

FY2010 Annual Report

on Food, Agriculture and Rural Areas in Japan

Summary

Ministry of Agriculture, Forestry and Fisheries
Japan, 2011

The FY2010 Annual Report on food, agriculture and rural areas in Japan is based on Items 1 and 2 of Article 14 of the Food, Agriculture and Rural Areas Basic Act (law no. 106 for 1999).

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Acronyms and abbreviations

ASEAN	Association of Southeast Asian Nations
BRICs	Brazil, Russia, India and China
BOJ	Bank of Japan
BSE	Bovine Spongiform Encephalopathy
CBOT	Chicago Board of Trade
COP	Conference of Parties
CSA	Community Supported Agriculture
CSR	Corporate social Responsibility
DIDs	Densely-Inhabited Districts
EPA	Economic Partnership Agreement
EU	European Union
FAO	Food and Agriculture Organization
FTA	Free Trade Agreement
GAP	Good Agricultural Practice
GCC	Cooperation Council for the Arab States of the Gulf
HACCP	Hazard Analysis and Critical Control Point
IFPRI	International Food Policy Research Institute
JAS	Japan Agricultural Standards
JFC	Japan Finance Corporation
MAFF	Ministry of Agriculture, Forestry and Fisheries
MEXT	Ministry of Education, Culture, Sports, Science and Technology
MHLW	Ministry of Health, Labour and Welfare
MIC	Ministry of Internal Affairs and Communications
MOF	Ministry of Finance Japan
NARO	National Agriculture and Food Research Organization
NIAS	National Institute of Agrobiological Sciences
NPO	Nonprofit Organization
ODA	Official Development Assistance
PRIMAFF	Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries
PS&D	Production, Supply & Distribution
R&D	Research and Development
SARS	Severe Acute Respiratory Syndrome
UN	The United Nations
US	The United States
USDA	United States Department of Agriculture
WTO	World Trade Organization

Symbols

ha	Hectare
kl	Kilolitre
a	Are
kg	Kilogram
t	tons

Foreword

FY2010 saw Japan hit by a large number of natural disasters that greatly damaged the agriculture-forestry-fisheries sector. The Great East Japan Earthquake in March 2011 came as one of Japan's worst natural disasters, exerting grave impacts on people's lives and agriculture-forestry-fisheries production. The subsequent accident at the Tokyo Electric Power Company's (TEPCO's) Fukushima Daiichi Nuclear Power Station has exerted great impacts on farming around the station. Furthermore, the first foot-and-mouth disease outbreak in Japan in a decade and highly pathogenic avian influenza outbreaks in various parts of Japan brought about great damage to relevant local livestock industries. In addition, low temperatures in spring and later, the prolonged rainy season, record summer heat waves, typhoons, heavy snow from late 2010, and the eruption of Mt. Kirishima (Shinmoedake) damaged relevant local communities in many different ways.

Under such circumstances, this report begins with the Great East Japan Earthquake as a special topic, discussing details of damage and restoration/reconstruction efforts in agriculture and other sectors in disaster-hit areas. Given that the situation changes as time goes by and that the report is required to be submitted to the Diet annually, this report covers events through to the middle of May. The chronology of agricultural restoration/reconstruction in disaster-hit areas will be reported in the next fiscal year and thereafter.

Chapters 1 and 2 cover damage from and responses to the foot-and-mouth disease outbreak and meteorological disasters.

Given that interest has grown in global environmental problems through the 10th Conference of Parties to the Biodiversity Convention, or COP10, which took place in Nagoya, Aichi Prefecture, in October 2010, this report takes up the topic of efforts to solve these problems in the food, agriculture and rural areas sector.

The food, agriculture and rural areas sector in recent years has seen rising international prices of grains and other commodities amid the global destabilization of food supply and demand. In Japan, the food self-sufficiency ratio fell from 49% to 40% in the past two decades. Agriculture income has halved while abandoned cultivated land has expanded to 400,000 hectares. The number of farmers as well as farms has continued declining, while the farming population has aged. In rural areas that are the infrastructure of sustainable agriculture development and are places for demonstrating the multifunctionality of agriculture, community functions have declined. Consumer needs have grown for better food quality and greater food safety/security as the basis of life. Chapters 1 to 3 discuss such changes and future problems regarding these matters while citing the latest data, figures and tables, and specific cases.

At its end, this report lists major developments and indicators in the food, agriculture and rural areas sector over the past 50 years, as FY2010 marked the 50th anniversary of Japan's first annual report on agriculture, which was issued in 1961.

As food-resource demand is expected to expand further in line with population and economic growth around the world, all Japanese people must consider how to secure water and food and how to convey a desirable society for security to the next generation. The terrible earthquake/tsunami disaster has led the people to recognize the importance of a stable food supply and the agriculture-forestry-fisheries sector's supporting of such supply again. We hope that this report will contribute to deepening the people's interest in and understanding about food, agriculture and rural areas.

Special Feature: “Great East Japan Earthquake”

In March 2011, the Great East Japan Earthquake struck. It was the largest ever quake on record in Japan.

The earthquake and subsequent tsunami wreaked havoc on farmlands, farming facilities, farm products and other parts of the agriculture sector, feed and other agricultural production-related industries, and the food industry in the coastal regions of Iwate, Miyagi, Fukushima, and other prefectures.

(Estimated area of farmlands washed away, drowned or damaged by the tsunami)

(Unit: ha, %)

Prefecture	Cultivated area (2010)	Estimated area of farmlands washed away, drowned or damaged by the tsunami		
		Paddy fields area	Upland fields area	
Aomori	156,800	79 (0.1)	76	3
Iwate	153,900	1,838 (1.2)	1,172	666
Miyagi	136,300	15,002 (11.0)	12,685	2,317
Fukushima	149,900	5,923 (4.0)	5,588	335
Ibaraki	175,200	531 (0.3)	525	6
Chiba	128,800	227 (0.2)	105	122
Total	900,900	23,600 (2.6)	20,151	3,449

Sources: MAFF Surveys

Note: In parentheses are damaged cultivated areas' shares of the total

(Damage to agriculture-forestry-fisheries sector as of May 18)

Category	Major damage	Number of damaged locations	Damage value (100 million yen)	Major damaged prefectures
Farmlands and agricultural facilities	Damaged farmland locations	14,734	3,957	Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima, Ibaraki, Tochigi, Gunma, Saitama, Chiba, Kanagawa, Nagano, Shizuoka, Niigata, Mie
	Damaged agriculture facility locations	18,364	3,180	
Subtotal		33,098	7,137	
Farm products, etc.	Farm products, livestock, etc.		117	Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima, Ibaraki, Tochigi, Gunma, Chiba, Yamanashi, Nagano, Niigata
	Agriculture/livestock facilities, etc.		378	
Subtotal			495	
Subtotal for forestry	Forest devastation, forest conservation facilities, forest road facilities, forest damage, timber processing and distribution facilities, special forestry facilities	Damaged facilities, etc.: 2,930 locations Damaged forests: 845 ha	1,162	Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima, Ibaraki, Tochigi, Gunma, Chiba, Niigata, Nagano, Shizuoka, Kochi
Subtotal for fisheries	Fishing boats, fishing port facilities, aquaculture facilities, aquaculture products, etc.	20,723 fishing boats Facilities at 319 fishing ports Etc.	8,952	Seemingly devastating damage in Iwate, Miyagi and Fukushima Prefectures. Hokkaido, Aomori, Ibaraki, Chiba, Tokyo, Kanagawa, Shizuoka, Aichi, Mie, Wakayama, Tokushima, Kochi, Oita, Miyazaki, Kagoshima, Okinawa, etc.
Total			17,746	

Source: MAFF surveys

Note: Damage is limited to losses confirmed at present. Coefficients and the like in the table could change depending on future survey results.



Farmland flooded by the tsunami and covered with various waste



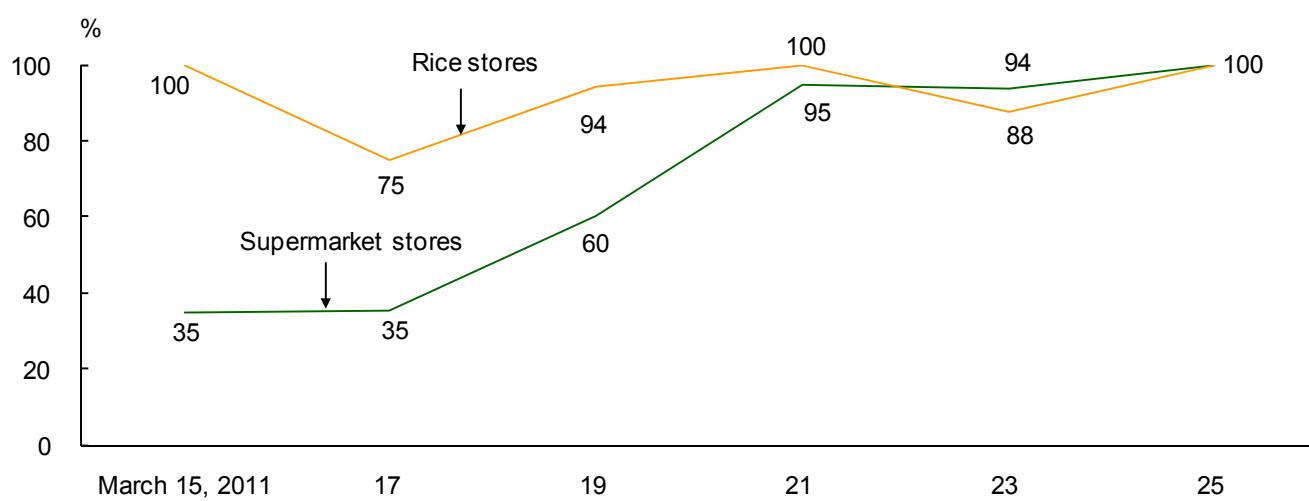
Rubble accumulated in a major drainage canal



A damaged feed mill (Hachinohe, Aomori Prefecture)

Immediately after the disaster, the government implemented measures to procure and provide emergency food, beverages, charcoal, briquette coal, etc., to tentatively restore agriculture-forestry-fisheries and other facilities, to prevent secondary disasters, to supply feed and to secure a stable rice supply in the Tokyo metropolitan and other regions.

(Share for supermarket and other stores with over-the-counter rice inventories in Tokyo and its vicinity)



Source: MAFF survey

Note: The survey covered 20 supermarket stores — eight in Saitama, eight in Tokyo and four in Kanagawa — and 10 rice stores — four in Saitama, four in Tokyo and two in Kanagawa.

The government issued instructions on restrictions of distribution of spinach, raw milk and other products in some regions in line with the fallout radionuclides due to the accident at TEPCO's Fukushima Daiichi Nuclear Power Station.

Considering disaster the strong hopes that refugees from evacuated areas have to "be free from inconvenient lives as early as possible and feel safe to return to farming and fishing," the government will continue all-out efforts to restore and reconstruct agriculture in the disaster-hit region and address the nuclear plant accident. (A supplementary FY2011 budget includes funding for restoring farmlands, for farming facilities and the like, for recovering production and distribution functions, for supporting the continuation or reconstruction of business operations, and for confirming the safety of agricultural and livestock products and the like.)

The reconstruction of agriculture, forestry and fisheries as the key industry in the disaster-hit region is the most important for the overall post-disaster restoration. The central and relevant local governments should be united to proceed with the reconstruction while listening to opinions from disaster-hit regions.

(Chronology of events regarding the Fukushima Daiichi Nuclear Power Station accident)

Date	Events
March 11	The Great East Japan Earthquake and Tsunami occurred. A declaration of a nuclear state of emergency ⇒ Evacuation advisory for residents within a 3-kilometer radius of the power station.
March 12	A hydrogen explosion occurred at the No. 1 reactor of the Fukushima Daiichi Nuclear Power Station ⇒ Evacuation advisory for residents within a 20-kilometer radius of the power station
March 17	Advisory to shelter indoors for residents within areas 20 to 30 kilometers from the power station Provisional regulation values were set for radioactive substances under the Food Sanitation Act.
March 18	Radioactive iodine exceeding the provisional regulation value under the Food Sanitation Act was detected in raw milk in Fukushima Prefecture
March 19	Radioactive iodine exceeding the provisional regulation value under the Food Sanitation Act was detected in spinach in Ibaraki Prefecture
March 21	Restrictions* on distributing foods were launched (as instructed by the Director General the Nuclear Emergency Response Headquarters)
April 4	About 10,000 tons of highly contaminated radioactive water was released into the sea. The Nuclear Emergency Response Headquarters announced "Concepts of inspection Planning and the Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods concerned Applies"
April 5	Provisional regulation values (on radioactive iodine in fish and shellfish) were set under the Food Sanitation Act.
April 8	The Nuclear Emergency Response Headquarters announced a policy on rice planting.
April 22	The Director General of the Nuclear Emergency Response Headquarters called for restrictions on rice planting in restricted areas, planned-evacuation areas and areas-prepared for evacuation in the case of emergency

Sources: MAFF surveys

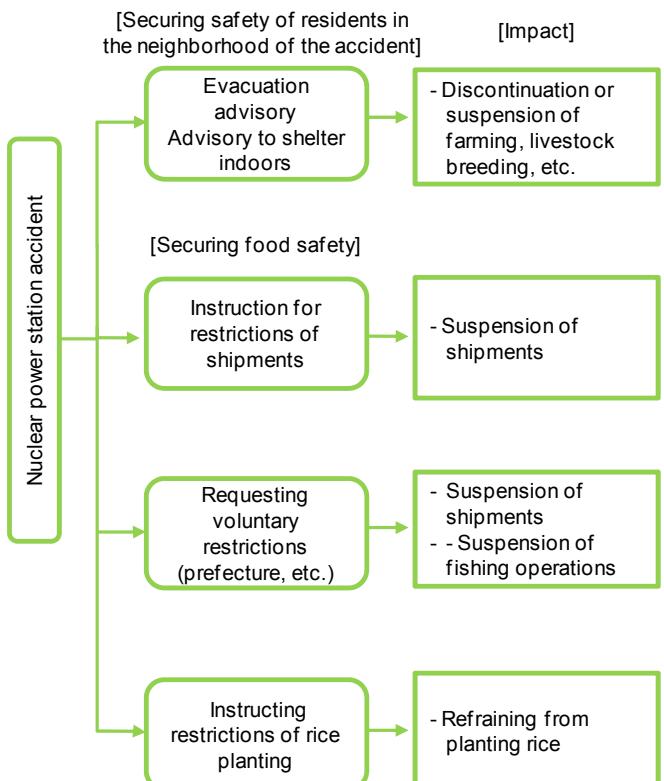
Note: Shipment restrictions are lifted if radioactive substances fall below the regulation values in three consecutive weekly inspections (implemented from April 8).

(Outline of rice planting restrictions)

○ **"Policy on Rice Planting (excerpts)" (Nuclear Emergency Response Headquarters, April 8)**

- Restrictions on rice planting shall be imposed in restricted areas, planned-evacuation areas, and areas prepared for evacuation in the case of emergency, as well as in areas where data on radioactive cesium detected in paddy field soil and indicators of radioactive cesium transmission to rice suggest that radioactive cesium in brown rice is likely to exceed the provisional regulation values under the Food Sanitation Act.
- Based on inspections of paddy field soil, the central government shall consult with relevant local governments to designate specific areas for rice planting restrictions. Upon the designation, the Director General of the Nuclear Emergency Response Headquarters shall instruct relevant local governments to implement rice planting restrictions.
- When rice planting restrictions are implemented, appropriate compensation shall be secured.

(Instructions based on the Act on Special Measures Concerning Nuclear Emergency Preparedness)



An "Eat to Support" sales fair



Disaster emergency pumps used to drain farmlands. (Ishinomaki, Miyagi Prefecture)

Topic: Environmental problems, and food, agriculture and rural area

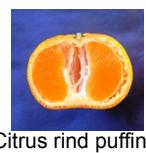
○ Major environmental problems

At present, there are various environmental problems, including global warming, biodiversity loss, deforestation and forest degradation, ozone layer depletion, acid rain, marine pollution, desertification, and garbage. Environmental changes exert great impacts on food, agriculture and rural areas in many ways.

(Present status of major environmental problems)

Global warming		Global warming refers to rises in earth surface and atmospheric temperatures caused by an increase in the atmospheric density of greenhouse gases (including carbon dioxide, methane and dinitrogen monoxide) due to human activities. Global warming is expected to exert serious impacts on the natural ecosystem and human beings through sea level rises, prolonged droughts and other such events.
Biodiversity loss		Biodiversity loss is growing due to such factors as declines of species caused by human activities and development, changes in human-influenced environments due to reduction or elimination of human influences on nature, and ecosystem disruptions by alien species and chemicals.
Deforestation and forest degradation		Tropical rainforests and other forests have been declining due to agricultural development, illegal felling, forest fires, over-grazing and other factors, threatening to deepen global environmental problems, including global warming, biodiversity loss and desertification. Additionally, greenhouse gas emissions resulting from deforestation and forest degradation in developing countries appears account for 20% of the world's gross emissions.
Garbage problem		Garbage has increased globally and become qualitatively diverse on the back of economic and population growth, mainly in developing countries. Inappropriate garbage disposal has led to environmental pollution in some developing countries.

Sources: Prepared by MAFF, based on materials including those from the Ministry of the Environment
(Impact of higher temperatures on farm products)



Citrus rind puffing



Sunburn of citrus fruit



Poor red skin coloration in apples



Whitening of rice grain under high temperatures



Cracked rice kernel

Source: National Agriculture and Food Research Organization (National Institute of Fruit Tree Science, Kyushu Okinawa Agricultural Research Center, National Agricultural Research Center for Western Region)

○ Achievements at the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10) and the 5th Meeting of Parties to the Cartagena Protocol on Biosafety (MOP5)

“The Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets” for halting the loss of biodiversity, “the Nagoya Protocol” on access to genetic resources, and the fair and equitable sharing of the benefits arising from the utilization of genetic resources, and “the Nagoya–Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety,” which provides international rules and procedures in the field of liability and redress relating to biodiversity loss through transboundary movements of living modified organisms, were adopted.

(Outline of the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets)

Vision (medium to long-term targets (2050))

Realize a world of living in harmony with nature

Missions (short-term targets (2020))

Taking effective and urgent action to halt the loss of biodiversity

20 headline targets (the Aichi Biodiversity Targets)

Strategic goal A: Address the underlying causes of biodiversity loss (Targets 1 to 4)

Strategic goal C: Improve the status of biodiversity (Targets 11 to 13)

Strategic goal B: Reduce the direct pressures on biodiversity (Targets 5 to 10)

Strategic goal D: Enhance the benefits to all from biodiversity (Targets 14-16)

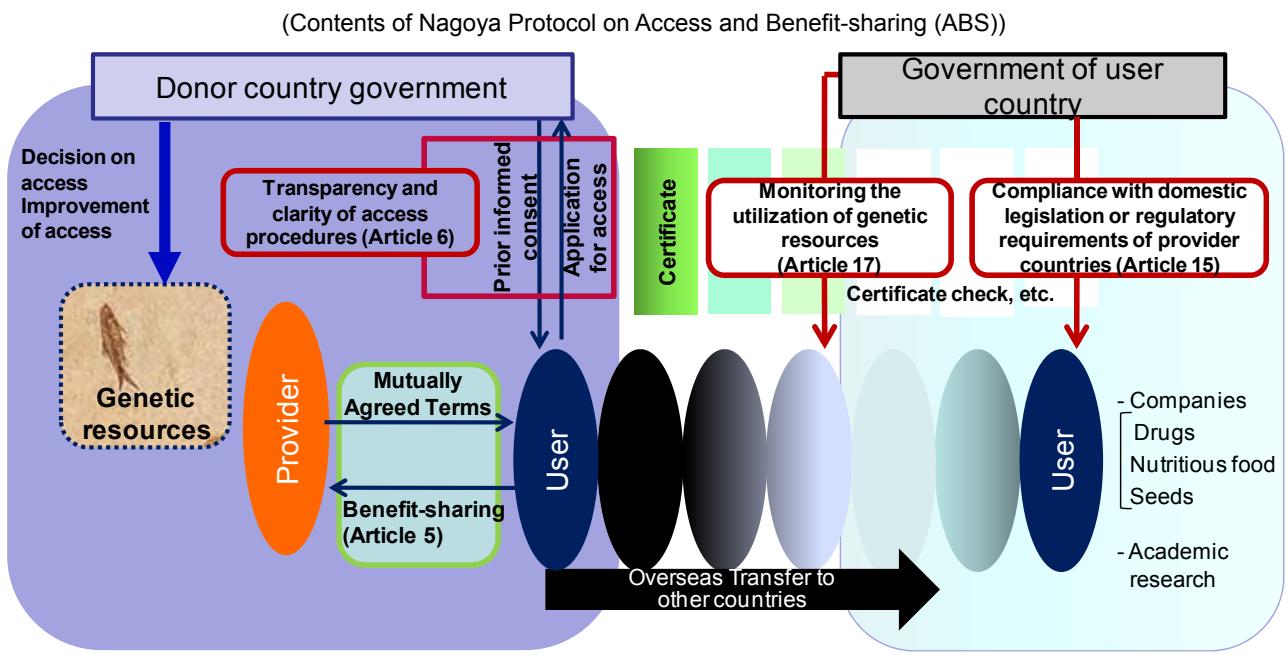
Strategic goal E: Enhance implementation through participatory planning, knowledge management and capacity building (Targets 17 to 20)



Agriculture, Forestry and Fisheries Minister Michihiko Kano chairs the MOP5 meeting.

Source: Prepared by MAFF

The COP10 adopted the Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization. It states that provider countries shall clarify procedures, that genetic resources shall be accessed in accordance with prior informed consent from provider countries, and that the benefits arising from the utilization of genetic resources shall be shared, based on mutually agreed terms.



Source: Prepared by MAFF

The MOP5 meeting dealt with “liability and redress” under the Cartagena Protocol and adopted “the Nagoya-Kuala Lumpur Supplementary Protocol” calling for the parties to the protocol to identify those responsible for biodiversity loss and order them to restore biodiversity.

(Details of “liability and redress” under the Cartagena Protocol)

[Outline of supplementary protocol]

The protocol provides for measures that the parties to the protocol should take regarding liability and redress for any damage to the conservation and sustainable use of biodiversity through transboundary movements of living modified organisms, or LBOs.

If any such damage emerges, the parties will identify the operators responsible for the damage and order them to restore the damage.

- “Damage”: This refers to adverse effects on the conservation and sustainable use of biodiversity and is scientifically measurable or observable and remarkable.

- “Operators”: The operators directly or indirectly manage LMOs (including developers, exporters, importers, transporters and suppliers)

- “Responses”: Including prevention, mitigation, avoidance and restoration of damage, as well as prevention of damage expansion



Source: Prepared by MAFF

○ Efforts to reduce carbon dioxide emissions

The per capita food mileage in Japan is larger than in other countries.

In the food industry and in agriculture, efforts to reduce carbon dioxide emissions are making progress, including “the visualization of carbon dioxide” (carbon footprint), local consumption of local produce, and the introduction of energy-saving machines and equipment.

(Per capita food mileage)

(Ton-km)

Japan 2010	6,770
2001	7,093
U.S. 2001	1,051
U.K. 2001	3,195
France 2001	1,738
Germany 2001	2,090

Source: Prepared by MAFF

(Food mileages for consumption of local food materials
(in Ishikawa Prefecture) and others (examples))

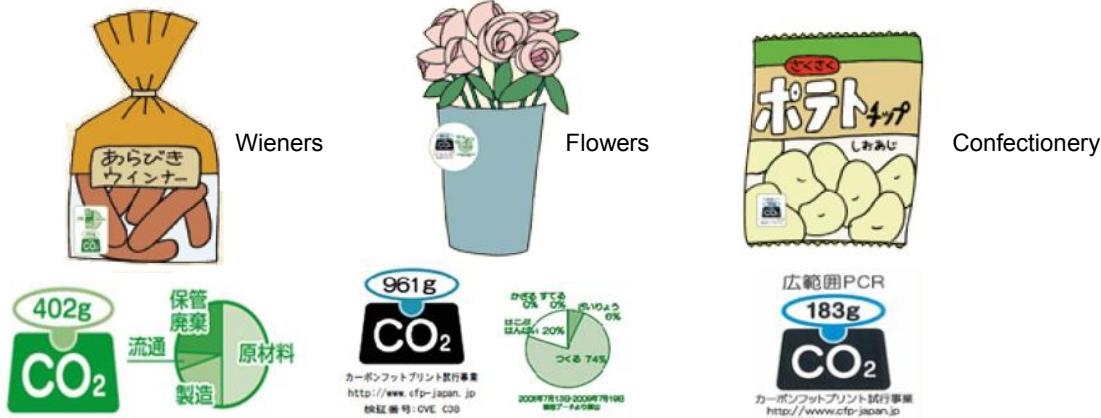
Menu	Major food material	Consumption (g)	Consumption of local food materials				Consumption of food materials (including imports) selected according to market distribution			
			Producing area	Transportation distance (km)	Food mileage (kg-km)	CO ₂ emissions (g)	Producing area	Transportation distance (km)	Food mileage (kg-km)	CO ₂ emissions (g)
Rolled Noto pork with vegetables	Pork	200	Kahoku City	21.6	4.3	0.8	U.S.	19,422.4	3,884.5	79.5
	Green onion	70	Nanao City	70.0	4.9	0.9	Saitama Prefecture	466.1	32.6	5.9
	Carrot	40	Komatsu City	33.1	1.3	0.2	China	2,877.7	115.1	7.5
Miso soup with shiitake mushrooms and crown daisy	Shiitake mushrooms	40	Komatsu City	33.1	1.3	0.2	China	2,877.7	115.1	7.5
	Crown daisy	30	Minna, Kanazawa	5.7	0.2	0.0	Gifu Prefecture	210.9	6.3	1.1

Source: Tetsuya Nakata, “Using Food Mileage Indicator to Measure Effects of Environmental Load Reductions through Local Consumption of Local Products,” *Food System Study*, Vol.17 No. 3, December 2010

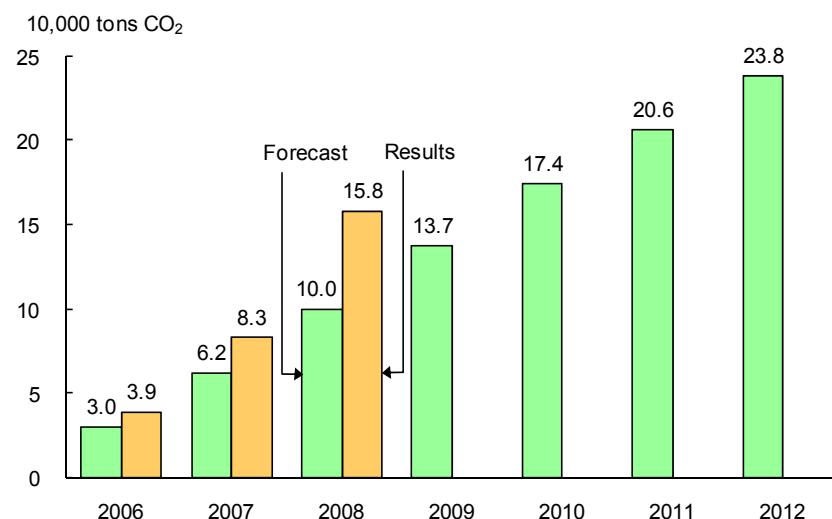
<Carbon footprints>

Carbon footprints indicate CO₂ emissions converted from total greenhouse gas emissions at raw materials procurement, production, distribution, consumption/maintenance, disposal and recycling stages for products. They are designed to boost farmers' and consumers' consciousness of emission cuts.

(Carbon footprint examples)



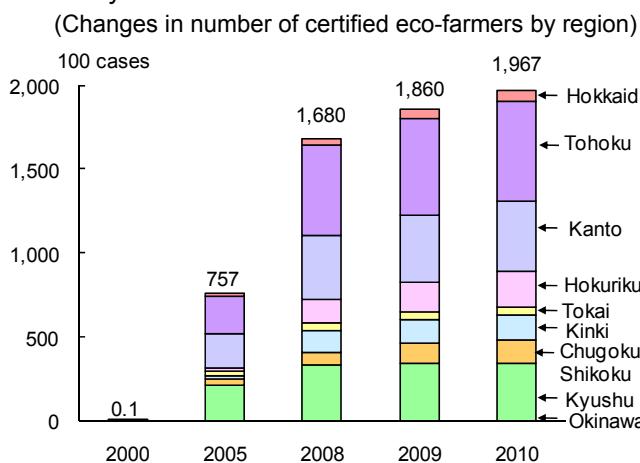
(Results and forecasts of CO₂ emissions by facility horticulture and agricultural machines)



Sources: MAFF surveys

○ Promoting sustainable agriculture

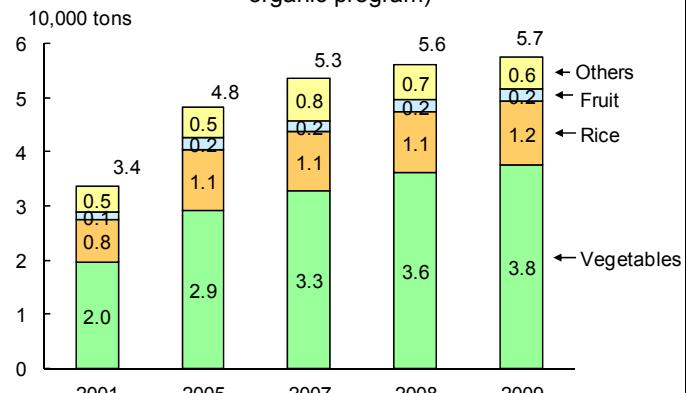
Sustainable agriculture efforts are making progress, including an increase in the number of certified eco-farmers implementing such measures as the reduction of consumption of chemical fertilizers and chemosynthetic chemicals.



Sources: MAFF surveys

Note: Data at the end of March for each year

(Changes in organic produce certified under the JAS organic program)

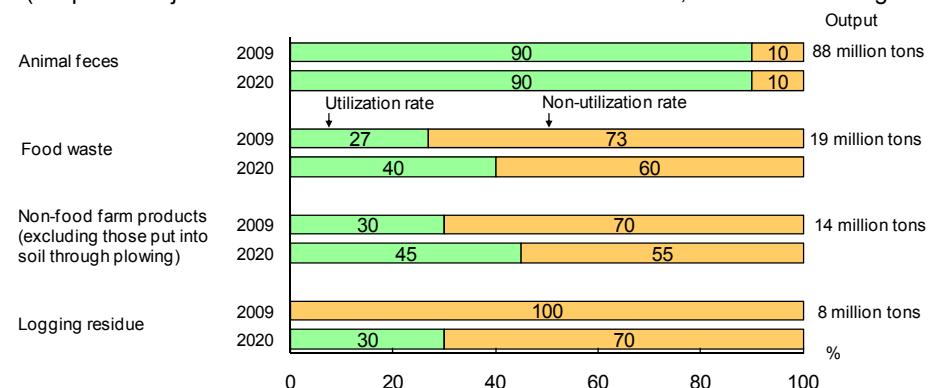


Sources: MAFF surveys

○ Promoting biomass use

Based on the “basic plan for promoting biomass use” as decided on by the Cabinet in December 2010, we comprehensively and systematically promote biomasses to invigorate rural areas and conserve the environment.

