

Topics

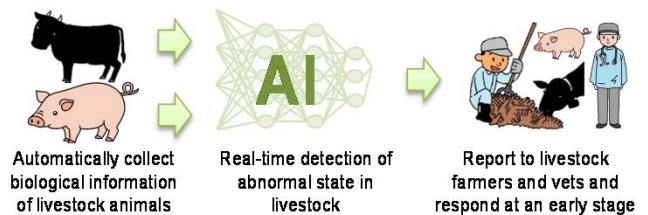
Improving productivity by applying groundbreaking AI, IoT and robot technologies

The lack of farmers in hilly and mountainous areas is becoming a serious problem. It is important to try to improve productivity by developing innovative AI, IoT and robot technologies with a clear goal of sales prices, etc. with participation of people engaged in agriculture.

Present status of AI technology and future measures

- Artificial Intelligence (AI) technology in the agriculture field has been under development.
- “The research project for the future agricultural production utilizing artificial intelligence” has been carried out since FY 2016, which promotes research, etc. of AI technology using innovative ideas of the private sector. Specifically, technology for early detection of livestock diseases has been developed.

Development of a technology to detect livestock diseases early using AI technology.

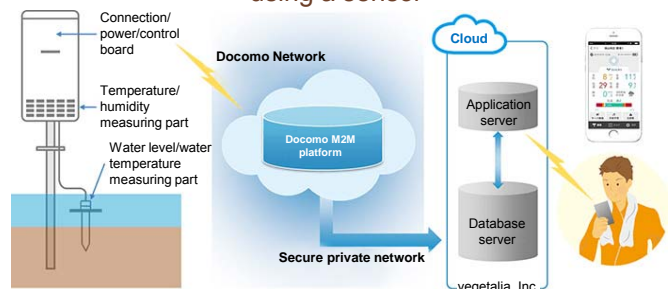


- ✓ AI indicates appropriate responses at an early stage.
- ✓ Decrease in the number of fatal accidents of livestock animals and prevent the spread of diseases.

Present status of IoT technology and future measures

- Internet of Things (IoT) technology in the agriculture field has been applied commercially in the system that enables farmers to track data of the water levels and water temperatures of paddy fields collected by a sensor on their tablet device. In a test demonstration conducted by a developer, the length of time necessary for water management decreased by 40% on average.
- In order to analyze the large amount of accumulated data, a guideline was developed to standardize agricultural work terms so that data collected in different systems can be shared. In the future, the government will consider the development of a coordination base for agricultural data and promote the provision of data owned by public institutions such as agricultural land block information (estate boundary polygon), etc.

System for the tracking of agricultural field status using a sensor



Source: NTT Docomo, Inc.

Present status of robot technology and future measures

- Although Robot technology in the agriculture field has been under development, it will soon be applied commercially in tractors as follows:
 - [1] Automatic traveling system for tractors using GPS, etc.
 - [2] Agricultural assist suit that reduces the physical burden of farmers in carrying work.
- The number of workers engaged in agriculture is decreasing. With the help of robots, elderly people and female farmers can have more opportunities to participate in agricultural work.

Reduction of weight burden using an assist suit for agriculture



1. Promoting structural reform of agriculture

Total agricultural output trends

Explained in page 8 (Special Topic 2)

Efforts of the Public Corporations for Farmland Consolidation to Core Farmers through Renting and Subleasing

- The total farmland area in 2016 decreased 25,000 hectares from the previous year to 4.471 million hectares.
- The usage accumulation rate of agricultural land to business farmers is listed on page 7 (Special Topic 2). The total area rented by Farmland Intermediary Management Institutions in 2015 increased 47,000 hectares from the previous year to 76,000 hectares, and the total subleased area increased 53,000 hectares from the previous year to 77,000 hectares.

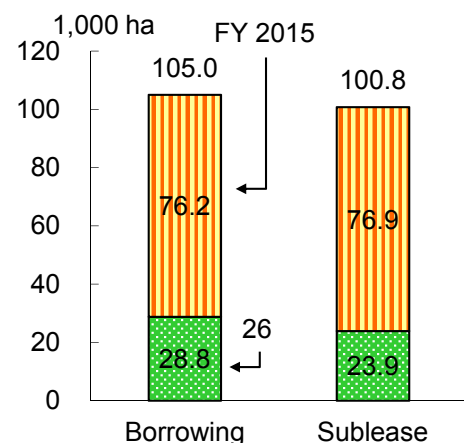
Development of/securing business farmers

Explained in page 5 and 6 (Special Topic 2)

Strengthening of human resources capability

- The percentage of agricultural high school graduates who became engaged in farming was 2.6% and the percentage of those who entered a prefectural college of agriculture was 4.2% (FY 2015). In order to promote agricultural high school graduates' engagement in farming, the government promotes cooperation of agricultural high schools with prefectural colleges of agriculture and farmers who are successful in the region.
- Farming grants for young farmers (changed to "investment in next generation human resources in agriculture" in FY 2017) support a stable income of pre-farmers during their training period and of farmers during the period of unstable management immediately after their engagement in farming. 2,477 pre-farmers and 11,630 new farming businesses have used the grant (FY 2015).
- It is essential to nurture farmers with an excellent business sense as well as farming skills as the future leaders of regional agriculture. The government supports the holding of management seminars and "Online Agri Business School" for students of prefectural colleges of agriculture and new farmers. Also, the promotes the launching of "agricultural management seminar" where local farmers can learn management skills while engaging farming.

Achievements of Farmland Intermediary Management Institutions



Source: MAFF

GLOBALG.A.P. from a high school with a view to the world (Aomori)

The prefectural Goshogawara Agriculture and Forestry High School in Goshogawara City, Aomori, acquired the first GLOBALG.A.P. certificate among all high schools in Japan in December 2015 for their cultivation of apples. The school also acquired a certificate for rice in December the following year.

In January 2017, students of the high school went through procedures for the export of apples themselves and practiced face-to-face sales in a department in Chengdu City, Sichuan Province, China.

The high school has received a "G.A.P. Awards 2016."

