAFF, "Food Balance Sheet"

Notes: 1) Estimates for FY 2012

2) Milk and milk products are in terms of raw milk.

Total production costs, feed costs' share of production costs (FY 2012)



Sources: MAFF, "Statistical Survey on Farm Management and Economy (Production Cost of Livestock)," "Statistics on Meat Marketing," "Statistical Survey on Farm Management and Economy (Management Statistical by Farming Type (individual management))"

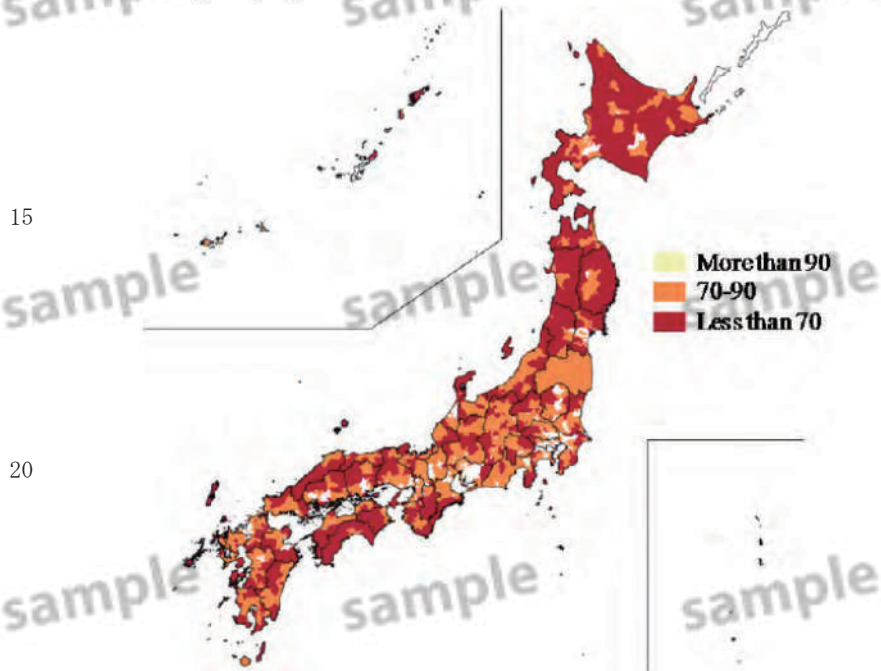
- Notes: 1) Fattening cattle data represent a weighted average based on total production costs for castrated yearling feeder cattle, dairy male fattening cattle and hybridized fattening cattle and on the number of slaughter cattle.
 2) Milk and fattening pigs data represent total production costs, and layer and broiler data indicate production costs by farming category.

Maintaining and demonstrating multifunctional roles of agriculture and rural areas

○ According to the population projection (in 30 years), population will decrease in all Japanese prefectures. Particularly, municipalities in hilly and mountainous regions will see a sharp population drop. In municipalities where agriculture, forestry and fisheries workers have larger shares, the population decline will be more rapid.

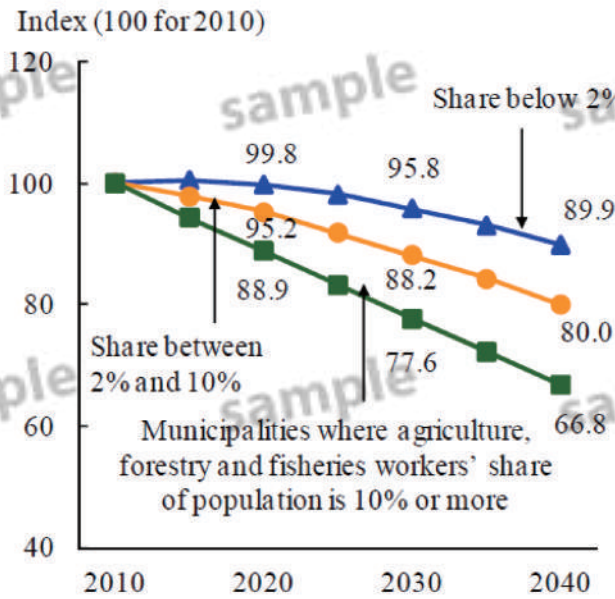
○ As the population decline is projected to accelerate in rural areas, agricultural production and joint activities developed over a long period of time are feared to weaken, with regional resources and settlement infrastructure collapsing.