(Output of major biomasses and utilization rates in rural areas, and utilization targets for 2020)



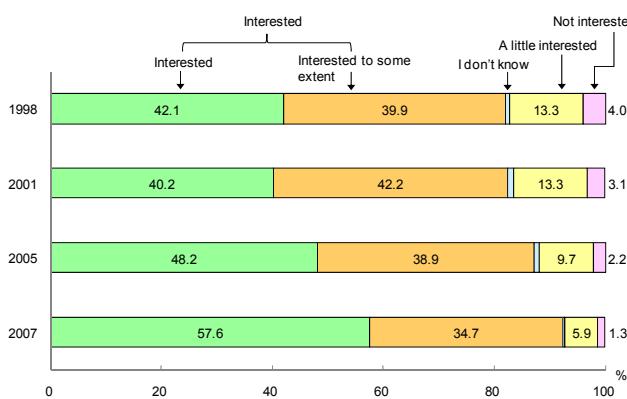
Source: MAFF surveys

Notes: 1) Output and utilization rate data for major biomasses at present are those available as of 2009.

2) Output indicates the wet weight (dry weight for logging residue)

○ Changes in people's interests in global environmental problems

Peoples' interests in such global environmental problems as global warming, ozone layer depletion, and tropical forest declines have been growing year by year.

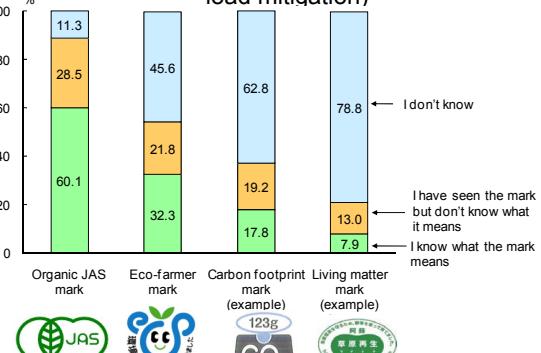


Source: Cabinet Office, “Poll on Global Warming Measures”

○ Growing consciousness about environmental problems

Mark awareness expansion and education efforts should be promoted to link the growing consciousness to actions to solve environmental problems.

(Awareness of agriculture-related marks on environmental load mitigation)



Source: MAFF, “Survey on Consciousness/Intentions about Sustainable Use of Food, Agriculture, Rural Area and Fisheries Resources,” released in May 2011

Note: A questionnaire survey covering 1,800 consumer monitors (response rate at 90.3%)

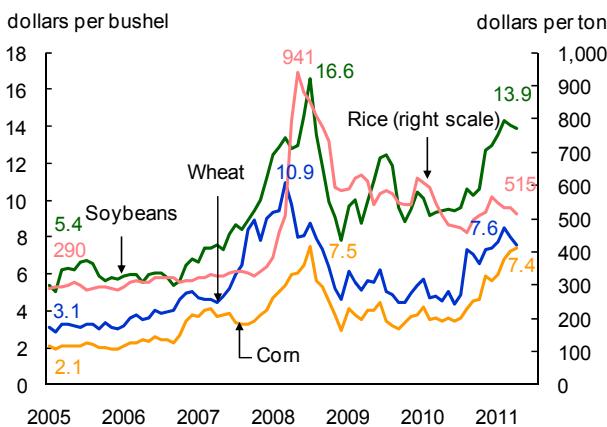
Chapter 1 Toward a securing stable food supply

(1) World food situation

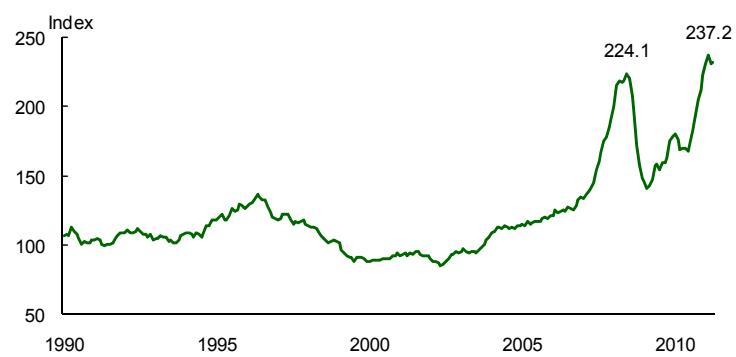
○ Past and forecast changes of grains and food prices

International prices of grain and other food products have risen close to the record highs posted in 2008. The FAO food price index (covering grains, meats, sugar, dairy products, and oils and fats) has hit a record high.

(Changes in international prices of grains and soybeans)



(FAO Food Price Index Changes (100 for 2002–2004))



Sources: Prepared by MAFF based on data from Reuter and Rice Committee, Board of Trade of Thailand

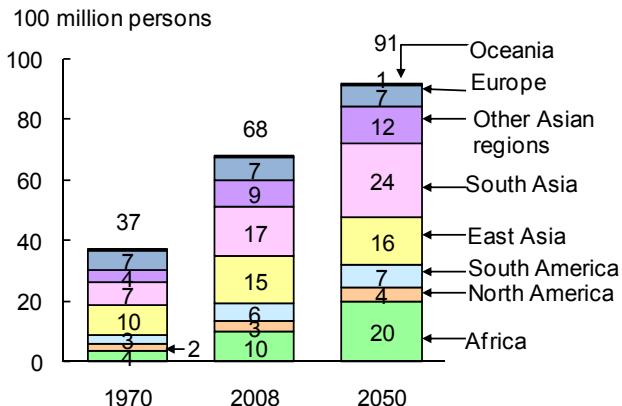
Source: FAO, "Food Price Index"

○ Population growth mainly in developing countries and continuation of economic growth in BRICs, especially China

World population is estimated to increase to 9.1 billion in 2050. India and China may account for one-third of the world population. Substantial population growth is expected in Asian and African developing countries.

BRICs countries have continued economic growth, especially China, which has replaced Japan as the world's second largest economy in terms of GDP.

(Past and forecast changes of world population)



Source: Prepared by MAFF based on the United Nations' "World Population Prospects: The 2008 Revision."

(GDP results and forecasts for major countries)

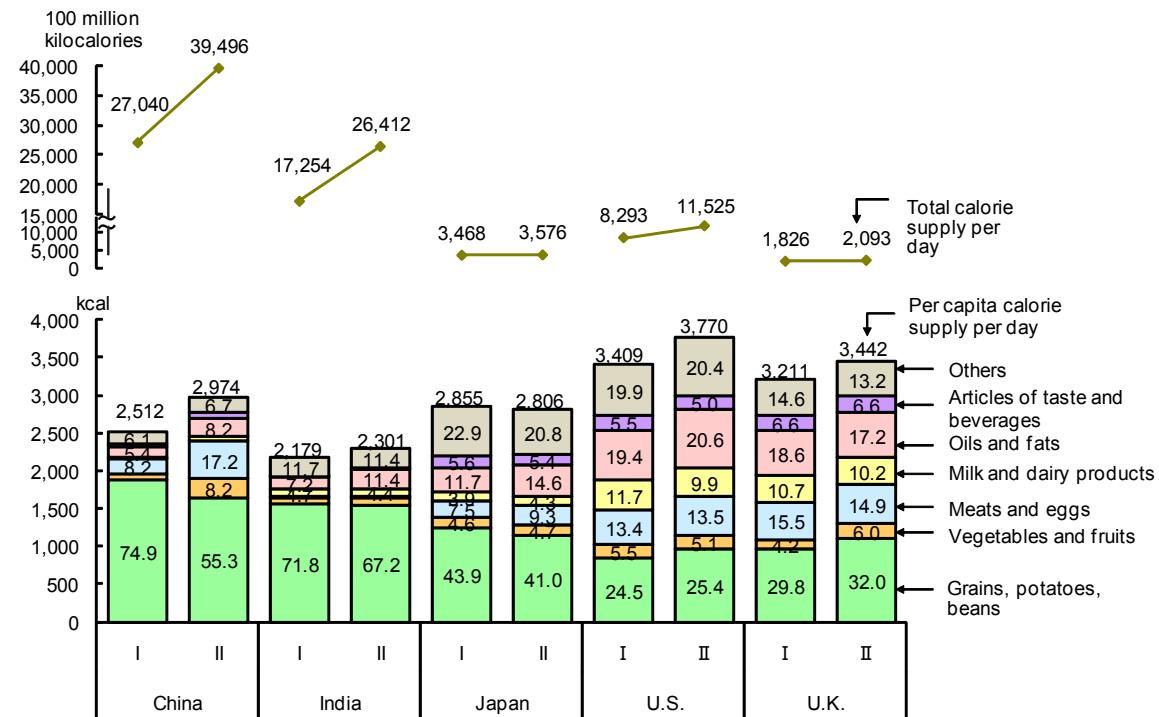
	2009	2015	Ratio of 2009 GDP to 2015
U.S.	14,119	18,029	127.7
China	4,984	9,982	200.3
Japan	5,069	6,517	128.6
Brazil	1,572	2,789	177.4
Russia	1,231	2,499	203.0
India	1,287	2,412	187.4

Source: IMF, "World Economic Outlook Database, October 2010"
Note: Covering the three largest economies in terms of forecast 2015 GDP, and Brazil, Russia and India

○ Changes in food consumption in major countries

Regarding food demand, China and India posted sharp growth in food consumption in calorie terms in line with the growing consumption of meats, eggs, vegetables, fruits, and fats and oils.

(Changes in food categories' shares of consumption and total calorie supply per day in major countries)



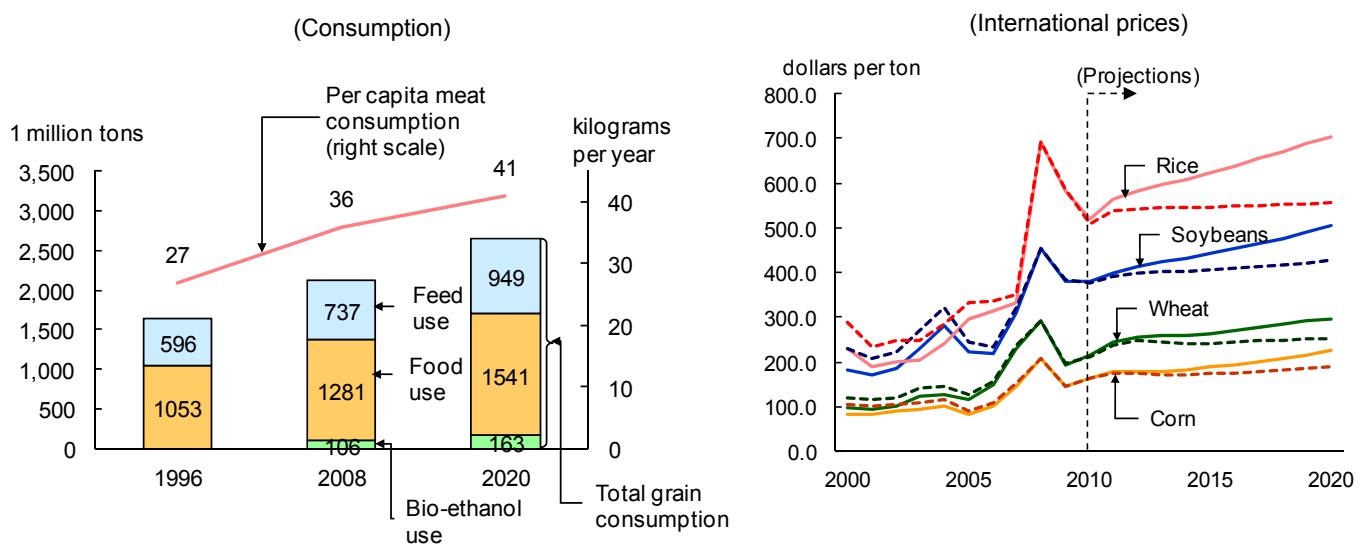
Source: Prepared by MAFF based on FAO "FAOSTAT"

Notes: 1) Average per capita calorie supply per day in the 1985–1987 period (I) and the 2005–2007 period (II) for each category was computed to calculate each category's share of total supply.

2) Numbers in the bar graph represent percentage shares of per capita calorie supply per day

○ Future prospects for world grain consumption and international prices

Grain and soybean prices in 2020 are estimated to be a nominal 24–35% higher than the average for the three years between 2007 and 2009 as demand for agricultural products for food, feed and biofuel uses expands in line with population and income growth.



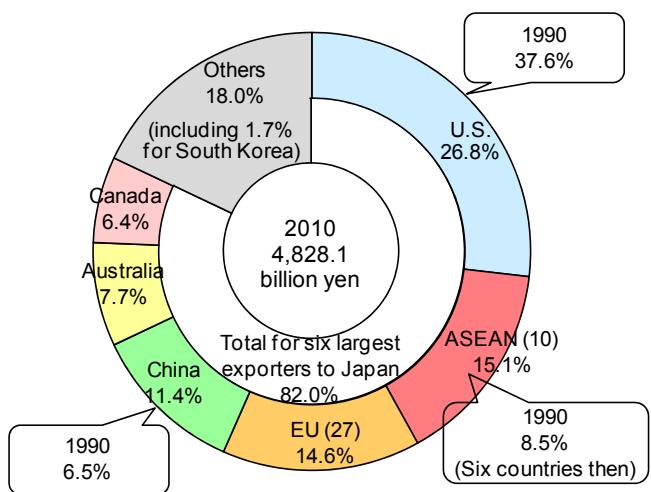
Source: MAFF Policy Research Institute, "World Food Supply and Demand Projections to 2020" (released in February 2011)

Note: The solid line for international prices indicates nominal prices and the dashed line real prices.

(2) Trends of Japan's agricultural product imports and food self-sufficiency ratio

○ Country-by-country breakdown of Japan's agricultural product imports

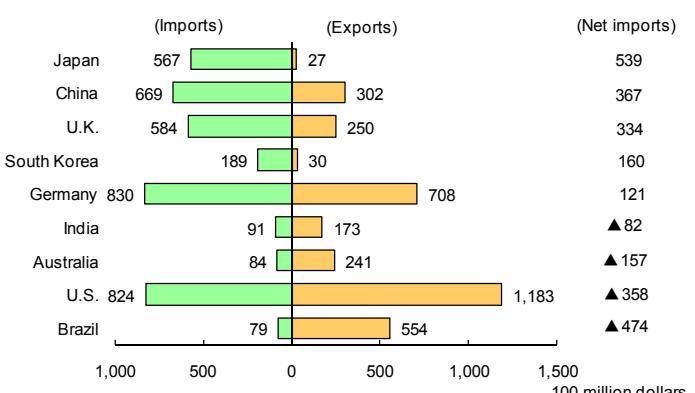
Japan's agricultural products imports in 2010 totaled 4.8 trillion yen, of which the six largest exporters to Japan accounted for 82%. The share declined for the United States but rose for China and ASEAN.



Source: Prepared by MAFF based on Ministry of Finance, "Trade Statistics"

○ Agricultural products imports by Japan and other major countries (2008)

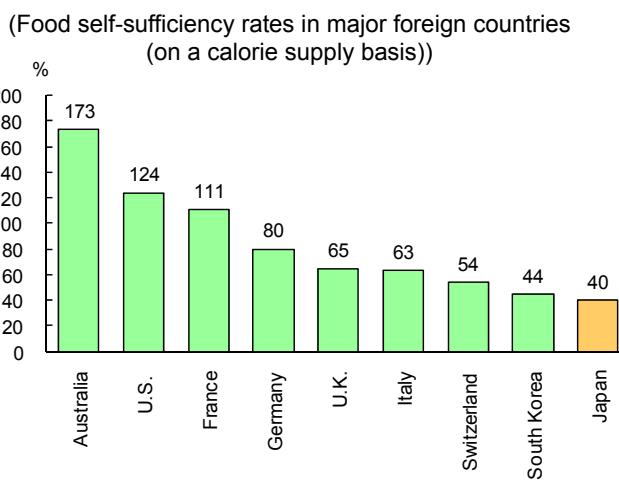
Japan features far less agricultural products exports and more imports. It is the world's largest net importer of agricultural products.



○ Food self-sufficiency ratios in major foreign countries (on a calorie supply basis)

Japan's food self-sufficiency ratio on a calorie supply basis stood at 40% in 2009, the lowest among industrial countries.

Japan's grain self-sufficiency ratio came to as low as 28%, the 27th highest among the 30 OECD members.



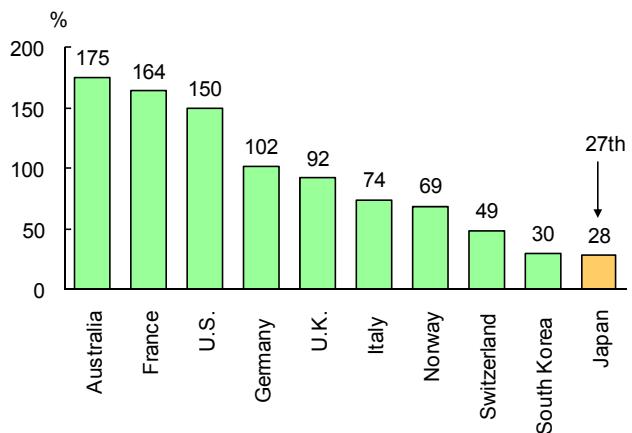
Source: Prepared by MAFF based on MAFF "Food Balance Sheet," FAO "Food Balance Sheets," etc.

Notes: 1) The South Korean data are from the Korea Rural Economic Institute's "Food Balance Sheet" and Swiss data from an annual agriculture report by the Federal Office for Agriculture.

2) Japan's data are for FY2009 and other countries' data for 2007.

3) The food self-sufficiency ratio on a calorie supply basis is the ratio of domestic calorie supply to total calorie supply. For livestock products, imported feeds are taken into account.

(Grain self-sufficiency ratios in major countries (2007))



Source: MAFF, "Food Balance Sheet"

Notes: 1) Ratios are specified for 10 out of the 30 OECD members.

2) The grain self-sufficiency ratio covers rice, wheat, barley, naked barley, corn, kaoliang and other cereals, including those for feed use.

○ Foreign economies publishing or setting targets for food self-sufficiency ratios

As well as Japan, other major food importers, such as South Korea, Switzerland, Norway and Taiwan, have published food self-sufficiency ratios on a calorie supply basis. South Korea has set a target ratio. China has established a target for its grain self-sufficiency ratio.

South Korea

- Ministry for Food, Agriculture, Forestry and Fisheries sets targets for the calorie-based total food self-sufficiency ratio as well as for self-sufficiency ratios by each food category, the staple grain and grain in general in its basic plan for agricultural and rural development. [2015 target: 47% (on a calorie supply basis, with feed imports taken into account*)]
- The Korea Rural Economic Institute publishes the food self-sufficiency ratio on a calorie supply basis. [2008: 49% (on a calorie supply basis*)]

Switzerland

- The Federal Office for Agriculture publishes both calorie-based and value-based total food self-sufficiency ratios and self-sufficiency ratios by each food category.
- | |
|---|
| 2008: 62% (on a calorie supply basis, with no feed imports taken into account*) |
| 55% (on a calorie supply basis, with feed imports taken into account*) |
| 68% (on a value basis*) |

Norway

- The Norwegian Agricultural Economics Research Institute (a research institute at the Ministry of Agriculture) publishes the food self-sufficiency ratio on a calorie supply basis.
- | |
|--|
| 2008: 52% (preliminary) (on a calorie supply basis, with no feed imports or exports taken into account*) |
|--|

Taiwan

- The Council of Agriculture publishes calorie-based and value-based total food self-sufficiency ratios and self-sufficiency ratios by each food category.
- | |
|---|
| 2009: 32% (on a calorie supply basis, with no imported feeds taken into account*) |
| 69% (on a value basis*) |

U.K.

- The Department for Environment, Food and Rural Affairs publishes the food self-sufficiency ratio on a value basis. [2009: 59% (preliminary) (on a value basis*)]

China

- The medium to long-term national food security plan outline (2008–2020) sets food self-sufficiency ratio targets for grains, etc.
- | |
|--|
| 2020 target: 95% or more for grains, etc. (including rice, wheat, corn, beans and potatoes) (on a weightbasis) |
|--|

Russia

- The Russian food security doctrine sets category-by-category food self-sufficiency ratio targets.
- | |
|---|
| 2020 targets: 95% or more for grains, 80% or more for sugar, 85% or more for meat and processed meat products, 90% or more for milk and dairy products, 95% or more for potatoes, etc. (on a weightbasis) |
|---|

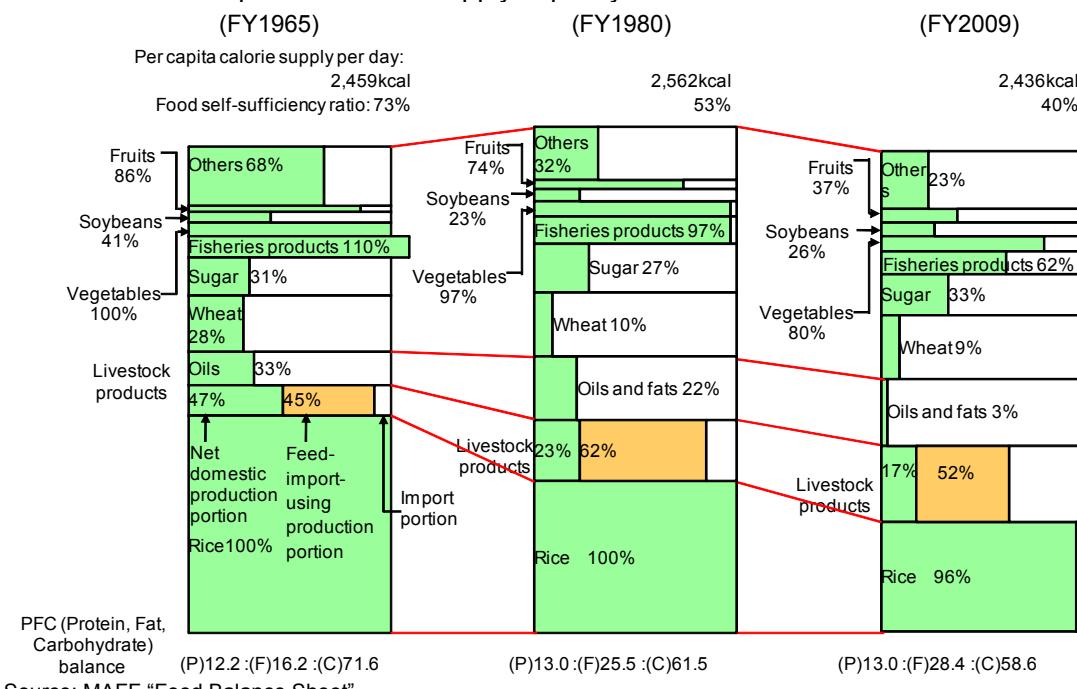
Source: MAFF surveys

Note: * means the total food self-sufficiency ratio covering all foods

○ Trends of category-by-category food self-sufficiency ratios (on a calorie supply basis), etc.

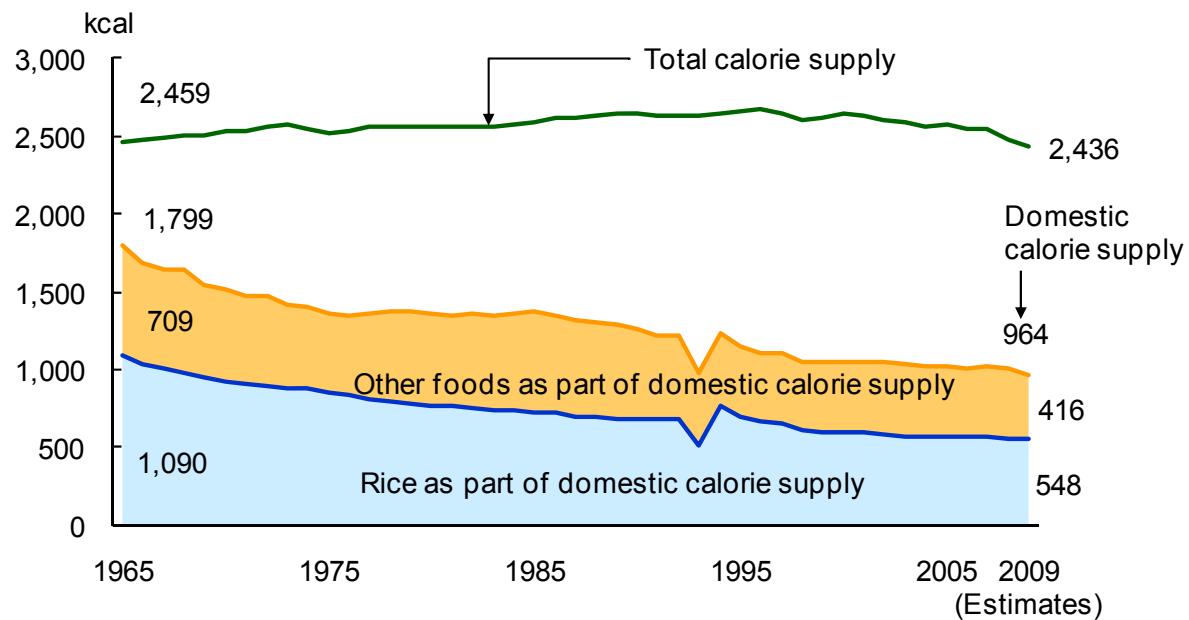
Japan's food self-sufficiency ratio on a calorie supply basis has declined due to both production and consumption factors. Around 1965, the rice that Japan could supply independently accounted for nearly 50% of food consumption, with livestock, oil and fat product consumption limited. Japan had maintained an appropriate nutrition balance under the Japanese dietary pattern until the mid-1980s. Later, however, rice consumption declined with livestock, oil and fat production consumption expanding, leading to the problem of the deteriorating nutrition balance.

On the production side, a decline in the number of farmers, their aging, a fall in cultivated land and other factors have weakened Japan's domestic supply capacity.



○ Changes in total calorie supply and domestic calorie supply

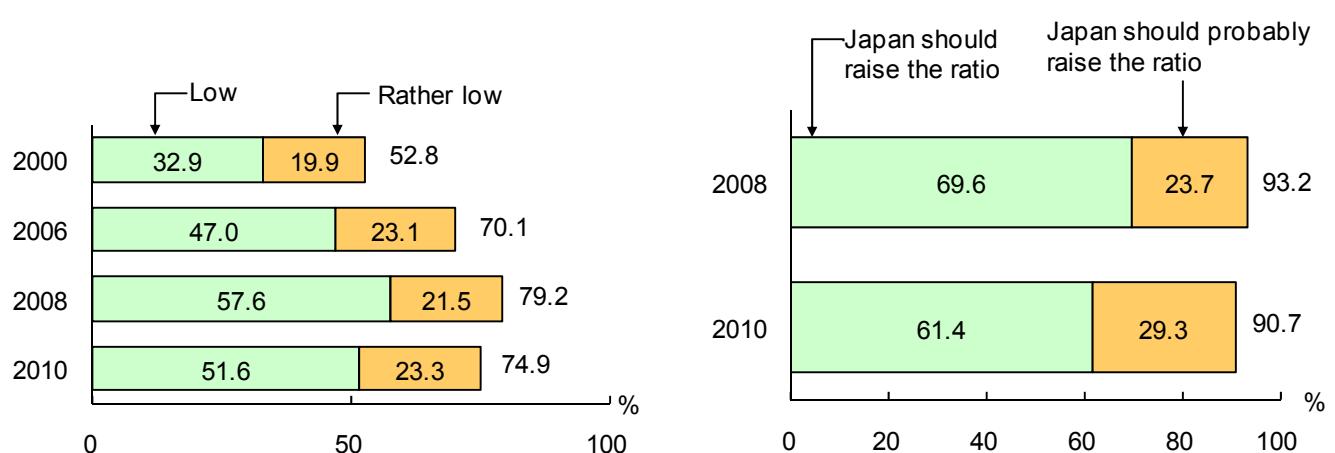
In Japan, domestic calorie supply as the numerator for the computation of the food self-sufficiency ratio on a calorie supply basis has declined considerably, regarding rice as well as other foods.



Source: MAFF "Food Balance Sheet"

○ Consciousness about food supply

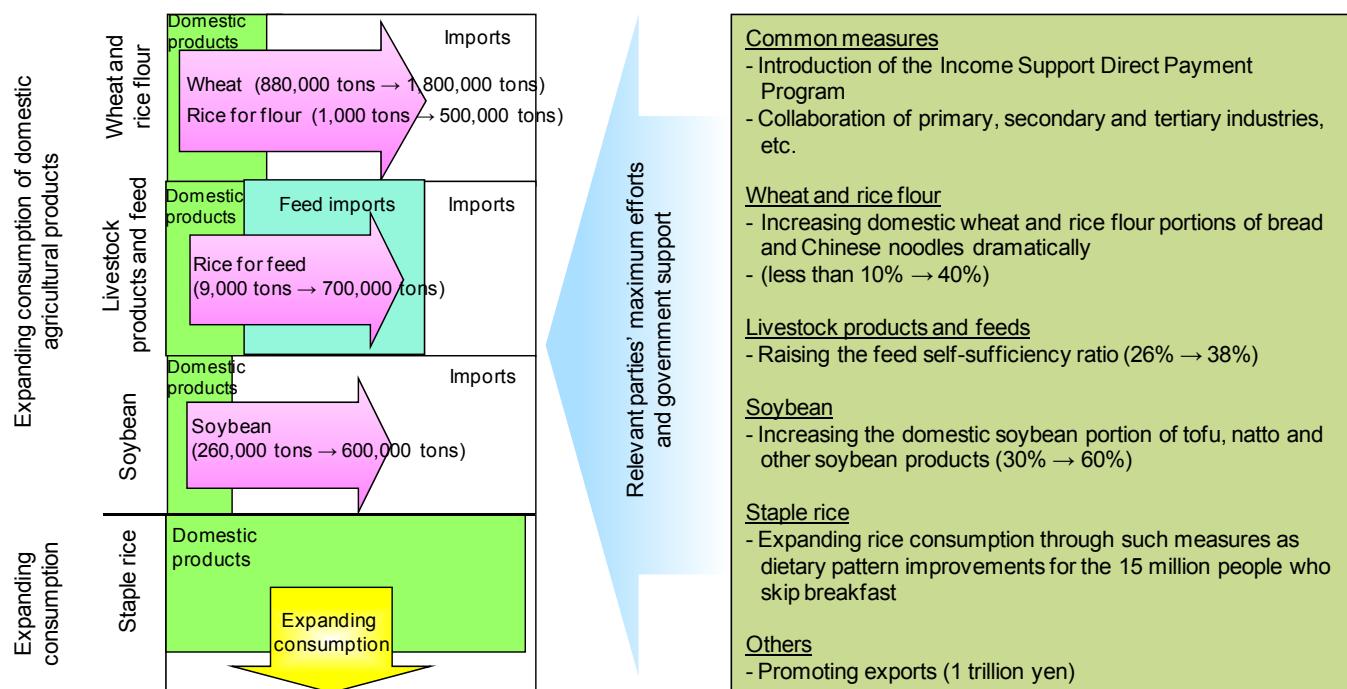
As Japan's food self-sufficiency ratio stands at around 40%, as high as 75% of poll respondents view the present ratio as low. Some 90% believe that the food self-sufficiency ratio should be increased.