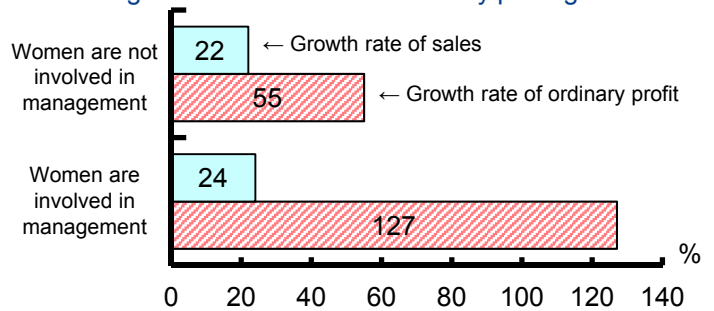


Practice in face-to-face sales of apples

Participation of female farmers

- The earning capacity of management entities where women are involved is higher than that of management entities where women are not involved.
- The percentage of women that are core persons mainly engaged in farming is high in vegetable and fruit farming, and the percentage of farm households where women are involved in management is high in vegetables grown in facilities and dairy businesses.
- The percentage of female members of the Agriculture Committee and officers of agricultural cooperative is increasing. The government promotes community understanding and fosters a mindset for further increase.
- The “Nougyou-Joshi Project” (Project for female farmers to be more active in agricultural business by cooperation with various companies to tap female farmers' knowledge and experience) formulated “Team Hagukumi” and launched activities to foster future female farmers from students. Japanese female farmers actively exchanged opinions with U.S. and French female farmers at the G7 International Forum.

The relationship between women's involvement in management and sales and ordinary profit growth rate



Source: Japan Finance Corporation, Trend Survey on Employment Status (surveyed in July 2016)

Note: Growth rate in agriculture management in the past three years

Percentage of women that are core persons mainly engaged in farming (Unit: %)

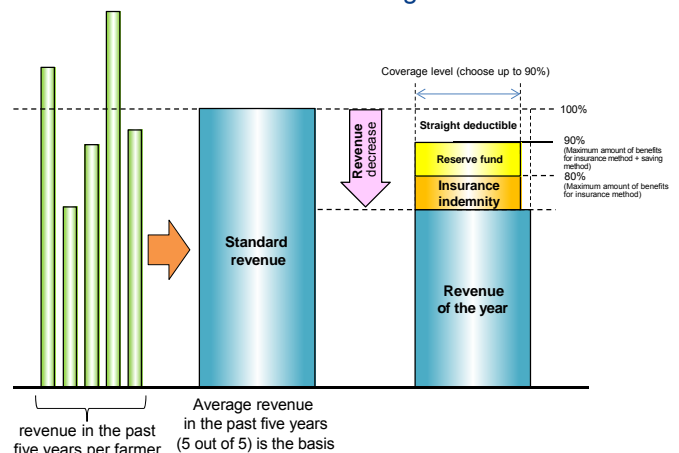
	Core women mainly engaged in their own farming	Farm households where women are involved in management
Rice cultivation	39.3	40.9
Outdoor grown vegetables	45.5	54.7
Vegetables grown in facilities	46.1	62.7
Fruits	46.0	55.6
Dairy	41.9	63.1
Beef cattle	41.0	51.2
Pig farming	40.8	56.8
Poultry farming	42.6	59.0

Source: MAFF, “2015 Census of Agriculture and Forestry”

Introduction of the revenue insurance system

- The Agricultural Competitiveness Enhancement Program summarized a document on the introduction of a revenue insurance system as a safety net for agricultural businesses which work on their management development based on a business decision.
- The revenue insurance system covers farmers who file blue returns and conduct appropriate management.
 - [1] All items are covered,
 - [2] provides coverage for revenue decrease due to natural disasters as well as price decline, etc.
 The insurance covers items and risks that were not covered by the agricultural mutual relief system.
- The bill for the amendment of the Compensation Against Agricultural Loss Law which is intended to introduce this system was approved in the Diet.

The basic ideas of the revenue insurance system included in the Agricultural Competitiveness Enhancement Program



Note: When people who have filed blue returns for 5 years or longer choose 90% of maximum coverage (insurance method + saving method).

2. Developing and conserving agricultural production infrastructure

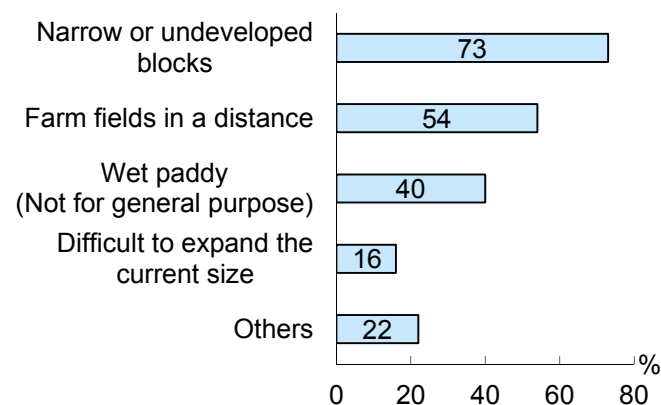
Current status and direction of agricultural production infrastructure

- The government approved the Long-Term Plan of Land Improvement (FY 2016 - 2020) incorporating three policy issues and measures in the cabinet meeting in order to respond to the situation at home and abroad and issues surrounding agriculture and rural areas. At the same time, after the implementation of the land improvement project, MAFF compiled case examples of the promotion process in rural areas, which introduced advanced examples that realized characteristic development.

Review of the land improvement system

- Farmers are highly unlikely to rent agricultural land with insufficient infrastructure development. For this reason, when a consolidation of land use to farmers is conducted, the government aims to establish a system in which a farmland consolidation project can be carried out without requesting farmers to pay expenses. To realize this, the government submitted a bill for the revision of the Land Improvement Act to the Diet.

Reasons that business farmers refused the request for cultivation (multiple answers)



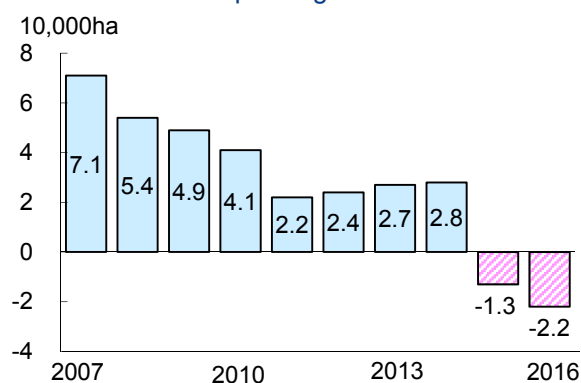
Source: MAFF (survey conducted in November 2010)

3. Production trends for major farm and livestock products

Rice

- In FY 2016, a shift of cultivation to feed rice, wheat and soybean advanced and there has been no excess planting of table rice for two consecutive years. For the production starting in 2018, related people are working together to promote the production based on demands without relying on the target volume of rice production allocated by the government.
- Reduction in feed rice production and greater value added to livestock products using feed rice are promoted by using manuals and holding "Feed Rice Yield" competitions.
- The government formulates guidelines for the labeling of rice flour such as standards by use and non-gluten indication and promotes the development and dissemination of appealing products using the property of rice flour.

