

FY2011 Annual Report
on Food, Agriculture and Rural Areas in Japan

Summary

Ministry of Agriculture, Forestry and Fisheries
Japan, 2012

The FY2011 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
APTER	ASEAN Plus Three Emergency Rice Reserve
DI	Diffusion Index
GAP	Good Agricultural Practice
HACCP	Hazard Analysis and Critical Control Point
JAS	Japan Agricultural Standards
JFC	Japan Finance Corporation
MAFF	Ministry of Agriculture, Forestry and Fisheries
TEPCO	Tokyo Electric Power Company

Symbols

ha	Hectare
kl	Kilolitre
a	Are
kg	Kilogram
t	tons

Foreword

The Annual Report on Food, Agriculture and Rural Areas in Japan is submitted to the Diet every year under the Food, Agriculture and Rural Areas Basic Act.

At present, the restoration and reconstruction from the Great East Japan Earthquake are the top priorities for the government. Most of the disaster-damaged areas are rural. It is important for Japan to restore and reconstruct the disaster-damaged areas, including the Tohoku region, one of Japan's leading food supply bases, as soon as possible. In addition to earthquake and tsunami damage, the disaster triggered a nuclear power plant accident that brought the unprecedented havoc of massive radioactive contamination. Particularly, Fukushima Prefecture was seriously damaged. Prompt and thorough responses are required for the damage.

Given such a situation, this report begins with a special topic titled "A year of reconstruction from the Great East Japan Earthquake -- Towards reconstruction steps," describing a wide range of problems from the impacts of the earthquake-tsunami disaster and the nuclear plant accident on agriculture to changes in consumer sentiment, food industry trends and the disaster-damaged areas' agriculture restoration and reconstruction efforts.

Through interviews with disaster-affected farmers and persons engaged in food industry, we have tried to grasp and convey the real conditions of the disaster-damaged areas.

FY2011 was the second year for the Basic Plan for Food, Agriculture and Rural Areas, which was reformed in March 2010. The basic plan positioned the food, agriculture and rural area policy as one of Japan's national strategies to make a major policy shift and create the "society where agriculture and rural areas are supported by every citizen," based on the following background:

- (1) The food supply-demand balance has grown tighter due to increasing resource and food consumption accompanying the population and economic growth in developing countries and due to the diversification of the uses of farm products as indicated by expanding biofuel production. Even in the face of these changes, Japan's agriculture has failed to fully meet consumer and food industry needs, and the food self-sufficiency ratio has worsened.
- (2) As Japan's economic society has matured and citizens' values and lifestyles have diversified, rural area agriculture's multifunctional roles, including water recharging and contribution to national land conservation, have become important.
- (3) On the other hand, agriculture and rural areas face tough conditions including a substantial decline in agricultural income and serious shortages of motivated farmers.

The basic plan puts forward three agriculture policy principles – backing farmers by introducing the Income Support Direct Payment Program for Farmers, switching to a production system to meet consumer needs including "high quality," and "safety and consumer confidence," and reviving vigorous rural areas through collaboration between primary, secondary and tertiary industries. Based on these principles, it calls for implementing various measures integrally and steadily. It aims to increase Japan's food self-sufficiency ratio to 50% on a calorie supply basis (70% on a production value basis) in FY2020 on the precondition of stakeholders' maximum efforts to overcome challenges.

Given that two years have passed since the Basic Plan for Food, Agriculture and Rural Areas was reformed, this report verifies degrees of achievement for major policy measures provided by the basic plan. Based on the verification, this report describes efforts and their achievements over the past two years as specifically as possible.

The great earthquake-tsunami disaster has prompted citizens to once again recognize the food-supplying agriculture-forestry-fisheries sector as being very significant to their lives. We hope that this report will help citizens deepen their interest in and understanding of food, agriculture and rural areas.

[Special Topic] A year of reconstruction from the Great East Japan Earthquake -- Towards reconstruction steps --

(1) Earthquake-tsunami disaster's damage to agriculture-forestry-fisheries sector and impact on the food industry, etc.

The Great East Japan Earthquake caused a staggering 2,426.8 billion yen in damage to the agriculture-forestry-fisheries sector (including 947.6 billion yen for agriculture sector), some 18 times as large as the 133 billion yen for the Niigata Chuetsu Earthquake and about 27 times as large as the 90 billion yen for the Great Hanshin/Awaji Earthquake.

(Damage to Agriculture sector (as of March 5, 2012))

Section	Main damage	Total number of damage	Amount of damage (100 million yen)	Main disaster area (Prefecture)
Agricultural land, facilities, etc.	Damaged agricultural land	18,174 areas	4,006	Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima, Ibaraki, Tochigi, Gunma, Saitama, Chiba, Kanagawa, Nagano, Shizuoka, and Niigata
	Damaged agriculture facility, etc.	17,502 points	4,835	
	Subtotal	35,676 points	8,841	
Agricultural crops, etc.	Agricultural crops, livestock, etc.		142	Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima, Ibaraki, Tochigi, Gunma, Chiba, Yamanashi, Nagano, and Niigata
	Agricultural livestock production facilities, etc.		493	
	Subtotal		635	
Total			9,476	



A drainage pumping station crippled by tsunami waves (Natori City, Miyagi Prefecture)

Source: MAFF

Farmlands that were washed away or flooded by the tsunami are estimated to include 20,200 hectares in paddy fields and 3,400 hectares in upland fields. The three Tohoku prefectures of Iwate, Miyagi and Fukushima account for most of the damaged farmlands.

(Estimated area of farmlands washed away or flooded by tsunami (March 2011))

Prefecture	Cultivated area (2010)	Estimated area of farmlands washed away or flooded by tsunami	Share for damaged area	Breakdown by category	
				Paddy fields	Upland fields
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

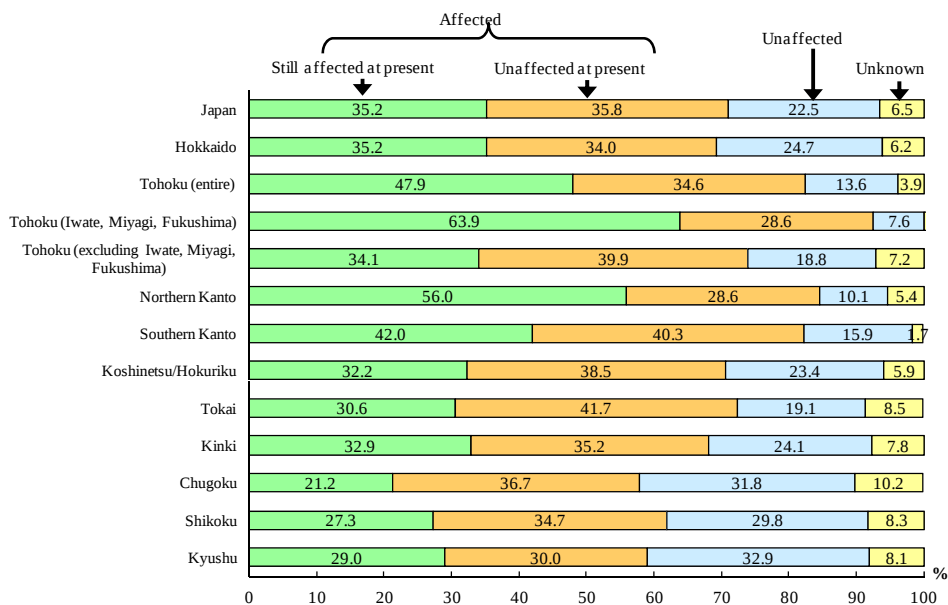


Farmland flooded by the tsunami and buried in rubble (Natori City, Miyagi Prefecture)

Sources: MAFF

The food industry was seriously affected by production drops, business suspensions, distribution ruptures, etc. due to damaged plants, rolling blackouts, packaging material production shortages, gasoline shortfalls, etc.

(Earthquake-tsunami disaster's effects on food industry (January 2012))



Sources: JFC "Survey on Movement of the Food Industry in the Second Half of FY 2011" (March 2012)

(2) Emergency responses to the earthquake-tsunami disaster, and restoration/reconstruction efforts

While it was very difficult to secure food and drink in the disaster-damaged areas, the MAFF food procurement team procured food and other goods by requesting support from food makers and others. Agriculture cooperative organizations, private companies and others provided food and other goods in their emergency response to the disaster. MAFF implemented the following emergency measures for the agriculture and food industries:

- 1) Restoration of farmlands, agricultural facilities, etc. (emergency measures for drainage pumping stations and other facilities, creation of a mechanism for central and prefectural governments to implement salt removal, farmland restoration and other measures on behalf of municipal governments, etc.)
- 2) Restoration of means of production and distribution functions (restoration of agricultural production facilities, support for restoration of wholesale markets, etc.)
- 3) Support for business continuation and resumption (financial aid to collaborative groups for regional agricultural recovery in disaster-damaged areas, Japan Finance Corporation's disaster recovery loans with zero-real-interest, etc.)

MAFF and the Tohoku Regional Agricultural Administration Office formed local support teams to help resume farming in disaster-damaged areas as widely as possible

(Goods procured by food procurement team, etc.)

Period	Aid goods	Procurement volume
March 11- April 20	Food	25.84 million packs
	Formula milk for infants	53 thousand cans
	Drinks	7.62 million bottles (3.81 million liters)
March 17- April 6	Fuel oil	800 kiloliters
	Diesel oil	420 kiloliters
March 17- April 6	Charcoal	26 tons
	Braziers	1,300 sets
March 17-29	Wood stoves burners	113 units

Source: MAFF

(Salt removal procedures)



Source: MAFF

(Wholesale market restoration: Iwaki City Central Wholesale Market)



March 12: A slope collapsed just after the earthquake.



June 21: Filling cracks in emergency slope restoration



September 2: Laying blue sheets in emergency slope restoration

On August 26, MAFF published the Basic Guidelines for Reconstruction of Agriculture and Rural Communities after the Great East Japan Earthquake (revised on November 21), specifying a farmland restoration schedule (restoration within about three years) and measures required for the restoration.

On December 7, 2011, the Law for Special Zone for Reconstruction (special reconstruction zone system) was enacted, providing for special regulation and procedural measures for special reconstruction zones where farmlands and residential lands can be reconstructed integrally.

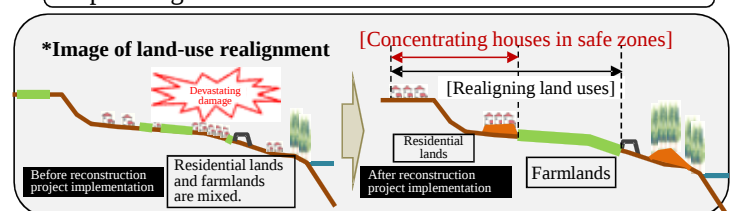
(Area of tsunami-damaged farmlands available for farming resumption)

Prefecture	(Unit: hectares)					
	Farming resumed in FY2011	Farming to be resumed in FY2012	Farming to be resumed in FY2013	Farming to be resumed in FY2014	Others	Total
Iwate	10	310	30	0	380	730
Miyagi	1,220	5,390	5,450	1,970	310	14,340
Fukushima	60	610	2,670		2,120	5,460
Total	1,290	6,310	5,480	4,640	2,810	20,530
Share	40%		26%	22%	13%	100%
Aomori, Ibaraki, Chiba	810	140	0	0	0	950

Source: MAFF

(Special measures for land-use realignment in tsunami-damaged areas)

- ◆ Easing approval standards under the Agricultural Land Act and other laws
- ◆ One-stop procedure for zoning, approval and project planning



Source: MAFF

(3) FY 2011 agriculture conditions in disaster-damaged areas

Salt removal has been completed or launched for 39% (8,310 hectares) of tsunami-damaged farmlands (at the end of March 2012).

Of tsunami-damaged farms, 40% (about 4,090 farms) have resumed farming (as of March 11, 2012).

Farming resumption has been supported by various parties including local governments, agricultural cooperatives, private companies and volunteers.

(Agriculture restoration conditions after the Great East Japan Earthquake)

Item	Damage	Progress in restoration (%)	Notes
Farmlands	Tsunami-damaged farmlands in six prefectures (Aomori, Iwate, Miyagi, Fukushima, Ibaraki and Chiba): 21,480 hectares	39% (Salt removal has been completed or launched for 39% (8,310 hectares) of tsunami-damaged farmlands (at the end of March 2012).)	*As for tsunami-damaged farmlands, the Basic Guidelines for Reconstruction of Agriculture and Rural Communities after the Great East Japan Earthquake target complete restoration in about three years and resumption of farming by FY2014.
Farms	Tsunami-damage farms (in six prefectures: Aomori, Iwate, Miyagi, Fukushima, Ibaraki and Chiba): about 10,200 farms	40% (About 4,090 farms have resumed farming.) (About 4,090 farms that have resumed farming include those that have resumed part of agricultural production operations or started preparations for them (as of March 11, 2012).)	
Major drainage pumping stations	Major drainage pumping stations available for provisional restoration in three Tohoku prefectures: 72 points	100% (Emergency response measures taken for 72 points)	
Coastal farmlands	Priority restoration zones with considerations given to importance of hinterlands: 7.3 kilometers	100% (Emergency response measures taken for 7.3 kilometers)	
Rural community sewerage	Number of disaster-affected districts in 11 disaster-damaged prefectures from Aomori to Nagano: 402 districts	92% (Restoration has been completed or launched for 370 districts (at the end of March 2012))	

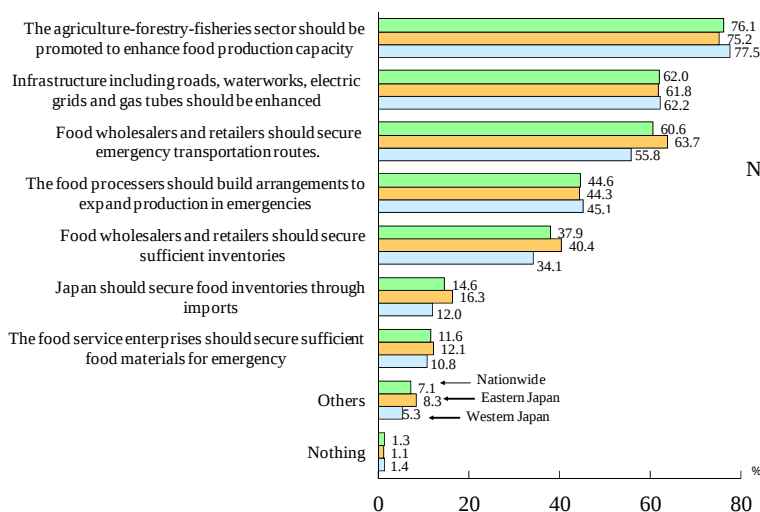
Source: MAFF

(4) The Great East Japan Earthquake's impact on citizens' consciousness

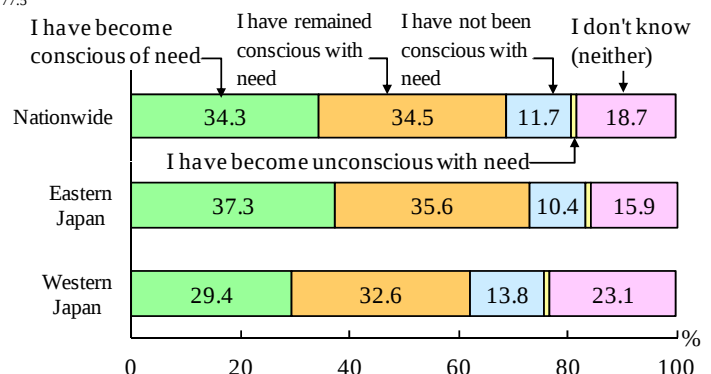
The earthquake-tsunami disaster prompted consumers to strongly recognize the importance of stable food supply arrangements.

Of consumers, 70% recognize the need for food storage. The disaster prompted 30% of consumers to recognize this need.