10 Municipal population indexes in 2040 (100 for 2010)



Source: Prepared by MAFF based on "Population Projections for Japan by Region (March 2013)" released by the National Institute of Population and Social Security Research

Changes in municipal population indexes
(By share for agriculture, forestry and fisheries workers)



Source: Prepared by MAFF based on "Population Projections for Japan by Region (March 2013)" released by the National Institute of Population and Social Security Research

○ Agriculture and rural areas have various roles including not only food supply but also national land conservation, water recharge, biodiversity conservation, good landscape formation and cultural succession. The entire people have benefitted from these roles.

○ Rice terraces, canals and irrigation ponds with long histories and traditions have formed beautiful rural landscapes against the backdrop of locally nurtured cultures and should be conserved and inherited as regional resources by future generations.

Maintenance of community functions and conservation of regional resources

○ It is important to support agricultural production undertakers, and maintain and enhance community functions in order to maintain and demonstrate the multifunctionality of agriculture and rural areas and invigorate rural communities.

○ The “direct payment to farmers in hilly and mountainous areas” has been provided for various activities including the prevention of farmers abandoning cultivated lands, the management of such facilities as canals and farm roads, and the planting of landscape-improving crops to maintain agricultural production and secure multifunctional roles in hilly, mountainous and other areas with unfavorable conditions.

○ The “payment for conserving farmland and water” has been provided to conserve and manage farmlands and farming water resources and improve the rural environment (community collaborative support) and to implement repair and renewal operations to lengthen the service lives of facilities (improvement support).

○ The “direct payment for environmentally friendly agriculture” has been provided for farming operations to reduce chemical fertilizer and agrichemical consumption by 50% or more in principle, prevent global warming and conserve biodiversity.

Harmonious coexistence and interactions between urban and rural regions

○ In order to meet the diversifying needs of urban residents, rural regions should explore new tourism demand by combining green tourism operations, including agricultural, forestry or fishery activities, with other tourism operations.

○ Children’s activities in rural areas are useful for them to learn the importance of food, deepen understanding of rural communities and agriculture and develop their rich humanity and sociality through experiences with agriculture. These activities not only bring about such educational effects but also contribute to invigorating rural communities.

○ Paying attention to farming operations’ contributions to health maintenance and improvement, welfare and other facilities are implementing initiatives for cooperation between agriculture, and healthcare and welfare services. Some companies have founded special subsidiaries for these initiatives.

Promotion of urban agriculture

- Urban agriculture plays various roles including the provision of fresh farm products and green and farming experiences and has growingly been expected over recent years to help prevent disasters.
- Of farmlands within urbanization promotion areas, those designated as productive green zones have been generally conserved. But the others have been declining.
- As urban residents seek to promote their health, find motivation in life and communicate with farmers through agricultural experiences, initiatives for farming-based lives are ongoing, including facilities for enjoying local farm products and citizen farms.

Initiatives for farming-based lives

A farming experience farm for elderly people

The Ishisaka Farm House in Hino City, Tokyo, has opened a farming experience farm for promoting elderly people's mental and physical health. It provides elderly people with opportunities to closely interact with farming through an "upland field farming course" and "meetings to enjoy natural blessings (through the production of miso bean paste, rice dumplings, konjac, etc.). Participants in these events have formed a community.



Three-generation exchange through konjac making

A welfare farm pursuing year-round employment of physically challenged people

Kaze, an agricultural production corporation, in Tokorozawa, Saitama Prefecture, has employed physically challenged people as a Type-A business establishment for supporting continued employment. It has taken advantage of its urban location for allowing physically challenged people to commute by train for farming and marketing. It has introduced greenhouse farming for the year-round employment of physically challenged people.



Triple greenhouse introduced for physically challenged people

*A Type-A business establishment concludes employment agreements to provide workplaces and vocational training services to people who have difficulties in working at ordinary companies.