Excess planting for table rice



Source: MAFF

Wheat

- The total planted area of wheat produced in 2016 increased 1,000 hectares from the previous year to 214,000 hectares, which was the largest in the last 10 years. The production decreased 213,000 tons from the previous year to 791,000 tons due to bad weather.
- Wheat cultivar for medium ground flour has been produced which is suitable for udon noodles. In recent years, however, a variety of cultivars for uses in bread, Chinese noodles and pasta have been developed and promoted.
- Following the efforts of Local Production for Local Consumption, domestically produced wheat has been used for bread and noodles for school lunch programs.

Main uses of domestically produced wheat and shipment quantity by cultivar

(Unit: 10,000 t)

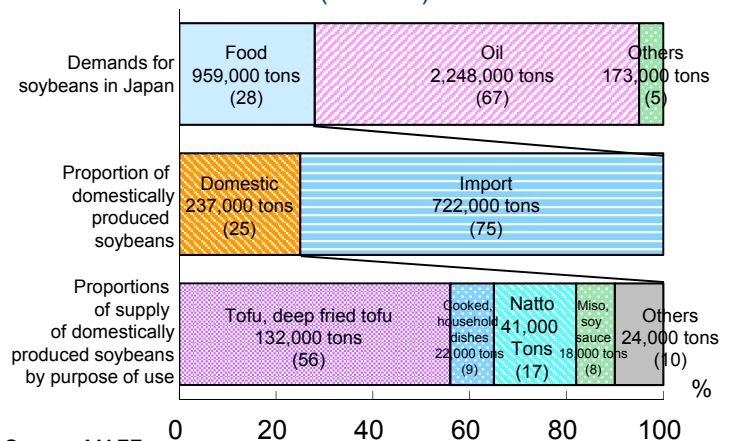
Purpose	Variety	2001 production	2006	2011	2016 (Quick estimation)
Varieties for bread	Haruyo Koi	0.1	3.0	2.3	5.1
	Yumehikara	-	-	0.0	6.2
Variety for chinese noodles	Chikushi W No.2 (Wheat for ramen noodles)	-	-	0.2	0.5
Variety for pasta	Selodur	-	-	-	0.0
Varieties for Japanese noodles	Kitahonami	-	-	56.6	48.4
	Salonosora	-	-	0.6	4.7
	Shirogane Komugi	5.4	7.4	5.4	4.0
	Chikugo Izumi	4.3	5.7	3.6	3.1
	Norin No. 61	13.1	10.6	6.2	1.7
	Hokushin	45.1	49.6	0.2	0.0

Source: MAFF, Results of Agricultural Product Inspection

Soybeans

- The total planted area of soybeans produced in 2016 increased 8,000 hectares from the previous year to 150,000 hectares, which was the largest in the last 10 years. The production decreased 5,000 tons from the previous year to 238,000 tons due to bad weather.
- Soybeans are used for food such as tofu and natto, and oil. Domestically produced soybeans have received recognition for their quality and taste, and almost all production is used for food.
- As users expect a stable supply, in addition to the existing post-harvesting bidding transactions, a pre-sowing bidding system has been introduced on a trial basis from the 2017 production, which will be fully introduced from the 2020 production.

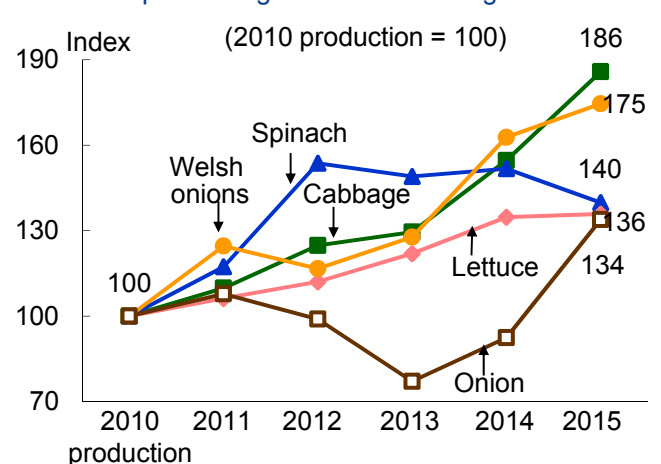
Demands for soybeans and use of domestically produced soybeans (FY2015)



Vegetables

- The total planted area of vegetables produced in 2015 decreased 2,000 hectares from the previous year to 397,000 hectares. The production decreased 50,000 tons from the previous year to 11,909,000 tons.
- In recent years, production for processing and manufacturing uses has been increasing. The government promotes new cultivar development and the introduction of a coherent mechanized system in order to increase the ratio of domestic production in vegetables for processing and manufacturing uses.
- Looking at vegetables for processing and manufacturing uses by product, shipment of stem vegetables such as lettuce, cabbage and welsh onions increased and a large quantity of lettuce is produced in Gunma and Nagano, cabbage in Gunma and Aichi and welsh onions in Osaka and Tokushima.

Shipment of vegetables for processing and manufacturing uses



Fruits

- The total planted area of fruits produced in 2015 decreased 4,000 hectares from the previous year to 230,000 hectares. The production decreased 160,000 tons from the previous year to 2,945,000 tons due to citrus fruits being affected by bad weather.
- The production of fruits is decreasing. The cultivation of varieties such as "Shine Muscat," a grape cultivar which can be eaten with its peel, and "Setoka," a citrus fruit which can be peeled easily, is increasing because they are easy to eat, taste good, and satisfy consumers' needs.
- Previously, products below standard have mainly been used for processing and manufacturing uses. The cultivation of varieties such as "Chiyuki" apples, whose cross section is less subject to discoloring and suitable for cut fruits, and "Tsuyuakane," from which ruby-colored plum wine is made, is increasing to allow the development of new demands.