(Measures considered to be required for stable food supply)



(Changes in consciousness about need for food storage after earthquake-tsunami disaster)



Source: MAFF, "Survey on Consciousness and Intentions about Food, Agriculture and Rural Areas, and Fisheries and Fishery Products" (Conducted in January-February 2012)

Source: JFC, "1st Consumer Trend Survey in FY2011" (July 2011)

(5) The Effect of the accident at the Fukushima Daiichi Nuclear Power Plant of the Tokyo Electric Power Company (TEPCO) on agriculture and action taken by government responses

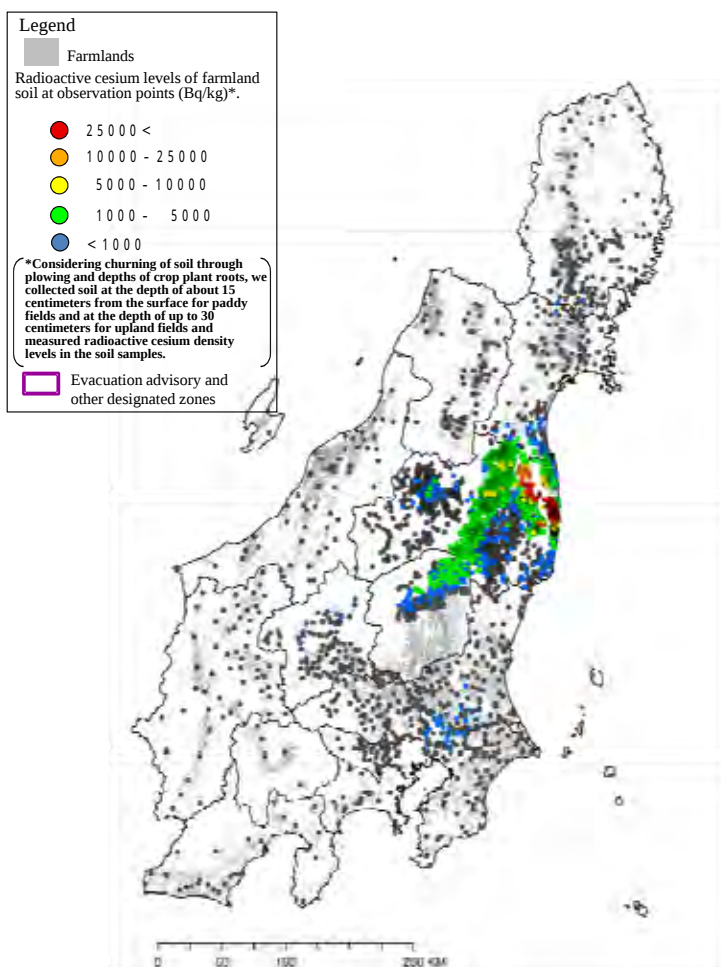
Since just after the accident, MAFF has implemented the following measures to stably provide citizens with safe food.

- 1) Providing advice on creation of food inspection plans and supporting inspection equipment installations in relevant prefectures (since just after the accident)
- 2) Implementing technical guidance regarding feeding and management of livestock (March 19, 2011)
- 3) Setting provisional tolerable levels for forage for producing milk and beef below the provisional regulation value for food (April 14, 2011)
- 4) Implementing demonstration tests regarding radioactive decontamination of farmlands. Conducting radioactive decontamination of farmlands with new technologies to work out a practical operation manual (Since May 28, 2011)
- 5) Implementing measures to reduce radiation levels through cultivation technology improvements and prevent crops from absorbing radioactive materials (since June 29, 2011)
- 6) Implementing measures to ensure consumers' confidence in safety of beef, including purchases of distribution beef inventories suspected of being from cattle given radiation-contaminated rice straw (July 26 and August 5, 2011)
- 7) Setting provisional tolerable levels for fertilizers and feed for preventing radioactive contamination of farmland soil from expanding and for producing agricultural and animal products below the provisional regulation value for food (August 1, 2011)
- 8) Releasing a farmland soil radiation level map (August 30, 2011). Updating the map to cover a wider scope and more details (March 23, 2012)
- 9) Supporting emergency radiation inspections for rice in Fukushima Prefecture and conducting an analysis of factors behind radioactive contamination, after detection of rice over the regulation level (November 2011). Implementing restrictions on rice planting for 2012 based on the analysis (releasing a relevant policy on February 28, 2012).
- 10) Revising provisional tolerable levels for producing animal and fishery products below the standards limits for radionuclides in foods (February 3 and March 23, 2012)

On August 5, 2011, the government released interim guidelines for determining nuclear losses. On September 12, it established the Nuclear Damage Liability Facilitation Fund to support nuclear damages payments. By March 2012, agricultural damages payments regarding the nuclear disaster totaled about 106.2 billion yen.

(Farmland soil radiation level map (as of March 23, 2012))

(Radioactive decontamination technologies according to radioactive cesium density levels in soil)



Source: MAFF

Radioactive cesium density levels in soil	Technologies for application
~ 5,000 Bq/kg	Inverting plowing, radiation transfer reduction cultivation, topsoil removal (unplowed land)
5,000 ~ 10,000 Bq/kg	Top soil removal, inverting plowing, padding with water
10,000 ~ 25,000 Bq/kg	Topsoil removal
25,000 Bq/kg	Using soil hardener for topsoil removal



Inverting plowing



Padding with water



Basic topsoil removal



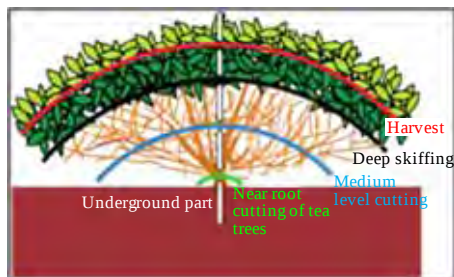
Using soil hardener for topsoil removal

Source: MAFF

(Technologies to reduce radioactive materials in farm crops)

Radioactive cesium reduction in tea leaves

- Pruning (deep skiffing and medium level cutting) covering leave layers
- At non-pruned tea fields, branches are pruned to increase leaves for cutting.



Orchard decontamination methods



- Removal of rough bark
The measure is applied for apple, pear and other fruit trees with rough bark. Older bark is removed.



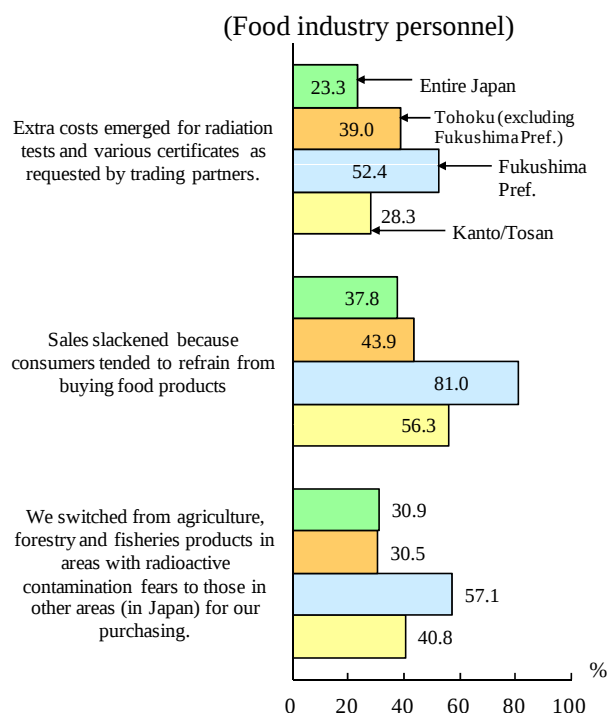
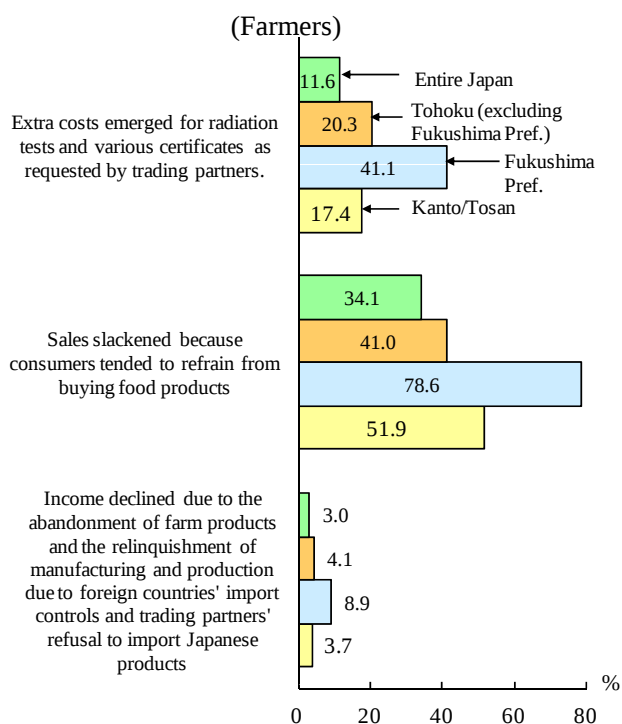
- High pressure washing
The measure is applied for peach and other fruit trees having no rough bark. Radioactive cesium on the tree surface is washed away.

Source: MAFF

Consumers tended to refrain from buying farm, livestock and other food products produced in areas where the effect of the accident at the Fukushima Daiichi nuclear power plant of TEPCO was feared.

Due to foreign countries' import controls, the value of Japan's farm and livestock product exports declined substantially, including those to China and other Asian countries. (Exports in the April-December 2011 period plunged by 40.9 billion yen or 11.0% from the year before.) The Minister of Agriculture, Forestry and Fisheries and other government officials made direct appeals to ministers and government officials of foreign countries and regions in a bid to recover confidence in Japanese farm, forestry and fisheries products and food. Such efforts brought about some achievements including Hong Kong's response that it would ease import restrictions based on scientific grounds.

(Effects of TEPCO nuclear plant accident (multiple answers))



Source: MAFF, "Survey on Consciousness and Intentions about Food, Agriculture and Rural Areas and Fisheries and Fishery Products" (Conducted in January-February 2012)

While one year passed after the Great East Japan Earthquake, various parties made restoration and reconstruction efforts. Nevertheless, restoration and reconstruction efforts for food, agriculture and rural areas for the earthquake-tsunami disaster and the nuclear plant accident are a top priority.

In this respect, we must give consideration particularly to the feelings of people who have been forced by the accident at the Fukushima Daiichi nuclear power plant of TEPCO to give up using their farmlands that they had cultivated over a long period of time. At the same time, we must communicate information based on scientific basis in order to protect food safety from the effect of the accident at the Fukushima Daiichi nuclear power plant of TEPCO.

Regarding communications, it is important to make sure that agriculture-forestry-fisheries sector people and other stakeholders are fully aware of relevant policy measures. Officials at regional agricultural administration and forest offices and relevant independent administrative organizations as well as MAFF must visit disaster-damaged areas frequently for this purpose. We should accurately address immediate challenges for food, agriculture and rural areas and proceed with systematic efforts while considering future prospects.

Chapter 1: Improving Japan's food self-sufficiency ratio

(1) Food self-sufficiency ratio trends

[Direction of policy measures as indicated by the Basic Plan for Food, Agriculture and Rural Areas (hereinafter, "the basic plan")]

- Raising the FY2020 food self-sufficiency ratio to 50% on a calorie supply basis (70% on a production value basis) on the precondition of stakeholders' maximum efforts to overcome challenges
- Setting challenges and quantitative production targets for major products

The food self-sufficiency ratio on a calorie supply basis declined by 2 percentage points from 41% in FY2008 to 39% in FY2010.

The food self-sufficiency ratio on a production value basis rose by 4 percentage points from 65% in FY2008 to 69% in FY2010.

The decline in the ratio on a calorie supply basis is attributable to a drop in production of wheat, sugar plants (sugar beet and sugarcane) and tubers (potato and sweet potatoes) under abnormal weather conditions.

(Japan's food self-sufficiency ratio trends)

(Unit: %)

	FY2008	FY2009	FY2010
Calorie supply basis	41	40	39
Production value basis	65	70	69

Source: MAFF, "Food Balance Sheet"

(Product-by-product contributions to food self-sufficiency ratio changes on a calorie supply basis (FY2008-2010))

	Total	Rice	Wheat	Soybean	Vegetables	Fruits	Livestock products	Fish products	Sugar plants	Fats	Tubers, etc.
Contributions to food self-sufficiency ratio changes (points)	1.0 0.0 -1.0 -2.0 -3.0	0.4	-1.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.9	0.1	-0.4
FY2009	-1.2	-0.2	-0.6	-0.1	0.0	0.0	0.0	0.0	-0.4	0.3	-0.1
FY2010	-1.2	0.6	-0.3	0.0	-0.1	-0.1	-0.1	-0.1	-0.6	-0.1	-0.3

Source: MAFF

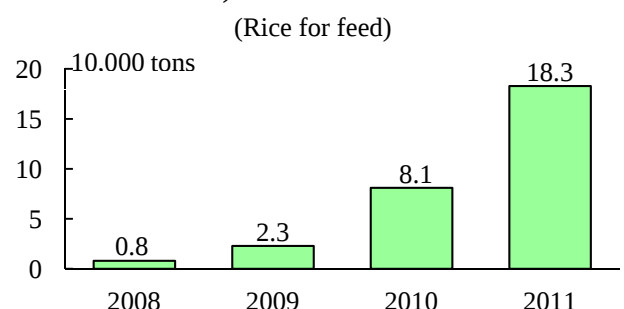
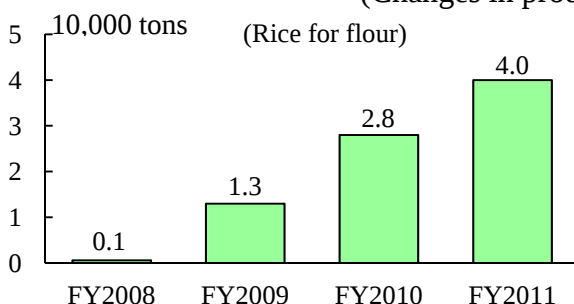
(2) Food self-sufficiency ratio improvement efforts

[Direction of policy measures as indicated by the basic plan]

- A quantitative production target is set at 500,000 tons for rice for flour and 700,000 tons for rice for feed. To achieve these targets, such challenges as building a stable supply system and diffusing high-yielding cultivars to improve yields must be solved.

In response to the introduction of the Income Support Direct Payment Program for Farmers, production in FY2011 expanded 40-fold from FY2008 for rice for flour and 20-fold for rice for feed.

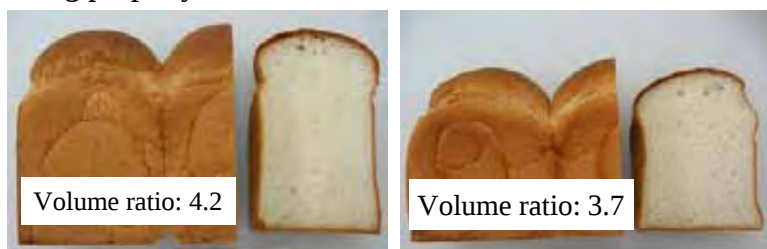
(Changes in production of rice for flour and feed)



Source: MAFF, "Certification of Plans for New-use Rice"

“Mizuhochikara,” a high-yielding rice cultivar suitable for rice-based bread, has been developed along with “Momiroman” and “Hokuriku 193,” high-yielding rice cultivars suitable for feed rice and WCS (Whole Crop Silage) rice. Expectations are high for their future diffusion.

(Baking property of “Mizuhochikara” rice cultivar for rice flour)



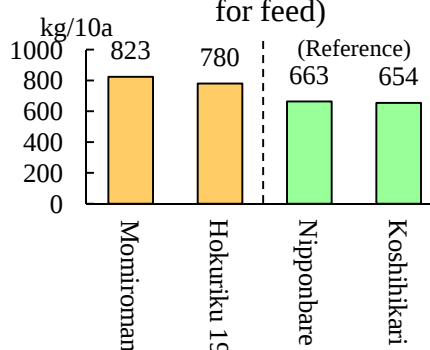
“Mizuhochikara”

“Akimasari” as a staple rice cultivar

Source: MAFF

Note: The volume ratio is the ratio of bread volume to dough volume. A larger ratio indicates a lighter texture.

(Unit yields of high-yield rice cultivars for feed)



Source: MAFF

[Direction of policy measures as indicated by the basic plan]

- The wheat production volume target is set at 1.8 million tons. To achieve the target, such challenges as the expansion of wheat production for bread/Chinese noodles and the diffusion of double cropping for paddy fields through the cultivation of good-quality late maturing paddy rice varieties will have to be solved.

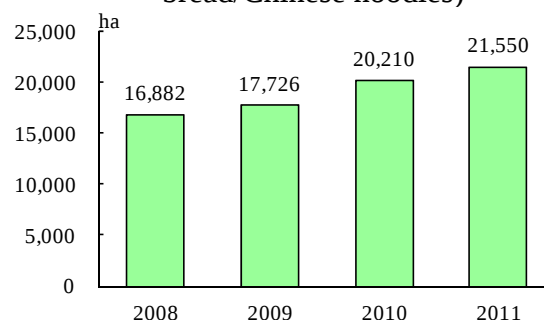
While the wheat-planted area increased slightly from 2008, production volume declined under bad weather conditions. The crop acreage for wheat for bread and Chinese noodles has increased gradually thanks to the development of new varieties.

(Wheat production volume trends)

	2008	2009	2010	2011	2020 (target)
Production volume (10,000 tons)	88.1	67.4	57.1	74.6	180
Crop acreage (10,000 hectares)	20.9	20.8	20.7	21.2	

Source: MAFF, “Crop Statistics”

(Trends of crop acreage for wheat for bread/Chinese noodles)



Sources: MAFF

[Direction of policy measures as indicated by the basic plan]

- The soybean production volume target is set at 600,000 tons. To achieve the target, such challenges as organized aggregative farming of paddy fields and the diffusion of cultivation technologies contributing to improving and stabilizing unit yields will have to be solved.

The soybean-planted area declined in Miyagi Prefecture (by 1,380 hectares) and Fukushima Prefecture (by 780 hectares) due to the Great East Japan Earthquake.