Sources: Cabinet Office, "Special Poll on Food Supply" (released in October 2010) and other polls

○ Strategy for raising the food self-sufficiency ratio to 50%

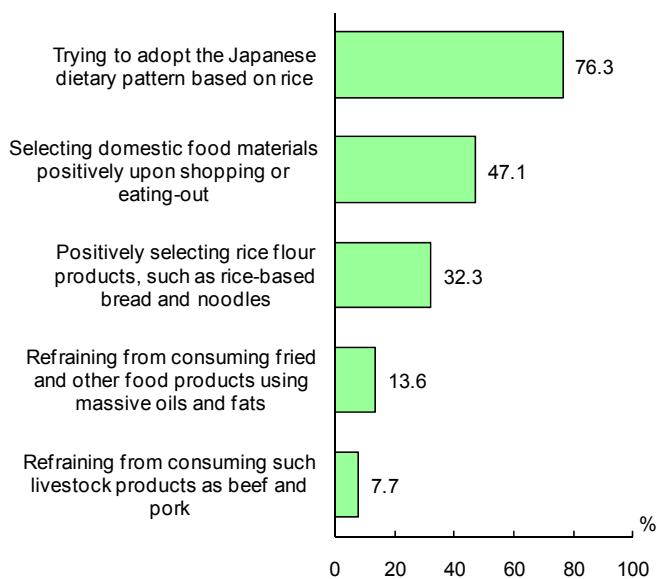
The basic plan for food, agriculture and rural areas sets the calorie-based food self-sufficiency ratio target at around 50% for FY2020 and calls for relevant parties to be united to take such measures as the expansion of consumption of domestic agricultural products to boost the ratio.



Source: Prepared by MAFF

○ Actions to improve the food self-sufficiency ratio

On the consumption side, people's willingness to eat more rice-based meals and positively select domestic food materials to improve the food self-sufficiency ratio should be linked to actual actions through "Food Action Nippon" and other campaign efforts.

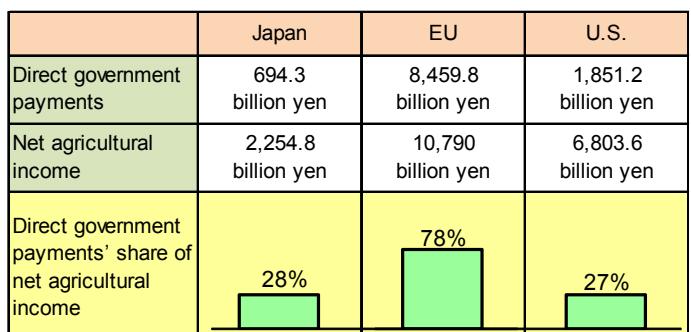


Source: Cabinet Office, "Special Poll on Food Supply" (released in October 2010)

Note: The poll covered 3,000 adults aged at or above 20 throughout Japan (response rate at 64.6%)

○ Direct government payments' shares of net agricultural income in major countries (2006)

Direct government payments' share of net farm income stood at 78% in the EU, against 28% in Japan. In order to support agriculture, Japan's farm support will switch to direct payments to farming families and shift to a more transparent agriculture administration



Sources: Estimates by MAFF based on countries' reports to the WTO in 2006; MAFF, "Farm Production Income Statistics" and "Agriculture Management Statistics Survey Report;" EU, "Eurostat Database;" USDA Economic Research Service, "Farm Economy"

Note: As Japan has no statistical data about "net agricultural income," we estimated "net agricultural income" by subtracting estimated wage and other costs based on farm household data from "agricultural production income."

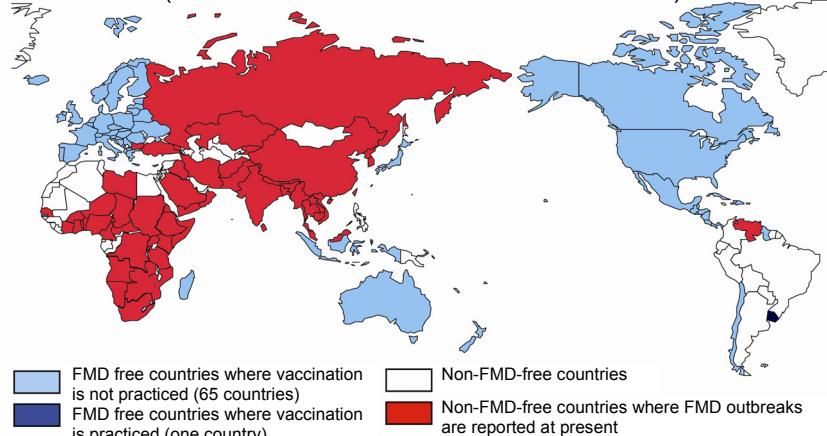
(3) Efforts to establish food security

○ Challenges over food security

Comprehensive measures are required for food security as there are challenges over food security, including the expansion of domestic production, the stabilization of imports, stockpiling, the stable procurement of fertilizers and other agricultural production materials, agricultural investment in foreign countries, and plant and animal quarantine.

Under such situation, animal quarantine is vital for preventing the entry or spread of foot-and-mouth disease, highly pathogenic avian influenza and other diseases affecting livestock production that have broken out in neighboring countries.

(Foot-and-mouth disease outbreaks in the world)



(4) Foot-and-mouth disease outbreaks and countermeasures

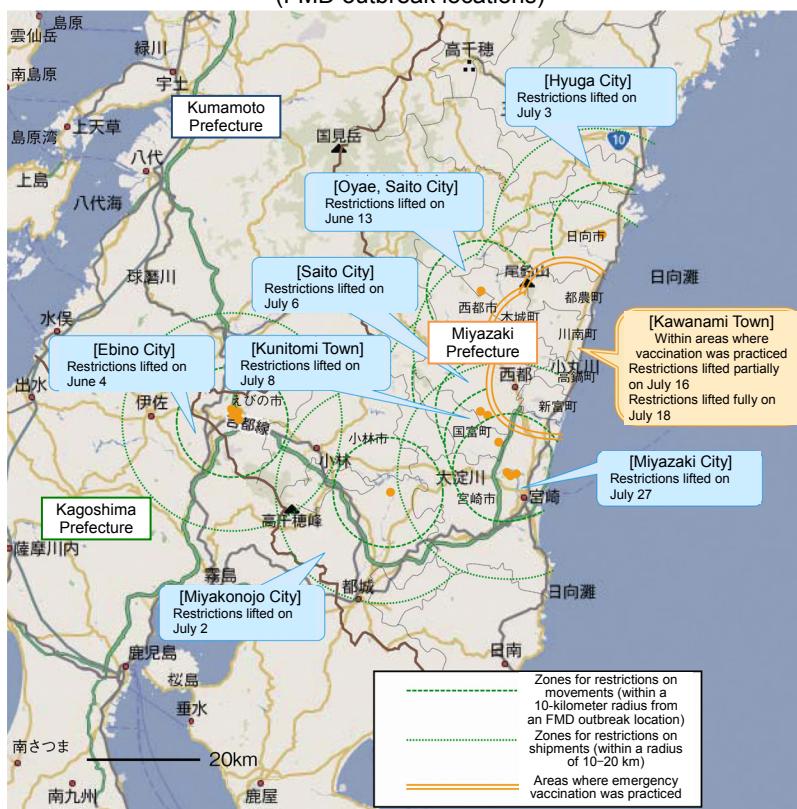
○ Status of FMD outbreaks

As FMD broke out in Miyazaki Prefecture in April 2010, about 70,000 cows and about 230,000 pigs were culled. Various countermeasures were then taken and all relevant parties were united to make epidemic prevention efforts. By the end of July 2010, all restrictions were lifted on livestock movements in the prefecture.

In February 2011, the Scientific Committee of the World Organization for Animal Health, known as OIE, identified Japan as regaining the status free from FMD.

The Act on Animal Infectious Diseases Control was amended in line with a report released in November 2010 by the FMD countermeasure verification committee comprising third parties.

(FMD outbreak locations)



Disinfection at an FMD outbreak farm



Spraying disinfectants on vehicles



A calf auction resumed in Shintomi Town (Koyu County), Miyazaki Prefecture. (September 30, 2010)

(5) Toward establishing new trade rules

○ Progress in Japan's EPA/FTA

By February 2011, Japan concluded, signed or completed negotiations on economic partnership agreements with 13 economies.

The government established the Headquarters to Promote the Revival of the Food, Agriculture, Forestry, and Fishery Industries in November 2010 from the standpoint of promoting high-level economic partnerships that will withstand comparison with the trend of other such relationships and promoting appropriate domestic reforms with respect to agriculture and other areas under the Basic Policy on Comprehensive Economic Partnerships as decided by the Cabinet in November 2010.

In response to the Great East Japan Earthquake, the Cabinet decided on a policy promotion guideline on May 17, 2011. Regarding EPA/FTA, the guideline mentions the basic policy for strengthening "kizuna" (the bonds friendship) with other countries, taking into consideration such factors as the sentiments of the farmers and fishermen who have suffered enormous damage by the earthquake and the nuclear incident, progress made in the international negotiations, and concerns of de-industrialization.

The guideline also mentions that the timing of a decision on whether to join negotiations for the Trans-Pacific Partnership (TPP) Agreement will be considered from an overall perspective. On the revitalization of the food, agriculture, forestry and fisheries industries, it mentions that every effort will be made for the restoration and reconstruction from the disaster, the Council to Promote the Revitalization of Food, Agriculture, Forestry and Fishery Industries will consider measures to cope with the new challenges of rehabilitating agriculture, forestry, and fishery industries in East Japan, and restoring confidence in Japan's agricultural and marine products, and so on.

	2009	2010	2011
Implementation, signing or completed negotiations	Singapore		
	Mexico		
	Malaysia		
	Chile		
	Thailand		
	Indonesia		Implementation
	Brunei		
	Entire ASEAN		
	Philippines		
	Switzerland		
Ongoing negotiations	Vietnam		
	India		OEPA signed in February
	Peru		○ Negotiations completed in November
	Republic of Korea	Suspended negotiations	
Joint study, etc.	GCC	Ongoing negotiations	
	Australia	Ongoing negotiations	
	Japan-China-Korea		○ Joint study started in May
Broader regional economic partnership	EU		○ Joint study started in July
	Mongolia		○ Joint study completed in March
	Canada		○ Joint study launched in March
	FTAAP (Free Trade Area of the Asia-Pacific)		○ An APEC summit in November decided to take specific actions to realize FTAAP.
	ASEAN+3 (Japan, China, Korea)	○ Government-to-government study started in October	
ASEAN+6 (Japan, China, Korea, India, Australia, New Zealand)		○ Government-to-government study started in October	
	TPP (Trans-Pacific Partnership) agreement		Consultations started with relevant countries to collect information

As of April 2011

Source: Prepared by MAFF

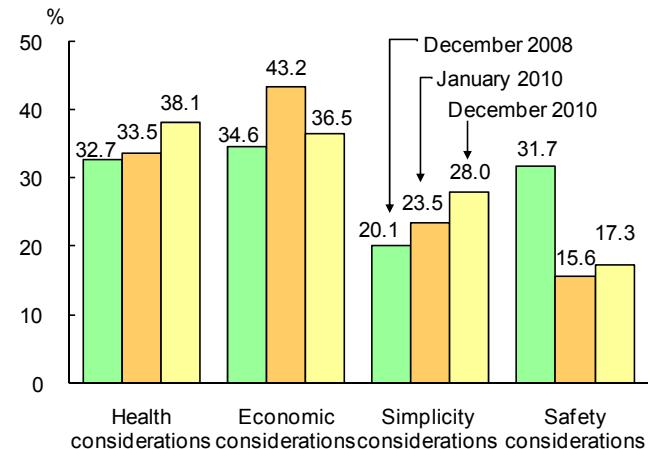
Notes: 1) The "New Growth Strategy" (Cabinet decision in June 2010) calls for "creating Japan's roadmap for building the Free Trade Area of the Asia-Pacific (FTAAP) by 2020."

2) Japan's EPA with the entire ASEAN took effect for Japan, Singapore, Laos, Vietnam and Myanmar in December 2008, for Brunei in January 2009, for Malaysia in February 2009, for Thailand in June 2009, for Cambodia in December 2009, and for the Philippines in July 2010. The only country this has not yet taken effect for is Indonesia.

(6) Food consumption, dietary habits and food industry trends

○ Changes in consumer considerations for food

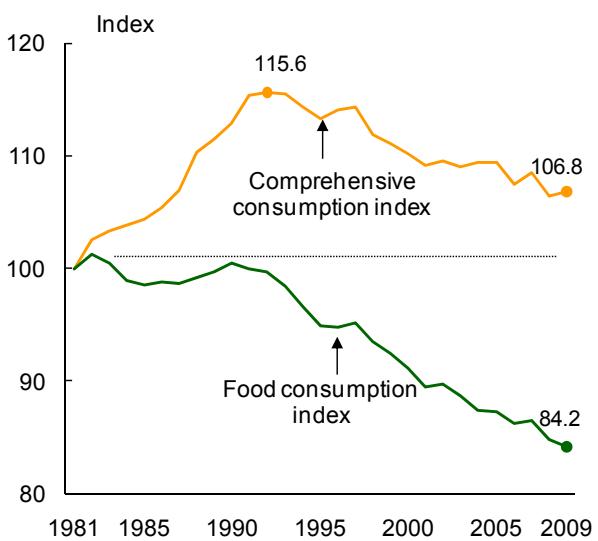
Consumers' economic considerations for food (or their willingness to cut food costs) are still strong. Health considerations (consumers' willingness to give considerations to health) and simplicity considerations (their willingness to save cooking and cleanup labor) have increased.



Source: Japan Finance Corporation, "2nd Consumer Trend Survey"
Note: An Internet poll covering men and women aged between 20 and 60 in Japan (2,000 respondents)

○ Food consumption index trends (100 for 1981)

The food consumption index has continued declining, standing at 84 in 2009 against 100 for 1981.

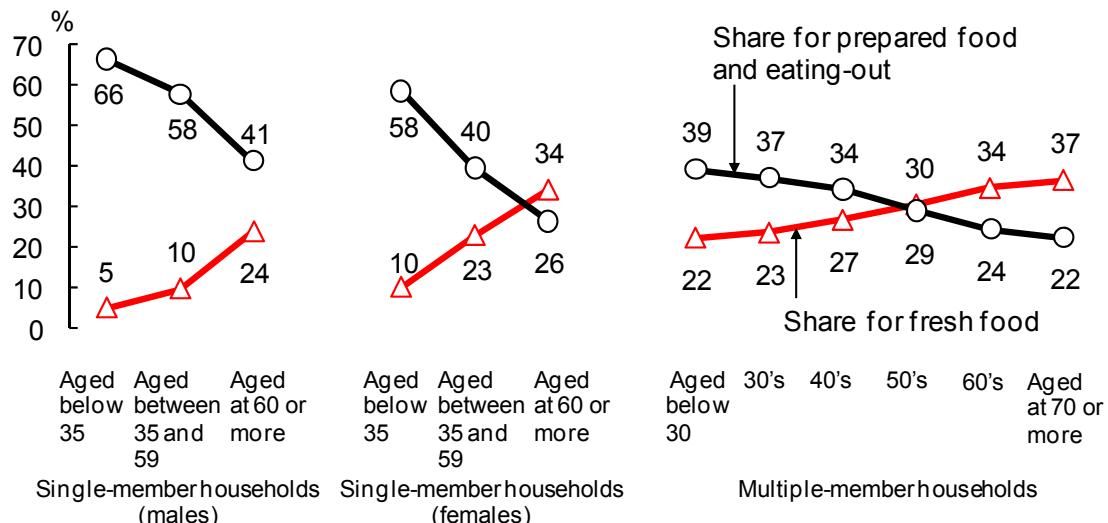


Source: Prepared by MAFF based on "Family Income and Expenditure Survey" by the Ministry of Internal Affairs and Communications

Note: Influences of the family size, the number of days in a month, price fluctuations and householders' ages on expenditure were excluded in computing the consumption index.

○ Category-by-category shares of monthly food consumption expenditure per family member (2010)

Over the recent years, the share for non-home meals combining eating-out and home-meal replacement has remained around 42%. A breakdown of food expenditure by family category indicates that the share for prepared food and eating-out exceeds 50% for people aged below 35, single-member households of males aged between 35 and 59, and those of females aged below 35.



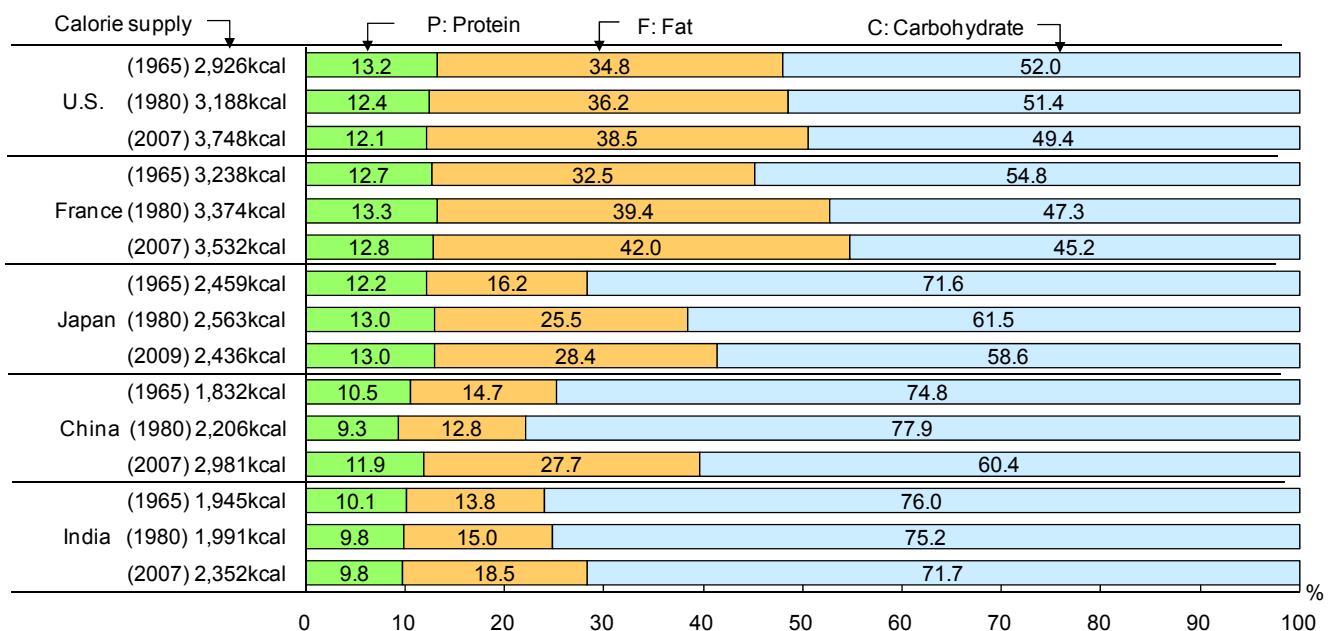
Source: Prepared by MAFF based on "Family Income and Expenditure Survey" by the Ministry of Internal Affairs and Communications

Notes: 1) Fresh food includes rice, fresh fish, fresh meat, eggs, fresh vegetables and fresh fruits. Process food covers all food other than fresh food, prepared food, eating-out, beverages and liquors.

2) The share for fresh food and that for prepared food and eating-out are percentages of total food consumption expenditure.

○ PFC (Protein, Fat and Carbohydrate) balance trends in major countries

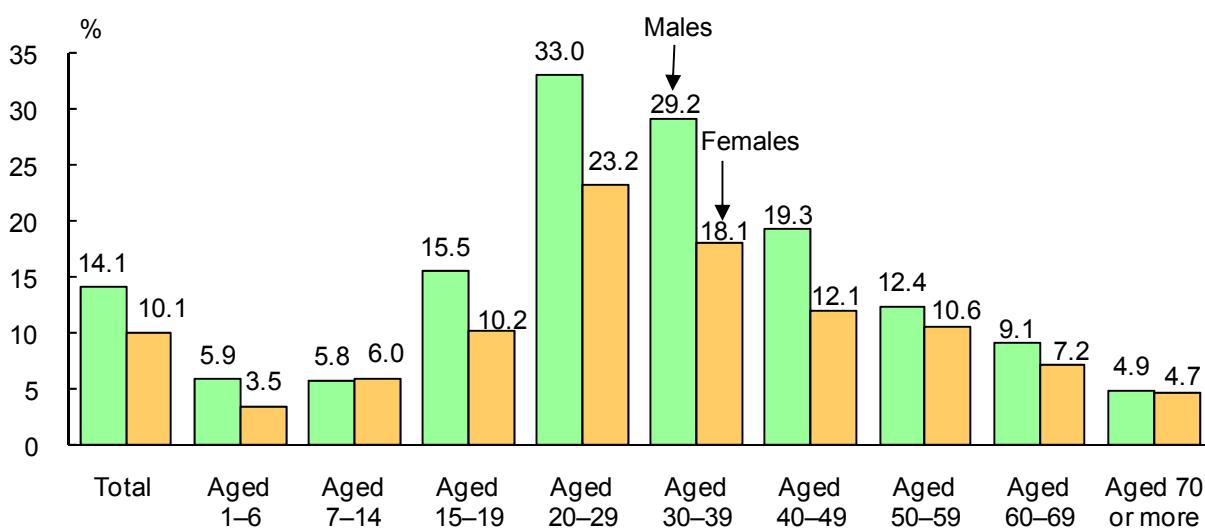
Excessive fat intake is a common trend in industrial countries. Japan's fat intake ratio (average), though falling short of U.S. and French levels, has risen considerably from earlier levels. As China has been achieving rapid economic growth over the recent years, its carbohydrate intake has declined substantially, with fat intake increasing, as seen in Japan.



Source: Prepared by MAFF based on its "Food Balance Sheet" and the FAO "Food Balance Sheets"

○ Rate of breakfast skipping (2009)

The rate of breakfasts skipping stood at 14% for males and 10% for females. By age group, it was high for males in their twenties and forties, and females in their twenties and thirties. Breakfast skipping and excessive fat intake are seen as part of causes of lifestyle-related diseases.



Source: Ministry of Health, Labour and Welfare, "National Health and Nutrition Survey (2009)"

○ Food industry's roles and efforts for future development

The food industry has contributed much to the stable food supply and played a key role in supporting regional economies.

While the food products market has leveled off or declined, the industry over the recent years has made new efforts including the exploration of markets for breakfast and food for elderly people, and the development of new products meeting consumers' health considerations

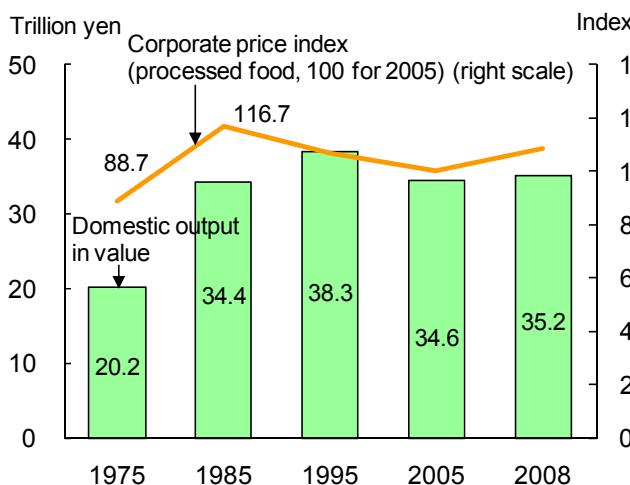
(Value of food manufacturing industry product shipments, and employees in rural and urban regions)

		Value of product shipments		Number of employees	
		Value (100 million yen)	Percentage share of total manufacturing industry shipments	Number of employees (persons)	Percentage share of total manufacturing industry employment
Prefectures featuring high shares of product shipments in value	Hokkaido	19,219 (Highest in Japan)	32.5 (Highest in Japan)	85,452 (Highest in Japan)	46.0 (Highest in Japan)
		6,145 (13th)	30.0 (2nd)	25,591 (14th)	33.2 (3rd)
	Okinawa	1,354 (39th)	22.4 (3rd)	10,496 (35th)	41.7 (2nd)
		7,719 (11th)	7.6 (24th)	35,044 (11th)	9.7 (39th)
Three major metropolitan regions	Tokyo	10,775 (9th)	5.9 (32th)	49,853 (5th)	9.5 (40th)
		16,530 (2nd)	4.4 (42th)	67,652 (2nd)	7.9 (43rd)
	Aichi	249,415	7.4	1,138,327	13.6

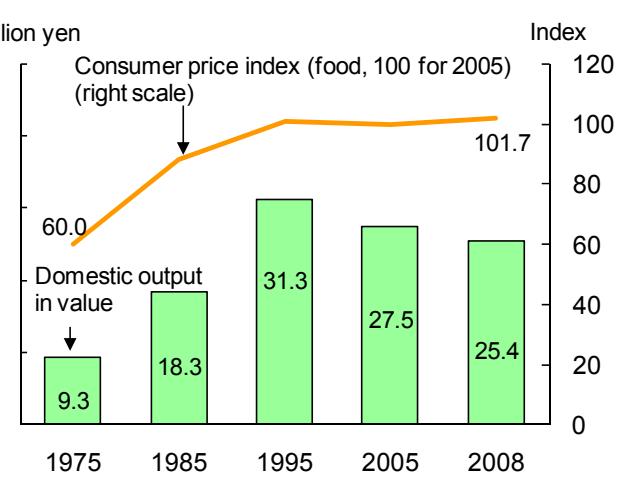
Source: Ministry of Economy, Trade and Industry, "Industrial Statistics Survey (2008)"

Note: Data cover business establishments with four or more employees.

(Trends of domestic food manufacturing industry output in value)



(Trends of domestic food distribution industry output in value)



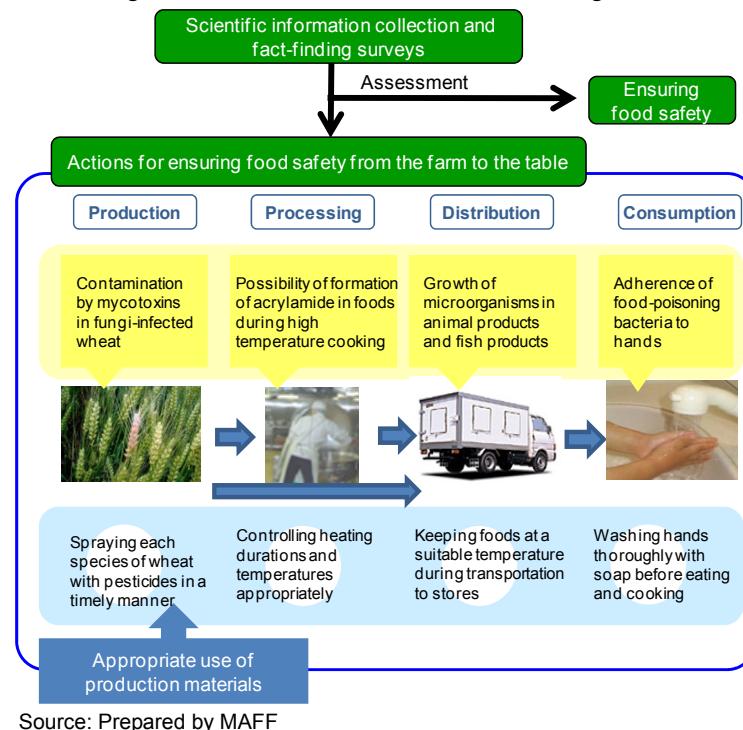
Sources: MAFF, "Agriculture/Food-related Industry Accounting;"
Bank of Japan, "Corporate Price Index"

Sources: MAFF, "Agriculture/Food-related Industry Accounting;"
Ministry of Internal Affairs and Communications,
"Corporate Price Index"

(7) Ensuring food safety and consumer confidence

○ Actions for ensuring food safety throughout the food chain

It is important for improving food safety, from primary production to the final consumer and the understanding that the idea of “an ounce of prevention is worth a pound of cure” is central to the improvement of food safety. MAFF has implemented risk management decisions based on scientific grounds.



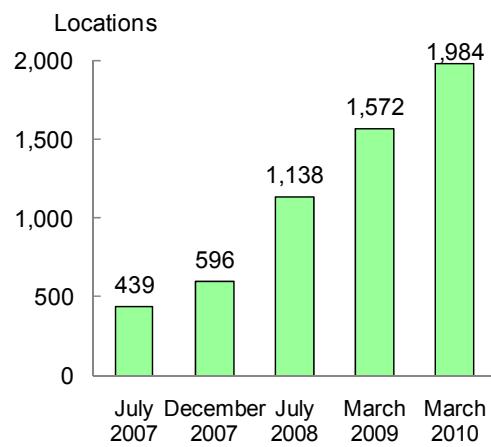
○ Good Agricultural Practice (GAP) and Rice Traceability System efforts

A growing number of agricultural production locations in Japan have introduced the GAP system to accurately implement, record and check each process in agricultural production according to check lists based on laws and regulations concerning food safety improvements, environmental conservation and the like. The number stood at 1,984 in March 2010.