Shipment of fruits for processing and manufacturing uses

Apple Chiyuki
(cultivar name: Aori 27)
(Discoloration of fruit)



Grated
apple

Cross
section

Left: Chiyuki Right: Fuji

Source: Aomori Prefectural Industrial
Technology Research Center

Plum Tsuyuakane



Source: National Agriculture and
Food Research Organization

Livestock products

- The number of livestock farms has decreased in Japan due mainly to livestock farmers' growing retirement as they age and shortages in their successors. However the number of animals per farm has increased.
- The raw milk production increased 1.0% from the previous year to 7.41 million tons (FY 2015) due to the increase in milk yield per delivered cow, although the number of delivered cow farmed is decreasing. The beef production decreased 5.4% from the previous year to 475,000 tons (FY 2015) due to the decrease in the number of beef cattle farmed. Transaction prices of beef calves have been high.
- Productions of pork and eggs have generally remained unchanged in recent years. However chicken production reached a record high because of the rise in health awareness (1,517,000 tons (FY 2015)).

The number of livestock farms and animals per farm

(Unit: household, animal, poultry)

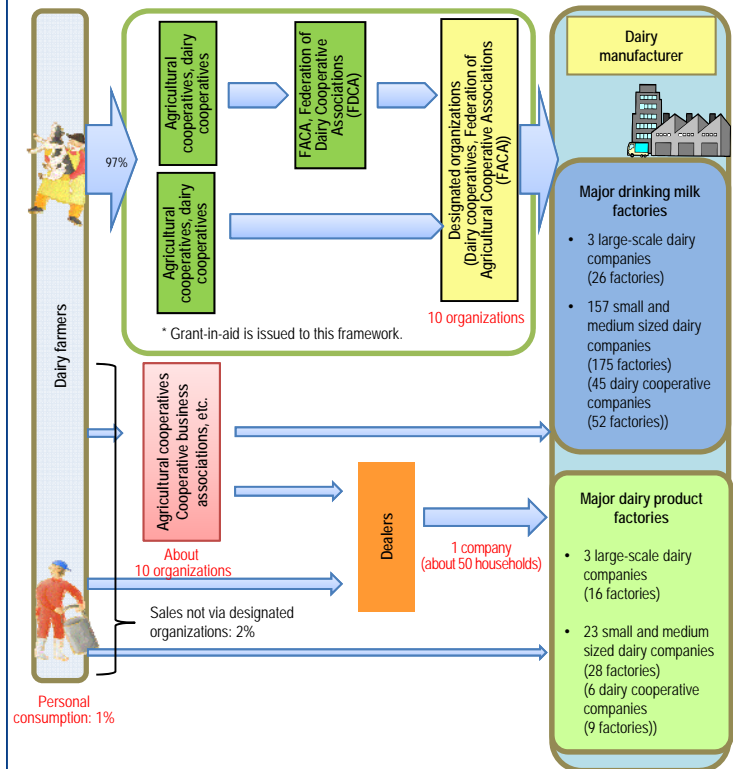
		Number of livestock farms		Number of animals per farm	
		2006	2016	2006	2016
Dairy cattle	Hokkaido	8,590	6,490	99.7	121.1
	Excluding Hokkaido	18,000	10,500	43.3	53.3
Beef cattle		85,600	51,900	32.2	47.8
	Cows for breeding	73,400	44,300	8.5	13.3
	Fattening cattle	13,100	8,330	54.7	86.4
	Dairy cattle for beef	7,830	5,040	134.4	166.1
Pigs		7,800	4,830	1,233.3	1,928.2
Layers(× 1000)		3,600	2,440	38.0	55.2
Broilers(× 1000)		2,590	2,360	40.0	56.9

Source: Prepared by MAFF, "Statistics on Livestock"

Livestock products (continued)

- In order to increase the number of breeding cattle, the government promotes the use of cattle stations and the embryo transfer (ET) of Japanese beef cattle to breeding cattle. In order to secure the number of descendant dairy cattle, the government promotes the technology to use sexed semen and the introduction of automatic calf feeders.
- Bill for the amendment of the Act on the Stability of Livestock Farming and the Act on the Agriculture & Livestock Industries Corporation, Independent Administrative Agency was submitted to the Diet in order to review the present method in which the government issues a grant-in-aid for producers who commit to sell to designated organizations.
- The government supports the introduction of machinery and devices such as milking robots, which could significantly contribute to the improvement of labor conditions in order to implement a "labor condition reform" of dairy farmers.
- In order to establish livestock farming that does not depend too much on imported feeds, the government promotes the development of a wide-area distribution system of domestic feeds, the expansion of public rearing ranch uses, and Japanese-style grazing. It is also necessary to try to ensure steady management of the compound feed price stabilization system.

Sales routes of raw milk



Note: Number of dairy manufacturers as of December 31, 2015

4. Promoting technological innovation on production/distribution field

- The council of industry-academia-government collaboration - "Field for Knowledge Integration and Innovation," which was established in April 2016, established a research and development platform for production and distribution technologies with involvement of those who are engaged in agriculture, forestry and fisheries in discussions.
- Through cooperation between the farming industry and the business world, demonstrations of the sensing technology that allows the tracking of field crop growth with a camera started being put into practical use.
- In response to the requests from site workers for information on the latest technologies and research results, MAFF developed and published the list of researchers and their specialized fields collected from research institutes in Japan.
- The National Agriculture and Food Research Organization (NARO) developed a system to immediately stop the blades of grass cutters in order to prevent accidents during farming work.

Long-term storage of "Shine Muscat" grapes

NARO developed a long-term storage technology for "Shine Muscat" grapes with research institutes in Yamagata and Aomori prefectures.

The cold storage method by keeping the rachis of harvested "Shine Muscat" in a plastic tube filled with tap water prevents discoloring of rachis and maintains the fruit quality and marketability of products even after 4 months.

This enables a constant supply of domestic grapes during the period from after October to early in the New Year when their stocks are low. Grapes can also be exported to East Asia when there is a high demand during the Chinese New Year.