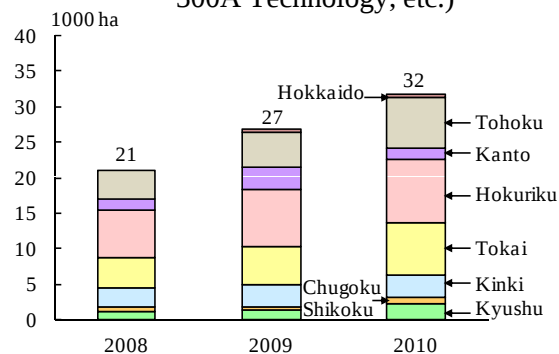
The area expanded for the introduction of “the soybean 300A technology” and similar soybean technologies contributing to improving unit yields and stabilizing quality.

(Soybean production volume trends)

	2008	2009	2010	2011	2020 (target)
Production volume (10,000 tons)	26.2	23.0	22.3	22.0	60
Crop acreage (10,000 hectares)	14.7	14.5	13.8	13.7	

Source: MAFF, “Crop Statistics”

(Area for introduction of Soybean 300A Technology, etc.)



Sources: MAFF

[Direction of policy measures as indicated by the basic plan]

- Targets are set to increase production volume for buckwheat, rapeseeds, feed crops, etc.
- For sugar beets, such challenges as the establishment of efficient production systems including direct seeding will have to be solved.
- For sugar cane, such challenges as the development of work contractor and joint production organizations will have to be solved.
- For feed crops, such challenges as the development of feed production organizations will have to be solved.
- For fruits, such challenges as the acceleration of switching to higher-quality species or varieties will have to be solved.

Buckwheat production volume increased from 2008 thanks to the introduction of the Income Support Direct Payment Program for Farmers. Rapeseed production volume also expanded.

Among feed crops, the crop acreage for rice for feed increased. However, production volume fell on unseasonable weather conditions including heat waves.

Efforts to solve challenges are promoted for major crops:

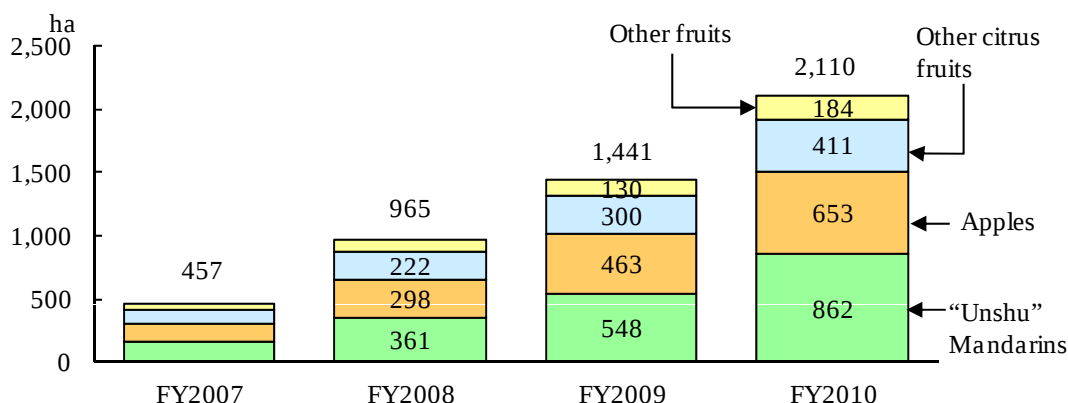
- 1) Share for direct seeding for sugar beet production: 8% (2008 crop) → 12% (2010 crop)
- 2) Share for work contractors among sugar cane producers: 40% (2008 crop) → 88% (2010 crop)
- 3) Number of work contractor farms for feed crops: 1,657 (2005) → 3,128 (2010)
- 4) Area for switching to higher-quality fruit species or varieties: 965 ha (FY2008) → 2,110 ha (FY2010)

(Production volume trends for other major crops)

	2008	2009	2010	2011	2020 (target)
Buckwheat (10,000 tons)	2.7	1.7	3.0	3.2	5.9
Rapeseeds (10,000 tons)	0.1	-	0.2	0.2	1.0
Potatoes (10,000 tons)	274.3	245.9	229.0	(234.6)	290
Sweet potatoes (10,000 tons)	101.1	102.6	86.4	88.6	103
Sugar beets (10,000 tons)	424.8	364.9	309.0	354.7	380
Sugarcanes (10,000 tons)	159.8	151.5	146.9	-	161
Vegetables (10,000 tons)	1,255	1,234	1,173	-	1,308
Fruits (10,000 tons)	344	338	294	-	340
Feed crops (10,000 TDNt)	435.6	418.8	419.0	-	527
Milk (10,000 tons)	794.6	788.1	763.1	-	800
Beef (10,000 tons)	51.8	51.6	51.2	-	52
Pork (10,000 tons)	126.0	131.8	127.6	-	126
Chicken (10,000 tons)	139.5	141.3	141.7	-	138
Eggs (10,000 tons)	253.5	250.8	251.5	-	245

Sources: MAFF, "Crop Statistics" and "Food Balance Sheet"

(Accumulated area for switching to higher-quality fruit species or varieties)



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

Note: The area for switching means the area for plans approved under the orchard management support project.

Chapter 2: Securing stable food supply

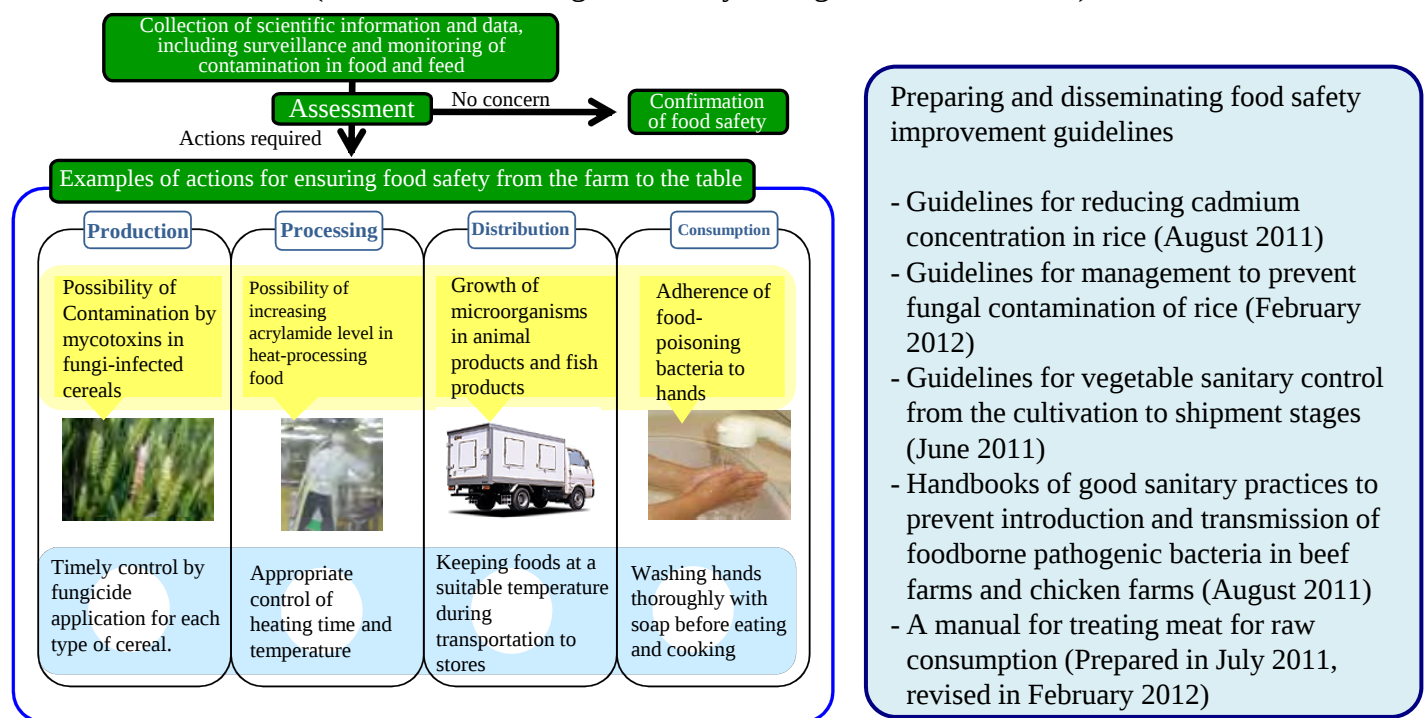
(1) Securing food safety and consumer confidence

[Direction of policy measures as indicated by the basic plan]

- Promoting policy measures for food safety improvement backed by scientific knowledge and introduction of the Good Agricultural Practice and the Hazard Analysis and Critical Control Point (HACCP) based on the concept that “an ounce of prevention is worth a pound of cure,”
- Promoting traceability efforts, expanding of the origin labeling requirement for materials of processed food products steadily, etc.
- Implementing appropriate risk management and control measures to enhance import quarantine, domestic control and epidemic prevention measures

It is important for improving food safety to take appropriate measures in each step from primary production to final consumption based on the concept that “an ounce of prevention is worth a pound of cure”. MAFF makes risk management decisions based on scientific evidence.

(Actions for ensuring food safety throughout the food chain)

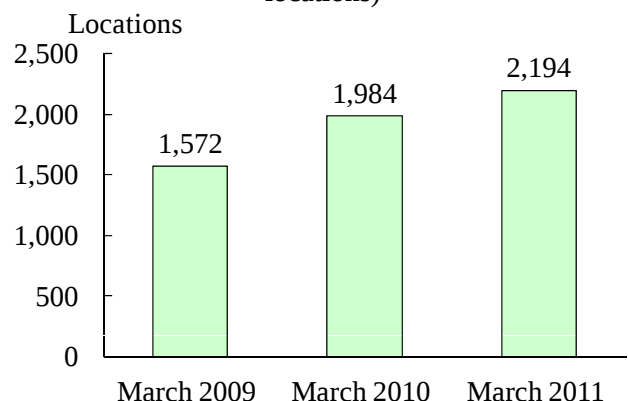
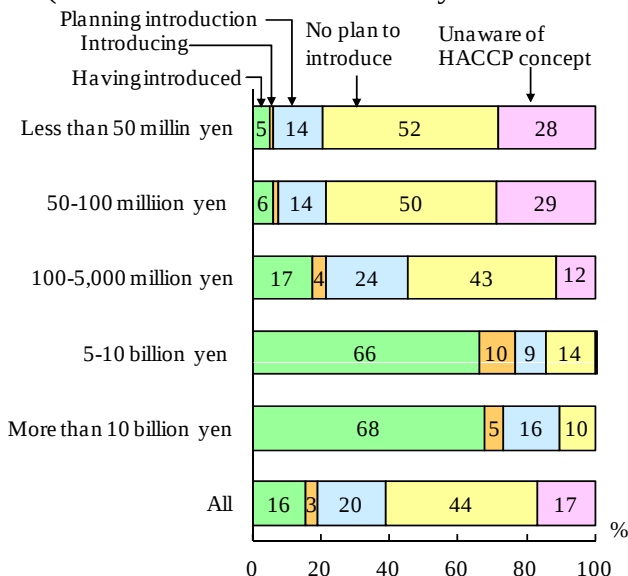


By FY2010, 19% of food manufacturers introduced the HACCP. In the future, efforts are required to promote the HACCP introduction among small and medium-sized companies.

A steady increase has been seen in the number of agricultural production locations that have adopted the GAP, which contribute to food safety improvement.

(HACCP introduction trends by food sales scale)

(Trends of GAP introducing agricultural production locations)

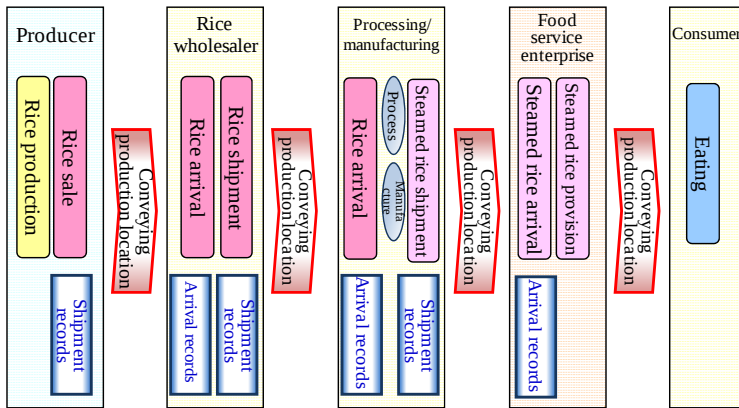


Note: GAP stands for Good Agricultural Practices. GAP are sustainable improvement activities through the accurate implementation, recording, inspection and assessment of each process in agricultural production operations in line with check lists worked out according to relevant laws.

In efforts to promote the traceability of rice and rice products, business entities have been required to prepare and keep transaction records since October 2010 and to relay place of origin information of rice ingredients of covered products since July 2011.

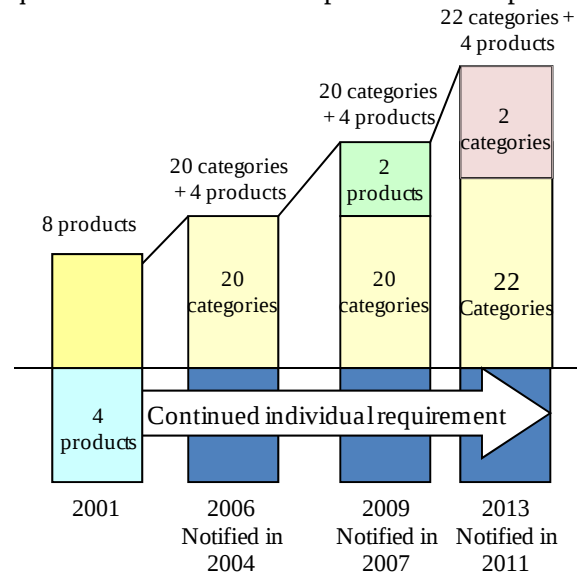
Origin labeling for materials of processed food products under the JAS (Japanese Agricultural Standards) Law has increased steadily. In March 2011, two food categories were subjected to the origin labeling requirement. At present, the requirement covers 22 processed food categories and four processed food products including farm pickles.

(Outline of rice traceability)



Source: MAFF

(Changes in products subject to origin labeling requirement for materials of processed food products)

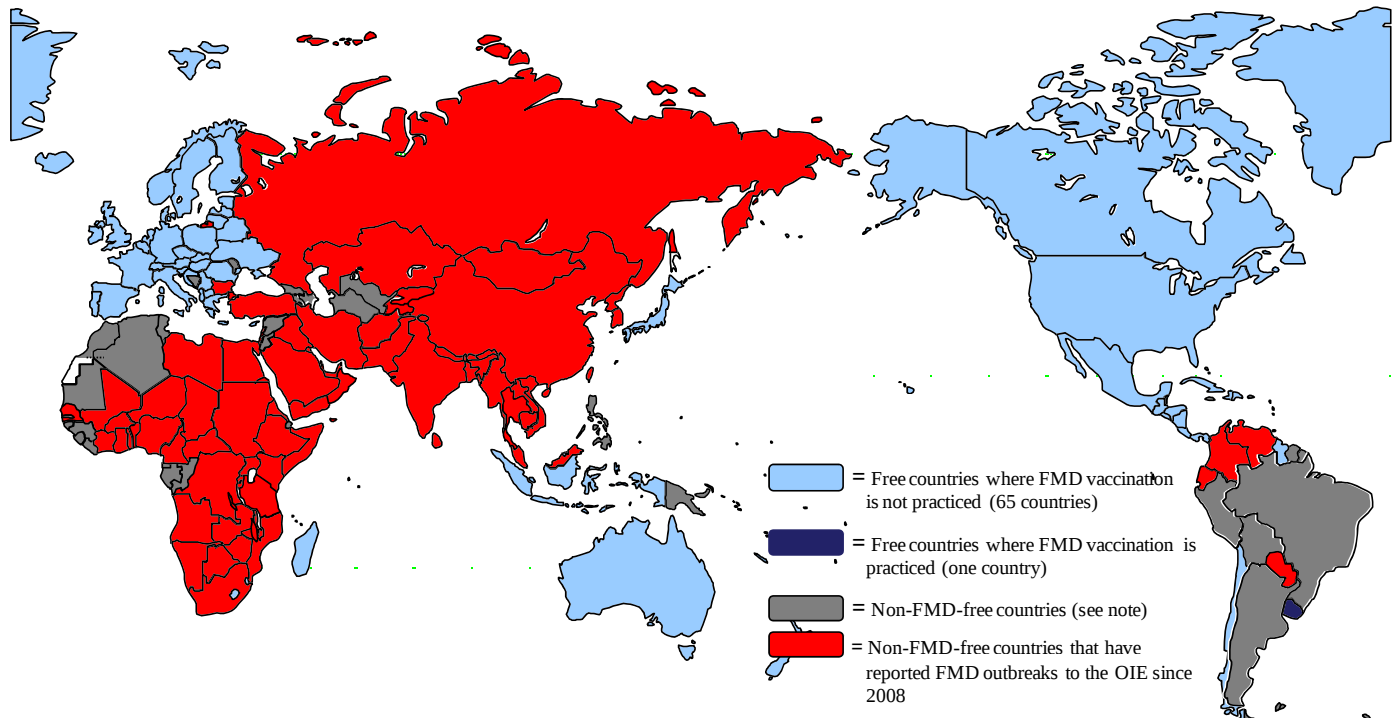


Source: Prepared by MAFF from Consumers Affairs Agency data

Given that a Foot and Mouth disease (FMD) outbreak in Miyazaki Prefecture in 2010 and a Highly Pathogenic Avian Influenza epidemic from 2011 affected the livestock industry and the economy, the Act on Domestic Animal Infectious Diseases Control was revised in April 2011.