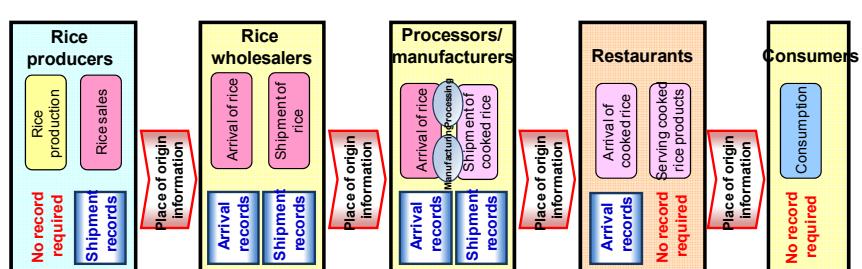
The Rice Traceability Act has required records on transactions in rice and processed rice products to be created and kept since October 2010, allowing distribution routes to be promptly identified and problematic products to be recovered when they are found. Since July 2011, rice dealers have been required to provide other dealers and consumers with place of origin information of rice and rice ingredients.

We should also consider the introduction of the Hazard Analysis and Critical Control Point (HACCP) system, food labeling improvement measures, and the traceability system for food and beverage products other than rice.

(Trends of GAP introducing agricultural production locations)



(Requirements for business entities under the Rice Traceability Act)



○ All business entities that deal with rice and processed rice products are required to keep transaction records on these products.

○ When selling or serving products to other business entities or consumers, these business entities are required to provide place of origin information of rice and rice ingredients.

Sources: MAFF surveys

Note: The number of production locations covers locations where production enhancement and other plans have been prepared.

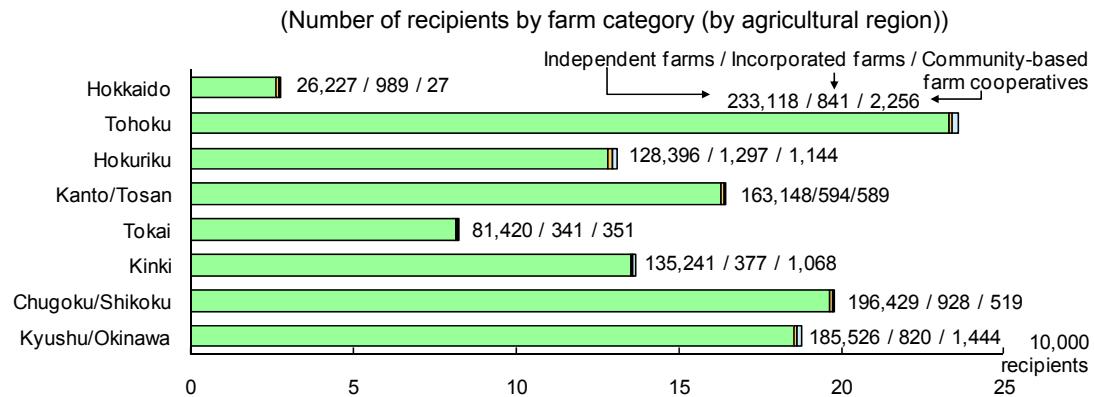
Source: Prepared by MAFF

Chapter 2 Toward Sustainable Development of Agriculture

(1) Income Support Direct Payment Program

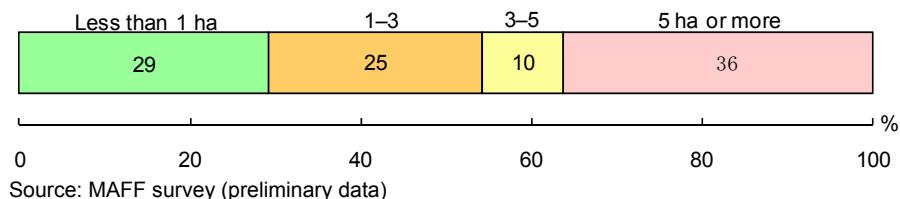
○ Number of recipients under pilot Income Support Direct Payment Program in 2010

The nationwide number of recipients under the pilot Income Support Direct Payment Program for rice farming totaled 1.16 million (including 1.15 million independent farms, 6,000 incorporated farms and 7,000 community-based farm cooperatives (consisting of 238,000 families)). A breakdown of the recipients under the pilot program for rice farming by crop acreage size shows that those with crop acreage at 5 hectares or more accounted for 36% of the total.



Source: MAFF surveys

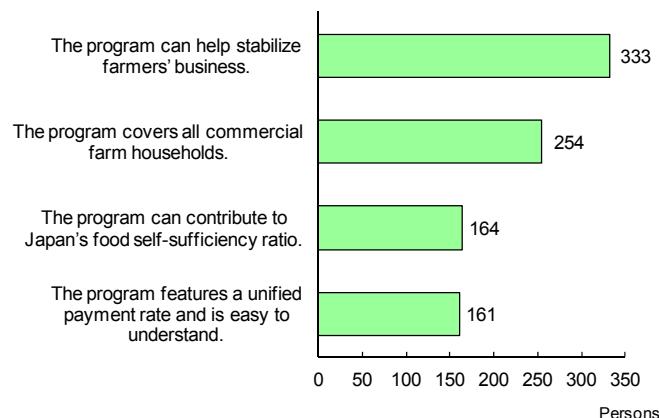
(Breakdown of recipients under pilot Income Support Direct Payment Program for rice farming by crop acreage size)



Source: MAFF survey (preliminary data)

○ Reasons for joining pilot Income Support Direct Payment Program for rice farming

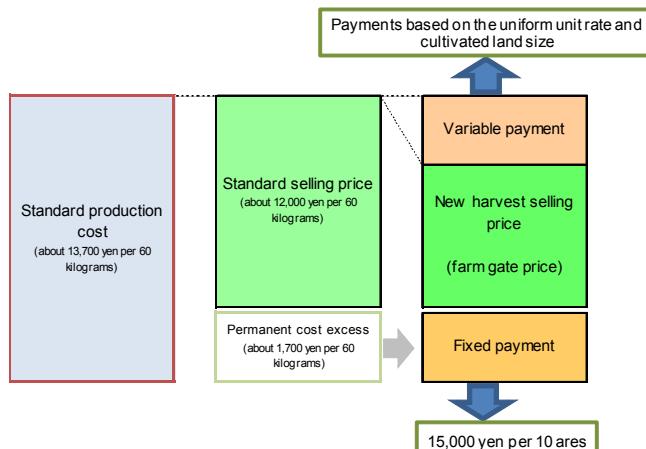
Frequently cited reasons for joining the program included “the stabilization of farm business,” “the coverage of all commercial farm households,” and “contribution to the food self-sufficiency ratio.”



Source: MAFF, “Survey on Consciousness and Intentions Regarding Income Support Direct Payment Program” (released in August 2010)

○ Mechanism for pilot Income Support Direct Payment Program for rice farming

Farmers joining the pilot Income Support Direct Payment Program for rice farming were given a fixed payment of 15,000 yen per 10 ares. Variable payment of 15,100 yen per 10 ares was also made in the face of price fluctuation.



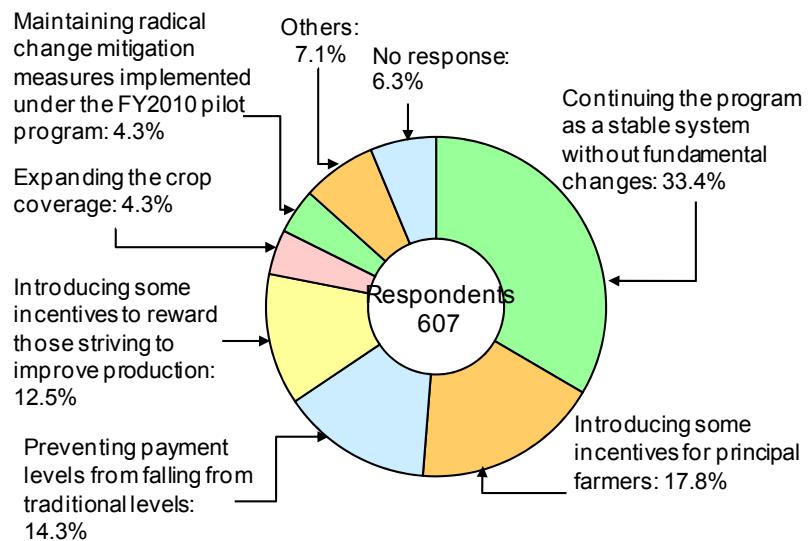
Source: Prepared by MAFF

○ Effects of and requests about pilot Income Support Direct Payment Program for rice farming

The program has not only helped stabilize farmers' business but also achieved an 8,000-hectare cut in the excessive rice planted area and some progress in organizing community-based farm cooperatives, increasing farmland liquidity and expanding production of rice for flour and feed uses.

Toward the implementation of a full-fledged program, farmers have made strong requests for such measures as "continuing the program as a stable system," "introducing some incentives for motivated farmers" and "expanding the crop coverage to include buckwheat, rapeseeds, etc.

(Particular requests toward a full-fledged program)

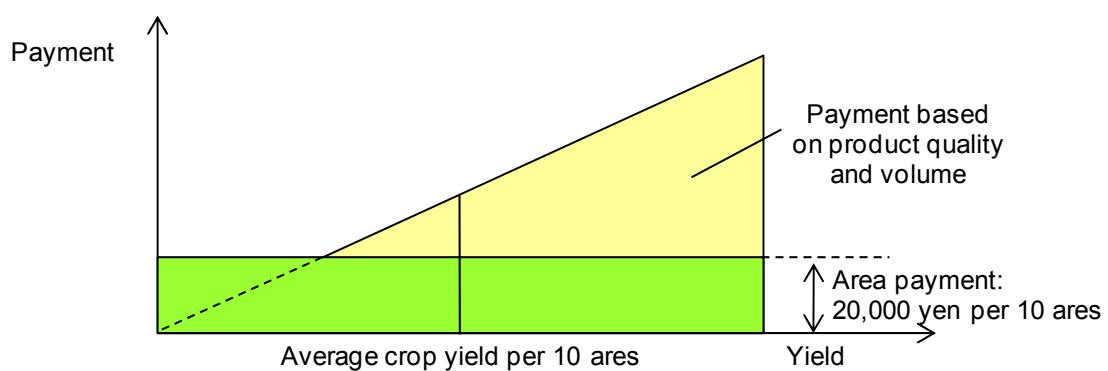


Source: MAFF, "Survey on Consciousness and Intentions Regarding Income Support Direct Payment Program" (released in August 2010)

○ Implementing full-fledged Income Support Direct Payment Program in FY2011

In and after FY2011, the FY2010 income support direct payments for rice farming will be continued in principle. In addition, to stabilize farmers' business, income support direct payments will also apply to upland-field crops (wheat, barley, soybeans, sugar beets, starch potatoes, and so on).

(Mechanism of the upland crop payment)



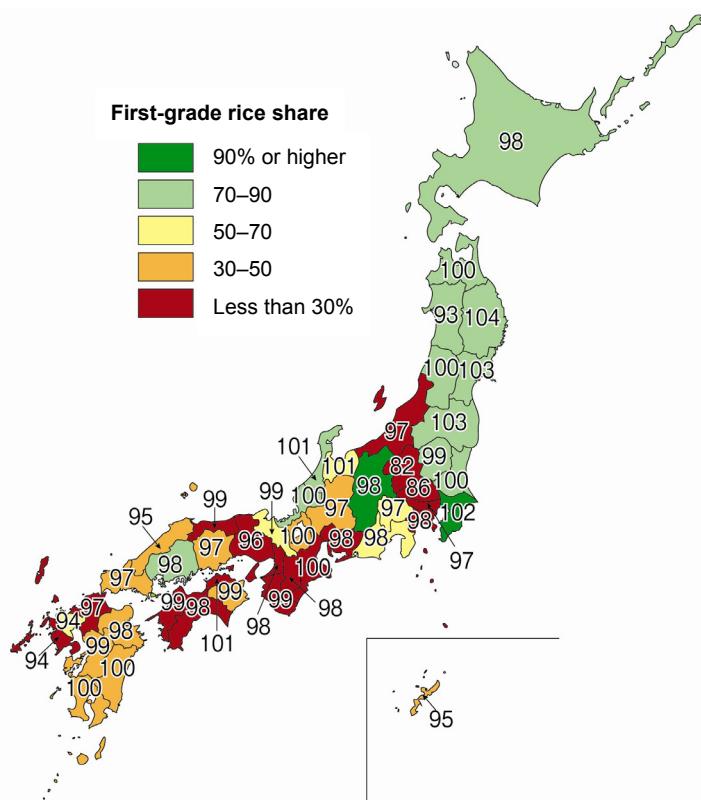
Source: Prepared by MAFF

(2) Trends of major crops in FY2010

○ First-grade rice share and crop condition by prefecture (2010 production)

The crop condition index for rice produced in 2010 stood at 98 indicating “slightly poor” conditions. First-grade rice’s share of total rice production fell to 61% from 85% for 2009.

Prices for negotiation-based transactions came to some 85% of previous-year levels. Even under this situation, the Income Support Direct Payment Program may be able to minimize adverse effects on farming business.

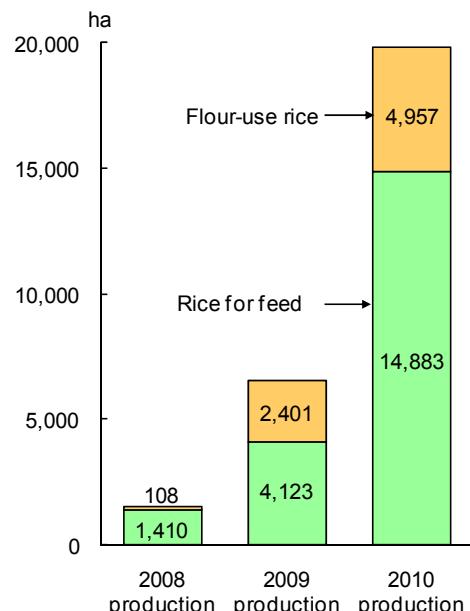


Sources: MAFF, “Crop Statistics” and “2010 Rice Inspection Results”
Note: Figures in the map are crop condition index values.

○ Planted areas for rice for flour and feed uses

In 2010, the planted area doubled from the previous year to 5,000 hectares for flour-use rice and tripled to 15,000 hectares for feed-use rice thanks to such measures as the direct payment program to secure income at the same level as for staple rice.

(Nationwide changes)



Source: MAFF survey

Note: Figures indicate area sizes counted for new-demand rice (flour-use and feed-use rice) in production adjustment.

○ Planted areas for wheat, barley, soybeans, buckwheat, rapeseeds, etc.

The planted area increased slightly for feed crops among strategic crops in 2010. But planted areas leveled off or decreased slightly for wheat, barley, soybeans, etc. Further problem-solving efforts are required for each crop.

(10,000 hectares)

	2005	2008	2009	2010	2020 (Targets)
Wheat	21.4	20.9	20.8	20.7	40
Barley	5.5	5.7	5.8	5.9	9
Buckwheat	4.5	4.7	4.5	4.8	7.3
Soybeans	13.4	14.7	14.5	13.8	30
Rapeseeds	0.1	0.1	-	0.2	0.5
Feed crops	90.6	90.2	90.2	91.1	105

Source: MAFF, “Crop Statistics”

○ Production trends for other crops

Planted areas or production leveled off for non-strategic crops and livestock products. Future efforts are required to reduce costs, increase output for processing and commercial uses and respond to consumer needs.

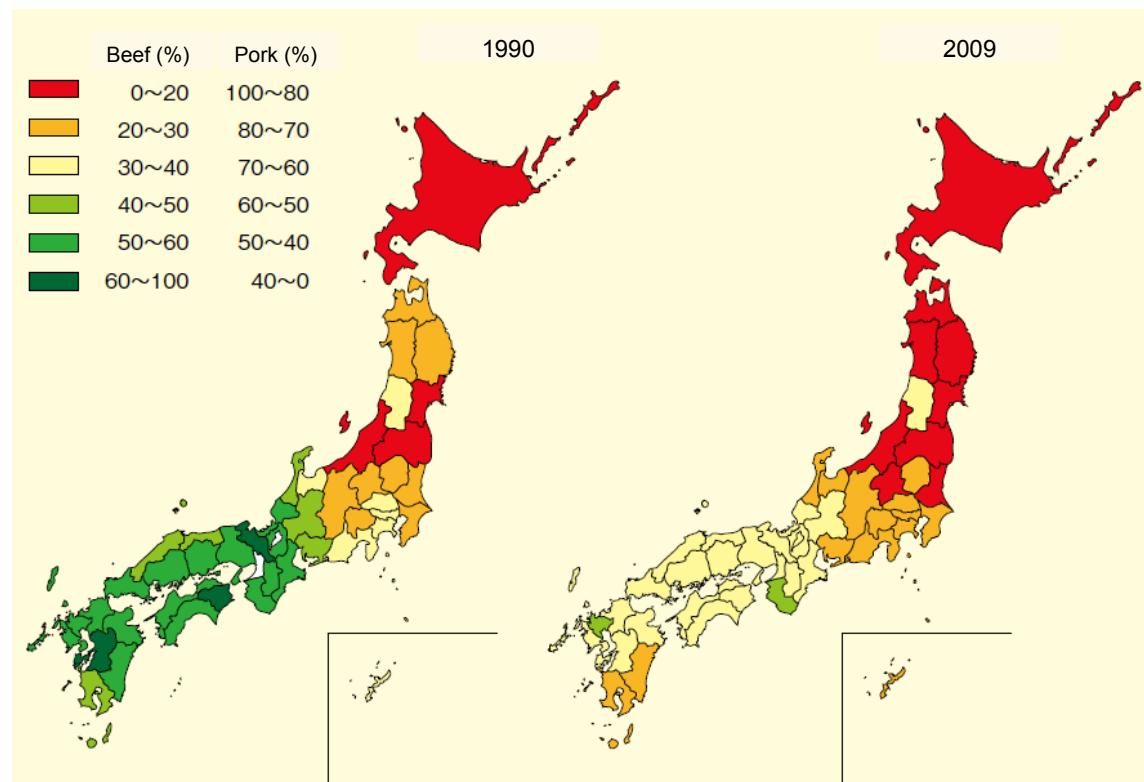
	2005	2008	2009	2010	(10,000 hectares, 10,000 tons)
Sugar beets	6.8	6.6	6.5	6.3	6.5
Sugarcanes	2.1	2.2	2.3	—	2.6
Potatoes	8.7	8.5	8.3	(8.0)	8.2
Sweet potatoes	4.1	4.1	4.1	4.0	3.8
Vegetables	45.0	44.0	44.0	—	44
Fruits	25.9	24.8	24.4	—	24
Green tea	4.9	4.8	4.7	4.7	4.7
Milk and dairy products	829.3	794.5	788.1	—	800
Beef	49.7	51.8	51.6	—	52
Pork	124.2	126.0	131.8	—	126
Chicken	129.3	138.3	141.3	—	138
Egg	246.9	254.7	250.5	—	245

Sources: MAFF, "Crop Statistics," "Livestock Statistics" and "Livestock Distribution Statistics"

Note: Planted areas are given for crops in 10,000 hectares. Production is given for livestock products in units of 10,000 tons.

<Regional gaps narrowing for beef and pork consumption>

Eastern Japan has tended to consume more pork and less beef than Western Japan. A reported reason for this tendency is that breeding of imported pigs spread in Eastern Japan in the Meiji Era while many cattle were bred for farming purposes in Western Japan. In 2009, Western Japan consumed more beef than Eastern Japan. In all prefectures, however, pork consumption exceeded beef consumption. Regional gaps in beef and pork consumption have narrowed.



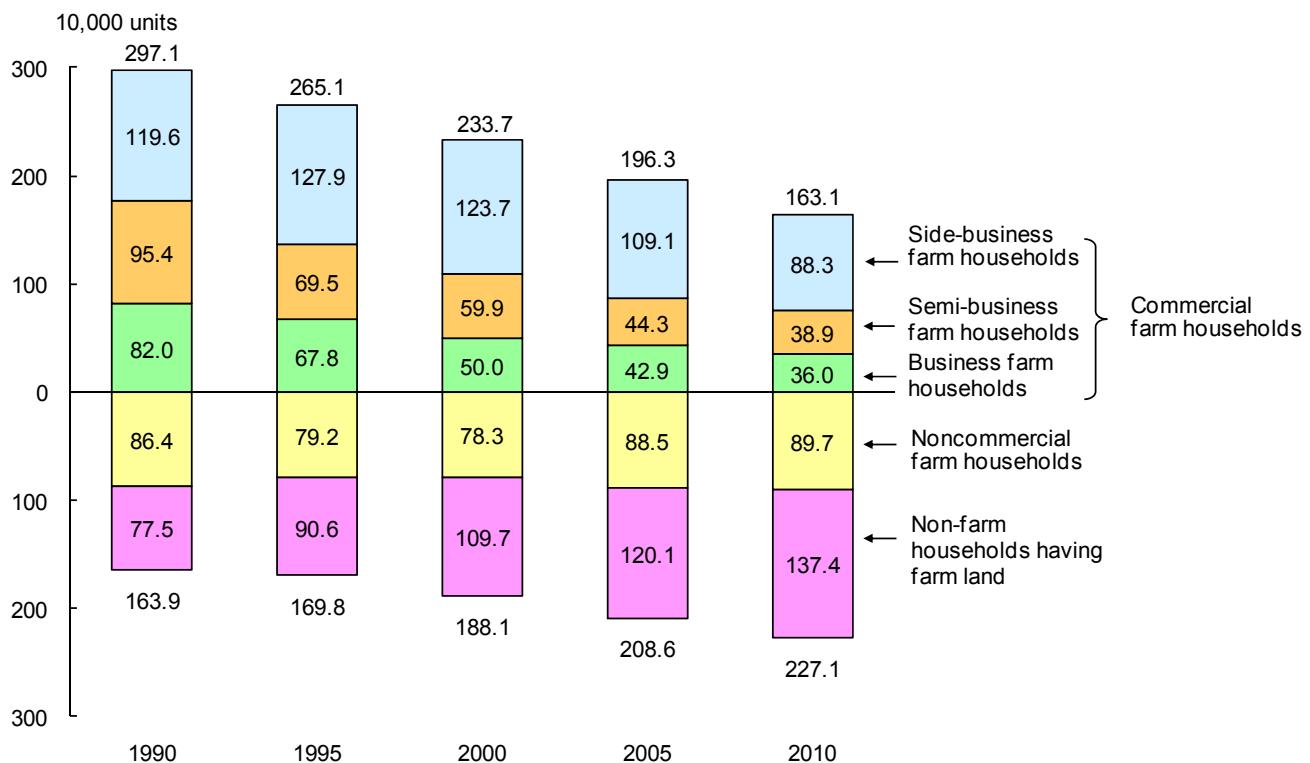
Source: Ministry of Internal Affairs and Communications, "Family Income and Expenditure Survey"

Note: Shares for beef and pork purchase amounts for multiple-member households in prefectural capitals

(3) Trends of farms and farmers

○ Changes in numbers of business and semi-business farm households

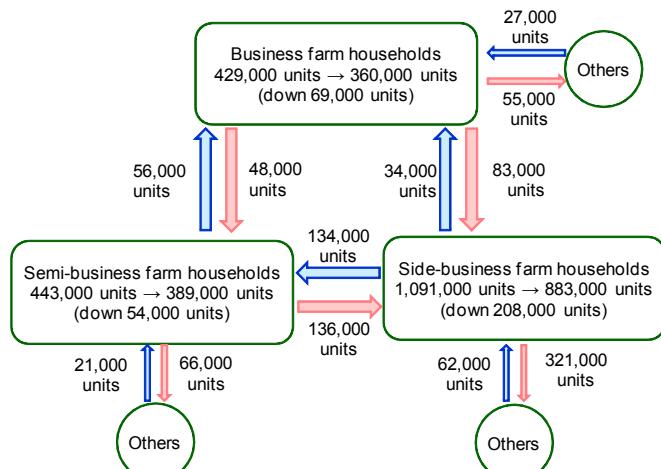
The number of commercial farm households in 2010 declined by 332,000 or 17% from 2005 to 1,631,000. Of the total, business farm households decreased by 70,000 to 360,000. Meanwhile, non-farm households having cultivated land continued increasing.



Source: MAFF, "Census of Agriculture and Forestry"

○ Business farm households' shift to other categories (from 2005 to 2010)

A major factor behind the decline in the number of business farm households is that these households turned into side-business farm households, noncommercial farm households or non-farm households having cultivated land due to aging.



Sources: Prepared by MAFF based on MAFF, "Census of Agriculture and Forestry" (custom-ordered tabulation)

Notes: 1) Others include noncommercial farm households and non-farm households having cultivated land
2) Estimates for 2010.

○ Changes in average operation size per farm household by category (entire Japan)

The average operation size expanded substantially for livestock breeding, fairly for vegetable and fruit production and moderately for rice production.

	1960	2000	2005	2010	Operation size expansion rate (times) (2010/1960)
Rice (ares)	55.3	84.2	96.1	105.1	1.9
Vegetables (ares)	8.6	55.0	53.4	64.4	7.5
Fruits (ares)	20.1	56.8	60.7	64.3	3.2
Milk cows (number)	1.1	34.2	38.1	44.0	40.0
Beef cattle (number)	1.2	24.2	30.7	38.9	32.4
Pigs (number)	2.4	838.1	1095.0	1437.0	598.8
Layers (number)	-	28,704	33,549	44,987	1,666.2
Broilers (number)	-	35,200	38,600	44,800	50.2

Sources: MAFF, "Census of Agriculture and Forestry," "Livestock Breeding Trends," "Livestock Statistics" and "Livestock Distribution Statistics"

Notes: 1) Milk cows are delivered cows. Broilers are young chickens for meat.

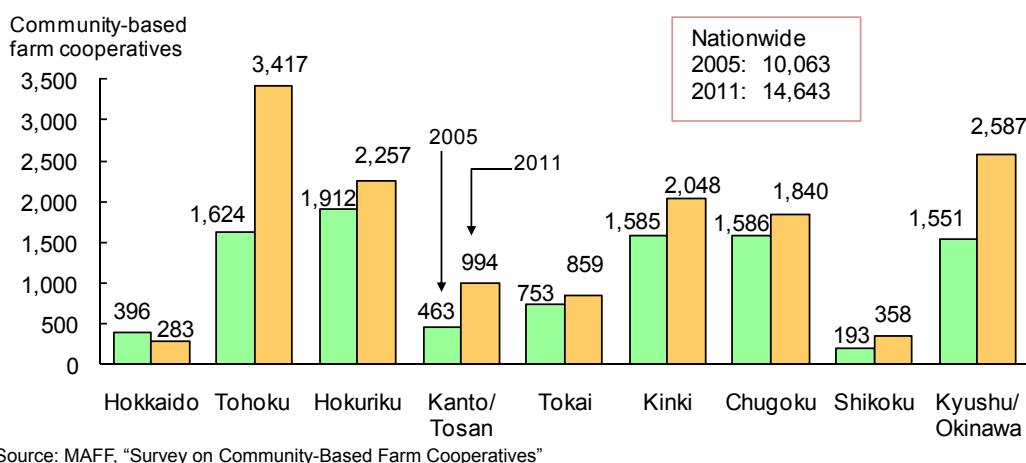
2) The operation sizes for layers and broilers are compared with levels in 1965.

3) Operation sizes for pigs and layers in 2005 are 2004 values and those in 2010 are 2009 values.

4) The operational size for broilers in 2010 is the value for 2009.

○ Changes in community-based farm cooperatives

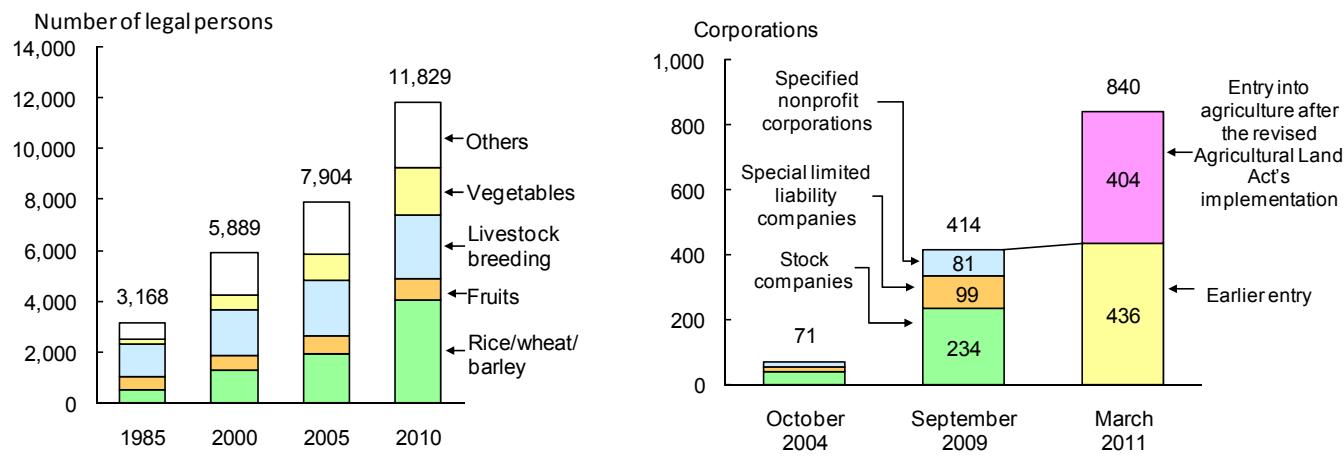
The number of community-based farm cooperatives has increased mainly in the Tohoku and Kyushu regions since 2005. In 2011, the number came to 14,643.



Source: MAFF, "Survey on Community-Based Farm Cooperatives"

○ Changes in the entry of agricultural production legal persons and corporations other than agricultural production legal persons into agriculture

The number of agricultural production legal persons using farmlands for their own farming has been persistently increasing. After the revised Agricultural Land Act took effect, 404 corporations entered agricultural production between December 2009 and March 2011.



Source: MAFF survey

Notes: 1) As of January 1 each year

2) Legal persons are categorized by product category accounting for 50% or more of gross income. "Others" are legal persons where any product category fails to reach 50% of gross income.