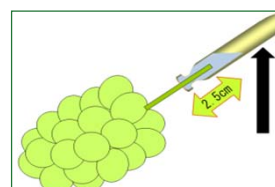


Image of hydration from a plastic tube to the bunch



"Shine Muscats" stored for 4 months (Left: not hydrated, Right: hydrated)

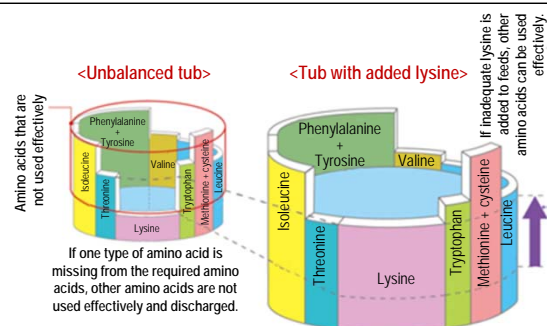
5. Promotion of environmental policy such as responses to climate change

- The Paris Agreement, which will be a legal framework replacing the Kyoto Protocol to the United Nations Framework Convention on Climate Change, came into effect in November 2016.
- Based on the Paris Agreement, MAFF formulated the global warming countermeasure plan in March 2017, which embodies the direction of promoting efforts in agriculture, forestry and fisheries industry.
- To expand production and the market of organic farm products, the "Network for Organic eco Agriculture and Food lifestyle NIPPON" was established in July 2016 with participation of people involved in industry, academia and the government. On the occasion of 10th year after the enforcement of the law on the promotion of organic farming, people involved in organic farming determined that the enactment of the bill, December 8, would be "Organic Farming Day."

Lysine, an amino acid that has the potential to reduce greenhouse gas emissions

When livestock animals are fed unbalanced amino acids, the excess amino acids are not used and get excreted as nitrogen compounds. This produces nitrous oxide with 300 times the greenhouse effect of carbon dioxide, which is one of the factors causing global warming. By adding lysine, an amino acid lacking in feed materials, the greenhouse gas emissions from livestock can be reduced and the production efficiency of livestock can be improved.

Amino acid balance in livestock feeds ("Tub Theory")



Source: Ajinomoto Co., Inc.

6. Agriculture-related organizations supporting agriculture

- The number of agricultural co-operatives was 686 (as of the end of FY 2015).
The revised Agricultural Cooperatives Act came into force in April 2016, which stipulates that agricultural co-operatives should give full consideration to increasing agricultural income.
The percentage of female board members of agricultural co-operatives increased 0.3 points from the previous year to 7.5% (2016).
- The number of Committee on Agriculture (COAG) was 1,706 (As of October 1, 2016).
Based on the revised Act for the Committee on Agriculture which was enforced from April 2016, 20% of the total number of agricultural committees in FY 2016 and 70% in FY 2017 will shift to a new system.
The percentage of female members of agricultural committees increased 0.7 points from the previous year to 8.1%. It was 11.2% in agricultural committees which shifted to a new system (2016).

Status of agricultural co-operatives (general agricultural cooperatives)

(Unit: number of cooperatives, 1,000 persons)

	2011	2012	2013	2014	2015
Number of cooperatives	723	717	712	692	686
Number of members	9,834	9,978	10,145	10,268	10,370
Full members	4,669	4,614	4,562	4,495	4,433
Associate members	5,165	5,364	5,584	5,773	5,937
Number of staff	216	212	209	207	205

Source: MAFF, Statistics on Agricultural Cooperatives

Note: 1) The number of cooperatives is the total in the statistics on agricultural cooperatives.

2) Figures are as of the end of fiscal year in each cooperative.

Status of Committee on Agriculture (COAG)

(Unit: number of committee, persons)

	2011	2012	2013	2014	2015	2016
Number of agricultural committees	1,713	1,710	1,710	1,708	1,707	1,706
Number of agricultural committee members	36,034	35,729	35,514	35,618	35,488	33,174
Number of coordinating members	—	—	—	—	—	3,257
Number of office workers	7,758	7,755	7,732	7,725	7,722	—

Source: MAFF (as of October 1 each year)

Topics

Bringing a brighter future for the agriculture in hilly and mountainous areas: a new challenge using local "treasure" products

Hilly and mountainous areas have values such as abundant natural surroundings and excellent landscape, which are not present in flat land. It is important to increase income by treating these resources in rural areas as "treasures" and launch projects including agriculture with creativity.

Current situation and issues in hilly and mountainous areas

- Although the population in hilly and mountainous areas is a mere 10% of the total population, both cultivated land and agriculture output account for 40% of the total. These areas play an important role as places for food production and in maintaining and using multifunctionality in agriculture and rural areas.
- Hilly and mountainous areas have more slopes, are vulnerable to damage from wild animals, and have a faster aging rate compared to flat land. On the contrary, these areas possess resources such as clean water, a cool climate, etc. which are not present in flat land. There is a potential to operate farming with earning power using these resources.

Support for efforts using regional characteristics

- Treating resources in hilly and mountainous areas such as abundant natural surroundings and landscape as treasures and taking the following actions using creative and original ideas.

- [1] Production and sales and the AFFrinnovation of agricultural products with high profitability
- [2] Proactive provision of support for farmers who are enthusiastic and attract visitors through exchanges between urban areas and rural areas in cooperation with tourism, education and welfare sectors and farm stays.

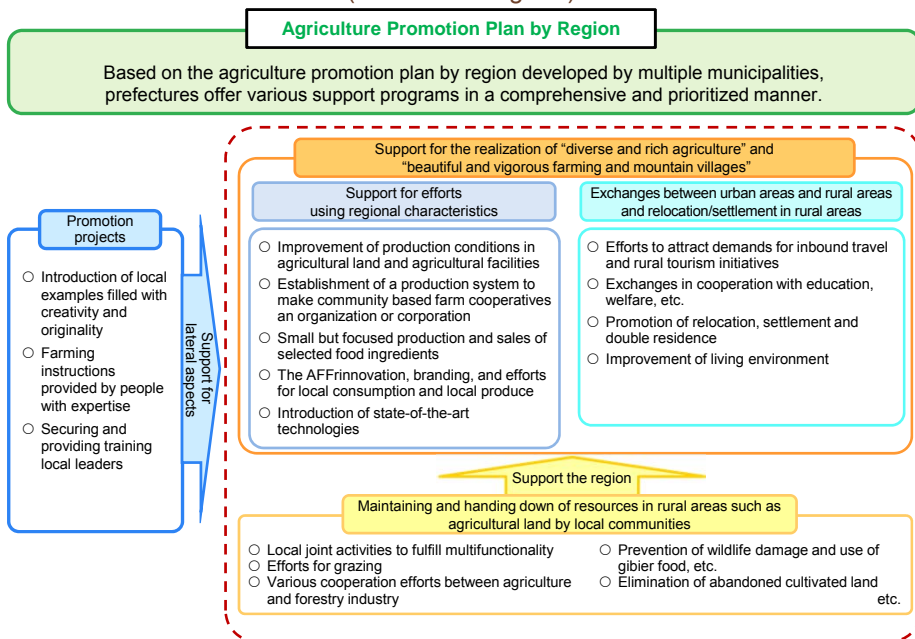
The Japanese agricultural direct payment system is introduced to support local activities to achieve multifunctionality and continuous farming.