Over the recent years, FMD outbreaks have continuously occurred in neighboring Asian countries such as China and South Korea. In response to such developments, MAFF has disinfected shoe soles of all visitors from abroad and vehicles and used quarantine detector dogs for enhanced baggage inspection at airports and seaports.

(Foot and Mouth Disease outbreaks in the world (as of April 1, 2011))



Source: MAFF

Note: The above non-FMD-free countries include those that have OIE-identified free regions where FMD vaccination is not practiced and those that have OIE-identified free regions where FMD vaccination is practiced.

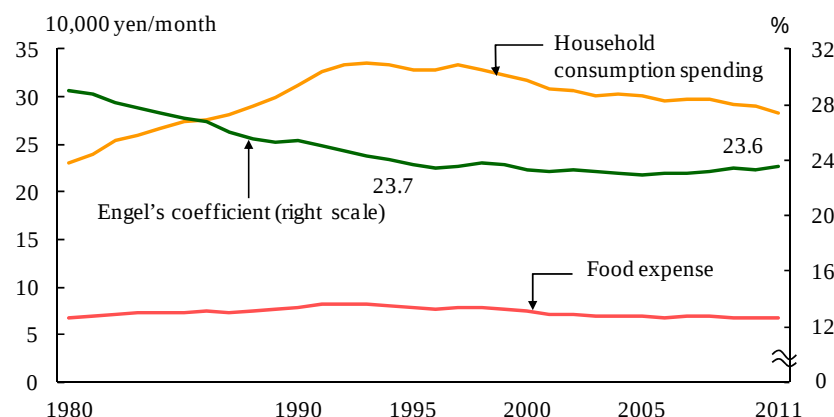
(2) Food consumption trends and promotion of food education

[Direction of policy measures as indicated by the basic plan]

- Continuing to promote food education

The Engel's coefficient in Japan has leveled off at around 23% since 1995 after declining consistently from the end of the war. The leveling-off has come as food consumption has declined in line with a fall in overall household consumption spending.

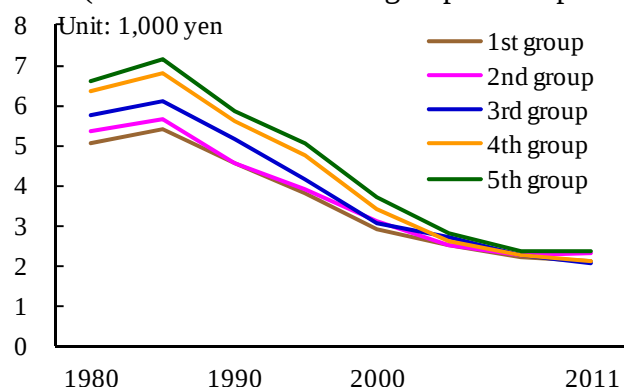
(Trends of Engel's coefficient)



Source: Ministry of Internal Affairs and Communications, "Family Income and Expenditure Survey" (two-or-more-member families)

Five income groups' spending on rice indicates that rice spending has declined for higher-income groups since 1985 and that there was little rice spending gap between the groups in 2011.

(Trends of five income groups' rice spending)



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

Notes:

<1> Two-or-more-member families. Agriculture-forestry-fisheries families are excluded for 1999 and earlier years.

<2> The five income groups mean that all families are lined up in the order of income from the lowest income families and divided equally into five groups.

The government put forward the Second Basic Plan for Promotion of Shokuiku (food education) in March 2011. Priority challenges cited in the plan are lifetime Shokuiku, Shokuiku for prevention and improvement of lifestyle diseases, and Shokuiku for children through eating with family.

(Shokuiku promotion numerical targets and present levels in the Second Basic Plan for Promotion of Shokuiku (excerpts))

Target item	Present level	Target for 2015
1. Share for people interested in Shokuiku	70.5%	90% or more
2. Reducing share for breakfast-skipping people (men in their 20's and 30's)	28.7%	15% or more
3. Share for local products used in school lunches	26.1%	30% or more
4. Increasing share for people with eating habits giving consideration to nutritional balance	50.2%	60% or more
5. Increasing share for people experiencing agriculture-forestry-fisheries operations	27.0%	30% or more
6. Increasing share for people with basic knowledge about food safety	37.4%	90% or more

Source: Prepared by MAFF based on the Cabinet Office's Second Basic Plan for Promotion of Shokuiku

(3) Actions for developing food industry

[Direction of policy measures as indicated by the basic plan]

- Given the requirement for environmental considerations, enterprises should promote the reduction of food waste and greenhouse gas emissions to fulfill their social responsibility.
- Food manufacturers and distributors should promote production and sales in Asian and other foreign countries to enhance their overseas business bases.
- “Food Industry Vision of the Future” will be established within FY2010, in which the proper form and future direction of food industries will be set out.

The food industry has stepped up environmental conservation efforts. In FY2009, the industry recycled 80% of food waste for such purposes as feed and fertilizer production.

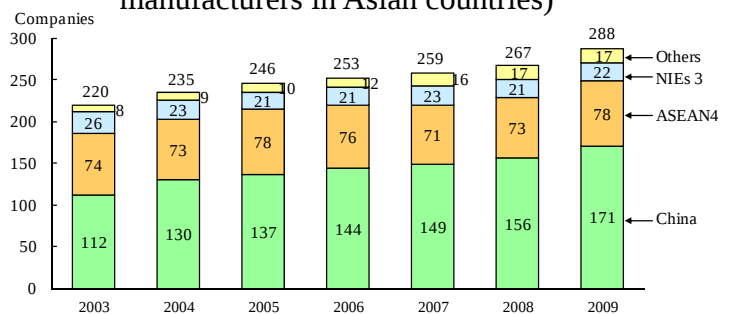
The number of Japanese food manufactures in Asia has increased year by year in line with the global expansion and diversification of food consumption.

(Estimated rate for recycling of recyclable food waste)

	FY2008	FY2009		FY2012 (Target)
		100 tons or more	Less than 100 tons	
Food manufacturers	93	93	94	40
Food wholesalers	59	58	64	44
Food retailers	37	36	38	26
Restaurants	13	16	34	9
Food industry total	79	81	-	-

Source: MAFF

(Changes in number of Japanese food manufacturers in Asian countries)



Source: Prepared by MAFF based on the Survey on Overseas Business Activities by the Ministry of Economy, Trade and Industry

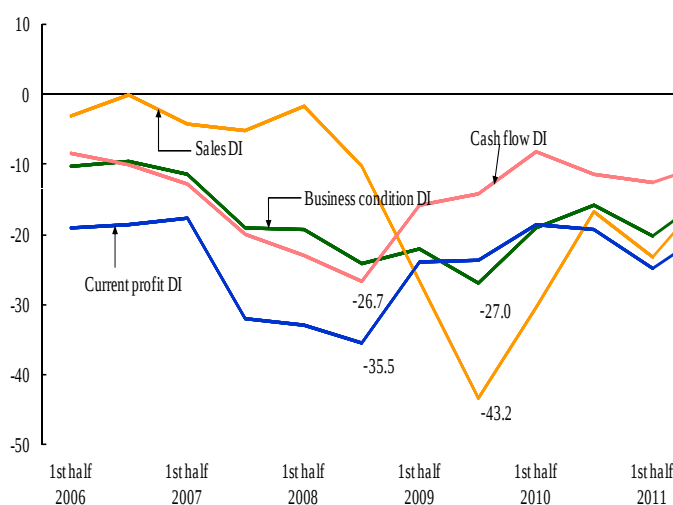
Notes: 1) NIEs 3 includes 3 countries/regions: Singapore, Taiwan and Korea.
2) ASEAN 4 includes 4 countries: Malaysia, Thailand, Indonesia and Philippines.

The food industry’s diffusion index (DI*) in the first half of 2011 declined from the year-before level due to the impact of the Great East Japan Earthquake. In the second half, however, the index indicated an improvement.

“Food Industry Vision of the Future” was established in March 2012, in which the proper form and future direction of food industries was set out.

*The DI is a gap between the percentage shares for enterprises expecting an increase (improvement) and those anticipating a decline (deterioration)

(Changes in Food industry DI)

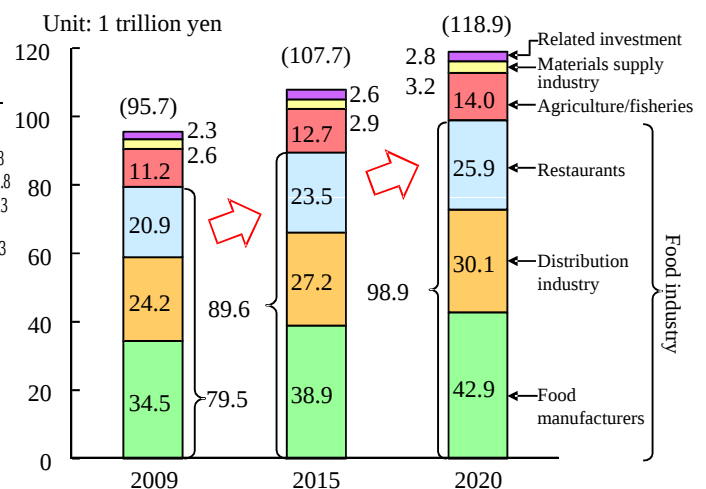


Source: JFC, “Food Industry Trend Survey”

Notes:

- 1) The business condition DI represents an average of sales, current profit and cash flow DIs.
- 2) The survey covered food related enterprises (manufacturers, wholesalers, retailers and restaurants) throughout Japan.

(Food related industries market sizes in 2020)



Source: Prepared by MAFF based on MAFF’s “Economic Accounts for Agriculture and Food related Industries,” etc.

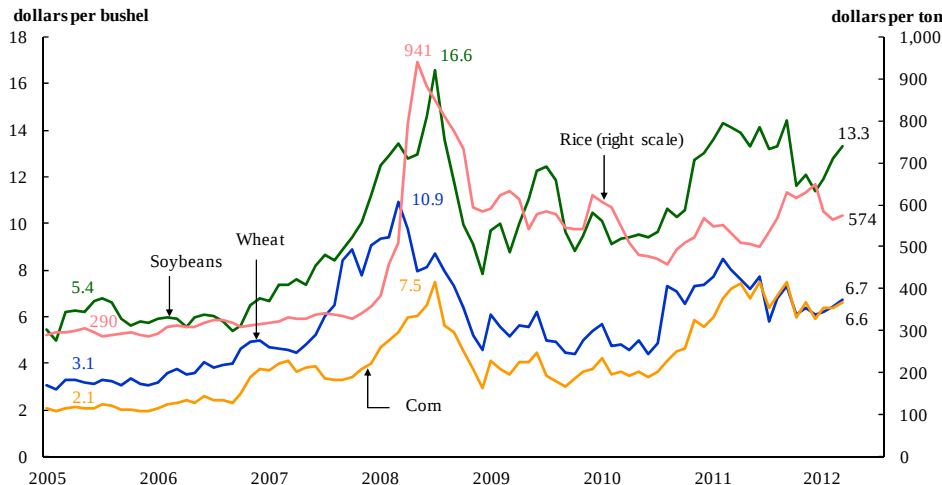
(4) Establishing comprehensive food security

[Direction of policy measures as indicated by the basic plan]

- Establishing comprehensive food security
- Efforts to realize an emergency rice reserve arrangement for ASEAN+3 (ASEAN, Japan, China and South Korea)

International grain and soybean prices rose again from 2010 and on. Grain production in 2011/2012 reached a record level exceeding demand. However, the inventory-sales ratio at the end of the season is expected to slip below the year-before level, indicating a tighter supply-demand balance for grains.

(Changes in International price of grains and soybeans)



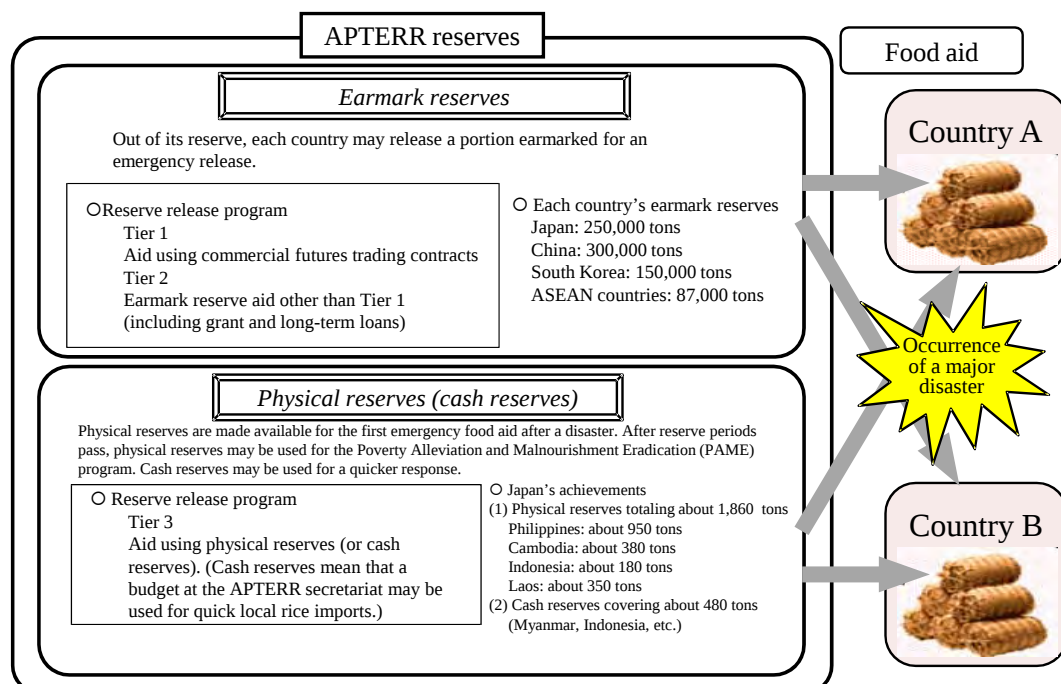
Sources: Prepared by MAFF based on data from the Chicago Board of Trade and the Rice Committee, Board of Trade of Thailand

Note: One bushel is equivalent to 27.2155 kg of soybeans and wheat, and 25.4012 kg of corn.

Given the Great East Japan Earthquake, we will consider various risks regarding stable food supply and revise the food security manual by the summer of 2012.

In October 2011, Japan signed the ASEAN Plus Three Emergency Rice Reserve (APTERR) Agreement.

(Overview of APTERR)



Source: MAFF

Chapter 3: Sustainable development of agriculture

(1) Implementation of Income Support Direct Payment Program for Farmers

[Direction of policy measures as indicated by the basic plan]

- Agriculture plays key roles for citizens' livelihood, including the stable provision of food and the demonstration of multiple functions. Agriculture can play these roles only if it maintains sustainability as an industry. The Income Support Direct Payment Program for Farmers has been introduced to secure sustainability and create an environment where all motivated farmers can continue agriculture and tackle their business development.

Based on the implementation of the Pilot Income Support Direct Payment Program in FY2010, we formally implemented the Income Support Direct Payment Program for Farmers from FY2011. The number of participants under the program in FY2011 increased by 55,000 from the number under the pilot program in the previous year to 1,218,000.

(Number of participants under the Income Support Direct Payment Program for Farmers by farm category)

	Number of participants	Farm category		
		Independent farms	Incorporated farms	Community-based farm cooperatives
FY2011	1,218,237	1,203,367	7,254	7,616
FY2010	1,163,090	1,149,505	6,187	7,398
Change vs. previous year (growth rate)	55,147(4.7%)	53,862(4.7%)	1,067(17.2%)	218(2.9%)

Source: MAFF

The planned crop acreage size for income support direct payment participants for rice farming in FY2011 increased by 25,000 hectares from the previous year to 1,152,000 hectares. The excessive rice planted area compared with the target volume of rice production declined by 19,000 hectares to 22,000 hectares.