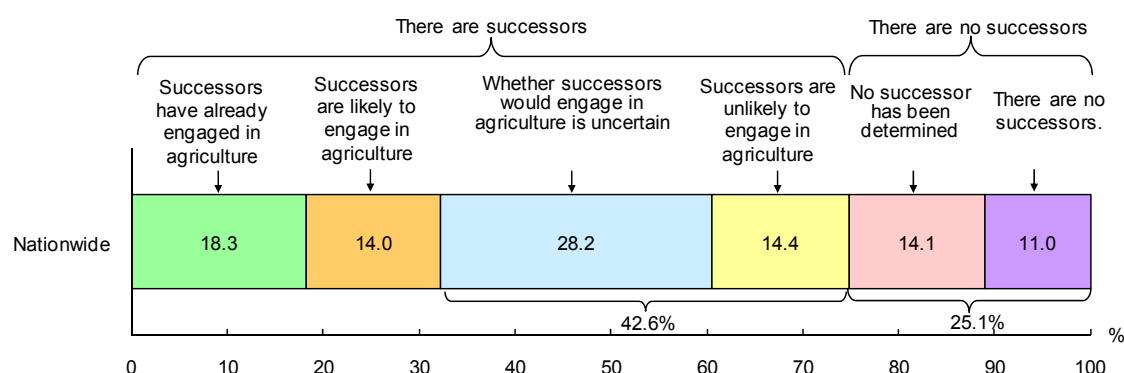
Source: MAFF survey

Notes: 1) Values after the revised Agricultural Land Act's implementation are those between December 15, 2003, and March 31, 2011.

2) The number for regions under the jurisdiction of the Tohoku Regional Agricultural Administration Office in February–March 2011 has remained unknown due to the March 11 Great East Japan Earthquake.

○ Conditions of successors of farm households expected to offer farmlands

A survey of farm households expected to offer farmlands (commercial farm households that have householders aged between 65 and 70 and a rice-paddy area below 2 hectares) indicated that one-fourth of these households have no successor.

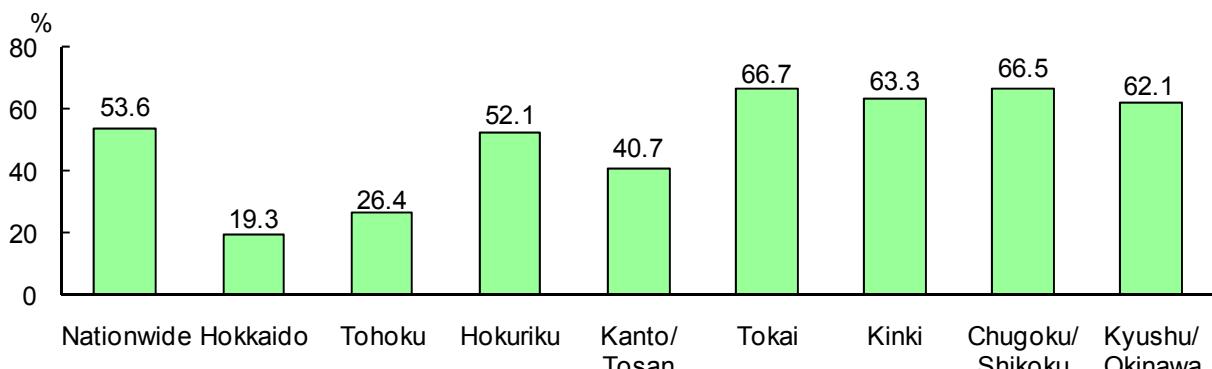


Source: MAFF, "Emergency Survey on Future Farmland Utilization" (conducted February 9–14, 2011)

Note: The survey covered 1,479 farm households expected to offer farmlands (commercial farm households that have householders aged between 65 and 70 and a rice-paddy area smaller than 2 hectares).

○ Share for rice-paddy communities lacking farmers who engage mainly in agriculture and are aged below 65

As commercial and business farm households have declined, the majority of rice-paddy communities in Japan lack farmers who engage mainly in agriculture and are aged below 65. Rice-farming households feature the highest such share, followed by fruit, vegetable and beef cattle producers.



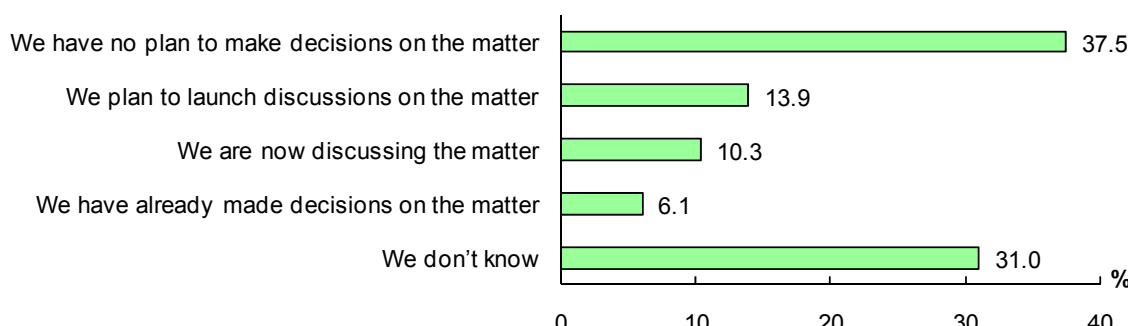
Source: MAFF, "2020 Census of Agriculture and Forestry" (custom-ordered tabulation)

Note: Rice-paddy communities lacking farmers who engage mainly in agriculture and are aged below 65 are those that lack business farm households giving top priority to rice farming.

○ Decisions on how best to maintain and invigorate communities

Those that have decided or are discussing how best to maintain and invigorate themselves are limited to less than 20% of farming communities in Japan.

It is important for all farming communities to discuss their desirable future courses including measures to train and secure their motivated farmers.

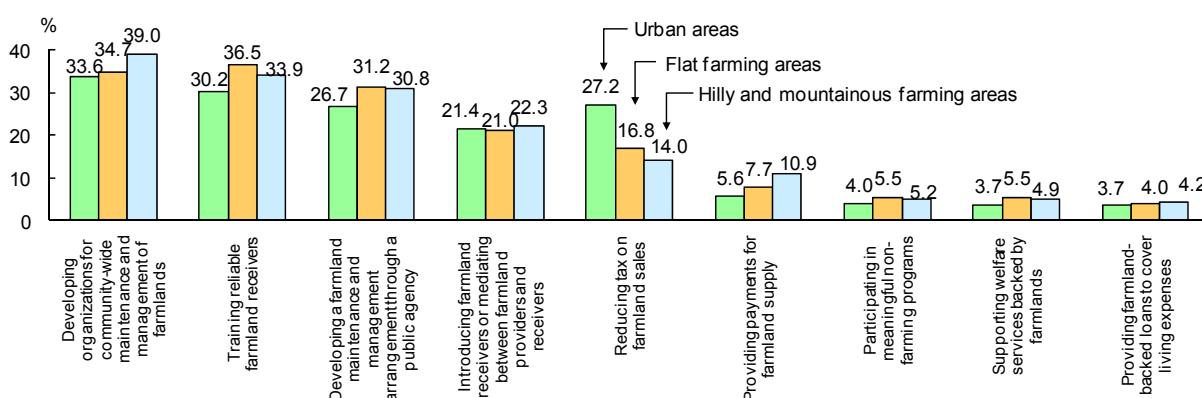


Source: MAFF, "Survey on Consciousness and Intentions Regarding Sustainable Utilization of Food, Agriculture, Rural Area and Fisheries Resources" released in May 2011

Note: The survey covered 2,000 farming monitors (response rate at 81.4%).

○ Measures and support for lending and selling farmlands, and entrusting farming (multiple answers are allowed)

As farmers age, they are required to develop organizations for community-wide maintenance and management of their farmlands and train reliable receivers of their farmlands in order to increase the liquidity of their farmlands.



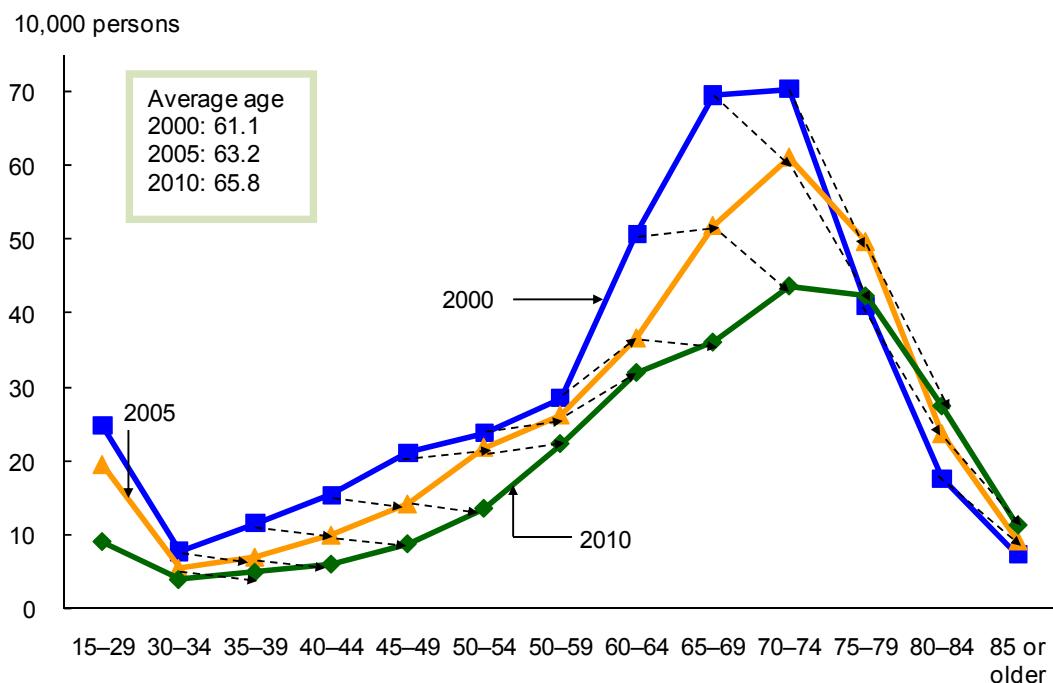
Source: MAFF, "Emergency Survey on Future Farmland Utilization" (conducted February 9–14, 2011)

Note: The survey covered 1,479 farm households expected to offer farmlands (commercial farm households that have householders aged between 65 and 70 and a rice-paddy area below 2 hectares).

○ Declining and aging farming population

Japan's population engaged mainly in farming totaled 2.61 million in 2010, down 33% from 10 years earlier and 22% from five years earlier. Farmers' average age rose from 61.1 to 63.2 and to 65.8.

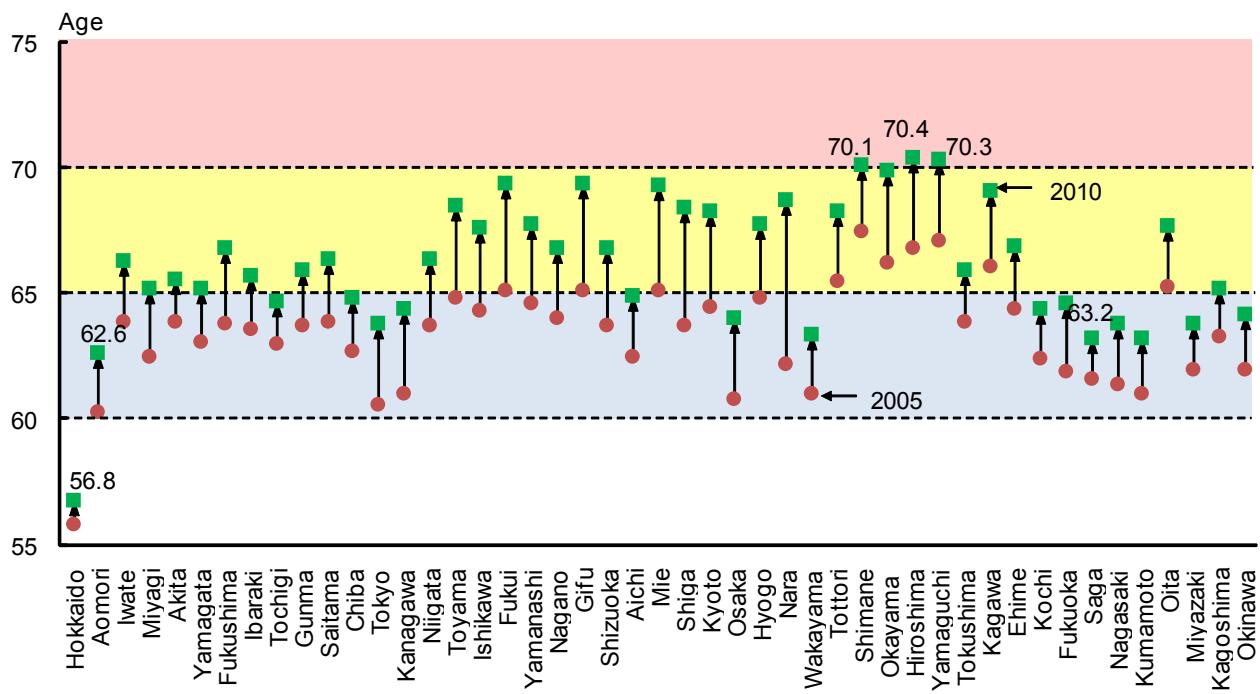
(Farming population broken down by age group)



Source: MAFF, "Census of Agriculture and Forestry"

○ Average population engaged mainly in farming age by prefecture

The average farming-population age is higher in Hiroshima, Yamaguchi and Shimane, and lower in Hokkaido, Aomori and Saga.

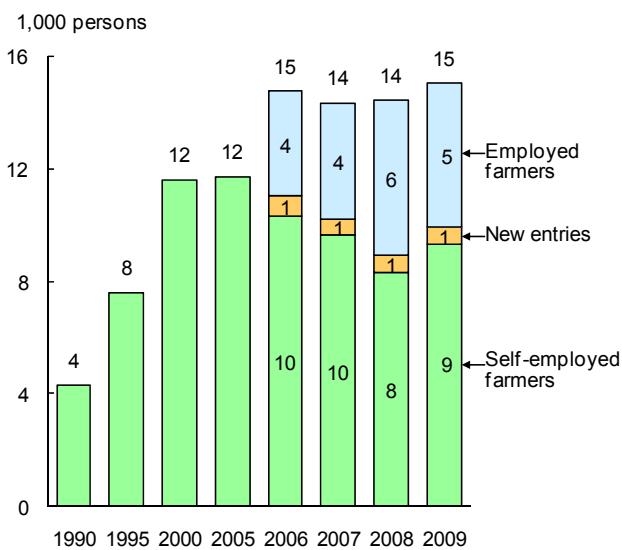


Source: MAFF, "Census of Agriculture and Forestry"

○ Trends of recruiting new farmers

In 2009, 67,000 people newly engaged in farming. The number of people engaged in farming at or below the age of 39 leveled off at 15,000 in that year. Of that number, self-employed farmers accounted for the largest share, at 9,000 persons, followed by 5,000 employed farmers.

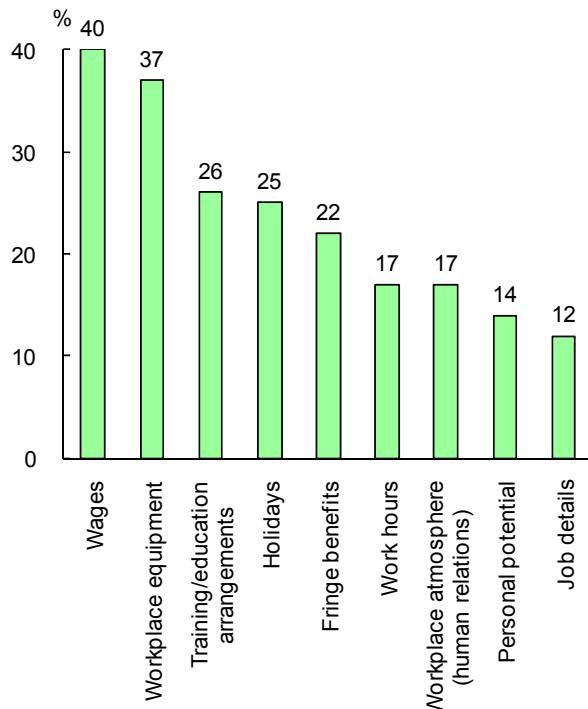
(Farmers at or below 39)



Sources: MAFF, "Survey on Trends of Farming Employment," "Survey on Agriculture Structure Dynamism," "Census of Agriculture and Forestry," and "Survey on Newcomers in agriculture"

○ Working conditions subject to improvement requests

Many young people are among those employed by agricultural corporations. Employed farmers, while being fairly satisfied with challenging jobs, cite wages, workplace equipment, training/education, and other working conditions as subject to improvement requests.



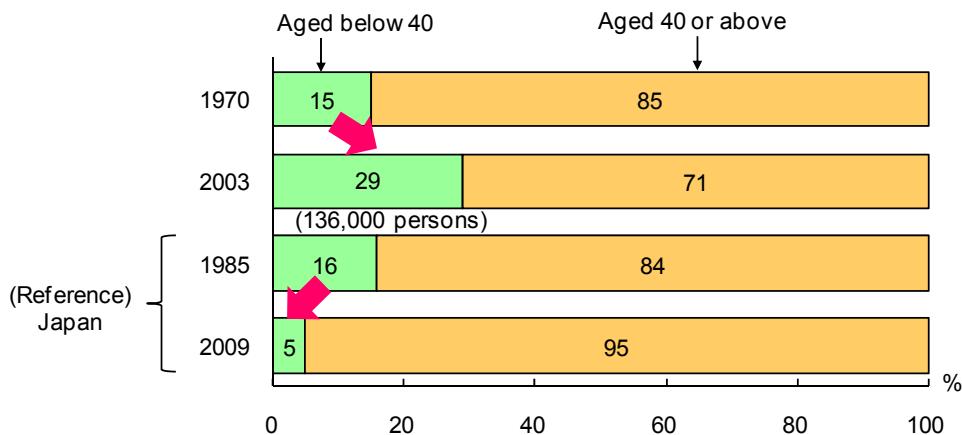
Source: National Chamber of Agriculture, "Questionnaire Survey on Employment at Agricultural Corporations, etc." (Conducted in February 2010)

<French measures to support young people's engagement in farming>

In order to improve agricultural productivity and enhance agriculture's competitiveness, France has implemented a lifetime compensation grant system for retiring farmers transferring business assets to young farmers and a farming grant and low-interest loan system for young farmers.

Farming grants are provided to people aged between 18 and 40 on such conditions as training, preparation of farming employment development plans and entries into farming within one year after grant payments. In 2009, farming grants totaled 10.7 billion yen (averaging 1.8 million yen per farmer, for 6,000 people). These systems contributed to the expansion of the share of total full-time farmers in France accounted for by those aged below 40 to some 30%.

(Breakdown of full-time farmers in France by age group)



Sources: French Ministry of Agriculture, Food, Fisheries and Rural Affairs, "AGRESTE - Recensements agricoles 1970, 1979, 1988, 2000 (échantillon) et enquête structure 2003," MAFF, "Survey on Agriculture Structure Dynamism"
Note: Core persons engaged mainly in farming for Japan

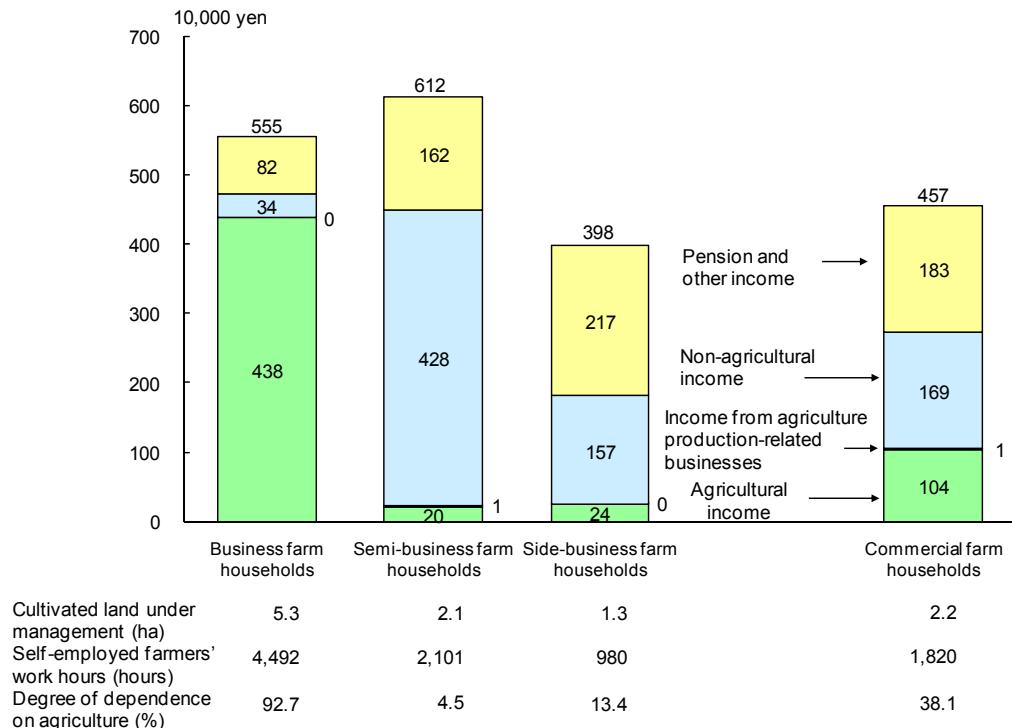
(4) Farmers' income and efforts for promoting the "sixth industry"

○ Income breakdown for commercial farm households by farm household category (2009)

Farmers' income comprises agricultural income, income from agriculture production-related businesses, such as the processing of farm products and restaurant operation, non-agricultural income and other components.

Japan's net agricultural production (amounting to Japan's total agricultural income) totaled 3 trillion yen in FY2008, halving from FY1990. Individual farmers' income has slackened.

In order to expand farmers' overall income, the government should support promoting the "sixth industry" to increase their income from agriculture production-related businesses in addition to their agricultural income.



Source: MAFF, "Statistical Survey on Agriculture Management by Farm Household Category (individual management)"

○ Income-expanding efforts by action/actor

Efforts to expand agricultural and agricultural production-related incomes include those made mainly by individual farms and by producing areas and other groups. It is important for them to find future challenges and development directions based on past cases for these efforts.

Farmers should cooperate with commercial and industrial sector players in making these efforts.

Action Actor	Expansion of agricultural income	Expansion of income from agricultural production-related businesses
Farms	<ul style="list-style-type: none"> Expansion of farming size Agriculture diversification Direct sales to consumers Production cost reduction 	<ul style="list-style-type: none"> Integration of production, processing and marketing Combination of agriculture with tourism, etc.
Producing areas or other groups	<ul style="list-style-type: none"> Expansion of added value Development of regional brands Responses to demand for processing and commercial uses of farm products Expansion of exports Reduction of shipment and distribution costs 	<ul style="list-style-type: none"> Actions for processing, marketing, tourism services, etc. Efforts using biomass and other natural energy sources

Source: Prepared by MAFF

Note: The term "sixth industry" is derived by multiplying the industrial sectors as follows. First (primary) × second (secondary) × third (tertiary) to come up with the "sixth industry." The sixth industry is expected to synergistically create new added-value through effective use of agricultural, forestry and fishery products, as well as land, water and other resources in farming, mountain and fishing villages, by integrating production, processing and distribution activities.

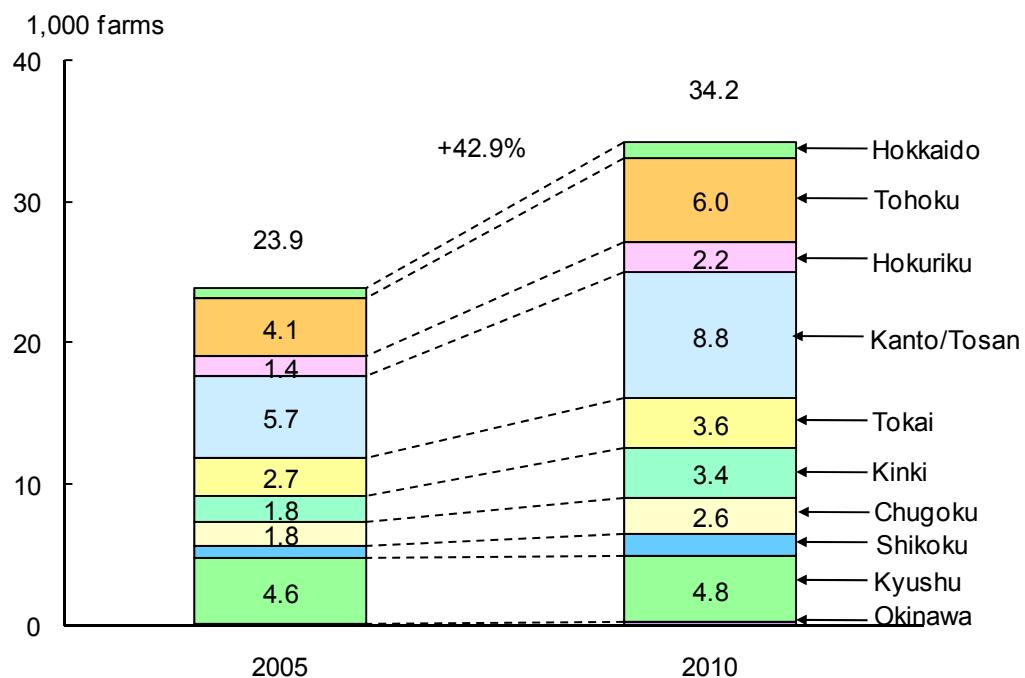
○ Efforts for promoting the “sixth industry”

While the number of farms whose largest sales destinations are agricultural cooperatives declined to 1,012,000 in 2010 (down 20% from 2005), the number of farms whose largest sales destinations are consumers (direct sales) increased to 152,000 (up 19%).

The number of farms undertaking the processing of farm products expanded by 43% from 24,000 five years earlier to 34,000.

Of the 1.68 million farms in Japan, however, those implementing direct sales to consumers are limited to 20%. Those undertaking the processing of farm products are limited to 2%.

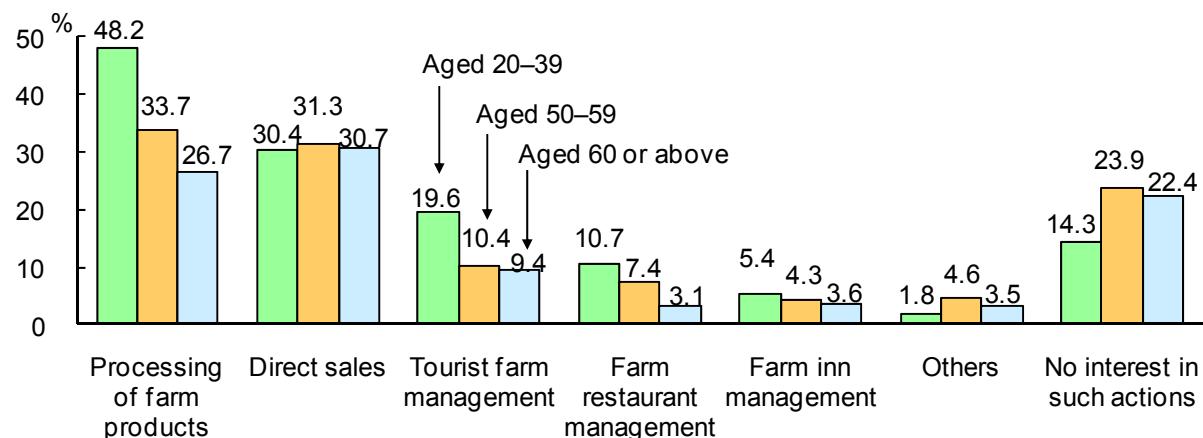
(Changes in farms undertaking the processing of farm products (by agricultural region))



Source: MAFF, “Census of Agriculture and Forestry”

○ Actions farmers want to undertake for promoting the “sixth industry” (multiple answers are allowed)

Processing of farm products, direct sales and tourist farm management are frequently cited by farmers as actions that they want to undertake for promoting the “sixth industry”.



Source: MAFF, “Survey on Consciousness/Intentions about Sustainable Use of Food, Agriculture, Rural Area and Fisheries Resources,” released in May 2011

Notes: 1) A questionnaire survey covering 2,000 farming monitors (response rate at 81.4%)

2) Direct sales include shipments to farm stands.

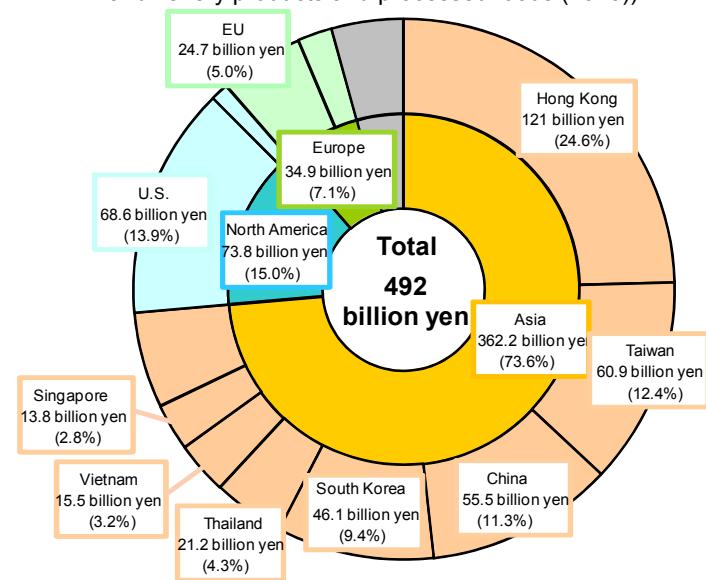
○ Export trends of agricultural, forestry and fishery products and processed foods (AFF products and foods)

In 2010, exports of AFF products and foods for China and other Asian markets have increased, and the total export value reached 492 billion yen. However, it is still a small portion compared to Japan's domestic agricultural output, which is 9 trillion yen. Further efforts are required to bring up the export value of AFF products and foods to 1 trillion yen.

In December 2010, the Ministry of Agriculture, Forestry and Fisheries (MAFF) signed a memorandum with the state-owned China National Agricultural Development Group Corp, mainly to expand exports of Japanese AFF products and foods. In January 2011, the president of the corporation visited Japan, and progress has been made.

Although such efforts to expand exports have just begun, the Chinese government has toughened import restrictions on Japanese agricultural products several weeks after the accident at TEPCO's Fukushima Daiichi Nuclear Power Station. The Japanese government has asked the Chinese government to prevent such restrictions from becoming excessive.