- The Agriculture Renaissance Project in hilly and mountainous areas will be implemented from FY 2017, which establishes a limit in priority numbers in various support programs and relaxes requirements for efforts positioned in the plan developed by each prefecture.

Horizontal spreading of excellent examples

- From the viewpoint of spreading creative and original approaches, it is important to spread excellent examples of agriculture in hilly and mountainous areas.

Agriculture Renaissance Project in hilly and mountainous areas (schematic diagram)



Expanding agricultural productivity by incorporating community-based farm cooperatives (Kochi)

Doi and Hirano communities in Shimanto town, Kochi are agricultural zones in an area at an altitude of 230 meters above sea level in the Shimanto River basin.

In 2013, community-based farm cooperatives in the Hirano community were incorporated as the "Agricultural Producers' Cooperative Corporation Hirano." It is entrusted machinery works for rice using the direct payment system to farmers in the hilly and mountainous areas, and cultivates garlic chives in facilities.

Rice cultivated in the area where the temperature difference is extreme between day and night is sold as the Niida Rice brand.

In FY 2015, Hirano community signed a partner agreement with the Doi community to expand measures.

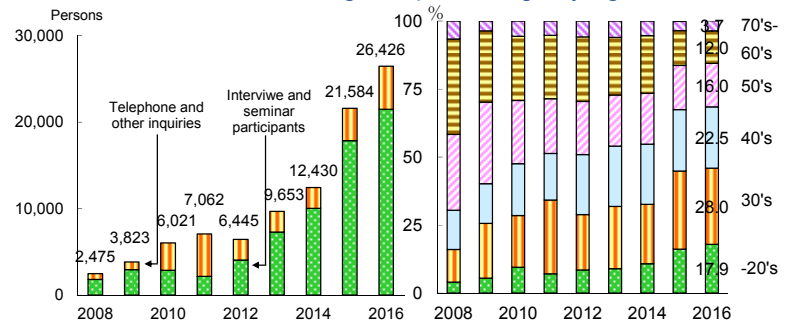


Cultivation of garlic chives

1. New trend of visit to rural areas toward regional empowerment

- The rural population in 2015 decreased 4.1% compared to 5 years ago (total population decrease 0.8% compared to 5 years ago). In recent years, the number of people in their 20s and 30s inquiring about moving to rural areas is increasing due to the popularization of the Coming Back to Rural Areas movement.
- Young people from urban areas visit rural areas, and the government promotes measures based on the Rural Invigoration Vision and supports regional practical activities.
- There is an example of a person who moved to a rural area, became a farmer and has produced facility horticulture crops, growing the operation 5 times over after 3 years of the farming business operation.
- The number of inbound visitors marked a record high of 24.04 million (2016). It is important to attract tourists including inbound visitors in order to increase agriculture income in rural areas. The government promotes the development of areas that launch rural tourism businesses (500 areas by 2020).

Number of people inquiring about moving and percentage by age



Source: Survey by Furusato Kaiki Shien Center

Using old houses for rural tourism businesses (Hyogo)

In Sasayama City, Hyogo Prefecture, an NPO corporation of community residents and a general incorporated association NOTE developed a system for the implementation of rural tourism projects.

The annual number of people using old house accommodations is slightly less than 700 (1 year from October 2015), showing that there are many visitors.

Ripple effects to the community such as U-turn migrants and the renovation of dilapidated farmland.



Maruyama community offering accommodations

2. Maintaining and demonstrating multifunctional roles of agriculture and rural areas

- Agriculture and rural areas have multifunctional roles including not only food supply but also national land conservation, water recharge, biodiversity conservation, good landscape formation and cultural succession. All people have benefited from these roles.
- In order to maintain and demonstrate these multifunctional roles, the government steadily implements Japanese agricultural direct payments (multifunctional payment, direct payment to farmers in hilly and mountainous areas, direct payment for environmentally friendly agriculture) to support regional cooperation, agricultural production in hilly and mountainous areas and agricultural production for natural environmental conservation.

Outline of the Japanese agricultural direct payment system



3. Responding to wildlife damage

- Annual wildlife damage to farm products has remained high level at 17.6 billion yen in FY 2015. This damage is affecting not only agricultural production but also decrease in the motivation for farming.
- Although the aging of owners of a hunting license is advancing, the percentage of women is increasing. The number of people acquiring a new license has been more than 10,000 annually and the percentage of people acquiring a new gunning license is increasing.
- Teams for implementing measures to prevent damage due to wildlife based on the Act on Special Measures for the Prevention of Damage Caused by Wildlife are placed in 1,093 municipalities (as of the end of October 2016).
In December 2016, the revised Act on Special Measures for the Prevention of Damage Caused by Wildlife was promulgated and put into force in order to effectively promote measures to prevent damage due to wildlife.
- Demonstrations have begun in various areas using ICT and drones.
- The government is working on the development of gibier (wild meat) demands and securing a supply system based on the demands, as well as providing support for the establishment and operation of unified standards for gibier by private organizations.

Mobile wildlife slaughtering vehicles

The Japan Gibier Promotion Association and Nagano Toyota Motor Sales Co., Ltd. manufactured the first mobile wildlife slaughtering vehicle in 2016.

The slaughtering vehicle can travel close to the site where wildlife was hunted, and mounts various equipment to maintain the same quality of meat as that in a fixed general meat processing facility.

Through the introduction of the vehicle, the use of hunted animals as gibier food is expected, which were previously buried or incinerated.



Mobile wildlife slaughtering vehicles

4. Proactive utilization of local resources

Creation of new values taking advantage of local resources

- 29 municipalities have developed a basic plan based on the Act on the Promotion of Renewable Energy in Rural Areas (as of December 2016).

Improvement of the employment structure in rural villages

- It is necessary to secure employment opportunities of local residents in order to increase income in agriculture and related industries and to maintain and develop rural areas.
To achieve this, the scope of industries to be introduced to rural areas is expanded to service industry, etc. and the bill for the revision of the Act on Promotion of Introduction of Industry into Agricultural Regions has been submitted to the Diet.
- The government promotes support measures based on the Act on Promotion of Introduction of Industry into Agricultural Regions, the provision of financial support, and promotes the use of related measures such as cross-industry tax measures.