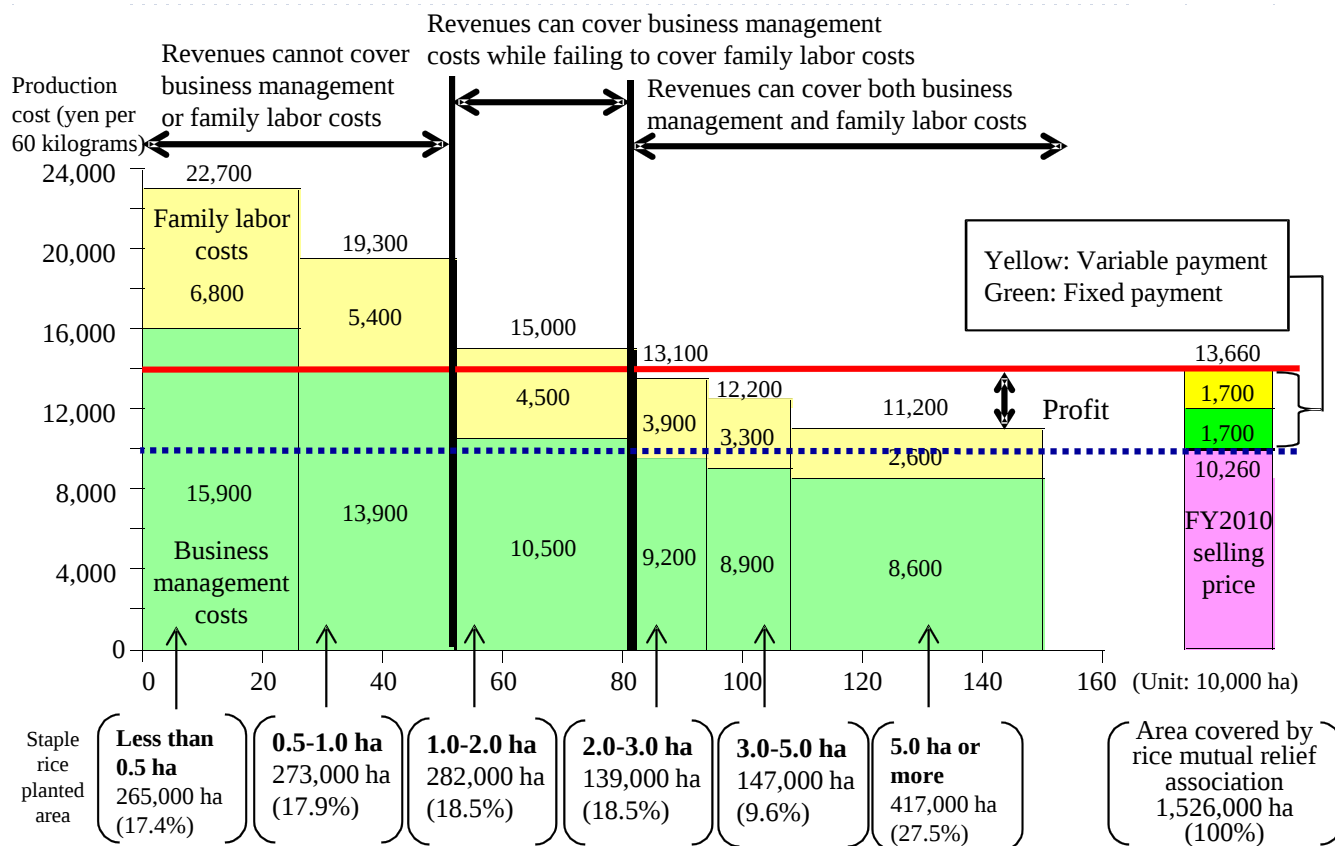
(Planted area for income support direct payment participants for rice farming)

Unit: hectares				
	Participants' planned crop acreage size	Staple rice planted area (nationwide)	Target volume of rice production calculated area	Excessive rice planted area compared with the target volume of rice production
FY2011	1,151,545	1,526,000	1,503,864	22,136
FY2010	1,127,040	1,580,000	1,538,697	41,303
Change vs. previous year	24,505	-54,000	-34,833	-19,167

Source: MAFF

The implementation of the Income Support Direct Payment Program for Farmers has made some contributions to improving farming business performance, promoting the adjustment of rice supply and expanding production of rice for new uses.

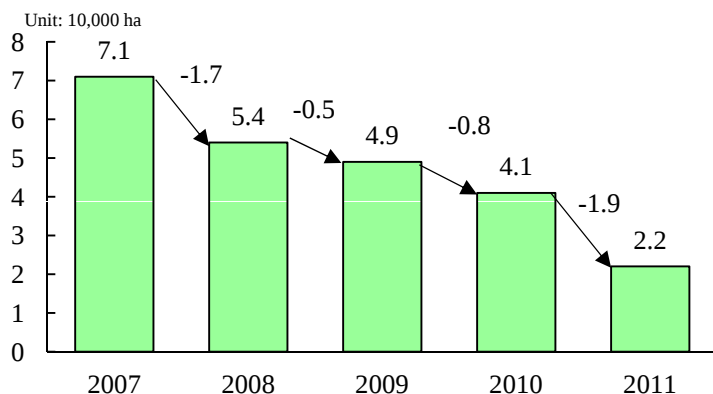
(Rice farmer's business conditions by planted area group)



Source: MAFF

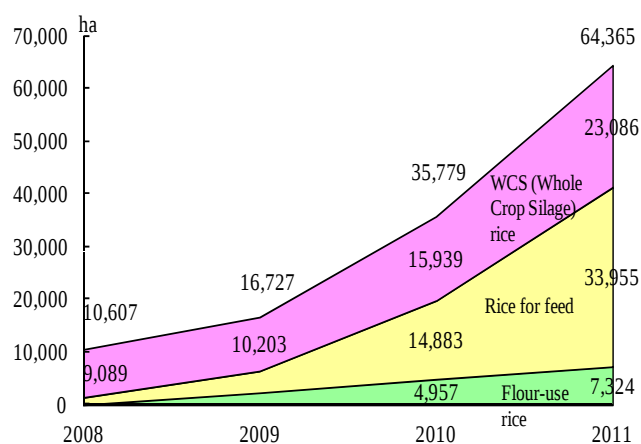
Note: Business management costs cover material procurement, interest payment, land rent and employment costs for rice production.

(Trends of excessive rice planted area compared with the target volume of rice production)



Source: MAFF

(Trends of planted area for rice for new uses)



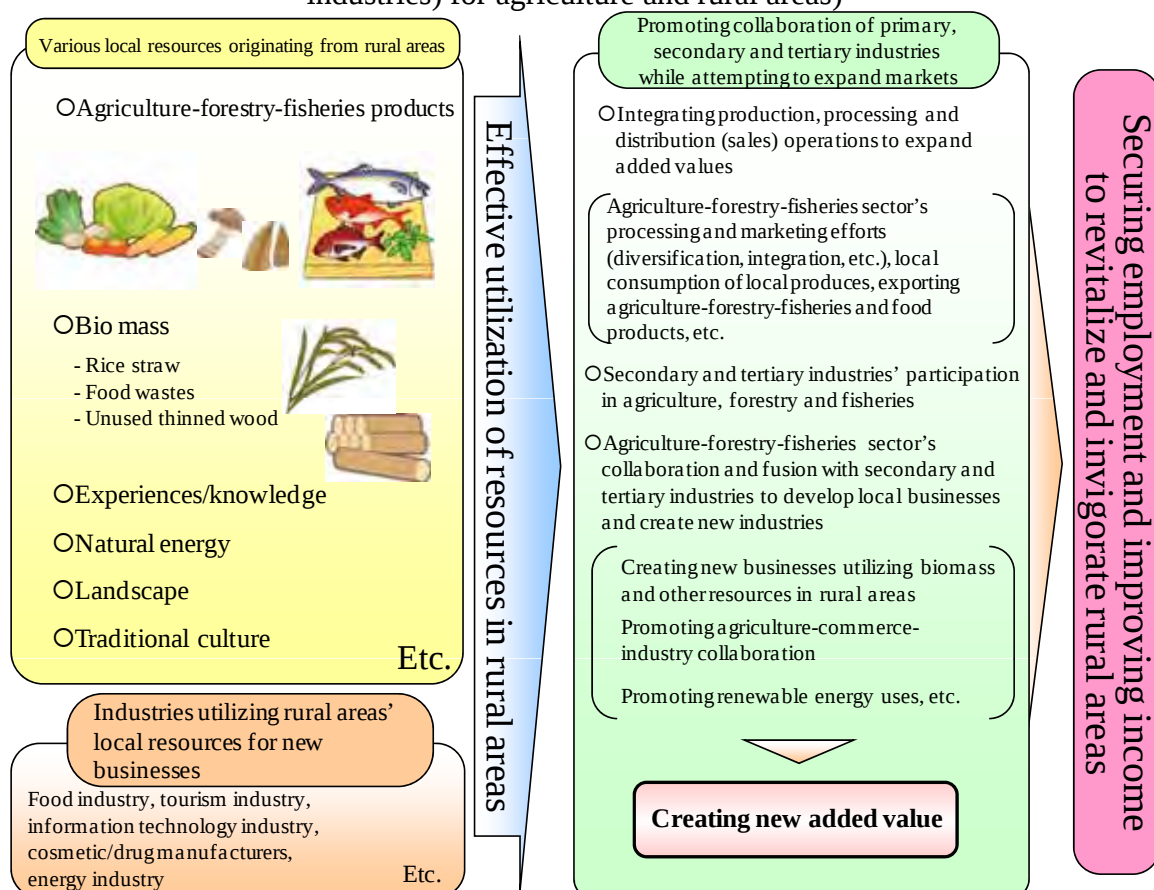
Source: MAFF

(2) Income expansion through sixth industry promotion (collaboration of primary, secondary and tertiary industries), etc.

[Direction of policy measures as indicated by the basic plan]

- Promoting the expansion of added value through the qualitative improvement, processing and direct sales of agricultural products
- Core direct sales stores should expand annual product lineups and enhance management and sales capabilities to promote the local consumption of local produce.
- Maintaining and expanding overseas sales channels for high-quality Japanese agriculture-forestry-fisheries and food products to boost annual exports of these products to 1 trillion yen by 2020.

(Image of sixth industry promotion (collaboration of primary, secondary and tertiary industries) for agriculture and rural areas)



Source: 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

Commercial farm households that undertake farm product processing and other related business of agricultural production doubled their share of Japan's total commercial farm households between FY2000 and FY2010.

(Changes in Number of commercial farm households undertaking related business of agricultural production)

(10,000 Households, %)

	Number of commercial farm households	Number of commercial farm households undertaking related business of agricultural production		
			Processing of agricultural products	Direct sales to stores and consumers
2000	233.7 (100.0)	25.3 (10.8)	2.0 (0.9)	8.4 (3.6)
2005	196.3 (100.0)	34.5 (17.6)	2.2 (1.1)	32.4 (16.5)
2010	163.1 (100.0)	34.2 (21.0)	3.2 (2.0)	32.1 (19.7)

Source: MAFF, "Census of Agriculture and Forestry"

Sixth industry promotion efforts (collaboration of primary, secondary and tertiary industries) may take some years to get on a profitable path (surplus).

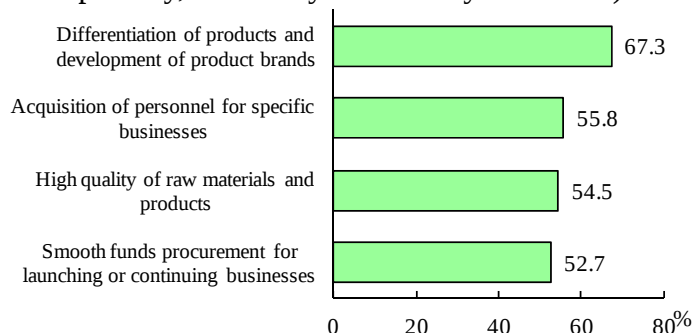
Challenges for such collaboration include the development of product brands and the acquisition of relevant personnel.

(Years taken to produce profit (by farming category))

(Unit: years)

Category	Average number of years in operation	Number of years taken to produce profit		
		Average	Minimum	Maximum
All categories	13.5	4.1	0.0	25.0
Rice farming	8.4	4.4	1.0	15.0
Vegetable farming	10.8	2.2	0.0	9.0
Pig farming	16.2	8.8	2.0	25.0
Dairy farming	16.7	1.8	0.0	3.0
Orchard farming	18.9	4.5	0.0	15.0

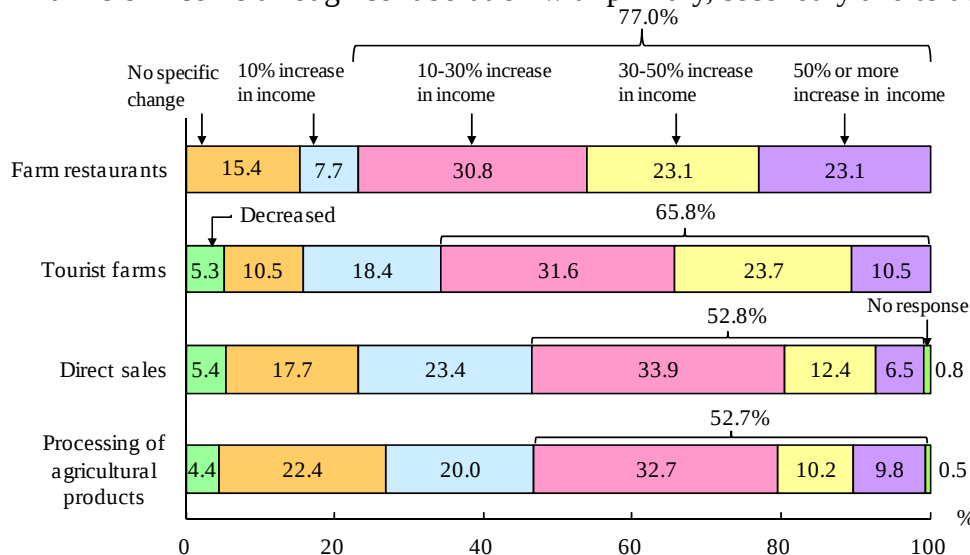
(Key challenges conceived for cooperation of primary, secondary and tertiary industries)



Source: JFC, "Survey on Collaboration of Primary, Secondary and Tertiary Industries" (released in December 2011)

Most farmers running tourist farms and farm restaurants undertake direct sales and processing of agricultural products integrally. Farmers running tourist farms and farm restaurants have a stronger sense of income growth than those doing other businesses for collaboration of primary, secondary and tertiary industries.

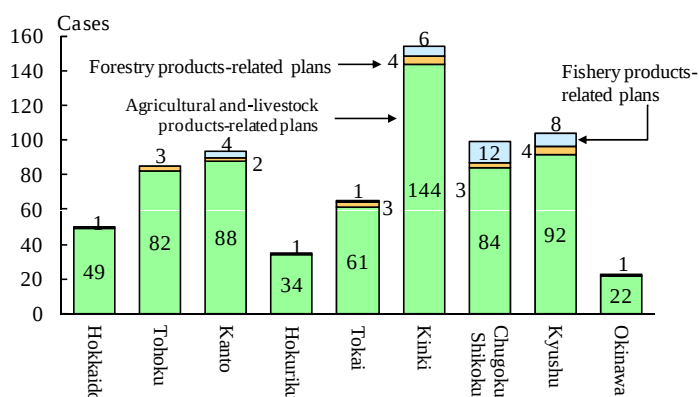
(Changes in farmers' income through collaboration with primary, secondary and tertiary industries)



Source: MAFF, "Survey on Consciousness and Intentions about Food, Agriculture and Rural Areas, and Fisheries and Fishery Products" (Conducted in January-February 2012)

Under the sixth industry promotion (collaboration of primary, secondary and tertiary industries) act implemented in March 2011, 709 business plans have been approved. The sixth industry's planners have been distributed throughout Japan.

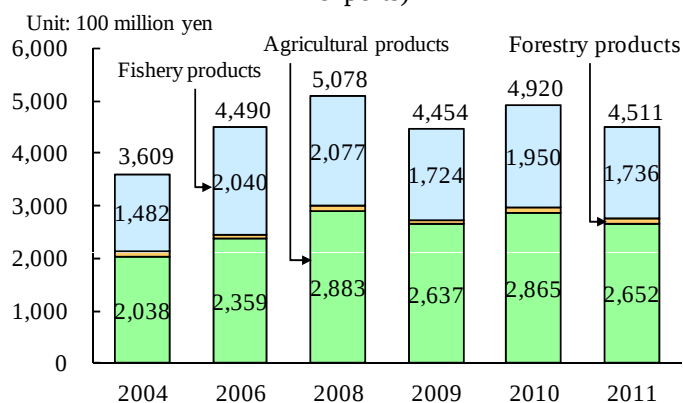
(Number of business plans approved under the sixth industry promotion act by region)



Source: MAFF

Agriculture-forestry-fisheries and food products exports in 2011 declined substantially from the previous year due mainly to the TEPCO Fukushima Daiichi nuclear plant accident and the yen's appreciation.