(Breakdown of Japan's export value of agricultural, forestry and fishery products and processed foods (2010))



Source: Prepared by MAFF, based on Ministry of Finance, "Trade Statistics"

(Top 10 products for exports (among fresh food products))

Ranking	Product	Exports (100 million yen)
1	Apples	64
2	Beef (excluding scrap meat)	34
3	Chinese yams	20
4	Chicken (including scrap meat)	14
5	Rice (excluding rice aid)	7
6	Chestnuts	6
7	Peaches	5
8	Grapes	4
9	Pears	4
10	Mandarin oranges	3

Source: Prepared by MAFF based on Ministry of Finance, "Trade Statistics"

Note: Covering grains, meat, vegetables and fruits

○ Characteristics, attractiveness and competitiveness of Japan's agricultural, forestry and fishery products and processed foods (AFF products and foods) for foreign countries

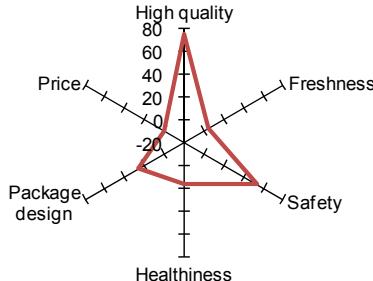
Foreign countries' assessments of Japan's AFF products and foods indicate that they give high ratings to the freshness, safety and healthiness of these products but low ratings to prices. It is necessary to make strategic sales promotions which are suitable for these characteristics of the Japanese products.

Since the accident at TEPCO's Fukushima Daiichi Nuclear Power Station, foreign countries have moved to toughen up their import restrictions on Japanese food products. These moves are threatening Japan's food exports. Therefore, the government will enhance approaches to foreign governments, organize an inspection system concerning radioactive materials for exports, and consider measures to recover good images of Japanese products and support farmers, forest holders, fishermen and food industries.

(China (Shanghai))



(Singapore)



(U.K.)



Source: Prepared by MAFF based on Japan External Trade Organization, "Impediments and Future Challenges to Expansion of Japan's Agriculture/Forestry/Fisheries Products and Food Exports," (released in March 2009)

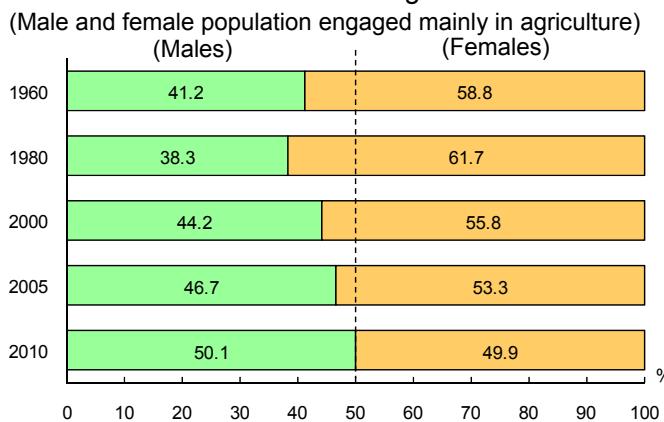
Notes: 1) The source is a questionnaire survey (open questions) of importers, retailers, distributors, restaurant operators, etc. in foreign countries. There are 150 samples for China (Shanghai), 19 for Singapore and 14 for the U.K. Figures represent percentage shares of the total number of samples.

2) We must take notice of the fact that Japan's exports of agriculture, forestry and fishery products and foods to China are sold mainly to wealthy people in China (Shanghai) and a limited range of products are sold to ordinary consumers.

(5) Trends of rural female residents and farmlands

○ Changes in female population engaged mainly in agriculture

In 2010, Japan's female population engaged mainly in agriculture came to 1.3 million, slipping below the male population engaged mainly in agriculture. The female population engaged mainly in agriculture has decreased due partly to the availability of non-agricultural jobs. In order to allow more women to participate actively in agriculture, relevant parties should found new businesses for the processing and sale of farm products, and appoint women as executives of relevant organizations.



Manufacturing jam



A farm stand exterior (left)

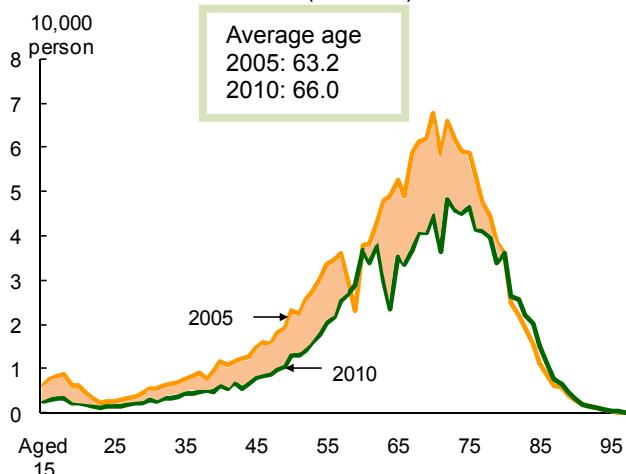


A female farmer (right)

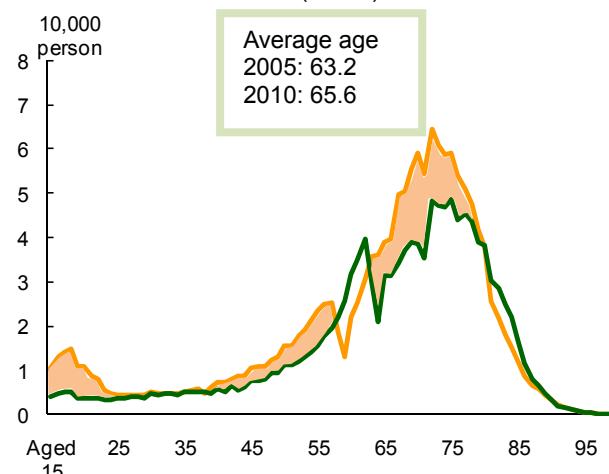
Source: MAFF, "Census of Agriculture and Forestry"

(Changes in male and female population engaged mainly in agriculture)

(Females)



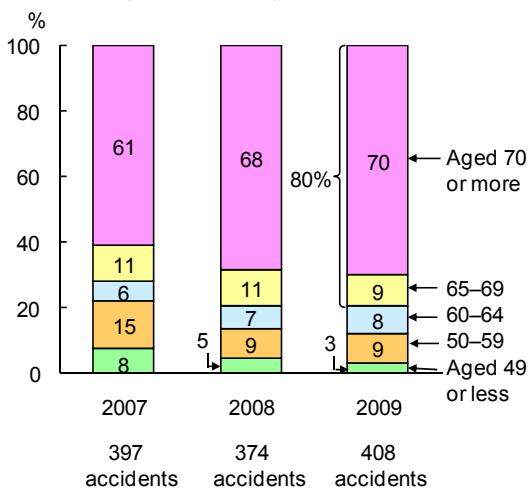
(Males)



Source: MAFF, "Census of Agriculture and Forestry" (custom-ordered tabulation)

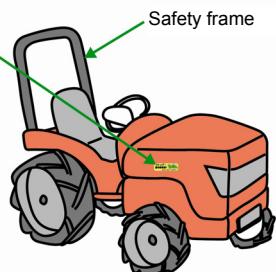
○ Changes in farm work accidents by age group

The annual number of fatal work accidents in agriculture in Japan has remained around 400, more than in other industries. Safety confirmation movements and industrial injury insurance coverage should be expanded under the target of cutting fatal farm work accidents by more than 10% in three years from 2010.



Stop farming accidents!

Ministry of Agriculture, Forestry and Fisheries

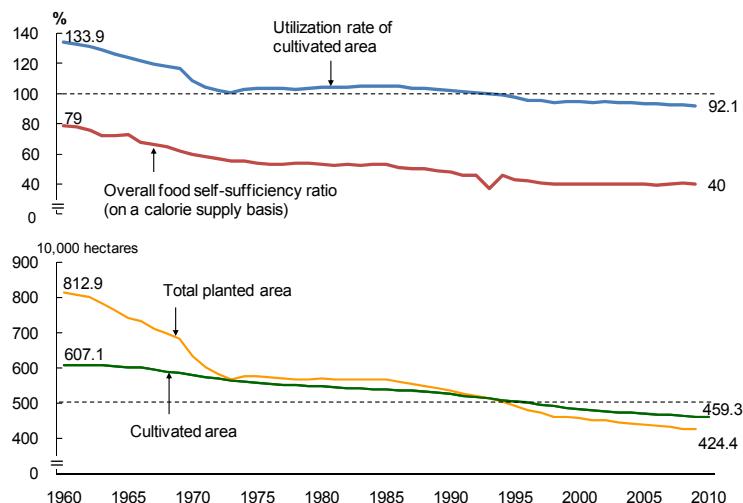


Source: MAFF, "Survey Report on Farm Work Accidents" (released in May 2011)

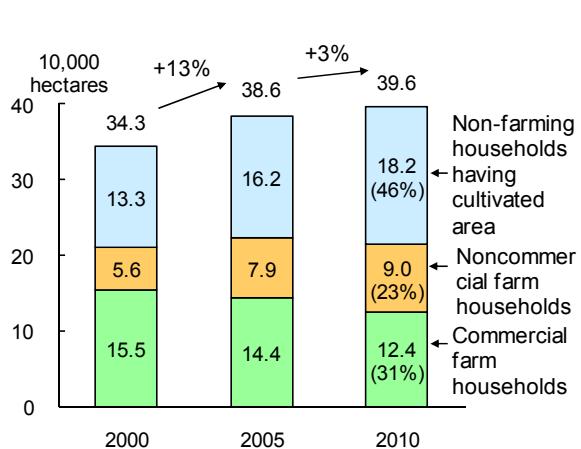
○ Trends of farmlands

As declines in cultivated area and the utilization rate of cultivated area, and an increase in abandoned cultivated area have continued, efforts have been seen to effectively utilize farmlands and eliminate the abandonment of cultivated area at various locations. These efforts must spread throughout Japan.

(Changes in cultivated area, planted area, etc.)



(Changes in abandoned cultivated area)



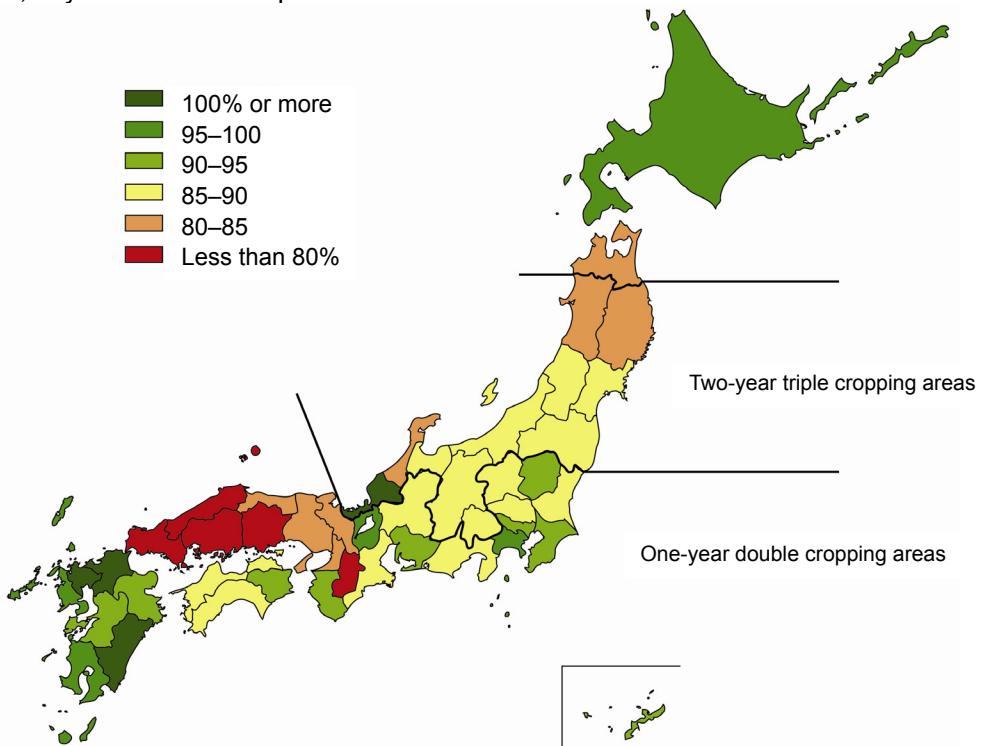
Source: MAFF, "Census of Agriculture and Forestry"

Sources: MAFF, "Statistics on Cultivated Area and Planted Area" and "Food Balance Sheet"

Notes: 1) The overall food self-sufficiency ratio is for a fiscal year.
2) Figures in the graph are for 1960 and 2009. Cultivated area data are for 1960 and 2010.

○ Utilization rates of cultivated area by prefecture

The utilization rate of cultivated area stands at 99.5% in Hokkaido and 89.6% in the other Japanese prefectures. The rate is lower for prefectures in the Chugoku, Kinki and northern Tohoku regions and higher for Saga, Fukuoka, Miyazaki and other prefectures.



Source: MAFF, "Total Planted Area and Utilization Rate of Cultivated Area in 2009" (released in November 2010)

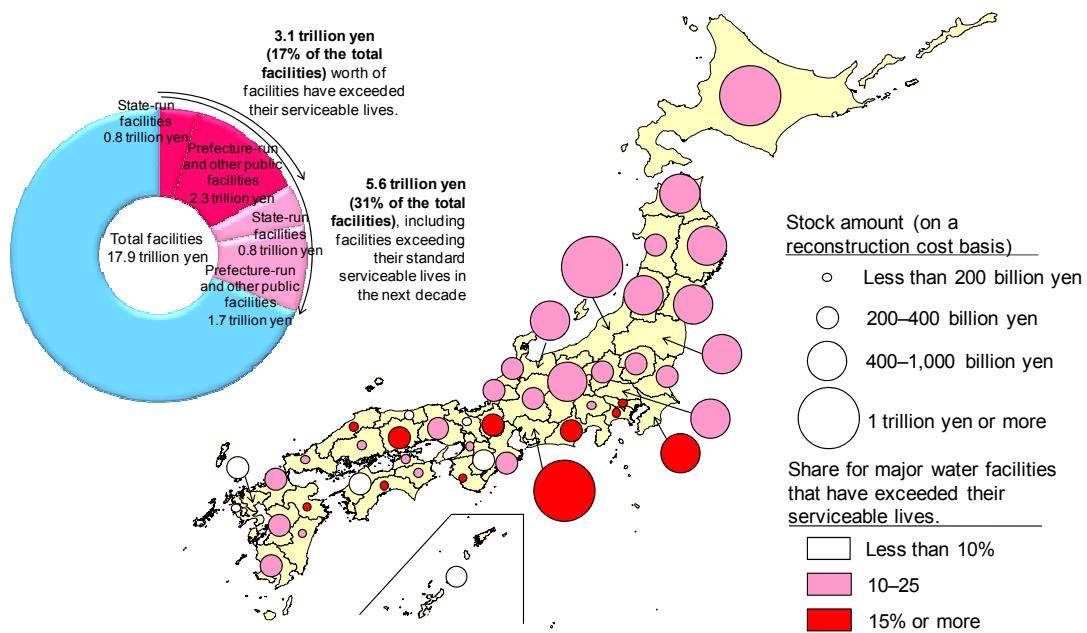
Note: Borderlines for multiple cropping areas depend on the presence or absence of rice planting after wheat/barley harvest in paddy fields for 2007. The two-year triple cropping areas harvest rice, wheat/barley and soybeans in that order. At points above or below the borderlines, multiple cropping is possible or impossible depending on weather conditions.

○ Status of agricultural production infrastructure

Farmlands with good agricultural water facilities and farming conditions must be secured to ensure agricultural productivity improvement and food supply capacity.

However, major irrigation facilities that have exceeded their standard serviceable lives now account for 17% of all such facilities on a reconstruction cost basis. Including those that will exceed their serviceable lives within the next decade, outdated major irrigation facilities may reach 5.6 trillion yen or 30% of the total. Irrigation facilities may thus grow outdated even further.

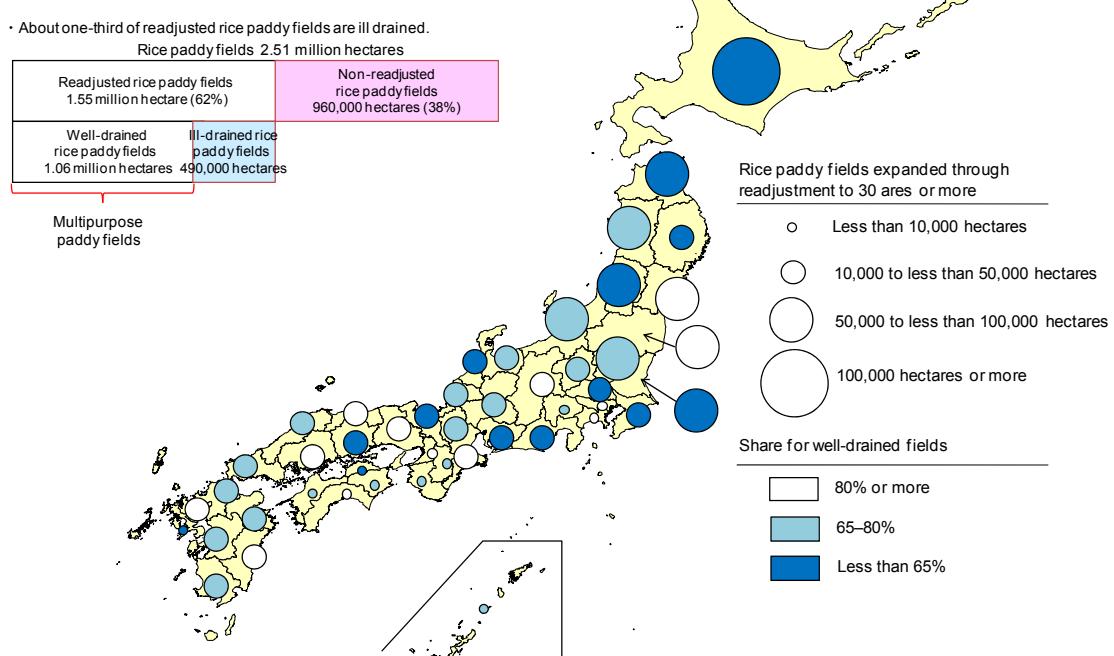
(Status of outdated major irrigation facilities (2009))



Sources: MAFF surveys

○ Status of rice paddy development

Readjusted rice paddy fields total 1.55 million hectares. Ill-drained rice paddy fields account for about one-third or 490,000 hectares of the total.



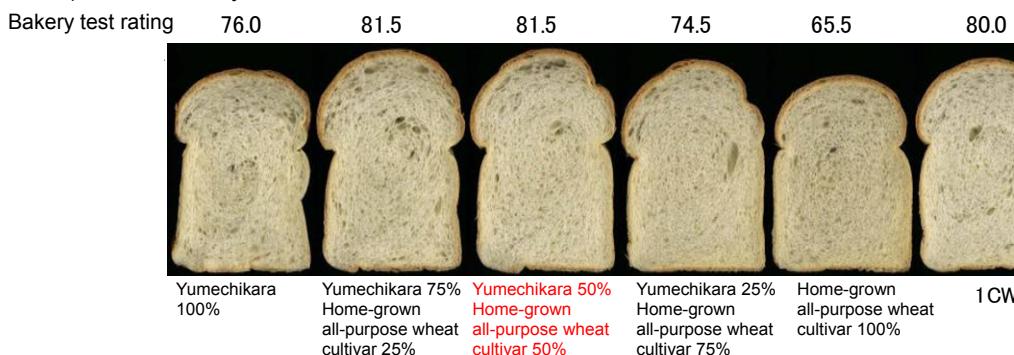
Source: Status in 2009 according to cultivated and planted land statistics and a basic survey on agricultural infrastructure development

- Notes: 1) Readjusted rice paddy fields are those expanded through readjustment to 30 ares or more.
 2) At well-drained rice paddy fields, the groundwater level is 70 centimeters or more and static flood waters can be removed in up to four hours.
 3) The share for well-drained fields is well-drained fields' share of fields expanded through readjustment to 30 ares or more.

○ Research and technology development efforts

It is important to expand the production of wheat, barley, soybeans, rice for new uses, feed crops, etc. and develop excellent cultivars in order to improve the food self-sufficiency ratio. In this respect, "Yumechikara" has been developed as an extra hardy wheat cultivar that can be blended with all-purpose wheat flour to produce flour for bread and Chinese noodles. "Satonosora" has also been developed as a high-yield, high-quality wheat cultivar for udon noodles, featuring strong resistance to lodging and diseases.

(The extra hardy "Yumechikara" wheat cultivar can be used for bread and Chinese noodles)

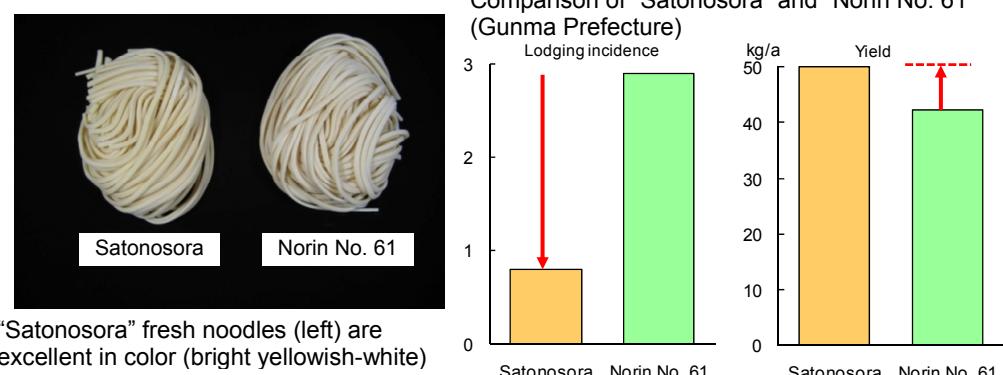


Source: National Agriculture and Food Research Organization (NARO) Hokkaido Agricultural Research Center

Notes: 1) The home-grown share of all-purpose wheat for Japanese noodles has reached about 70%. Uses of all-purpose wheat for bread and Chinese noodles are required to be explored. The extra hardy "Yumechikara" wheat flour can be blended with all-purpose wheat flour for the uses, expanding the range of uses of all-purpose wheat.

2) The ICW is a high-quality Canadian wheat cultivar for bread.

("Satonosora" – fast-growing, high-yield wheat cultivar)



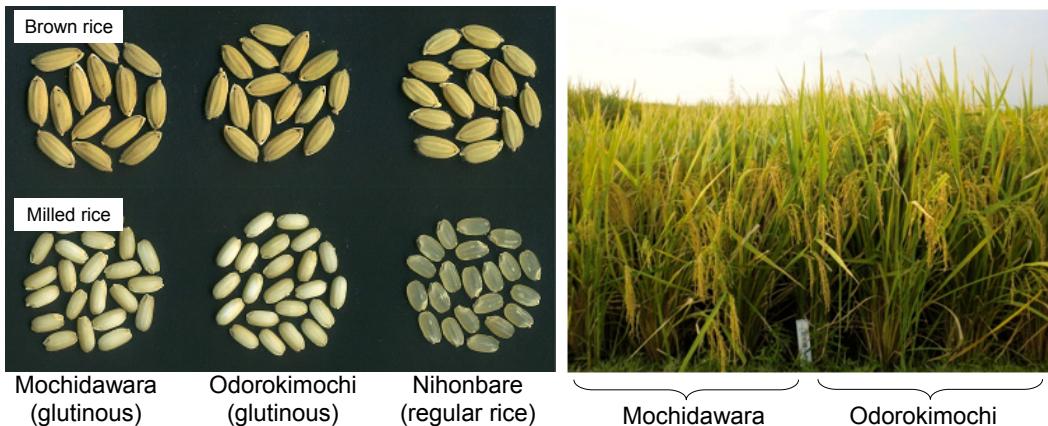
Source: Gunma Agricultural Technology Center, "Tests to Determine Recommendable Cultivars" (tests conducted in 2005–2008)

Note: Lodging incidence: 0 for no, 1 for very little, 2 for little, 3 for medium, 4 for frequent, 5 for very frequent

○ Development of new rice cultivars

The extra-high-yield "Mochidawara" rice cultivar has been developed. The cultivar is suitable for rice confectionery and is expected to be used as feed.

("Mochidawara" – a new glutinous rice species featuring high yield)



Source: National Agriculture and Food Research Organization (NARO) National Institute of Crop Science

○ Farmers' opinions on achievements of agriculture-related organizations

Agriculture-related organizations have missions to stabilize farming, improve productivity and product quality, secure a stable food supply to the people and expand domestic production.

In order to achieve these missions, 255,000 officials are working at agriculture cooperative organizations. At agricultural committee organizations, 38,000 committee members and officials are working.

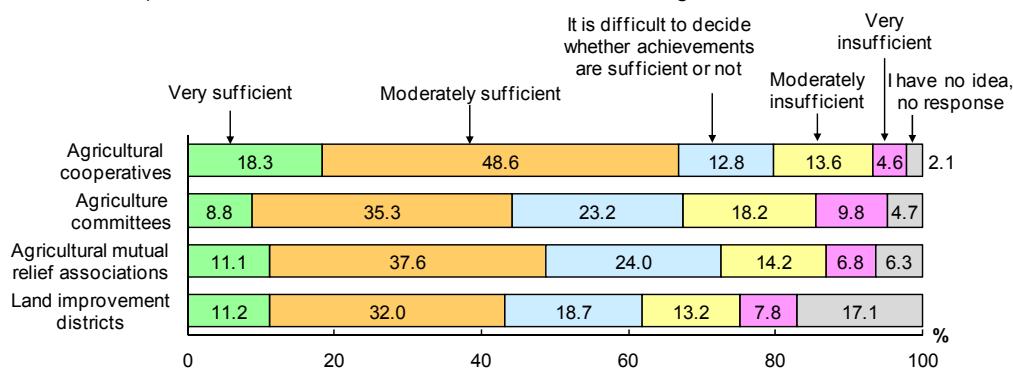
Asked whether regional agriculture-related organizations have made sufficient achievements, 40–70% of farmers answered "yes." Some 20–30% answered "no." These organizations are required to make further efforts based on their respective roles.

	(Unit: persons)			
	Agricultural cooperative organizations	Agricultural committees	Agricultural mutual relief organizations	Land improvement organizations
Regional organizations (municipal organizations)	224,063	37,456	6,564	8,000
Prefectural organizations	12,089	377	1,325	2,998
National organizations	18,705	48	-	36

Sources: MAFF, "Comprehensive Agricultural Cooperative Statistics" and "Agricultural Cooperative Federation Statistics (prefectural federations)," MAFF surveys

- Notes: 1) Figures for agricultural cooperative organizations are for the end of the fiscal year. Officials for national agricultural cooperative organizations include those for prefectural organizations (such as prefectural headquarters) as national organizations' integration with prefectural organizations has made progress.
- 2) The number of regional (municipal) agriculture committee officials is that of agricultural committee members (including those elected from regional farmers).
- 3) Officials for regional (municipal) mutual relief organizations include those for prefectural mutual relief organizations. Municipal government officials undertaking the agricultural disaster compensation system are excluded.
- 4) The number of officials at regional (municipal) land improvement organizations is an estimate based on a sampling survey of officials for land improvement districts designated in accordance with river-based, administrative and other districts.

(Farmers' consciousness about achievements of agriculture-related

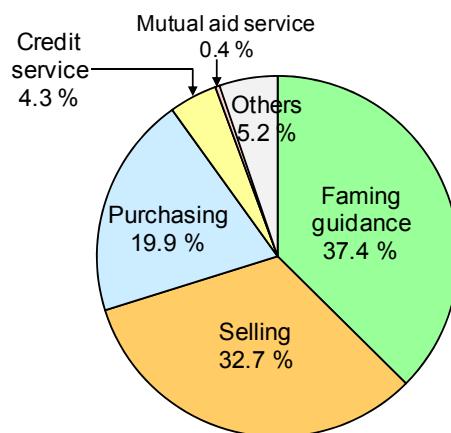


Source: MAFF, "Survey on Consciousness/Intentions about Sustainable Use of Food, Agriculture, Rural Area and Fisheries Resources," released in May 2011

Note: The survey covered 2,000 farming monitors (response rate at 81.4%).

○ Farmers' opinions on operations they want agricultural cooperatives to enhance

Operations that farmers want agricultural cooperatives to enhance include farming guidance (chosen by 40% of respondents in a survey), selling (30%) and purchasing (20%).



Source: MAFF, "Survey on Consciousness/Intentions about Economic Operations of Agricultural Cooperatives," released in March 2009

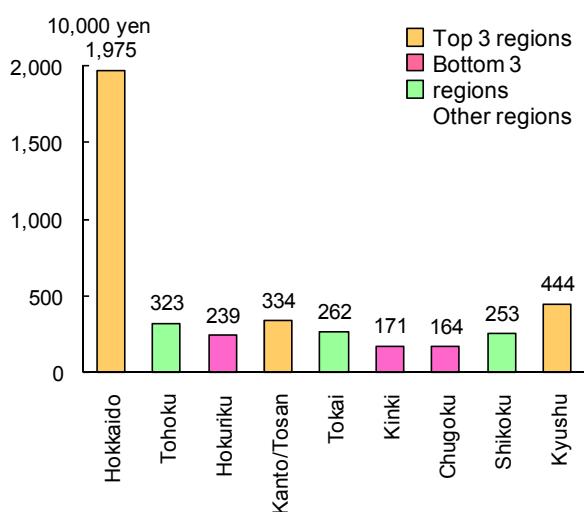
Notes: 1) The survey covered 2,500 farming monitors (response rate at 84.1%).
2) Others include those who made no response (0.8%).

<Farming trends should be observed carefully on a region-by-region basis)

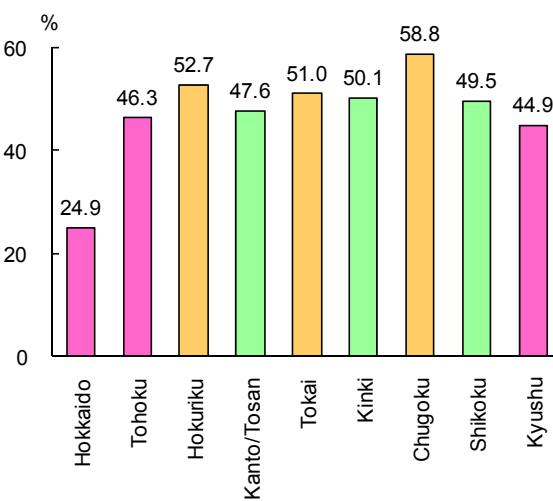
The overall agriculture situation has continued to be described as severe, but regional situations have varied. For example, food self-sufficiency rates and agricultural output, farms and farmers supporting agriculture, and farmland conditions and trends differ widely from region to region. Example data are given below. We believe that we should not only keep an eye on national average data but also carefully observe regional phenomena and underlying factors in order to find solutions.