Examples of industries other than manufacturing with a potential of introduction in rural areas.

- Farmer's markets and retailers selling processed products
- Hotels and food/beverage services such as rural tourism and farm restaurant businesses
- Electricity industry such as woody biomass power generation using thinned wood
- Healthcare and welfare service
- Information and communications industry

Farmer's markets



Farm restaurant



Rural tourism

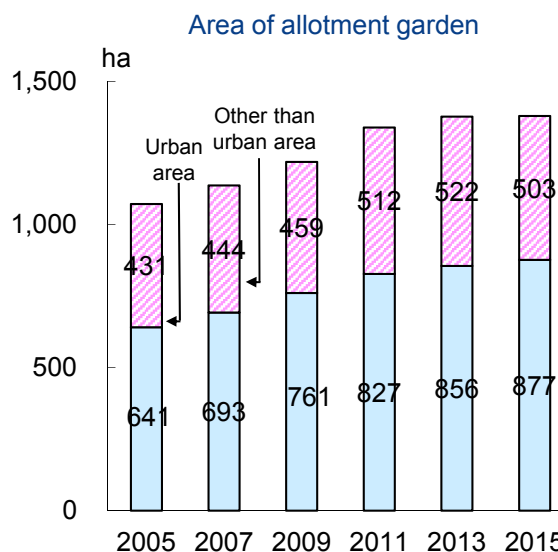


Woody biomass power generation



5. Promotion of urban agriculture

- In response to the rising demands of urban residents, the area of allotment gardens is increasing year after year mainly in urban areas.
- Based on the Basic Act on Promotion of Urban Agriculture, the Basic Plan for the Promotion of Urban Agriculture was formulated in May 2016, which embodies basic policies on the promotion of urban agriculture.
- Based on the plan, local governments will develop regional plans and consider promotion measures for urban agriculture.



Source: MAFF

6. Coordination between agriculture and various other areas

Cooperation with the education field

- It is important for children to experience farming and interact with people in rural areas so that they can deepen their understanding of future agriculture and rural areas.
- Through cooperative efforts, related ministries and agencies promote farm stay experiences for children in rural areas in the "exchange project for children experiencing farming and rural lives."

Welcoming children with more than 80 programs (Ishikawa)

In Noto Town, Ishikawa Prefecture, local residents including those moved there established the Shunran no Sato Executive Committee and started initiatives to showcase the farming experience and educational trips using farmhouse accommodations.

More than 80 experiencing programs are on offer including rice planting and country cooking. In FY 2016, the town welcomed about 1,800 children from 9 schools from urban areas including Tokyo.

It is generating ripple effects such as the elimination of dilapidated farmland and migration and settlement of young people.



Rice planting experience

Cooperation with the welfare field

- The government promotes cooperative efforts in agriculture and welfare which benefit both industries. Efforts that have been made include the operation of welfare gardens to secure employment of people with disabilities by employment facilities for people with disabilities and the employment of people with disabilities depend on each individual characteristic of disability by agricultural corporations, etc.
- There is a need to consider a system in which "agricultural and livestock products with active involvement of people with disabilities" can be purchased in an appropriate manner with the 2020 Tokyo Olympic and Paralympic Games in mind.

People with disabilities contribute greatly to the stable production of traditional vegetables (Nagano)

In Wago District, Anan Town, Nagano Prefecture, people with disabilities are engaged in the production of local traditional vegetables such as eggplants and gourds.

The number of days that people with disabilities engage in farming is around 60 per year, and the number of Suzugasawa eggplant stubbles planted by people with disabilities in 2016 was about 900 out of the total 1,300. They contribute greatly to the stable production of these vegetables.

Those with disabilities who are engaged in farming said they are pleased because they feel like they are living in the community.



Local residents and people who are engaged in farming.

Topics

Natural disasters that left ravages of destruction: efforts that contributed to early restoration

The Kumamoto Earthquakes occurred in April 2016 and a series of typhoons in the summer have brought tremendous damage to the agriculture, forestry and fisheries industry. However, early restoration was achieved through various efforts.

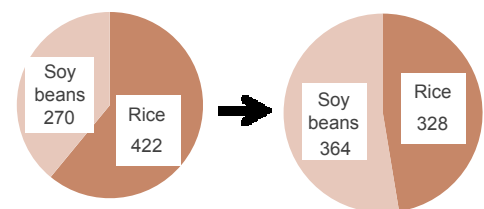


Kumamoto Earthquakes

Crop diversion from rice to soybeans prevents the generation of unplanted land.

- In Kashima Town, agricultural producer's co-operative corporation Kashima Wide-Area Farm produces rice and soybeans. As its agricultural land was damaged by the earthquake, the farm identified the damage status immediately, summarized farmers' willingness for cropping and repaired a channel. In paddy fields where no irrigation water can be used, crop diversion was conducted from rice to soybeans to prevent the generation of unplanted land.

Farming program and achieved area (ha) of Kashima Wide-Area Farm



The shipment of vegetables is continued by sorting manually with the help of related people.

- JA Kumamoto Economic Agricultural Cooperatives Garden Distribution Center in Uki City suffered damage to the building, sorting machine, etc. The center sorted melons and mini tomatoes manually and in the neighboring distribution facilities during the peak of their shipment in April and May. The sorting machines have been repaired and restarted operation in sequence. Shipment continued with the help of JA groups nationwide.



Damaged melon sorting machine

With the prompt response of people related to dairy farming, the amount of raw milk wasted was kept to a minimum.

- Immediately after the occurrence of earthquakes, dairy farmers in Nishihara Village were forced to dispose of raw milk due to the disruption of transport networks and the ceased operation of dairy plants in the prefecture. After that, transport destinations were found with cooperation of dairy manufacturers which own plants in the neighboring prefectures and outside the Kyushu region, and raw milk was distributed by collecting milk tank lollies from all over Japan with the help of the National Federation of Agricultural Cooperative Associations (ZEN-NOH), the National Federation of Dairy Cooperative Associations and designated raw milk producer groups in Japan.