(Trends of agriculture-forestry-fisheries and food products exports)



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

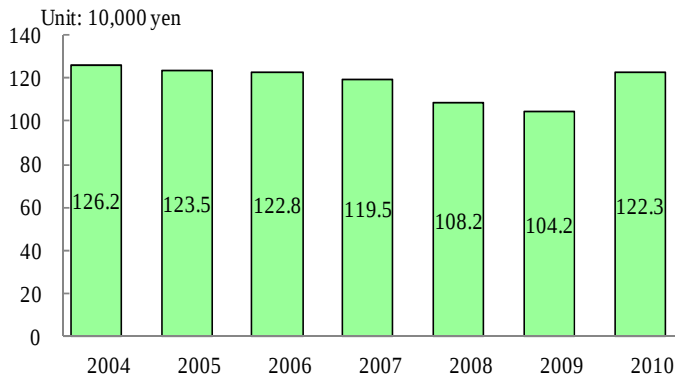
(3) Promoting motivated, diversified farmers' business management

[Direction of policy measures as indicated by the basic plan]

- Raising and securing motivated, diversified farmers

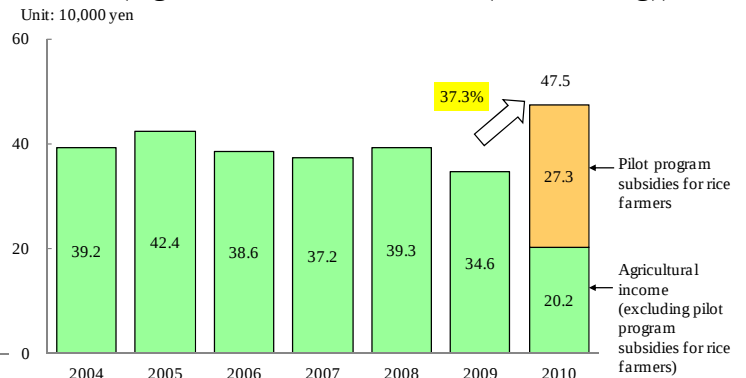
Farms' average agricultural income increased from 1.04 million yen in 2009 to 1.22 million yen in 2010 after continuing a downward trend. Particularly, paddy farms' agricultural income in 2010 expanded 37% from the previous year affected by subsidies provided under the Pilot Income Support Direct Payment Program for rice farmers, despite rice price drops.

(Agricultural income trends)



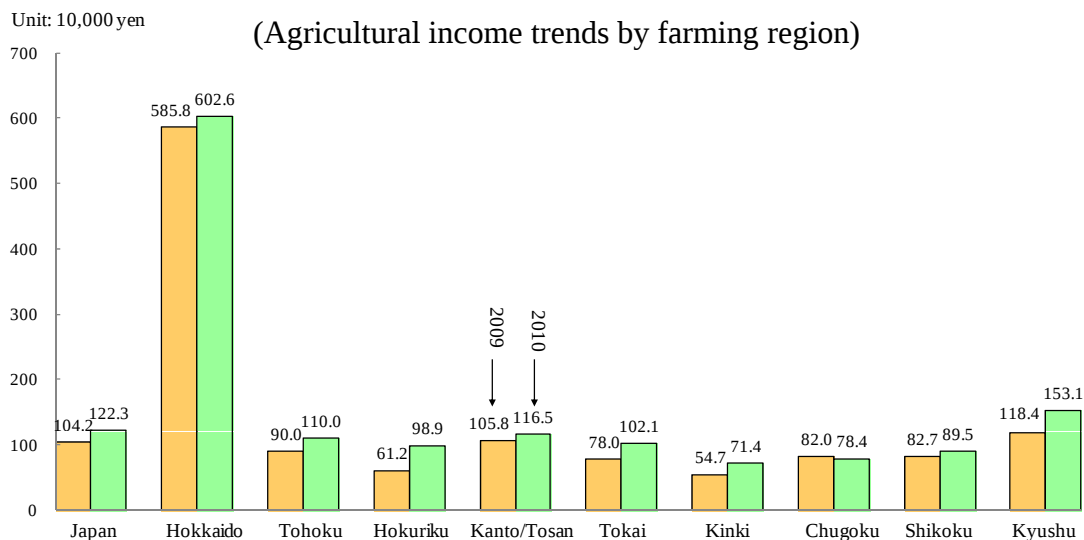
Source: MAFF, "Statistical Survey on Farm Management – Statistics by Farm Category (independent farms)"

(Agricultural income trends (rice farming))



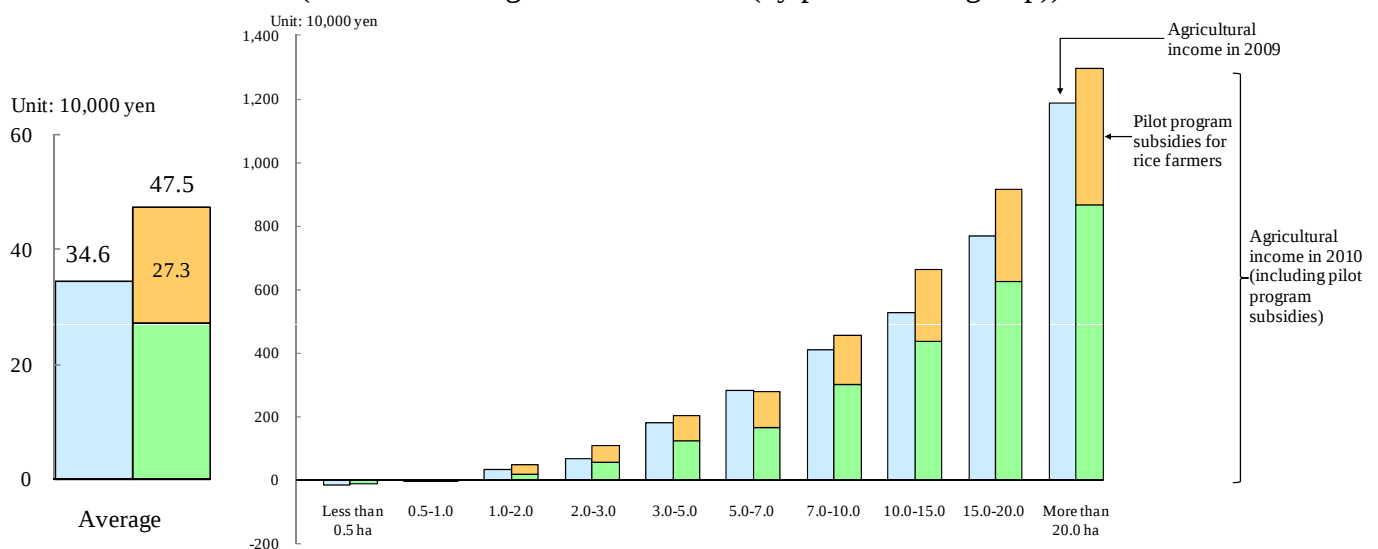
Source: MAFF, "Statistical Survey on Farm Management – Statistics by Farming Category (independent farms)"

(Agricultural income trends by farming region)



Source: MAFF, "Statistical Survey on Farm Management – Statistics by Farm Category (independent farms)"

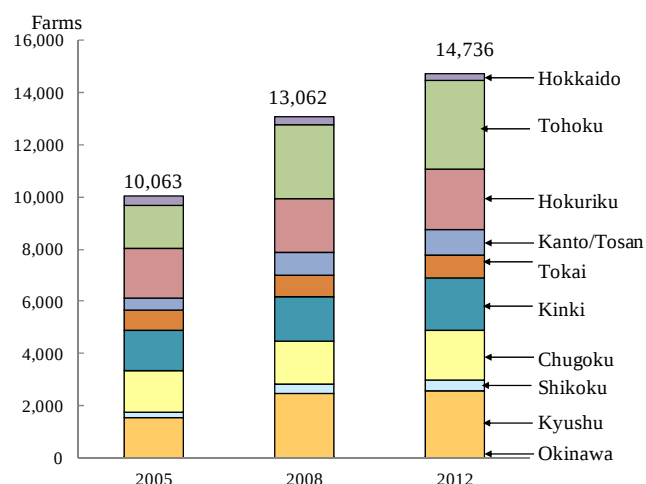
(Rice farmers' agricultural income (by planted area group))



Source: MAFF, "Statistical Survey on Farm Management – Statistics by Farming Category (independent farms)"

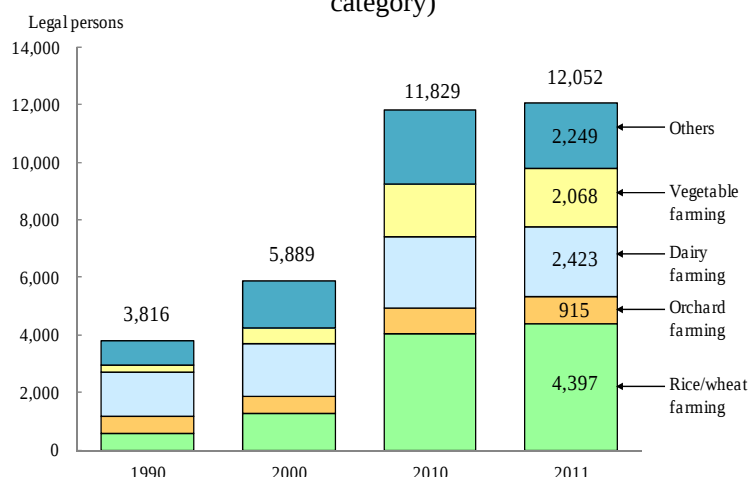
The number of community-based farm cooperatives has increased year by year, standing at 15,000 as of February 2012.

(Changes in community-based farm cooperatives by farming region)



The number of agriculture production legal persons has also increased year by year, standing at 12,000 in 2011.

(Changes in agriculture production legal persons by farming category)

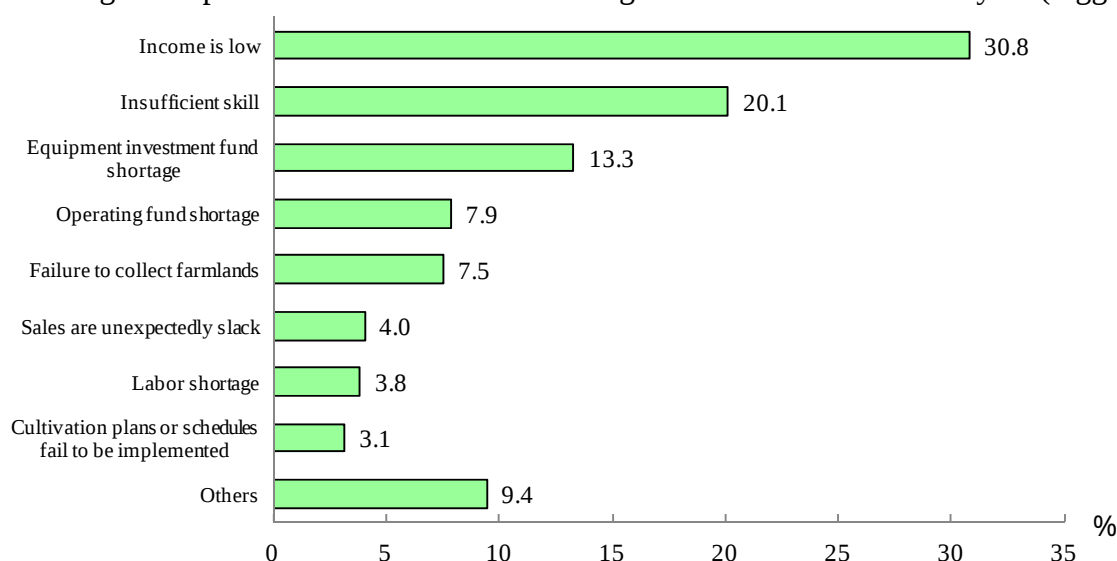


Source: MAFF, "Survey on Community-Based Farm Cooperatives"

Source: MAFF

It is important to raise and secure new farmers. Challenges include how to secure income and improve skills. The farming grant system for young farmers started in FY2012.

(Business management problems for new entrants into agriculture in first or second year (biggest problem))



Source: National Chamber of Agriculture, "Fact-finding Survey on New Entrants into Agriculture"

(Changes in new farmers)

	(Persons)				
	2006	2007	2008	2009	2010
New self-employed farmers	72,350	64,420	49,640	57,400	44,800
39-year-old or younger persons	10,310	9,640	8,320	9,310	7,660
New employed farmers	6,510	7,290	8,400	7,570	8,040
39-year-old or younger persons	3,730	4,140	5,530	5,100	4,850
New participants in farming	2,180	1,750	1,960	1,850 (1,680)	1,730
39-year-old or younger persons	700	560	580	620 (580)	640
Total new farmers	81,030	73,460	60,000	66,820	54,570
39-year-old or younger persons	14,740	14,340	14,430	15,030	13,150

Source: MAFF, "Survey on Newcomers in agriculture"

(4) Active use of rural women's capabilities

[Direction of policy measures as indicated by the basic plan]

- Promoting rural women's participation in farming management and women's income-generating activities for processing and marketing of agricultural products
- Promoting working styles giving consideration to the rural work-life balance through the conclusion of family management agreements to secure women's further participation in local society.

Rural women's income-generating activities have increased steadily. While group-managed businesses account for a majority of new businesses launched by rural women, independently managed businesses have increased year by year. Many businesses are for food processing and sales in the farm stand.

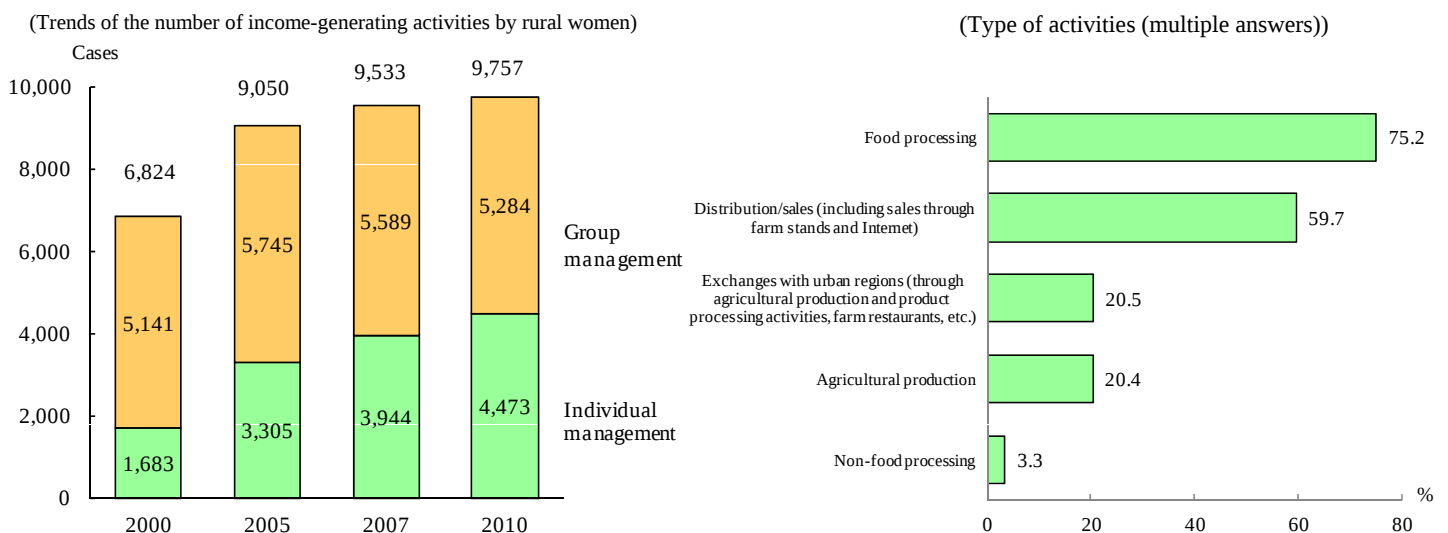
In 2011, for the first time all agricultural committees in Tochigi and Yamaguchi Prefectures included women members through elections. The number of agricultural committees with women members increased from the previous elections in 33 prefectures.

In 2011, all agricultural cooperatives in Aichi, Shimane and Okayama Prefectures had female executives for the first time, joining Nara, Tottori, Kagawa, Kumamoto and Okinawa Prefectures that already had female executives at all such cooperatives.

The number of family management agreements to promote women's participation in farm management has increased year by year, standing at 49,000 in 2011.

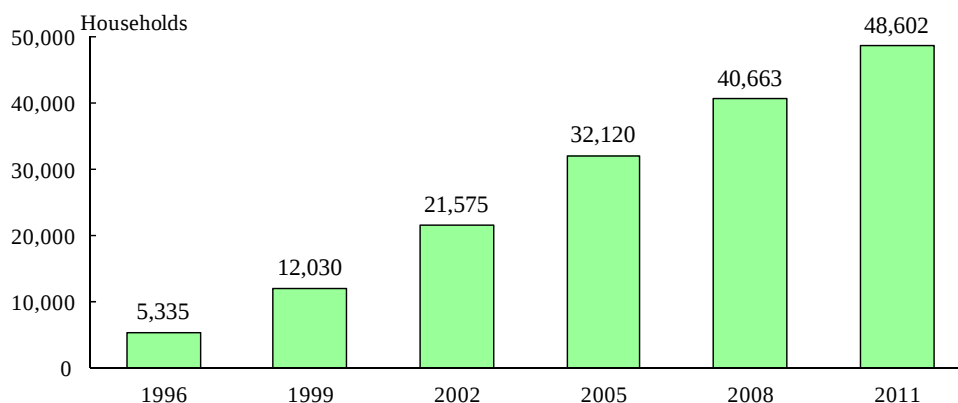
Opportunities for rural women to actively participate have increased, including the establishment of nationwide networks and attendance to international conferences.

(Changes in the number of income-generating activities by rural women and type of activities)



Source: MAFF

(Changes in family management agreements)



Source: MAFF

(5) Securing fine farmland and promoting its effective use

[Direction of policy measures as indicated by the basic plan]

- Securing fine farmland and promoting its effective use steadily to improve Japan's food self-sufficiency ratio
- Raising the utilization rate of cultivated land to 108% in 2020
- Supporting efforts to utilize abandoned farmland and promoting efforts to eliminate idle farmlands under the revised Agricultural Land Act
- Promoting farmland concentration for motivated, diversified farmers

The utilization rate of cultivated land in 2010 rose slightly for the first time in eight years due to an increase in the planted area size for rice paddies as a decline in the total cultivated area size.