(Region-by-region indicator examples)

(Total agricultural output per farming household)



(70-year-old and older people's share of farming population (2010))

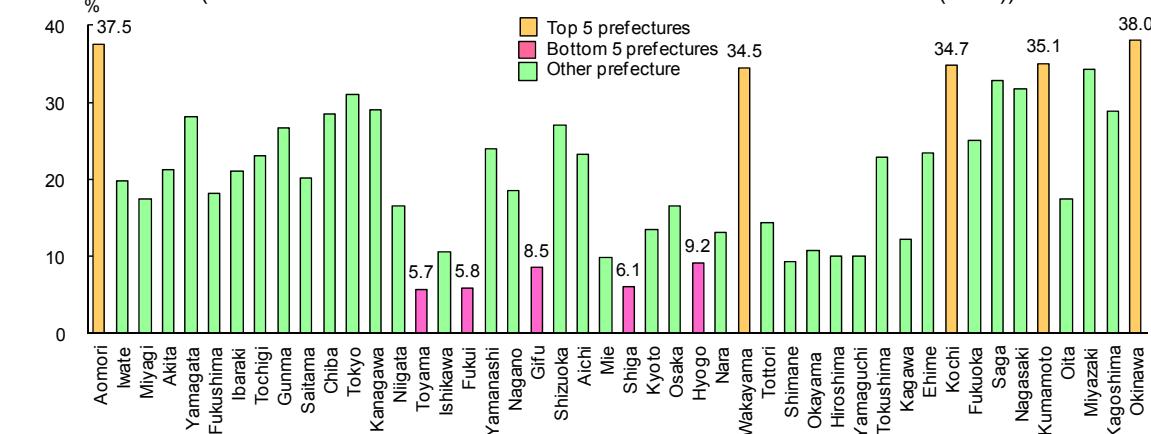


Sources: MAFF, "Census of Agriculture and Forestry (2010)" and "FY2009 Agricultural Production Income Statistics"

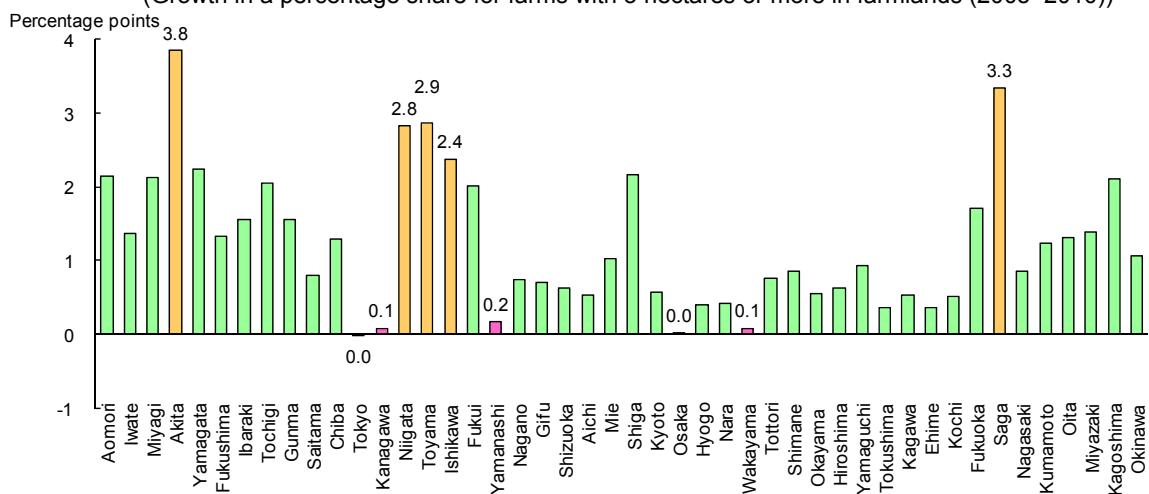
Source: MAFF, "Census of Agriculture and Forestry"

(Prefectural data examples)

(Business farm households' share of all commercial farm households (2010))



(Growth in a percentage share for farms with 5 hectares or more in farmlands (2005–2010))



Source: MAFF, "Census of Agriculture and Forestry"

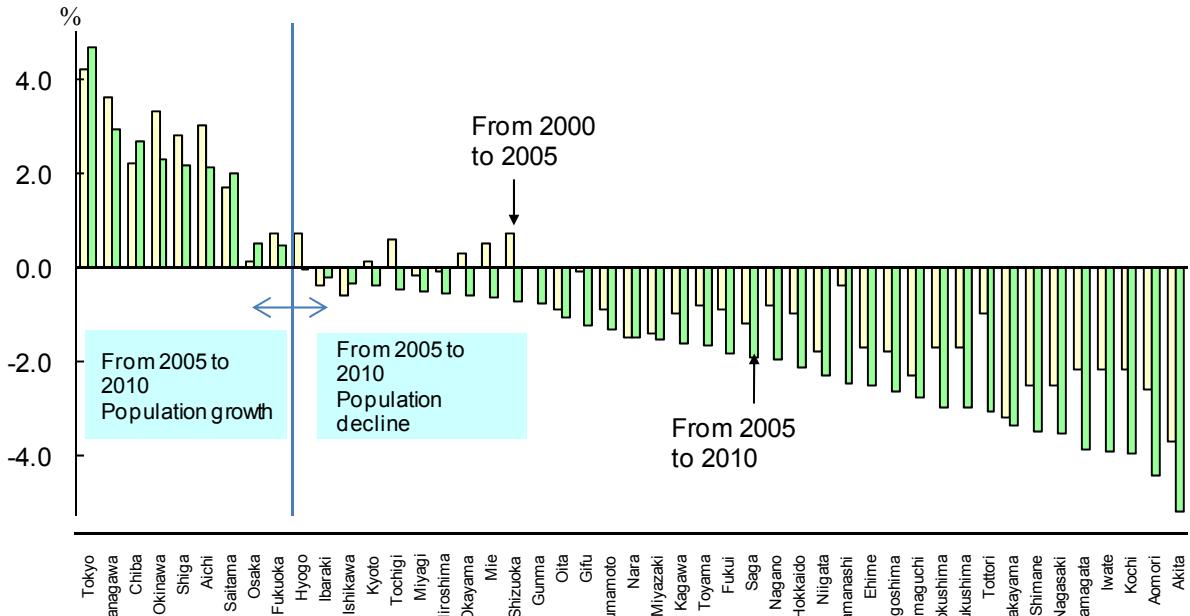
Note: Hokkaido's figure is given in a region-by-region graph

Chapter 3 Efforts toward Revitalization of Rural Areas

(1) Current state of rural areas and farming communities

○ Prefecture-by-prefecture population changes

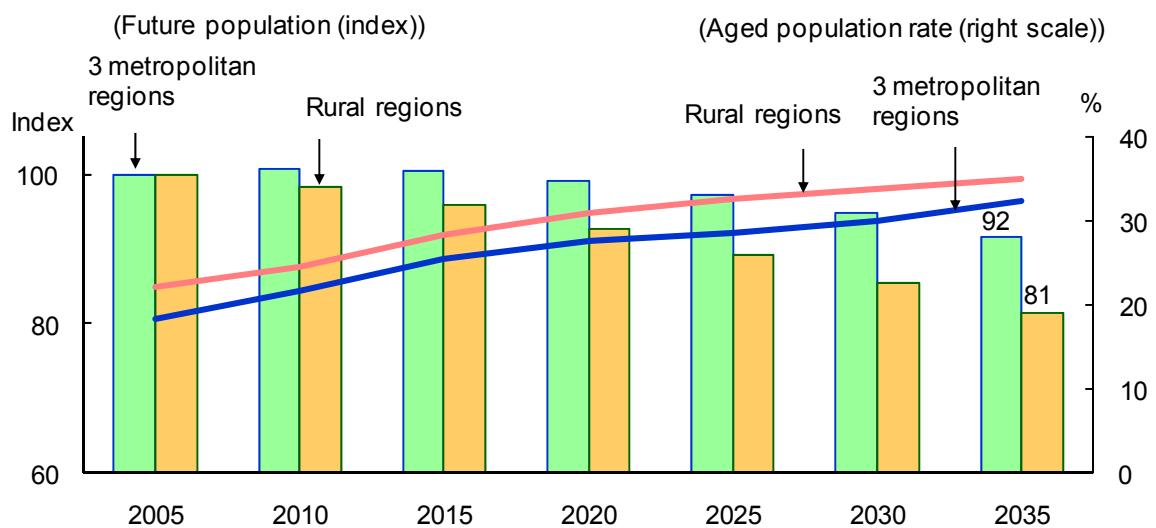
Prefecture-by-prefecture population changes from 2005 to 2010 indicate population growth in nine prefectures and accelerated drops in rural prefectures. Population drops are particularly large in Akita, Aomori and Kochi.



Source: Ministry of Internal Affairs and Communications, "2010 Population Census – Preliminary Population Data" (released in February 2011)

○ Future population and aged population rate in 3 metropolitan regions and rural regions

Future regional population estimates indicate that population in the three metropolitan regions in 2035 may fall to 92% of the 2005 level, with the aged population rate rising from 18% to 32%. Population in rural regions is estimated to decline to 81% of the 2005 level, with the aged population rate rising from 22% to 35%.



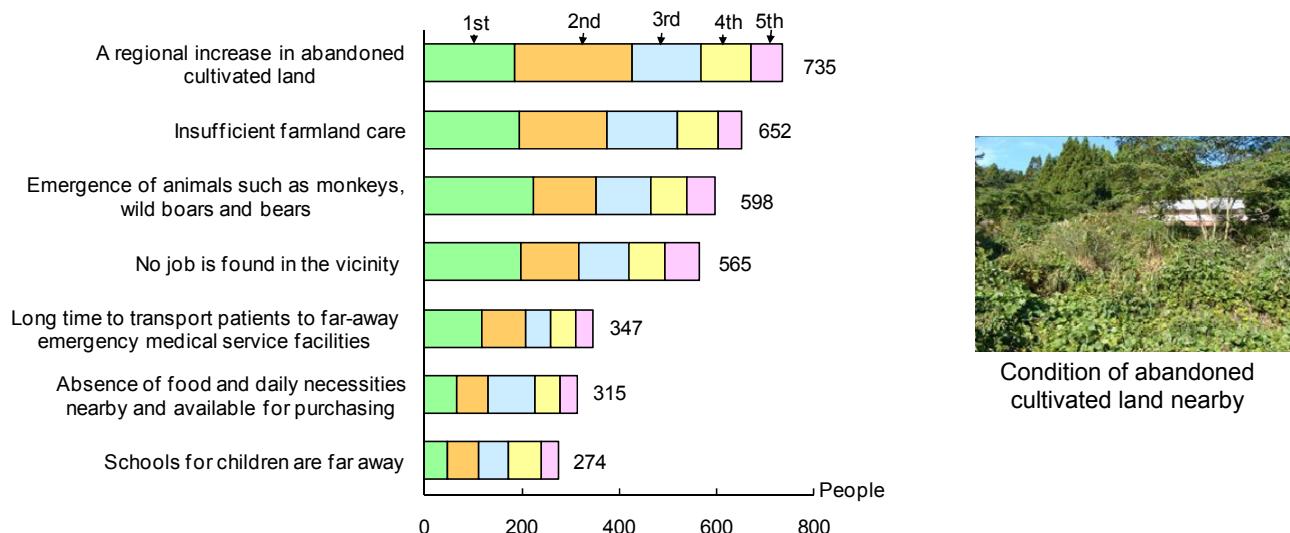
Source: National Institute of Population and Social Security Research, "Future Prefecture-by-Prefecture Population Estimates" (estimated in May 2007)

Notes: 1) Population represents an index based on 100 for 2005.

2) The three metropolitan regions are the Tokyo region (Saitama, Chiba, Tokyo and Kanagawa Prefectures), the Nagoya region (Gifu, Aichi and Mie Prefectures) and the Osaka region (Kyoto, Osaka, Hyogo and Nara Prefectures). Rural regions cover prefectures excluding those in the three metropolitan regions.

○ Problems and fears regarding rural life

As rural population declines and ages, farmers cite such life-related problems as abandoned cultivated land, farmland care, wildlife damage, employment and emergency medical services. Under the situation, a decline in community functions and depopulation are seen for some rural communities.



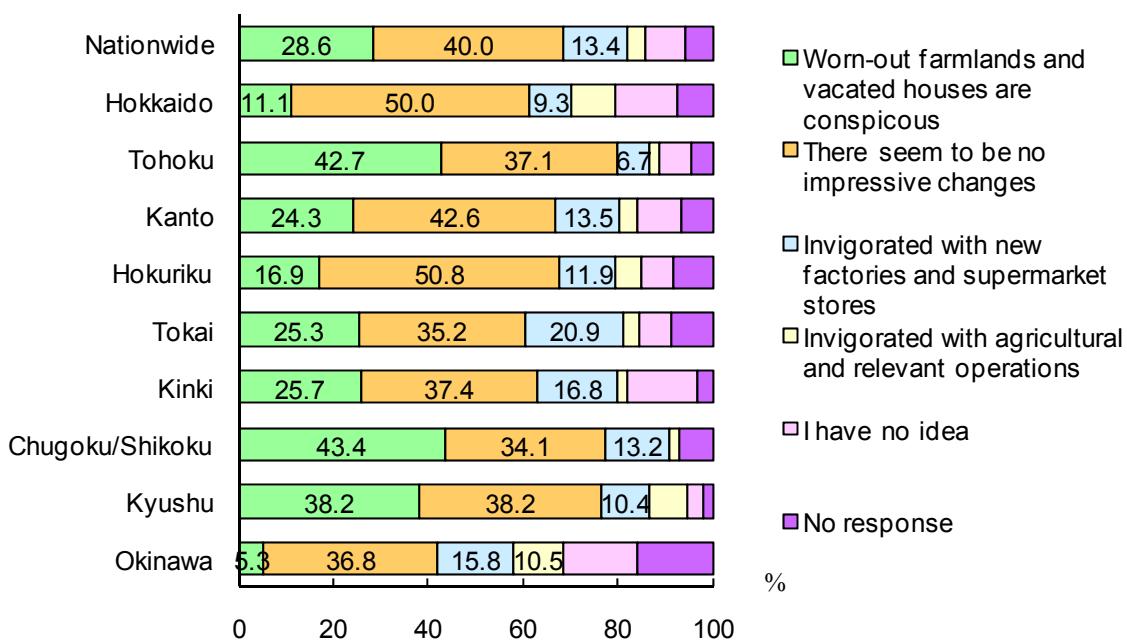
Source: MAFF, "Survey on Consciousness/Intentions about Sustainable Use of Food, Agriculture, Rural Area and Fisheries Resources," released in May 2011

Notes: 1) A questionnaire survey covering 2,000 farming monitors (response rate at 81.4%)

2) Respondents were asked to select and rank their five largest problems or fears regarding rural life over the next decade. Each figure in the graph is the total number of respondents giving first to fifth rankings for each problem.

○ Current status of rural areas as seen by consumers

Regarding the current status of agriculture and rural areas, on average, 29% of consumers see worn-out farms and vacated houses as conspicuous. The percentage is higher for Tohoku, Chugoku/Shikoku and Kyushu.



Source: MAFF, "Survey on Consciousness/Intentions about Sustainable Use of Food, Agriculture, Rural Area and Fisheries Resources," released in May 2011

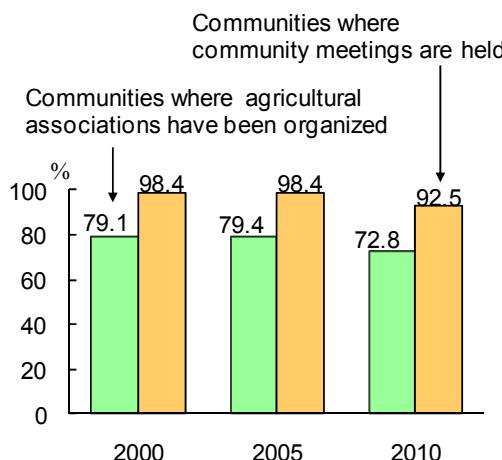
Notes: 1) A questionnaire survey covering 1,800 consumer monitors (response rate at 90.3%)

2) Survey targets regarding this question were 1,166 persons who live or return to their home in areas other than specified cities in the three major metropolitan regions, ordinance-designated major cities and prefectural capitals.

3) Kanto includes Yamanashi, Nagano and Shizuoka prefectures.

○ Organization of agricultural associations and community meetings

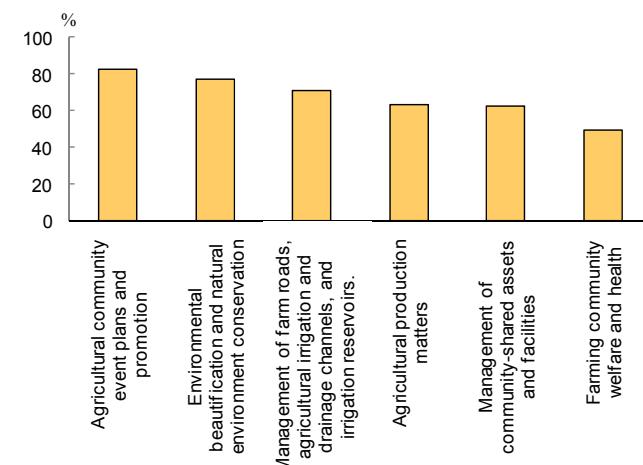
Of all rural communities in Japan, those with agricultural associations, the most basic organizations for agricultural production, accounted for 73% in 2010. Those where community meetings are held accounted for 93%. Each percentage declined 6 points from a decade earlier.



Source: MAFF, "Census of Agriculture and Forestry"

○ Shares for topics at community meetings (2010)

Topics taken up frequently at community meetings include "agricultural community event plans and promotion," "environmental beautification and natural environment conservation," and "management of farm roads, agricultural irrigation and drainage channels, and irrigation reservoirs."



Source: MAFF, "Census of Agriculture and Forestry"

○ Urban residents' consciousness about the roles of rural areas

Many urban residents have recognized the importance of rural areas' multifunctional roles (including food production, environmental conservation, living space provision and education).

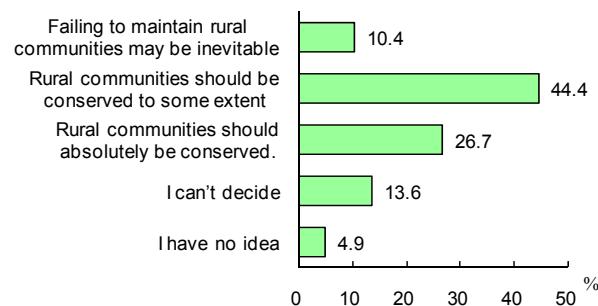


Source: Cabinet Office, "Survey on Roles of Food, Agriculture and Rural Areas" (released in November 2008)

Notes: 1) The survey covered 5,000 people aged 20 or more throughout Japan (response rate at 62.9%).
2) Urban region resident monitors were sampled.

○ Urban residents' opinions on maintenance of rural communities

Many urban residents believe that rural communities in hilly and mountainous areas, which are difficult to maintain, should be conserved. Efforts to maintain and invigorate rural communities should be promoted further.



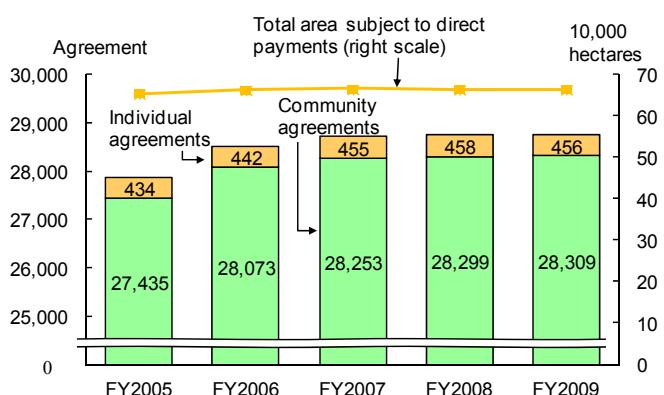
Source: MAFF, "Survey on Consciousness about Rural Areas" (released in February 2011)

Note: The questionnaire survey targeted urban residents (1,081 respondents).

(2) Efforts to conserve local resources in rural areas

○ Achievements of the program for direct payments to hilly and mountainous areas

At the end of FY2009, 28,765 agreements existed to cover 664,000 hectares in agricultural land, contributing to the conservation of national land and the invigoration of rural communities.

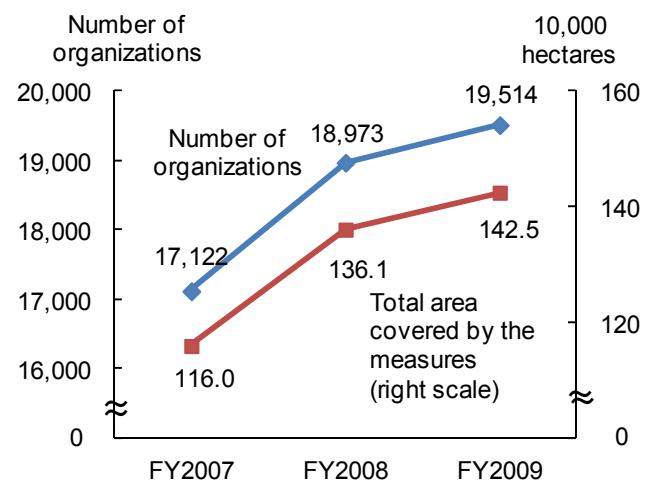


Source: MAFF survey

Notes: 1) A community agreement is signed by multiple farmers who conduct agricultural production at relevant agricultural land.
2) An individual agreement is signed between a certified farmer and an agricultural land owner under their contract on rights to use agricultural land and farming consignment.

○ Achievements of the measures to Conserve and Improve Land, Water and the Environment

At the end of FY2009, a total of 19,154 organizations were implementing measures to conserve 1.43 million hectares in agricultural land in Japan. These measures are effective for conserving and improving regional environments and invigorating regional communities.



Source: MAFF survey

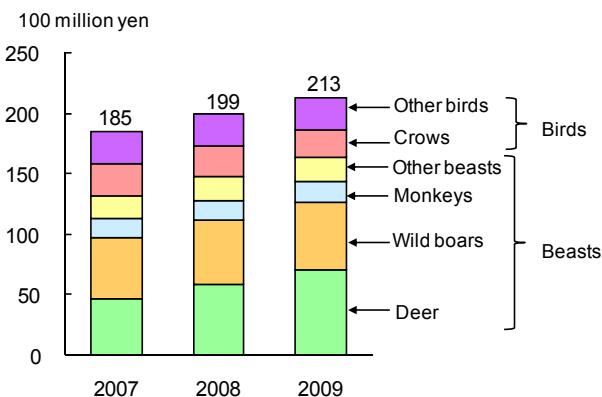
(3) Animal damage prevention efforts

○ Crop damage by wild animals

Crop damage by wild animals in Japan has remained at around 20 billion yen. Such damage by beasts has followed an upward trend over the recent years. Crop damage by beasts has been serious in such regions as Hokkaido, Kyushu and Kanto/Tosan.

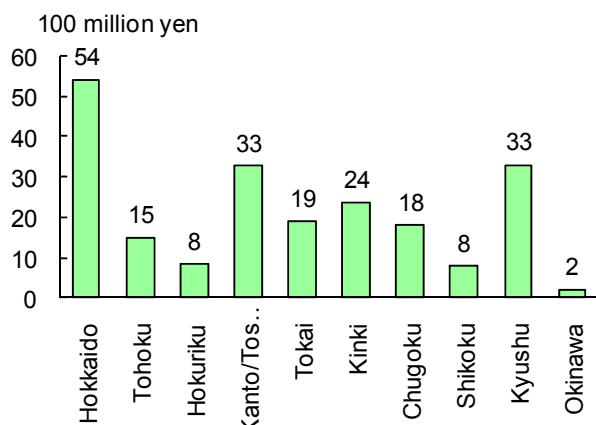
Regional communities should be united to make arrangements for preventing animal damage. Such measures as the establishment of buffer zones between humans and animals should be implemented comprehensively.

(Changes in crop damage by wild animals)



Source: MAFF survey

(Region-by-region crop damage by wild animals (2009))

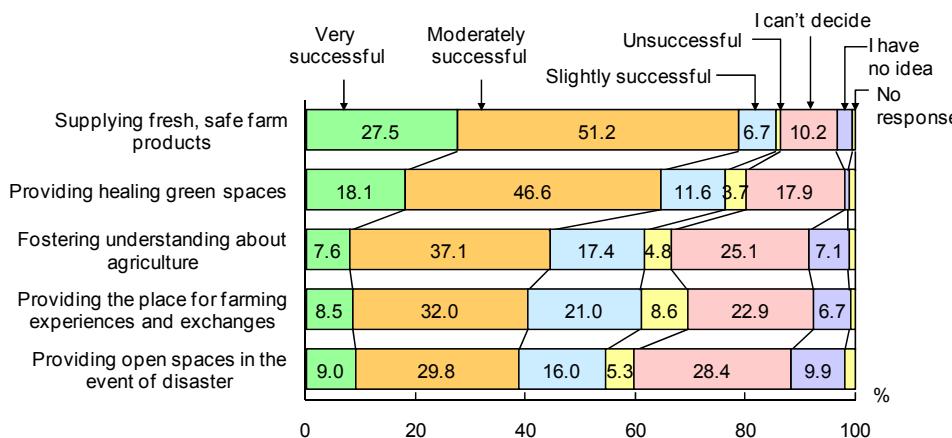


Source: MAFF survey

(4) Roles of urban agriculture

○ Suspected roles and functions of urban agriculture

Urban agriculture plays great roles in supplying fresh, safe farm products and providing a place for exchange and relief, as recognized by urban residents. In future, further efforts are required for developing allotment gardens and urban residents' farming experiences.



A map for farm stands
(Setagaya Ward, Tokyo)



Urban agriculture PR events
(in 23 wards of Tokyo)

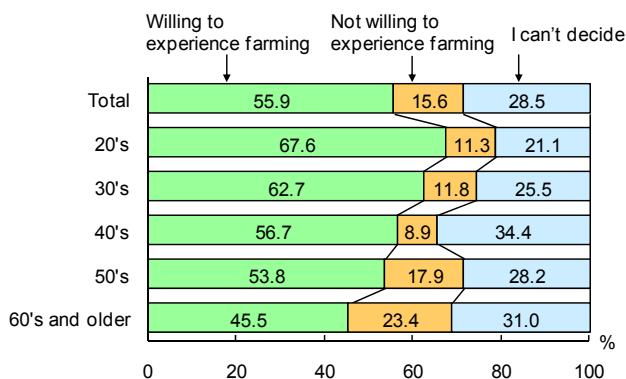
Source: MAFF, "Survey on Consciousness/Intentions about Sustainable Use of Food, Agriculture, Rural Area and Fisheries Resources," released in May 2011

Notes: 1) A questionnaire survey covering 1,800 consumer monitors (response rate at 90.3%)

2) Responses were collected from consumers living in specified cities in the three major metropolitan regions, ordinance-designated major cities and prefectoral capitals.

○ Tokyo residents' willingness to experience farming

Those willing to experience farming account for about 60% of urban (Tokyo) residents. Younger people are more willing to do so.

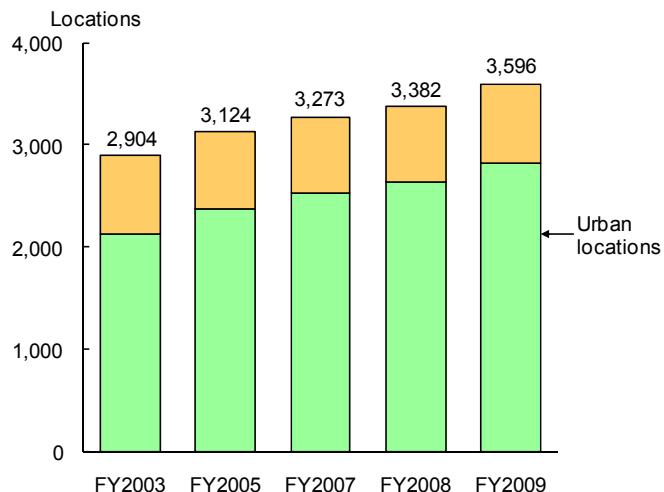


Sources: Tokyo Metropolitan Government, "1st FY 2009 Internet Questionnaire Survey on Tokyo Government – Agriculture in Tokyo" (released in June 2009)

Note: An Internet survey covering 500 Tokyo residents (response rate at 98.8%)

○ Changes allotment gardens

The number of allotment gardens has increased year by year in Japan, standing at 3,596 at the end of FY2009. Particularly, the increase has been remarkable in urban regions. However, supply shortages are seen in greater cities where competition for allotment gardens is fiercer.



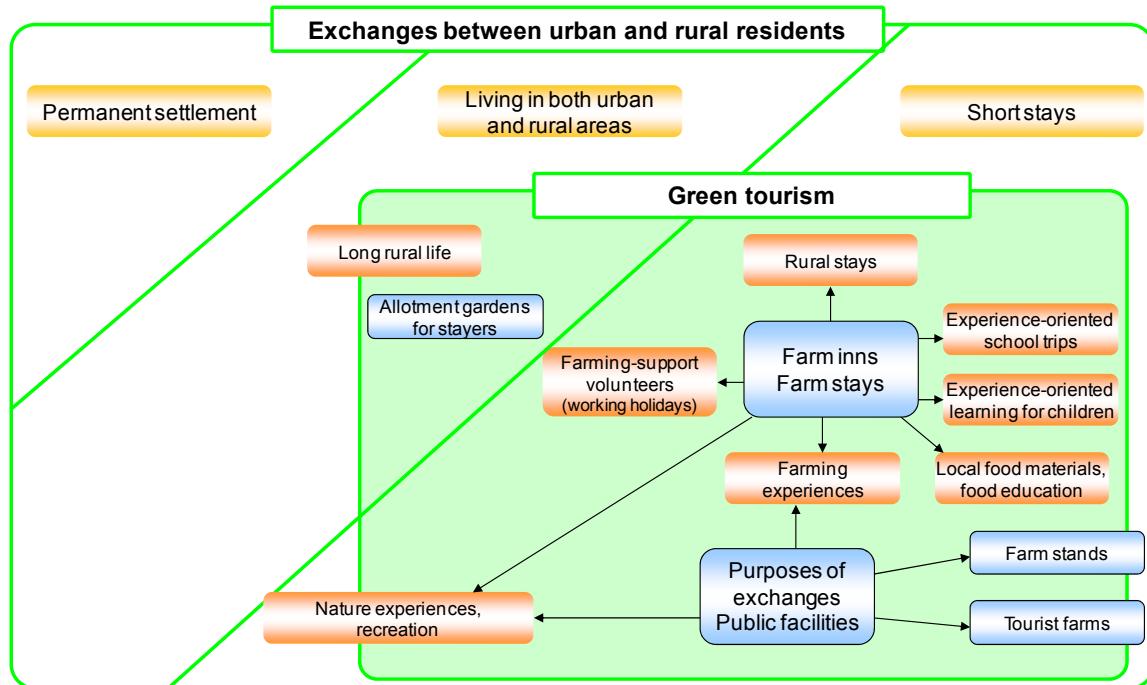
Source: MAFF survey

Note: Each figure represents the March-end number of allotment gardens opened under the Act on Special Cases of the Agricultural Land Act Concerning Specific Agricultural Land Leases and the Act on the Promotion for Development of Private Farmland for Community Use.