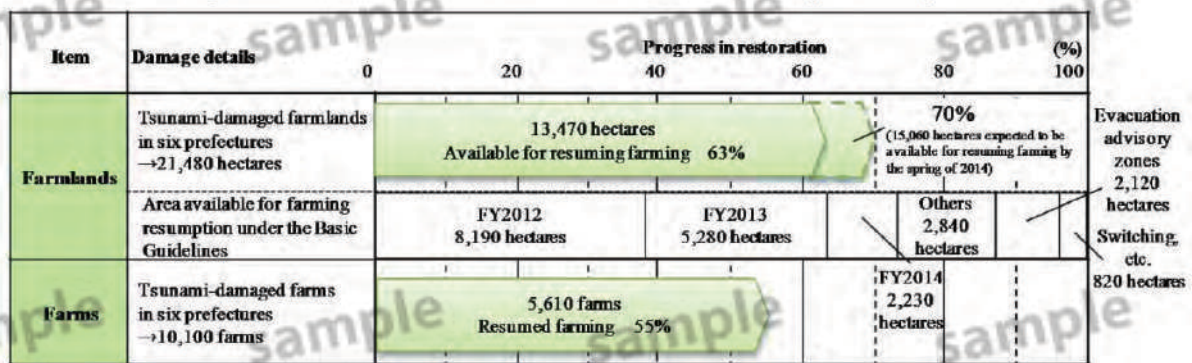
Earthquake and tsunami damage and restoration/reconstruction efforts

○ The Great East Japan Earthquake inflicted damage worth 2,384.1 billion yen on the agriculture-forestry-fisheries sector (including 904.9 billion yen for the agriculture sector).

○ As for the tsunami-damaged farmlands totaling 21,480 hectares, restoration and salt removal have been being implemented to allow farming to be resumed in three years or by FY 2014 under the Basic Guidelines for Reconstruction of Agriculture and Rural Communities.

○ By the FY 2013 planting season, farming was allowed to resume for 13,470 ha (63% of the tsunami-damaged farmlands), almost attaining the target under the Basic Guidelines.

Agriculture restoration conditions after the Great East Japan Earthquake



Source: MAFF

Notes: 1) The six prefectures are Aomori, Iwate, Miyagi, Fukushima, Ibaraki and Chiba

2) "Others" are farmlands subjected to the enlargement of partitions or coordination with town-building and other restoration/reconstruction projects.

3) Farmland data as of January 31, 2014, farms data as of February 1, 2014

4) Farms that have resumed farming include those that have resumed part or all of plowing, sowing and other operations, or of preparations for them.

○ MAFF has conducted demonstration research on land-extensive farming, greenhouse horticulture and other technologies in Miyagi Prefecture since FY 2011. Research results have diffused steadily, including those used at part of a strawberry production complex in a disaster-damaged site in Miyagi Prefecture.

○ In Iwaki City, Fukushima Prefecture, MAFF conducted demonstration research on flower growing and other technologies, including the new nutrient film technique (NFT) for stable year-round production of *Eustoma grandiflorum* in disaster-damaged areas.

Impacts of the accident at the Fukushima Daiichi Nuclear Power Plant of the Tokyo Electric Power Company and restoration/reconstruction efforts

○ To secure distribution of safe agricultural and livestock products, radioactive cesium reduction measures, radioactive cesium concentration inspections, shipment restrictions and other measures have been combined to allow only products with a radioactive cesium below the maximum limit to be distributed.

○ As a result of these measures, detection cases of radioactive cesium exceeding the maximum limit has declined year by year. Moves to resume shipments have expanded.

○ The Ministry of the Environment and other relevant government agencies have cooperated in radioactive decontamination of farmland soil. MAFF has promoted research and development for effective and efficient decontamination techniques of farmlands.