(Aggregate planted area size, cultivated area size and utilization rate of cultivated land trends)

	2008	2009	2010
Aggregate planted area () (10,000 ha)	426.5	424.4	423.3
Rate of change (%)	(-0.95)	(-0.49)	(-0.26)
Cultivated area () (10,000 ha)	462.8	460.9	459.3
Rate of change (%)	(-0.47)	(-0.41)	(-0.35)
Utilization rate of cultivated land (/) (%)	92.2	92.1	92.2

Source: MAFF, "Statistics on Cultivated Area and Planted Area"

The increase in abandoned cultivated land has slowed down over recent years.

(Changes in area of abandoned cultivated land)

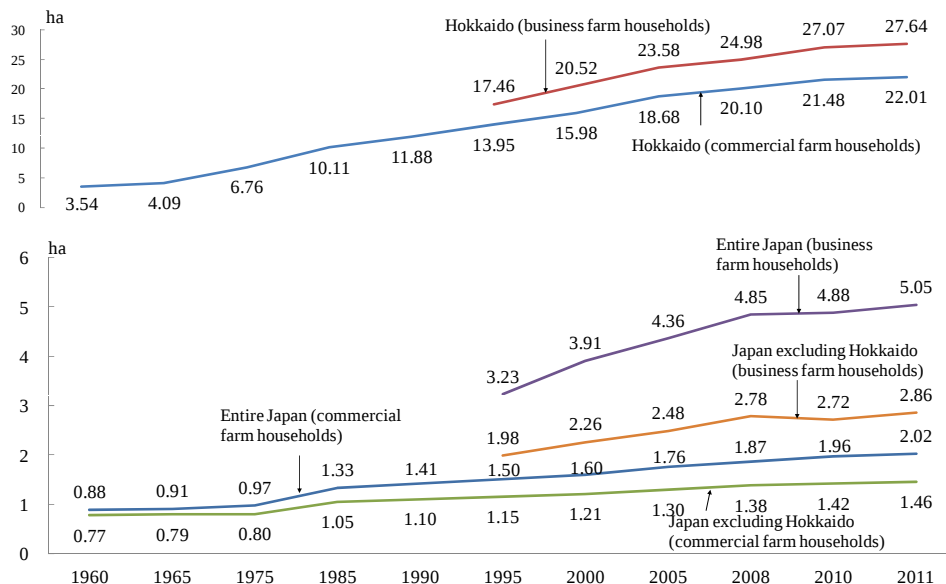
Unit: 10,000 ha

	1985	1990	1995	2000	2005	2010
Total	13.5	21.7	24.4	34.3	38.6	39.6
Commercial farm households	7.3	11.3	12.0	15.5	14.4	12.4
Non-commercial farm households	1.9	3.8	4.1	5.6	7.9	9.0
Non-farm households possessing cultivated land	4.2	6.6	8.3	13.3	16.2	18.2

Source: MAFF, "Census of Agriculture and Forestry"

Cultivated land under management per commercial farm household continued increasing in 2011.

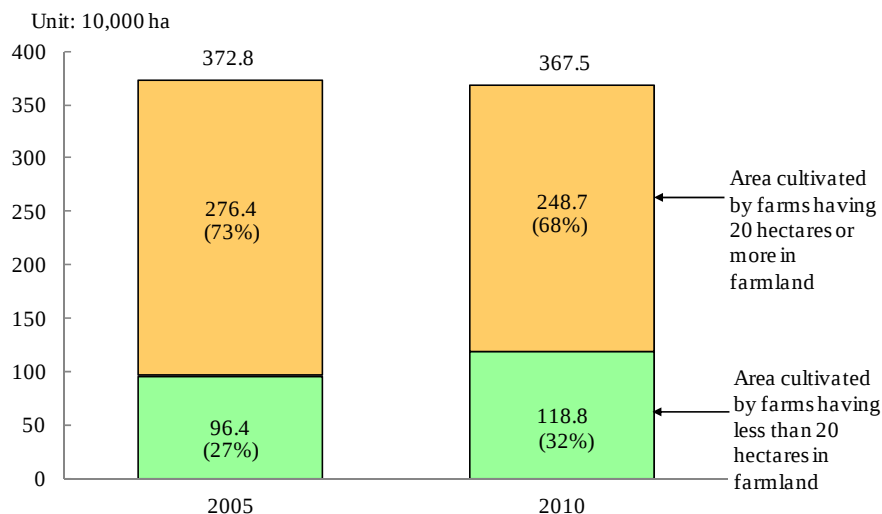
(Changes in cultivated land under management per commercial farm household and per business farm household)



Sources: MAFF, "Census of Agriculture and Forestry" and "Survey on Agriculture Structure Dynamism"

Farms cultivating 20 hectares or more in 2010 accounted for 32% of cultivated land area being utilized for land-extensive crops including rice and wheat.

(Percentage share of land area cultivated for land-extensive crops by farms having 20 hectares or more in farmland)



Sources: Estimated based on MAFF's "Census of Agriculture and Forestry" and "Statistics on Cultivated Area and Planted Area"

(6) Maintaining, managing and developing agricultural production infrastructure

[Direction of policy measures as indicated by the basic plan]

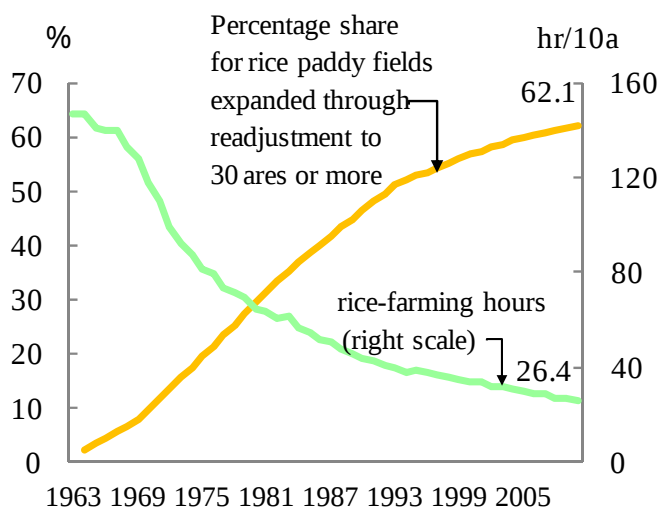
- A drastic reform of improvement measures for the agricultural production infrastructure base to strengthen agricultural productivity, including enhancing infrastructure maintenance through strategic preservation and management of major irrigation facilities, and building a better agricultural production base regarding the improvement of the food self-sufficiency ratio.

Rice paddy fields expanded through readjustment to 30 ares or more totaled 1.55 million hectares in FY2010, accounting for about 60% of total rice paddy fields in Japan.

The functional diagnosis of the facility is conducted to extend in-service lives of major irrigation facilities including irrigation channels, drainage canals and pump stations.

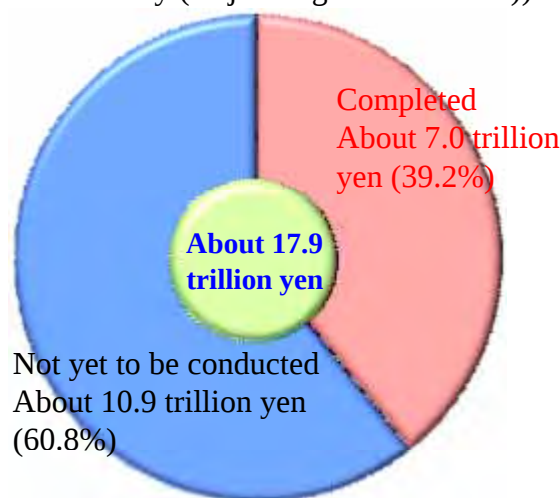
Given the Great East Japan Earthquake, the Cabinet decided on a new Long-Term Plan of Land Improvement in March 2012 to enhance Japan's agriculture and promote recovery from the disaster.

(Trends of the rice paddy field readjustment share and rice-farming hours)



Sources: MAFF, "Basic Survey on Agricultural Infrastructure Development," "Rice and Wheat Production Costs"

(Implementation status of the functional diagnosis of the facility (major irrigation facilities))



Source: MAFF

Notes:

- 1) An accumulated total through FY2010
- 2) Assessment on a reconstruction cost basis for irrigation facilities

(7) Sustainable agricultural production

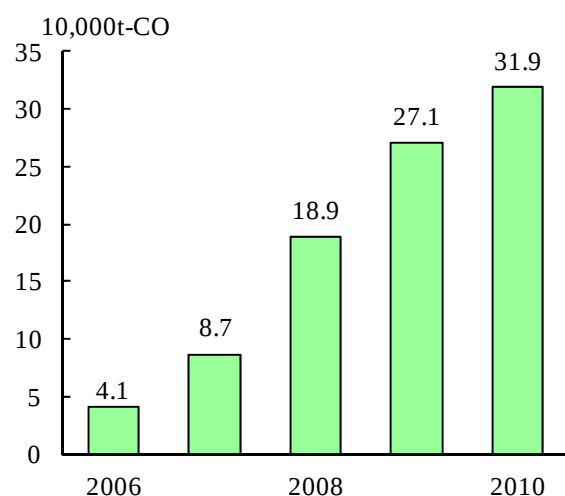
[Direction of policy measures as indicated by the basic plan]

- Promoting agriculture and food industries' introduction of energy-saving facilities and machinery, the optimization of fertilization and other measures to address global warming, and networks of farmers who tackle farming operations contributing to conservation of the environment.
- Promoting the expansion of production and distribution of organic agricultural products

Energy-saving farm machinery and facilities have increased steadily. In FY2010, greenhouse gases emission cuts for facility horticulture and farm machinery totaled 319,000 tons-CO₂.

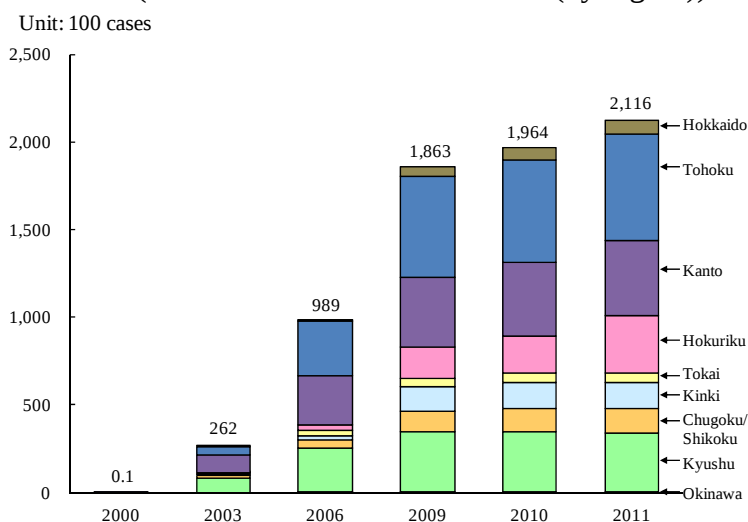
The number of eco-farmers certified as promoting sustainable agriculture giving consideration to the environment increased to 212,000 at the end of March 2011 against the backdrop of growth in consumer needs.

(Greenhouse gases emission cuts for facility horticulture and farm machinery)



Source: MAFF

(Trends of certified eco-farmers (by region))



Source: MAFF

Note: Numbers given for the end of March in each year

Agricultural products rated as organic under the organic JAS system in FY2010 totaled 56,000 tons including vegetables.

Direct payment for environmentally friendly agriculture started in FY2011 to support farmers' activities which address global warming and enhance biodiversity.

(Trends of agricultural products rated as organic under the organic JAS system)

(Unit: ton)

	Total				
		Vegetables	Rice	Fruits	Others
FY2001	33,734	19,675	7,777	1,391	4,891
FY2002	43,759	24,545	12,338	1,939	4,937
FY2003	46,192	28,444	10,433	2,163	5,152
FY2004	47,428	29,674	10,400	2,029	5,325
FY2005	48,172	29,107	11,369	2,222	5,474
FY2006	48,596	29,949	10,811	1,766	6,070
FY2007	53,446	32,780	10,828	2,199	7,639
FY2008	56,164	36,164	11,278	2,050	6,672
FY2009	57,342	37,644	11,565	2,436	5,697
FY2010	56,415	36,854	10,976	2,506	6,079

Source: MAFF

Chapter 4: Promoting and revitalization of rural areas

(1) Creating new industries in rural areas through renewable energy promotion and other efforts

[Direction of policy measures as indicated by the basic plan]

- Expanding renewable energy production, promoting regional renewable energy utilization, developing new profit-making systems in rural areas
- A strategy for “Revolution in Environmental Technology Preserving Water and Greenery” will be worked out to implement measures for creating new industries.

Renewable energy accounts for some 10% of Japan’s total electricity generation (in FY2010). The vast majority of this renewable energy is large-scale hydroelectric power generation. Other renewable energy sources including solar energy, wind power and biomass energy account for only about 1% of the total.

(Breakdown of Japan’s electricity generation)

Electric source	Share (%)
New energy sources	1.2
Pumped-up water	0.9
Ordinary hydro energy	7.8
Crude oil	8.3
Coal	23.8
LNG	27.2
Nuclear energy	30.8

Source: Ministry of Economy, Trade and Industry, “FY2010 Annual Report on Energy”

Note: “New energy sources” include solar energy, wind power, geothermal energy and biomass energy.

Demonstration tests for cutting costs for small hydroelectric power generation, installation of solar panels on agricultural facilities and efforts to convert biomass energy into electricity will be promoted at various points in Japan to utilize renewable energy.

(Efforts to utilize renewable energy)



Demonstration tests of a small hydroelectric power generator (Takeda City, Oita Prefecture)



Solar panels installed on a compost facility (Sanmu City, Chiba Prefecture)



Tokuai Wind Power Station (Itoigawa City, Niigata Prefecture)



Biomass conversion facilities (Yamaga City, Kumamoto Prefecture)

Technology verification and other studies are conducted at various points in Japan to build independent distributed energy systems including Smart Village systems to integrally control renewable energy on a regional basis.

Various measures to create new industries in rural areas are promoted under the “Comprehensive Strategy for Revolution in Environmental Technology Preserving Water and Greenery”, adopted in February 2011.

(Smart Village image)



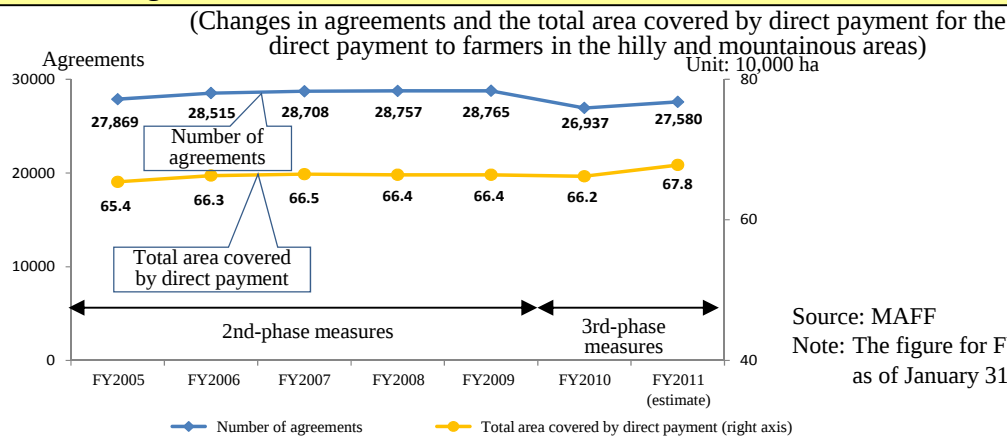
Source: MAFF

(2) Preservation of community functions and conservation of local resources and environment

[Direction of policy measures as indicated by the basic plan]

- The “direct payment to farmers in the hilly and mountainous areas”, The “payment for conserving farm land and water”, maintaining and revitalizing rural communities, promoting measures to prevent damage from wild animals, etc.

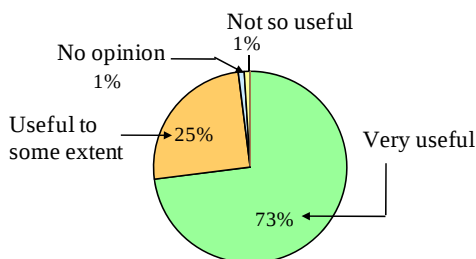
The “direct payment to farmers in the hilly and mountainous areas” has been revised to implement third-phase measures from FY2010. In FY2011, about 28,000 agreements under the program are expected to be signed for about 678,000 hectares of farmland.



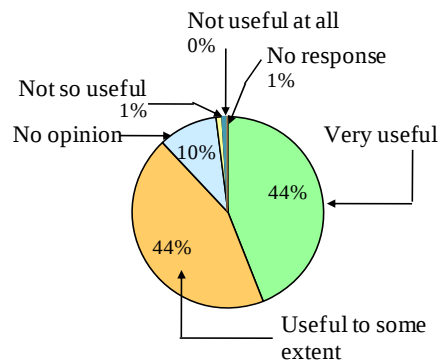
The “payment for conserving farm land and water” has been useful for maintaining agricultural irrigation canals, for conserving and improving rural environments and for invigorating and enhancing regional links. In FY2011, Its support was expanded to extend service lives of canals and other relevant facilities.