(5) Efforts for exchanges between urban and rural residents

○ Diverse patterns of exchanges between urban and rural regions

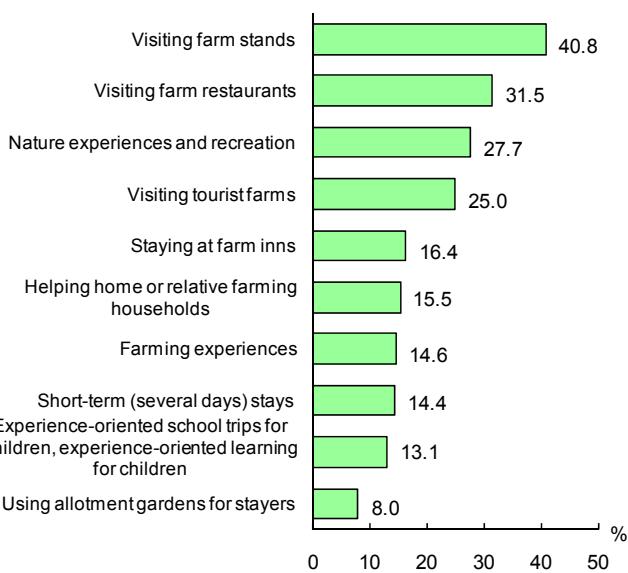
Patterns of exchanges between urban and rural regions range widely from short stays for green tourism (stays for recreation in rural areas) to living in both urban and rural regions, and permanent settlement in rural areas.



Source: Prepared by MAFF

○ Activities urban residents want to implement in rural areas (multiple answers are allowed)

Frequently cited activities that urban residents want to implement include visiting farm stands, visiting farm restaurants, nature experiences and recreation, visiting tourist farms and staying at farm inns. Based on these needs, we must promote exchanges between urban and rural regions.

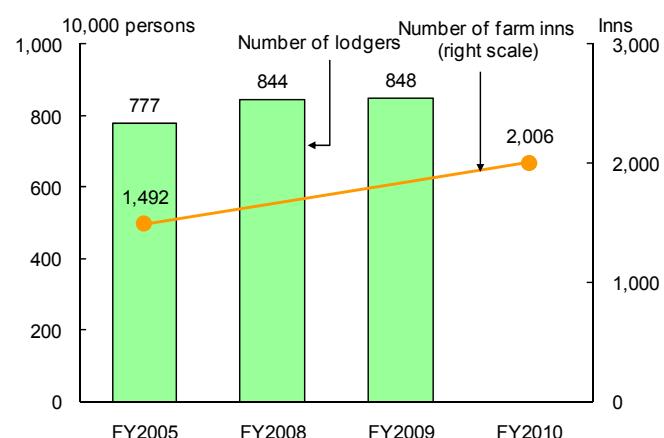


Source: MAFF, "Survey on Requests Regarding Rural Areas" (released in February 2011)

Note: An Internet survey targeting urban residents (1,081 respondents)

○ Changes in lodgers at green tourism facilities and in farm inns

The number of farm inns in 2010 increased to 2,006 in Japan. The number of lodgers at green tourism facilities has increased year by year, standing at 8.48 million in FY2009.



Sources: MAFF, "Census of Agriculture and Forestry;" MAFF surveys

(6) Developing bonds between food and local communities

○ Efforts by multiple entities to revitalize the vigor of “food” and “rural communities”

While rural communities as the foundation of agriculture, forestry and fisheries have lost their vigor, some regions have promoted efforts to invigorate local communities through exchanges between urban and rural regions based on bonds among farmers, consumers and business operators. These efforts should be promoted on a nationwide basis.

(1) Efforts led by local residents, farmers, local councils or industry-government collaboration organizations

Urahoro Town, Hokkaido Prefecture	In order to lead children to become confident and proud of their communities, the Urahoro Style Promotion Council implements lessons at elementary and junior high schools where children experience rural lives and make town-building proposals. Their proposals are implemented with help provided by adults.	
Shima City, Mie Prefecture	The Shima Isobue Kai association has created the Kirari (twinkling) Recipe for Shima local dishes in cooperation with divers and fishermen. It has also developed “Shinju Tekone Sushi” using pearl shell scallops, and original dishes using sea lettuce in a bid to invigorate the regional economy.	
Gokase Town, Miyazaki Prefecture	The Yuhinosato Zukuri promotion council has implemented local development programs taking advantage of local landscapes for exchanges with urban residents. It implements tours and events for urban residents, accepts educational tours from abroad and manages the Yuhinosato Bussankan shop for selling local indigenous products.	

(2) Efforts led by agricultural cooperatives, fishery cooperatives, or agricultural producers' cooperative corporations

Kurayoshi City, Tottori Prefecture	The Tottori Central Agricultural Cooperative has opened the “Agri Kids School” for learning through agricultural experiences in a bid to allow children to recognize the importance of agriculture, love home towns and nurture rich spirits. It has been expanding school activities in cooperation with senior high school students serving as assistant instructors.	
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(3) Efforts led by universities, specified nonprofit corporations or foundations

Izumisano City, Osaka Prefecture	The Izumisano Town Green Association has opened a market to promote understanding about agriculture, forestry and fisheries, step up exchanges between urban and rural residents and improve the food self-sufficiency ratio. It has also tackled a resources-recycling business to contribute to environmental conservation by feeding cattle with wild grass to lower production and management costs.	
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(4) Efforts led by enterprises

Murayama City, Yamagata Prefecture	Kunitachifarm Girls Farm has implemented an agriculture experience program that targets women university students and focuses on dialogue between women in their 20's, leading participants to change their images of and consciousness about agriculture. It has also taken advantage of women's sensitivity to produce confectionery using imperfect vegetables.	
Nagano City, Nagano Prefecture	Tanpopo Inc. processes and sells local farm products grown by women farmers, handles parcels for sending products to remote customers and undertakes biweekly lunch delivery services for elderly people. Its activities have prompted spouses of Tanpopo members to produce wine using idle farmlands.	

Sources: MAFF surveys

Afterword

This report introduced the situations of and responses to the Great East Japan Earthquake and the foot-and-mouth disease outbreak, and analyzed and considered trends of food, agriculture and rural areas under the new basic plan for food, agriculture and rural areas, and major policy efforts and problems from various perspectives. This report is summarized as follows:

First, the Japanese people must be united further to support reconstruction after the Great East Japan Earthquake, based on disaster victims' compelling hope to "end inconvenient lives and return to farming or fishing in peace as early as possible." While disaster-hit regional communities must take the initiative to develop medium to long-term reconstruction plans, the central government must fully consider what to do for disaster-hit regions where the agriculture-forestry-fisheries sector plays a great part. The government must also ensure that all damage compensations regarding the accident at TEPCO's Fukushima Daiichi Nuclear Power Station will be paid appropriately and expeditiously. As for foot-and-mouth and other domestic animal infectious diseases, all relevant parties must be united to enhance epidemic prevention efforts based on such laws as the revised Act on Domestic Animal Infectious Diseases Control.

Second, it is important for Japan to further promote efforts regarding food, agricultural and rural areas to visualize carbon dioxide emissions, reduce and recycle food garbage, introduce energy-saving machines and equipment, support environment- and biodiversity-oriented agriculture, and introduce renewable energy sources in order to solve global environmental problems. The government is required to tackle information and education to link the people's consciousness to real actions.

Third, Japan must increase its domestic food self-sufficiency ratio as international grain prices' rise close to record levels and other food price spikes are destabilizing food supply and demand further. In the first year under the new basic plan for food, agriculture and rural areas, consumption and production efforts to improve are lagging. But inventive efforts have been seen at various locations in Japan. These efforts should be developed into full-fledged programs in the future.

Fourth, Japan is urgently required to reform agriculture as a massive number of farmers are expected to retire upon aging. Amid globalization, it is important to steadily implement measures to nurture motivated farmers, including the promotion of new entries into farming, the integration of farmlands and the organization of community-based farm cooperatives. In this respect, we should promote the integration of production, processing and marketing, and promoting the "Sixth Industry" to increase farmers' income.

Fifth, efforts to support functions of rural communities are decreasing due to the declining and aging population. In order to invigorate rural areas, various regional players are required to cooperate in taking maximum advantage of regional resources and in nurturing regional leaders. Efforts to develop bonds between food and local communities have been spreading through exchanges between urban and rural residents. The nationwide promotion of these efforts is growing more important.

The key phrase for the 21st century is "water and food." All Japanese people should fully recognize the importance of food and the significant roles of agriculture and rural areas, and jointly consider how to solve problems facing agriculture and rural areas as well as implement solutions.

<Appendix>

As this white paper is the 50th one—which the first one was issued in 1961 under the Agricultural Basic Act— major agricultural policy and agriculture-related developments, as well as major indicators during the 50 years, are compiled below:

Major indicators

	(FY1960)	(FY2009)
■ Food self-sufficiency ratio (on a calorie supply basis)	79%	⇒ 40%
■ Food self-sufficiency ratio (on a production value basis)	93%	⇒ 70%
■ Annual per capita net food supply		⇒
Rice	114.9kg	⇒ 58.5kg
Meat	5.2kg	⇒ 28.6kg
Milk and dairy products	22.2kg	⇒ 84.8kg
Oils and fats	4.3kg	⇒ 13.1kg%
	(1975)	(2005)
■ Share for non-home meals	28%	⇒ 42%

Sources: MAFF, "Food Balance Sheet." Estimates by Foodservice Industry Research Institute

Note: Share for non-home meals = (food service industry market size + restaurant market size) / (household food, beverage and tobacco expenditure – tobacco sales + food service industry market size)



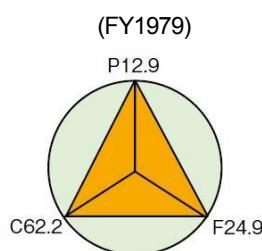
School lunch time around 1955



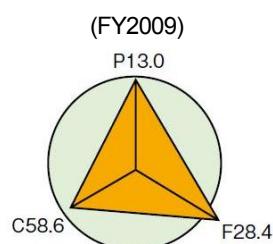
School lunch menu (1955):
bread roll, milk (skim milk),
fried horse mackerel, salad,
jam



A family restaurant in 1970



Nutrition (Protein, Fat and Carbohydrate) proportions of calorie supply



A prepared food corner at a supermarket store

Major indicators

	(1960)	(2009)
■ Total agricultural output	1,914.8 billion yen	⇒ 8,049.1 billion yen
■ Agricultural income	230,000 yen	⇒ 1.04 million yen
■ Agricultural income/pension and other income	220,000 yen	⇒ 3.52 million yen
■ Number of farm households	6.06 million	⇒ 1.63 million ^{*1}
■ Population engaged mainly in farming	14.54 million	⇒ 2.61 million ^{*1}
Share for elderly people aged 60 and more	17%	⇒ 74% ^{*1}
Share of total working population	33%	⇒ 4%
■ Cultivated area	6.07 million hectares	⇒ 4.59 million hectares ^{*1}
■ Abandoned cultivated area	130,000 hectares ^{*2}	⇒ 400,000 hectares ^{*1}
	(1970)	(2005)
■ Current status of developing rural living environment		
Paved road ratio	5%	⇒ 68%
Garbage collection ratio	47%	⇒ 93%
Water supply coverage	63%	⇒ 93%
Sewage coverage	1%	⇒ 47%

Sources: Ministry of Internal Affairs and Communications, "Population Census" and "Survey on Public Facilities," MAFF "Agricultural Production Income Statistics," "Statistical Survey on Farm Management," "Census of Agriculture and Forestry" and "Cultivated and Planted Land Statistics"

Note: *1 for 2010 and *2 for 1975



Protected rice nursery



Raising seedlings in a vinyl greenhouse



Dwarfing culture for apples



Rice planting using rulers



Rice planting using a ride-on planting machine



Aichi Reservoir



Rice harvesting using sickles



Rice harvesting using a combine harvester

II Summary of FY2011 Measures for Food, Agriculture and Rural Areas

Summary

Policy background, policy priorities, fiscal measures, legislative actions, organizational realignment and development, tax measures, monetary measures, policy assessment

I The great East Japan Earthquake measures

- Restoration measures for immediate future
- Measures for full-fledged reconstruction

II Measures to increase the food self-sufficiency ratio

- Efforts to increase the food self-sufficiency ratio
- Measures to achieve target volumes for individual primarily items

III Measures to achieve stable supply of food supply

- Ensuring food safety and consumer confidence
- Enhancing links between food and agriculture based on home-grown farm products
- Sustainable development of food industry
- Establishing comprehensive food security
- Tackling international negotiations under the basic principle that stable food supply is of the greatest importance as a nation that imports a large quantity of food

IV Measures for the sustainable development of agriculture

- Implementing Income Support Direct Payment Program and production/management measures
- Promoting the “Sixth Industry” to expand income
- Promoting farm management by motivated, diversified farmers
- Acquisition and efficient utilization of quality farmland
- Compensating for damage due to agricultural disasters
- Promoting farming safety measures
- Maintaining, managing and developing agricultural production infrastructure to enhance agricultural production capacity
- Promoting efforts to support sustainable agricultural production

V Measures to support rural areas

- Promoting the “Sixth Industry” in agriculture and rural areas
- Promoting intercommunication between urban and rural areas
- Enhancement of agriculture in urban and surrounding areas
- Conservation of rural community functions, local environments and resources

VI Measures applying comprehensively to food, agriculture and rural areas

- Comprehensive promotion of technology and environment policies
- Making diverse networks in order to support agriculture

VII Measures for the reorganization of relevant organizations

- Measures for realigning and developing agricultural cooperative organizations
- Measures for enhancing agricultural committee organizations
- Measures for enhancing agricultural mutual relief associations
- Measures for realigning and developing land improvement districts

VIII Items necessary to comprehensively and methodically promote policies related to food, agriculture and rural areas

- Comprehensive promotion of measures based on unity of government and private sectors
- Realizing a policy achievement process that stands in the position of the general public
- Undertaking effective and focused management of financial practices

[Definitions]

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).
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.
Non-farm household possessing cultivated land	A household other than a farm household possessing 5 ares or more in cultivated land and abandoned cultivated land.

(2) Classification of farms (definitions used since the 2005 Census of Agriculture and Forestry)

Terminology	Definition
Farm	An establishment that either performs agricultural production directly or on contract and fulfills one of the following conditions: (1) manages 30 ares or more cultivated land, (2) possesses a planted area or cultivated area or a number of livestock being raised or delivered that is equal to or greater than a predetermined standard (e.g. 15 ares for outdoor grown vegetables, 350 square meters for vegetables grown in facilities, one cow), (3) accepts farm work on contract. (Censuses from 1990 to 2000 regard farms as the combination of commercial farm households, agricultural holdings other than a farm household, and agricultural service enterprises.)
Family farm	An independent farm (farm household) or a single-household corporation (a farm household that is incorporated).
Independent farm	An agricultural establishment that operates as a household. This category excludes single-household corporations.
Incorporated farm	An agricultural establishment that has been incorporated. This category includes single-household corporations.

(3) Farm household economics

Terminology	Definition
Total income	Agricultural income + Income from agriculture-related production + Nonagricultural income + Income from pensions, etc.
Agriculture income	Gross agricultural income (total income from farming) – Agricultural expenditures (all expenses necessary for farming)
Income from agriculture-related production	Earnings from agriculture-related production (earnings from businesses such as agricultural processing, country inns, restaurants and tourist farms, which are related to agriculture and managed by individuals engaged in farming) - Expenditures from agriculture-related production (expenditures such as labor and material costs required for the aforementioned businesses)
Non-agriculture income	Non-agriculture earnings (e.g. earnings from independent part-time nonagricultural businesses, salaries and wages) - Non-agriculture expenses (e.g. expenses for independent part-time non-agricultural businesses, transportation expenses for commuting)

(4) Agricultural labor by farm household members

		Labor status				Household member As a rule, people who live and earn a living together
		Engaged only in self-employed farming	Engaged in both self-employed farming and other work	Engaged in other work only	Not engaged in any work	
Status during regular hours	Engaged mainly in work	Core person engaged mainly in farming (1)			Person engaged mainly in farming (2)	Person engaged mainly in farming (3)
	Engaged mainly in housework and child rearing	Mainly self-employed farming	Mainly other work			
Other						

Core person engaged mainly in farming (1)

Population engaged mainly in farming (2)

Person engaged mainly in farming (3)

Full-time farmers
Among persons engaged mainly in farming, those who are engaged in self-employed farming for more than 150 days per year.

(5) New farmers (definition used in the survey on new farmers)

		Type of involvement in farming			New farmers Defined as individuals who fulfill one of the following conditions:
		Self-employed farming	Employed fulltime by corporations, etc.	Just entering farming	
Status before farming	Student	(1) Self-employed farmers	(2) Employed farmers	(3) New participants	1) Self-employed farmers Members of farm households whose living status has changed anytime within a year of the survey date from "student" or "employed in other work" to "new graduate who has become a farmer" or "a new farmer who changed occupations".
	Employed in other work	New graduates who have become farmers		New farmers who have changed occupation	

(1) Self-employed farmers

(2) Employed farmers

(3) New participants

New graduates who have become farmers

New farmers who have changed occupation

1) Self-employed farmers
Members of farm households whose living status has changed anytime within a year of the survey date from "student" or "employed in other work" to "new graduate who has become a farmer" or "a new farmer who changed occupations".

2) Employed farmers
Persons engaged in farming who have been hired by corporations anytime within a year of the survey date and work for their employers for 7 months a year or more.

3) New participants
Persons who have started farming anytime within a year of the survey date by securing land and funds on their own.

- New graduates who have become farmers
Self-employed farmers who have changed their status from "student" to "engaged mainly in farming", as well as employed farmers who were recently students.
- New farmers who have changed occupations
New farmers whose status has changed from "mainly employed in another industry" to "engaged mainly in self-employed farming" anytime within a year of the survey (including at-home workers and U-turn workers).

(6) Agricultural regions nationwide

Agricultural region	Prefecture	Agricultural region	Prefecture
Hokkaido	Hokkaido	Kinki	Shiga, Kyoto, Osaka, Hyogo, Nara, Wakayama
Tohoku	Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima	Chugoku Sanin Sanyo	(Sanin, Sanyo) Tottori, Shimane Okayama, Hiroshima, Yamaguchi
Hokuriku	Niigata, Toyama, Ishikawa, Fukui	Shikoku	Tokushima, Kagawa, Ehime, Kochi
Kanto/Tosan Northern Kanto Southern Kanto Tosan	(Northern Kanto, Southern Kanto, Tosan) Ibaraki, Tochigi, Gunma Saitama, Chiba, Tokyo, Kanagawa Yamanashi, Nagano	Kyushu Northern Kyushu Southern Kyushu	(Northern Kyushu, Southern Kyushu) Fukuoka, Saga, Nagasaki, Kumamoto, Oita Miyazaki, Kagoshima
Tokai	Gifu, Shizuoka, Aichi, Mie	Okinawa	Okinawa

(7) Food self-sufficiency ratio

Terminology	Definition
Food self-sufficiency ratio	<p>This index indicates how much food for consumption is being supplied by domestic sources.</p> <p>- Self-sufficiency ratio for individual items The following equation is used to calculate the self-sufficiency ratio on a weight basis for individual items.</p> $\text{Self-sufficiency ratio} = \frac{\text{Domestic production volume}}{\text{Supply for domestic consumption}} = \frac{\text{Domestic production volume}}{\text{Domestic production volume} - \text{Export volume} + \text{Import volume} \pm \text{fluctuations in inventory}}$ <p>- Total food self-sufficiency ratio This ratio is an index for the total volume of food, and is expressed in both a calorie basis and a production value basis. Products made from domestic livestock raised with imported feed are not included in calculations.</p> <p>- Total food self-sufficiency ratio on a calorie supply basis Weight values for each item are converted to calories using the <i>Standard Tables of Food Composition (Fifth Revised and Enlarged Edition)</i>, after which the calories of all items are totaled. This sum is equivalent to the amount obtained by dividing the value for domestic calorie supply per person per day by the value for total calorie supply per person per day.</p> <p>- Total food self-sufficiency ratio on a production value basis Weight values are converted to cost using farm gate prices from agricultural price statistics, after which all costs are totaled. This sum is equivalent to the amount obtained by dividing the domestic production value of food by the total food supply value for domestic consumption.</p> <p>- Feed self-sufficiency ratio This index indicates how much feed is being supplied by domestic sources, calculated in terms of total digestible nutrients (TDN) using the <i>Standard Tables of Food Composition</i>.</p>

2. Basic Terminology

Abandoned cultivated land	Abandoned cultivated land represents a section in the statistical survey conducted by the Ministry of Agriculture, Forestry and Fisheries. In the Census of Agriculture and Forestry, it is defined as land that was cultivated in the past but has not been farmed for more than a year and will not be farmed for the next several years. Land that has not been farmed for more than a year but may be farmed in the next several years is called unplanted land and also includes cultivated land under management.
Agricultural production legal person	This is a legal person that can acquire rights to farmlands and satisfy all the following requirements: (1) Requirements for incorporation (a stock corporation (not a publicly traded company), a membership company or agricultural producer's cooperative corporation), (2) Requirements for business operations (main business is farming), (3) Requirements for members of the corporation (farming people account for at least three quarters of voting rights), (4) Requirements for executives (the majority of executives are engaged in farming full time).
Biomass	Biomass means organic resources of flora and fauna origin, excluding fossil resources. Biomass is made by organisms that create organic matter from inorganic water and CO ₂ through photosynthesis using solar energy falling on the earth. This type of resources is renewable throughout its life cycle as long as there are organisms and solar energy.
Calorie supply/Calorie intake	Calorie supply refers to the total amount of calories from food that is supplied to the public, and calorie intake refers to the total amount of calories actually consumed by the public. As a rule, the value for calorie supply is taken from the Food Balance Sheet issued by the Ministry of Agriculture, Forestry and Fisheries, while the value for calorie intake is taken from the National Health and Nutrition Examination Survey issued by the Ministry of Health, Labor and Welfare. Although it is necessary to keep in mind that calculations for both values are entirely different, since the calorie supply value includes leftovers and food destroyed in the distribution stage, the difference between this value and calorie intake can be used as a measure of the amount of food that has been destroyed or unconsumed.
Community based farm cooperatives	These farm cooperatives consist of farming households in certain regions that have developed a relationship through the local community or other geographical bases. In these cooperatives, farming households conduct agricultural production as a collaborative enterprise. Adopting the three basic tenets of (1) aggregation of diverted paddy fields, (2) communal use of communally purchased equipment and (3) communalization of the entire farming process from production to marketing with farming leaders playing a central role. These cooperatives take different forms and approaches depending on their geographical location.
Crop condition index	The index indicates crop conditions, taking the form of a percentage ratio of a (forecast) yield per 10 ares to a standard level per 10 ares. The standard yield is an anticipated yield estimated before planting on the assumption of average-year meteorological conditions and disaster incidence for the relevant year and the recent advancement of cultivation technologies, based on the recent actual yield trend.
EPA/FTA	EPA stands for Economic Partnership Agreement and FTA for Free Trade Agreement. An FTA is a treaty between particular countries or regions created for the purpose of reducing and repealing tariffs on goods and services trade barriers. An EPA is a treaty that adds rules on investment and protection of intellectual property to the basic contents of an FTA in order to enhance a wider range of economic relations. Under the General Agreement on Tariffs and Trade (GATT), FTAs and EPAs are recognized as an exception to most-favored nation status, albeit with the following requirements: (1) "abolishment of tariffs and other restrictive trade regulations" for "essentially all trade", (2) abolishing such practices within a reasonable time frame (as a rule, within 10 years), and (3) refraining from enhancing tariffs and other trade barriers for nations other than EPA or FTA partners (under Article 24 and other sections of the General Agreement on Tariffs and Trade).
GAP	GAP stands for Good Agricultural Practices. GAP are sustainable improvement activities through the accurate implementation, recording, inspection and assessment of each process in agricultural production operations in line with check lists worked out according to relevant laws.
Genetic resources	Genetic resources are materials from all living things including plants, animals and micro-organisms that have actual or potential value. For example, they include plants used as materials for breeding in agriculture (including not only the latest varieties but also old varieties, and those that are considered to be potentially useful.)
Greenhouse gas (GHG)	Greenhouse gases heat the earth's surface by absorbing and radiating a portion of infrared radiation reflected from the ground. The Kyoto Protocol designates carbon dioxide (CO ₂), methane (generated by rice paddies and final waste disposal sites), dinitrogen monoxide (generated during the process of manufacturing some raw ingredients for chemical products and from livestock waste), hydrofluorocarbons (used as coolants for air conditioning devices), perfluorocarbons (used in the production of semiconductors) and sulfur hexafluoride (used in the production of semiconductors) as greenhouse gases that should be reduced.

Growing presence of non-home meals	An increase in double-income and single-member households, the rapid aging of population, the diversification of lifestyles and other factors have resulted in a trend where households depend more on outside sources for cooking and meal preparation that have traditionally been done at home. At the same time, the food service industry is exploring new markets by providing more processed foods and home meal replacements such as ready-to-eat dishes and lunch boxes in response to these changes in food consumption patterns. This trend is comprehensively referred to as the growing presence of non-home meals. (Refer to home meal replacement.)
HACCP	HACCP stands for Hazard Analysis and Critical Control Point. A production control method in which hazards from contamination by microorganisms or metals are predicted (i.e. hazard analysis) at each stage of production from raw material acquisition to product completion, and stages that are particularly important for preventing hazards (i.e. critical control points, or the process of detecting and eliminating foreign objects using metal detectors, heating and sterilization, and other methods) are constantly monitored and recorded. The HACCP method can prevent the output of unsafe products with higher efficiency, compared to conventional quality control methods that sample and inspect the final product.
Highly pathogenic avian influenza	The avian influenza strain that causes serious clinical problems in poultry, including high mortality, is called highly pathogenic avian influenza (HPAI). An HPAI virus develops serious systemic problems, such as the neural, respiratory and/or digestive problems, and kills many poultry. Almost all cases of human infection with HPAI have been linked to close contact with birds infected with HPAI. There is no report of human cases following the consumption of adequately cooked poultry meat or eggs.
Local consumption of local products	The program for local consumption of local products is designed to expand the consumption of home-grown agricultural, forestry and fisheries products by promoting the utilization of local agricultural, forestry and fisheries products. The Act Concerning Agriculture, Forestry and Fisheries Operators' Creation Of New Businesses Utilizing Local Resources and the Promotion of Utilization of Local Agricultural, Forestry and Fisheries Products (act for collaboration of primary, secondary and tertiary industries) was enacted in November 2010 to promote the program.
NPO	NPO stands for non-profit organization. These organizations perform various activities to contribute to society and do not distribute profits to their members. NPOs are expected to play an important role in responding to diversified needs of society in various areas (including welfare, education, culture, community building, ecology and international cooperation). Organizations that have been incorporated through the Act to Promote Specified Nonprofit Activities are called non-profit corporations and are allowed to open bank accounts and lease office spaces under their respective organization titles.
Promoting the “Sixth Industry”	Promoting the “Sixth Industry” means that agriculture, forestry and fisheries as the primary industry, manufacturers as the secondary industry, and retailers as the tertiary industry are promoted comprehensively and integrally to create new added values using regional resources.
Rural community	The rural community is a fundamental regional unit where households are connected by local and family ties for farming or utilization of farming water in some municipal localities. These communities have close relationships for a wide range of activities including maintenance and management of irrigation facilities, use of farming equipment, and marriages and funerals. They have developed many characteristic traditions and function as autonomous or administrative units.
Total agricultural output	In agricultural production, the total agricultural output is the total output of all final agricultural goods. It is the amount of the item-based production volume of agricultural products minus intermediate products such as seeds and fodder to prevent overlapping calculations, multiplied by the price of each item on delivery from farms.
Traceability	‘Food traceability’ means the ability to trace and follow the movement of an agricultural product, processed product, or other food, from where the food came and to where the food went. The establishment and maintenance of records regarding movements of foods through all stages of production, processing and distribution enables identification of the movements from production to distribution and facilitates rapid withdrawal in the case of a food incident.
WTO	WTO stands for the World Trade Organization. The WTO is an international organization created in January 1995 to advance the framework of the General Agreement on Tariffs and Trade formed during the Uruguay Round trade negotiations. The headquarters is located in Geneva, Switzerland, and the mission of the organization is promotion of free trade through the removal of trade barriers. It provides a forum for multilateral trade negotiations and acts as an arbitrator for international trade disputes.

3. Multifunctional roles of agriculture

Flood prevention by retention and storage of rainwater	Paddy fields surrounded by furrows and water absorbent soil in dry fields are capable of temporarily storing water, which in turn prevents floods.
Landslide prevention	Production activities in rice terrace farming prevent landslides and slope collapse.
Soil erosion prevention	Proper maintenance and management of paddy and dry fields prevents soil erosion.
Watershed cultivation	Rainwater and agricultural water for paddy fields seep underground and in time returns to a river, and water that seeps further below cultivates underground watersheds.
Water purification	Water purification is achieved through the decomposition of organic materials by microorganisms in paddy and dry fields, the absorption of nitrogen by crops, and the removal of nitrogen by microorganisms.
Processing of organic waste	Microorganisms within paddy and dry fields such as bacteria decompose livestock waste and compost made from household waste. The decomposed materials are eventually reabsorbed by crops.
Climate moderating effect	Crops growing on farmland absorb heat through transpiration and paddy fields absorb heat through water evaporation, resulting in lower climate temperatures.
Preservation of biodiversity	The linking of paddy fields to a river through irrigation channels results in increased diversity of organisms compared to natural conditions.
Preservation of ecosystems	Proper and sustainable management of paddy and rice fields that facilitates harmonious coexistence with nature is capable of forming and maintaining secondary natural environments with ecosystems rich in plant, insect and animal life.
Maintenance of cultural tradition	Japan features many annual events and festivals which trace their origins to prayers for rich harvests. Agriculture plays a role in transferring these traditions to future generations.
Formation of good landscapes	Agricultural activities combine farmland, old farmhouses, surrounding water sources and mountains to create attractive natural landscapes