Results of the inspections on radioactive cesium levels in agricultural and livestock products (17 prefectures)

Category	FY2013 (April 1, 2013, to March 31, 2014)			Percentage of samples above the maximum limit in FY 2012 (April 1, 2012, to March 31, 2013) (%)	Percentage of samples above the maximum limit until the end of FY 2011*1 (to March 31, 2012) (%)
	Number of reported samples	Number of samples above the maximum limit	Percentage of samples above the maximum limit (%)		
Rice	10.99 million	28	0.0003	0.0008	2.2
Wheat and barley	592	0	0	0	4.8
Pulse*2	5,163	21	0.4	1.1	2.3
Vegetables	19,657	0	0	0.03	3.0
Fruits	4,243	0	0	0.3	7.7
Tea	447	0	0	1.5	8.6
Other cultivated plants (including buckwheat)	1,618	0	0	0.5	3.2
Raw milk	2,040	0	0	0	0.4
Meat and eggs (excluding wildlife meat)	194,945	0	0	0.003	1.3

Source: Prepared by MAFF based on materials from MHLW and local governments

○ In efforts to support disaster-damaged regions, MAFF promoted sales fairs for food products from these regions and their proactive use in company dining rooms under the slogan of “Support by Eating.” MAFF’s and other dining rooms and shops also used and sold food products from disaster-damaged regions.

○ Many foreign countries and regions tightened their import control measures on Japanese agricultural, forestry and fishery products including food due to the nuclear Fukushima Daiichi power plant accident. As a result of the negotiation with those countries and regions, some of them have relaxed or lifted these control measures.

Example of countries which have relaxed or lifted their import control measures

Ecuador

Lifted all import control measures in April 2013

Russia

Eased import control measures for all prefectures in April 2013

Vietnam

Lifted all import control measures in September 2013

Brunei

Eased import control measures for all prefectures other than Fukushima Prefecture in October 2013

Australia

Lifted all import control measures in January 2014

EU

Eased import control measures by reducing products and prefectures subject to safety certification requirements in April 2014