(Effects of “payment for conserving farm land and water”)

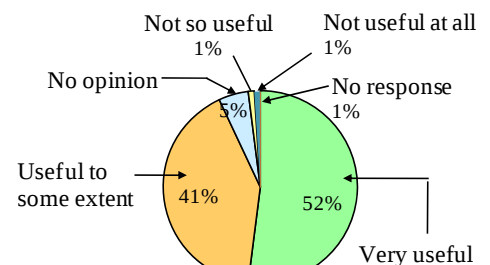
Q: Has the payment system been useful for maintaining functions of agricultural irrigation canals, etc.?



Q: Has the payment system been useful for conserving and improving regional environments?



Q: Has the payment system been useful for invigorating and enhancing regional (community) links?

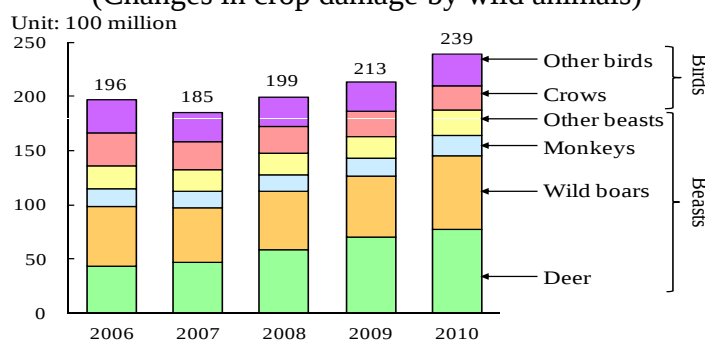


Source: MAFF, “Survey on Active Organizations” (conducted in March 2011)

The number of members of “Regional Cooperation Teams” and “Community Supporters” are increasing throughout Japan. Members of “Regional Cooperation Teams” are city residents who supply support service in rural areas. “Community Supporters” are agricultural experts, supporting residents in rural areas.

Crop damage by wild animals totaled 23.9 billion yen in FY2010. Comprehensive measures must be promoted to reduce crop damage by wild animals that greatly affect farming and rural livelihood.

(Changes in crop damage by wild animals)



(3) Exchanges between urban and rural areas and enhancing links between farmers and consumers

[Direction of policy measures as indicated by the basic plan]

- Promoting Exchanges between urban and rural areas by creating new exchange demand in rural areas, by securing and training human resources in urban and rural areas and by utilizing rural areas for education, medical services and nursing care.
- Promoting urban residents' understanding of functions and effects of urban agriculture, protecting urban agriculture, stepping up efforts for sustainable urban agriculture promotion to allow urban farming to fully produce its functions and effects.

For green tourism (where tourists stay in rural areas for leisure activities), various imaginative efforts have been implemented in line with local conditions.

According to the FY2010 Census of Agriculture and Forestry, in FY2010 there were 636,000 farm households in urban areas accounting for 25% of Japan's total farm households and 658,000 hectares or 14% of the nation's total cultivated land.

According to a survey on urban farm households, the cultivated land under management per urban farm household is 60% of the average for all Japanese farm households.

Urban farm households produce mainly open field vegetables and paddy/upland rice. Those with annual sales at 7 million yen or more produce mainly open field and protected vegetables.

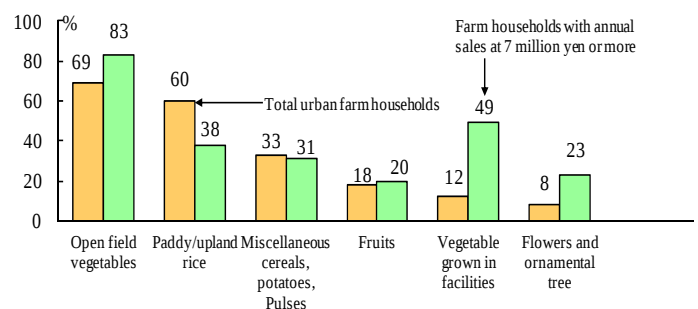
A urban agriculture promotion panel has been created to consider how best to conserve urban farmland and promote urban agriculture.

(Managed cultivate land area per urban farm household) (Survey results)

Category	Farmland in urbanization promotion area		Farmland in urbanization control area	Total	(Reference) Average for all farm households
		Agricultural land reserved in urbanization promotion area			
Total	36.3a	16.1a	38.2a	74.5 (56%)	133.1 (100%)

Sources: MAFF, "Fact-finding Survey on Urban Farming" (released in October 2011), "Census of Agriculture and Forestry (2010)"

(Produced agricultural crops (multiple answers))



Source: MAFF, "Fact-finding Survey on Urban Farming" (released in October 2011)

Building on health promotion and other functions of agriculture, programs have been promoted to link agriculture to healthcare and welfare.

[Specific program]: Shimada Kensetsu Corporation, Narita City, Chiba Prefecture

- An outpatient nursing care facility encourages users to grow vegetables and flowers at a farming garden.
- The company cooperates with a university in a scientific study on the effects of the activity.
- Elevated flowerbeds have been developed to allow elderly people to work without bending over. These flowerbeds have also been introduced to other facilities.

[Specific program]: Agricultural production corporation Nagahori, Ageo City, Saitama Prefecture

- The corporation expands its crop acreage by recycling and leasing abandoned cultivated lands and employs many local elderly people for harvesting and classifying komatsuna, a vegetable similar to spinach.
- The corporation allows new employees to freely choose time periods for their work, creating an environment where it is easy for elderly people to work.
- Elderly people made positive comments: "I have become more vigorous and healthy," "I am now more healthy than before my retirement," and "I feel pleased to communicate with friends." The program not only creates jobs but also produces significant effects for elderly people, including introducing new meaning for life and health promotion.

Summary of FY2012 Measures for Food, Agriculture and Rural Areas

Summary

Policy background, policy priorities, fiscal measures, legislative actions, tax measures, monetary measures, policy assessment

I The Great East Japan Earthquake measures

- Measures for full-scale reconstruction of agriculture and rural areas
- Restoration and development of farmlands and other production infrastructure
- Agricultural business continuation and realignment
- Restoration of agricultural production means and distribution functions
- Introduction of renewable energy in rural areas
- Measures for rural area
- Measures for the Accidents of Fukushima Dai-ichi Nuclear Plant of Tokyo Electric Power Company
- Reconstruction Grant in response to the Great East Japan Earthquake

II Measures to increase the food self-sufficiency ratio

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

III Measures to achieve stable supply of food

- 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 based on the importance of stable food supply as a major food-importing nation

IV Measures for sustainable development of agriculture

- The Revitalization of Japan's Food, Agriculture, Forestry and Fisheries
- Implementing Income Support Direct Payment Program for Farmers and production/management measures
- Promoting "The Sixth Industry" to expand income
- Promoting farm management by motivated, diversified farmers
- Securing fine farmland and promotion its effective use
- Compensating for damage from 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

- Creating new industries in rural areas through renewable energy promotion and other efforts
- 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 from the viewpoint 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
Agricultural holding other than farm household	A holding other than farm household managing cultivated land of 10 ares or more, or earning 150,000 yen or more per year from sales of agricultural products.
Agricultural service enterprise	An enterprise conducting farm work on contract (including enterprise other than agricultural holding, specializing in production and sale of seedlings).
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.

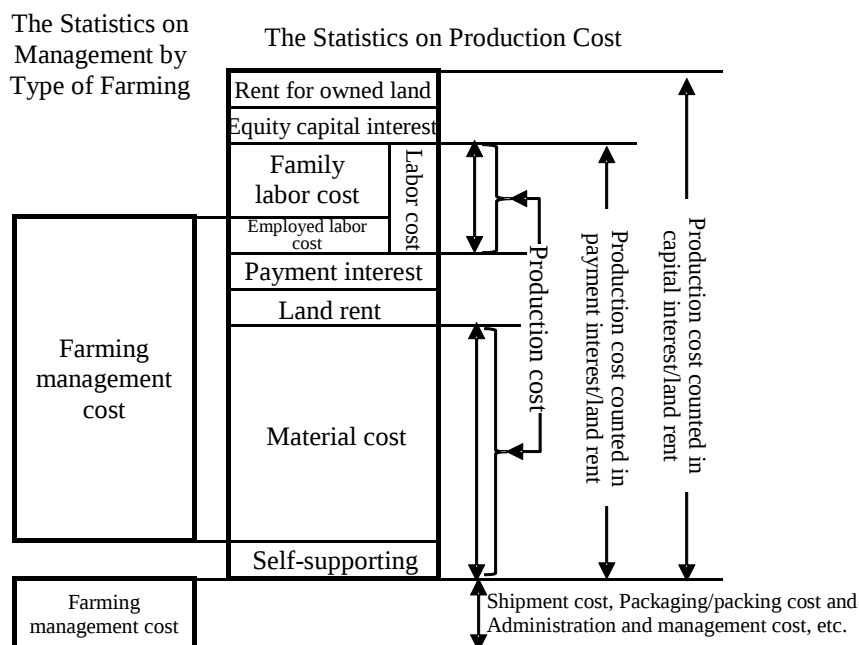
(2) Classification of farms (definitions used since the 2005 Census of Agriculture and Forestry)

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)
Production cost	The production cost is the total cost (combining property and labor costs) for production of farm products minus by-product values
material cost	The material cost combines liquid goods costs (seeding, fertilizers, agricultural chemicals, heating, lighting, power and other materials costs) and depreciation costs for fixed goods (depreciable assets including buildings, automobiles, agricultural machines and production management equipment).
Land rent	The land rent for a crop subject to the survey is calculated by multiplying the actually paid farm rent by the contribution rate for the relevant crop.
Interest payment	Interest payments are classified by use of underlying loans and multiplied by a contribution rate for a crop subject to the survey to calculate the borrowed capital interest to be shouldered by the crop.
Family labor cost	The family labor cost is calculated by multiplying family working hours by an average hourly wage for men and women (paid actually irrespective of sex in a relevant region) as computed based on wage data for business establishments with five to 29 workers in construction, manufacturing and transportation/postal industries (construction, manufacturing and transportation industries for 2009 under the former industry classification) in the Monthly Labor Survey Report (by the Ministry of Health, Labor and Welfare).
Employed labor cost	The employed labor cost represents wages paid to workers employed on an annual, seasonal or daily basis for producing farm products. Boarding and material compensations are assessed based on market prices. The cost includes rewards paid separately from wages.
Equity capital interest	The equity capital interest is calculated by multiplying equity capital – gross capital minus debt capital – by an annual interest rate of 4%.
Rent for owned land	The rent for owned land is based on a rent for similar farmlands (having capabilities similar to the farmland for a crop subject to the survey) within the same region.

Relationship between agricultural expenditures and production cost

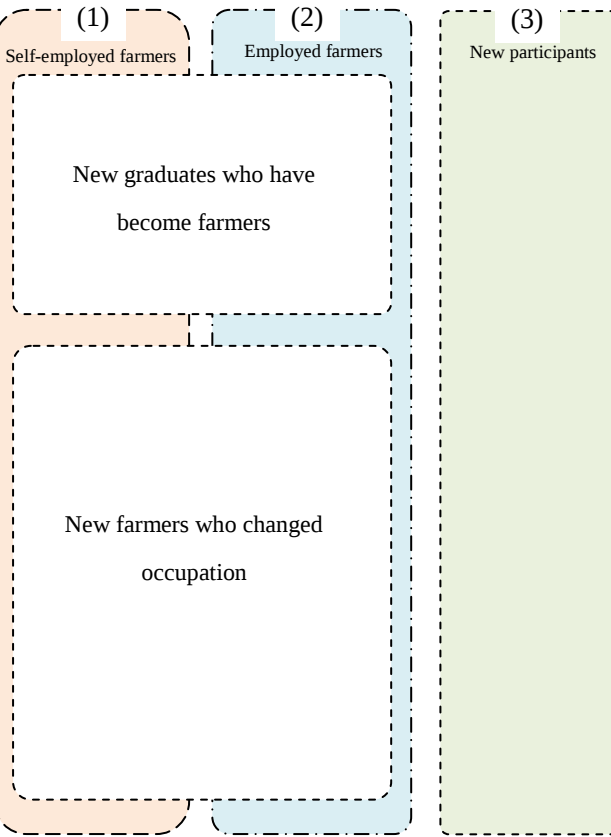


Note: Actually, by-product values are deducted from “production cost,” “production cost counted in payment interest /land rent” and “production cost counted in capital interest/land rent.”

(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	
			Mainly self-employed farming	Mainly other work			
Status during regular hours	Engaged mainly in work	Core person engaged mainly in farming (1) Population engaged mainly in farming (2) Person engaged mainly in farming (3)					1) Core persons engaged mainly in farming Among household members involved in self-employed farming (population engaged mainly in farming), those who are working mainly in agriculture during regular hours. 2) Population engaged in farming Persons engaged only in self-employed farming, or persons who are also engaged in work other than farming but spend more time engaged in farming on a yearly basis. 3) Persons engaged mainly in farming Household members 15 years old and over who are engaged in self-employed farming for more than one day per year. - Full-time farmers Among persons engaged mainly in farming, those who are engaged in self-employed farming for more than 150 days per year.
	Engaged mainly in housework and child rearing						
	Other						

(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 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	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.			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 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).			- 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	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	This index indicates how much food for consumption is being supplied by domestic sources. - Self-sufficiency ratio for individual items: The following equation is used to calculate the self-sufficiency ratio on a weight basis for individual items. Food self-sufficiency ratio calculation equation $\text{Self-sufficiency ratio} = \frac{\text{Domestic production volume}}{\text{Supply for domestic consumption}} = \frac{\text{Domestic production volume}}{\text{Domestic production volume} + \text{Import volume} - \text{Export volume} \pm \text{fluctuations in inventory}}$ - 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. - 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 (2010)</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. - 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. - 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>.

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 under the Agricultural Land Act and satisfy all the following requirements: (1) Requirements for incorporation (a stock corporation (not a publicly traded company), agricultural producer's cooperative corporation, a partnership, a joint-stock company or a limited liability company) (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 in principle), (4) Requirements for executives (the majority of executives are engaged in farming full time).
ASEAN	ASEAN stands for the Association of Southeast Asian Nations. ASEAN was established in the Thai capital of Bangkok in 1963 for cooperation in addressing the promotion of economic growth, and social and cultural development, the achievement of political and economic stability and other challenges in Southeast Asia. Upon its establishment, it consisted of five countries -- Indonesia, Malaysia, the Philippines, Singapore and Thailand. Brunei acceded to ASEAN in 1997, Vietnam in 1995, Laos and Myanmar in 1997 and Cambodia in 1999. ASEAN now thus comprises 10 countries. Prompted by the 1997 Asian currency crisis, Japan, China, South Korea and ASEAN have formed the ASEAN+3 framework for cooperation in East Asia.
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.
Direct seeding	Direct seeding, where rice seeds are directly scattered into paddies, can skip seedling-raising and transplanting steps required for the conventional practices including transplanting. There are various direct seeding methods, which are roughly divided into two groups – flooded direct seeding where seeds are scattered into flooded paddies after plowing and soil puddling, and dry direct seeding where seeds are scattered into non-flooded paddies.
Eco-farmer	Based on Article 4-1 of the Act for Promoting the Introduction of Sustainable Agricultural Production Practices, prefectural governors certify eligible farmers as so-called eco-farmers. As persons expected to become popular among producers and consumers, a name of eco-farmers was selected in August 2000 from those who filed applications with a national conference for promoting environmentally friendly agriculture.

Foot-and-mouth disease	Foot-and-mouth disease infected cloven-hoofed animals such as cattle and pigs show clinical signs, including vesicles/blisters on the mouth and feet, and the disease leads to reducing the productivity of industrial animals. The fatality rate for adult stock is several percent. Given the disease's strong infectious and epidemic capacity and the absence of effective treatments, the World Organization for Animal Health, known as OIE (Office International des Epizooties), views it as one of the most alarming infectious diseases. Meat of stock infected with the disease is not shipped to the market. Even if humans eat meat or milk of stock infected with the disease, human health will not be affected.
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.
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 (CH ₄ , generated by rice paddies and final waste disposal sites), dinitrogen monoxide (N ₂ O, generated during the process of manufacturing some raw ingredients for chemical products and from livestock waste), hydrofluorocarbons (HFCs, used as coolants for air conditioning devices), perfluorocarbons (PFCs, used in the production of semiconductors) and sulfur hexafluoride (SF ₆ , used in the production of semiconductors) as greenhouse gases that should be reduced.
HACCP	HACCP (Hazard Analysis and Critical Control Point) is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished 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.
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. In order to proceed with the promotion, the Act on Promotion of the "Sixth Industry" to create new added value using agricultural products in rural areas was enacted in November 2010.
Rice whole crop silage (rice WCS)	Before rice berries ripen, rice berries, stems and leaves are harvested integrally and fermented with lactic bacteria into feed called rice whole crop silage. The area has been expanding for producing rice WCS as a feed crop contributing to the effective utilization of rice paddies and the improvement of Japan's feed self-sufficiency ratio.
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.