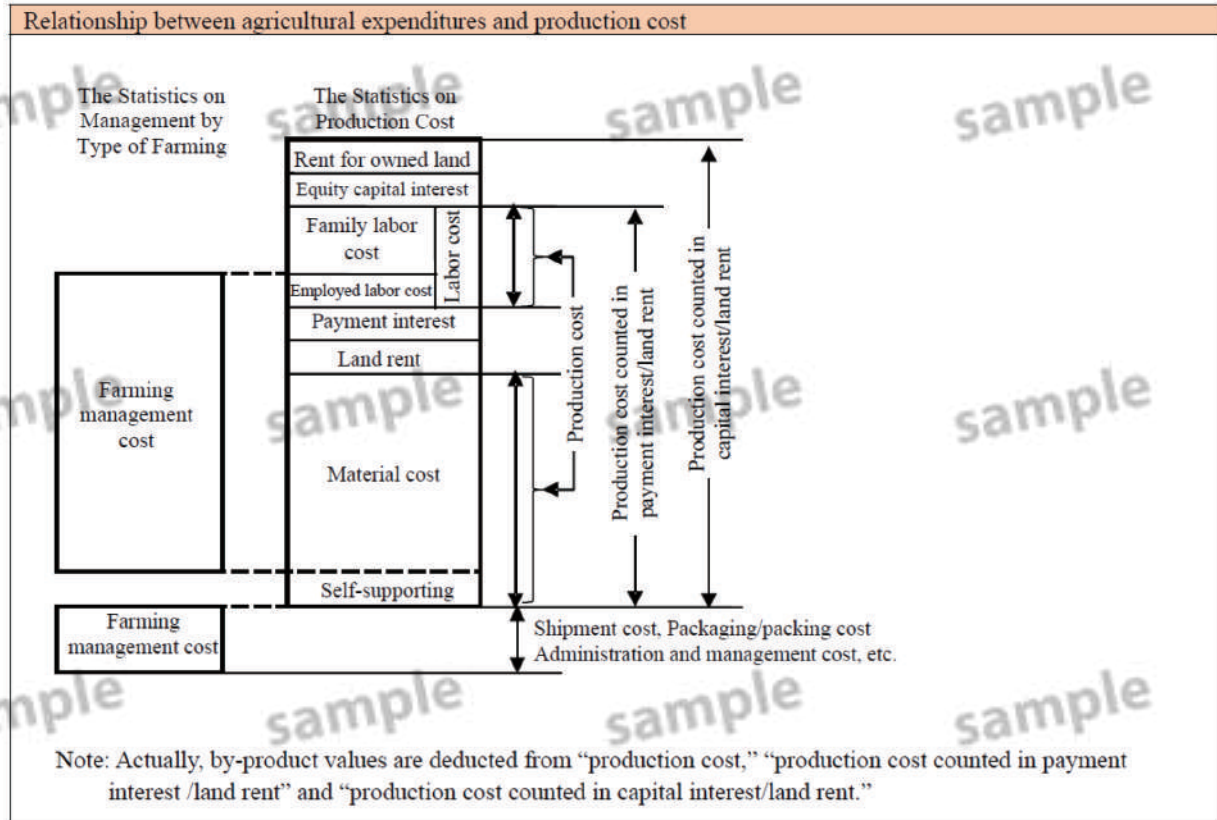
Source: MAFF

1. Basic statistical terminology

(1) Classification of farm households (definitions used since the 1990 World Census of Agriculture and Forestry)

Terminology	Definition
Farm household	Household engaged in farming and managing cultivated land of 10 ares or more, or earning more than 150,000 yen per year from sales of agricultural products.
Commercial farm household	Farm household managing cultivated land of 30 ares or more, or earning more than 500,000 yen per year from sales of agricultural products.
Business farm household	Farm household whose main source of income (50% or more) is farming, and which possess at least one family member under the age of 65 who is engaged in self-employed farming for more than 60 days a year.
Semi-business farm household	Farm household whose main income (50% or more) is from sources other than agriculture and which possess at least one family member under the age of 65 who is engaged in self-employed farming for more than 60 days a year.
Side-business farm household	Farm household without any members under the age of 65 engaged in self-employed farming for more than 60 days a year (farm households other than business and semi-business farm households).
Full-time farm household	A farm household without family members who are part-time farmers.
Part-time farm household	A farm household with one or more members who are part-time farmers.
Farm household earned main income from farming	A part-time farm household gaining more income from farming than other work.
Farm household earned main income from other jobs	A part-time farm household gaining more income from work other than farming.
Non-commercial farm household	A farm household managing cultivated land of less than 30 ares, and earning less than 500,000 yen per year from sales of agricultural products
Agricultural holding other than farm household	A holding other than farm household managing cultivated land of 10 ares or more, or earning 150,000 yen or more per year from sales of agricultural products.
Agricultural service enterprise	An enterprise conducting farm work on contract (including enterprise other than agricultural holding, specializing in production and sale of seedlings).
Land tenure non-farm households	A household other than a farm household possessing 5 ares or more in cultivated land and abandoned cultivated land.

Farm household economics



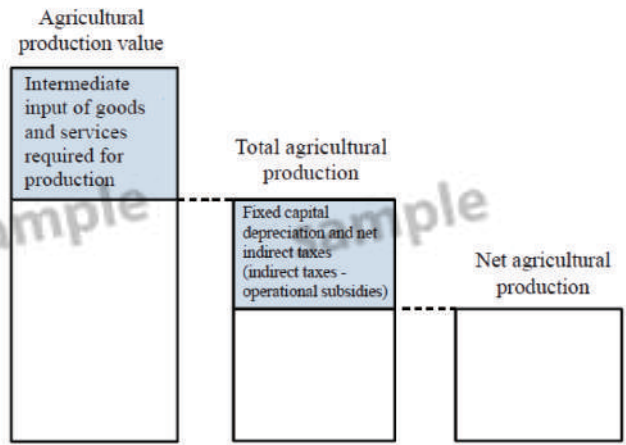
Economic Accounts for Agriculture and Food Related Industries

Agricultural production value: The value combines the amount assessed based on output gained as a result of agricultural production operations and the producer price (sales value excluding shipment and sales costs) with sales of agricultural services (including joint seedling-raising and joint fruit grading and packing).
 The agricultural production value is different from the “total agricultural production” in the “agricultural production income statistics” in that the value covers agricultural services and intermediate output (including seedling and feed crops) while excluding processed agricultural products.

Total agricultural production: The total agricultural production is equal to “the agricultural production value - intermediate input (the cost of goods and services required for production),” amounting to the value added.

Net agricultural production: The net agricultural production is equal to “the total agricultural production - (fixed capital depreciation + indirect taxes - operational subsidies),” conceptually combining “compensation of employees” and “operating surplus” and including agricultural income involving family labor.

[Conceptual Diagram]



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