Cracked open cattle farm

Toward the further development of agriculture through dividing land (including damaged agricultural land) in larger blocks

- Kumamoto Prefecture developed a restoration/reconstruction plan and has promoted the completion of restoration by FY 2018, the corresponding division of damaged agricultural land into larger blocks and farmland concentration to farmers. The prefecture takes measures for the development of infrastructure to divide a wide area of agricultural land including damaged land into larger blocks in 3 districts and plans land concentration to farmers as well as the introduction of crops with high profits such as vegetables.



Typhoons

Promotion of early restoration of agricultural land in cooperation with the River Department and Bureau

- In the Tokachi region, Hokkaido, a series of typhoons in the summer caused flooding of the river, resulting in soil discharge in about 1,900 hectare of agricultural land. The early restoration of the damaged land was encouraged with cooperation of the River Department and Bureau by using excavated soil in rivers for the restoration of agricultural land. The restoration works have been under way for planting in 2017 in areas outside of some that suffered devastating damage.



Agricultural land with discharged soil from river flooding

Potato chip plant reopened early using the pre-investigation groundbreaking system

- JA Furano Sirera Furano Plant processes potatoes from Minamifurano Town, Hokkaido into potato chips. The plant and the storage warehouse were submerged due to the flooding of rivers caused by the typhoon, and it was unable to receive raw materials and operate the business. By using the pre-investigation groundbreaking system and starting the restoration work early, the plant received raw materials again in October, the operation of the plant restarted in December, and the restoration of the entire plant will be completed within this fiscal year.



Inundated factory

1. Restoration/Reconstruction from natural disasters (Kumamoto Earthquakes, etc.) occurred in FY 2016

Response to disaster damage from Kumamoto Earthquakes

- On April 14 and 16, 2016, earthquakes measuring a maximum seismic intensity of 7 occurred centered in Kumamoto, causing 165.7 billion yen worth of damage to the agriculture, forestry and fisheries industry.
- Immediately after the disaster, about 2.78 million meals were provided by the food aid supply through push-type support that sent supplies without waiting for requests from the municipality and pull-type.
- The government designated the disaster caused by Kumamoto Earthquakes as a Disaster of Extreme Severity. MAFF supported early restoration of the disaster area through the promotion of a disaster restoration program, early payment of mutual relief indemnity, special measures for disaster-related funds, and subsidies for the reconstruction and repair of damaged facilities.
- The restoration and reconstruction of the disaster area has made steady progress, for example, crops were planted in almost all paddy fields due to the emergency work of agricultural land and crop diversion and the reconstruction and repair of damaged facilities progressed.



Depressed agricultural land



Collapsed animal house barn



Delivering relief supplies to disaster-affected areas



Paddy fields after crop diversion to soybeans

Response to typhoon damage

- A series of typhoons No. 7, 11, 9, 10, and 16 arrived between August and September 2016. For the first time in recorded history, three typhoons hit Hokkaido in a year and a typhoon struck the Tohoku region from the Pacific coast. The typhoons caused 159.6 billion yen worth of damage to the agriculture, forestry and fisheries industry.
- The government designated the disaster caused by typhoons as a Disaster of Extreme Severity. MAFF supported early restoration of the disaster area through the promotion of a disaster restoration program, early payment of mutual relief indemnity, special measures for disaster-related funds, and subsidies for the reconstruction and repairs of damaged facilities.
- The areas conducted disaster restoration projects before it started to snow using the pre-investigation groundbreaking system and made steady progress in restoration and reconstruction.



Agricultural land damaged by the flooding of rivers (Memuro Town, Hokkaido)



Onions discharged from the flooding of rivers (Kitami City, Hokkaido)



Heavy rain carried sediment in paddy fields (Fukagawa City, Hokkaido)



A vinyl greenhouse smashed by the flooding of rivers (Iwate)

Response to the damage caused by torrential rainfall between June 6 and July 15.

- A stationary rainy front on Japanese islands and the depression which passed over the front caused torrential rain, which led to 60.9 billion yen worth of damage to the agriculture, forestry and fisheries industry mainly in Kyushu.
- The government designated the disaster caused by the torrential rain as a Disaster of Extreme Severity. MAFF supported early restoration of the area through the promotion of a disaster restoration program and special measures for disaster-related funds.
- The area conducted disaster restoration projects using the pre-investigation groundbreaking system and made steady progress in restoration and reconstruction.



Sediment flowed in paddy fields
(Oita)



Sediment flowed in paddy fields
due to the collapse of mountain slopes
(Kagoshima)



Channel for irrigation
damaged by a landslide
(Kumamoto)



Sediment flowed in paddy fields
(Miyazaki)

Response to disaster damage from earthquakes centered in central Tottori Prefecture

- On October 21, 2016, earthquakes measuring a maximum seismic intensity of a lower 6 occurred centered in central Tottori Prefecture, causing 1.6 billion yen worth of damage to the agriculture, forestry and fisheries industry.
- MAFF supported early restoration of the disaster area through the promotion of the disaster restoration program and early payment of mutual relief indemnity.
- Restoration and reconstruction is making steady progress and out of 12 shared facilities covered by the disaster restoration program, 7 facilities are expected to restart operation in 2017.



Fallen pears
(Tottori)



Damaged pear sorting machine
(Tottori)



Damaged watermelon sorting machine
(Tottori)

Response to disaster damage from heavy snow in winter

- Heavy snow in winter caused 5.5 billion yen worth of damage in the agriculture, forestry and fisheries industry.
- MAFF supported early restoration of the disaster area through the promotion of a disaster restoration program, early payment of mutual relief indemnity, grants for the introduction of agricultural greenhouses, and grants for the damaged fruits.



Broken apple tree
(Yamagata)



Damaged shungiku
(chrysanthemum coronarium) greenhouse
(Hyogo)



Damaged grape greenhouse
(Tottori)

2. Restoration/Reconstruction from the Great East Japan Earthquake

Earthquake and tsunami damage and restoration/reconstruction efforts

- Of 20,120 hectares of agricultural land covered by the restoration program (diverted land excluded from 21,480 hectares of agricultural land damaged by tsunami), 16,770 hectares (83%) of agricultural land restarted the farm by the end of January 2017. By the end of September 2016, all debris was removed from the 19,000 hectare of agricultural land in Iwate, Miyagi and Fukushima except for areas to which evacuation orders have been issued.
- MAFF took measures to increase the productivity of agricultural management and agriculture income through the promotion of dividing damaged agricultural land into larger blocks when agricultural land damaged by tsunami was restored, and promotion of introduction of advanced technologies.

Example of agricultural land restoration (Sendai City)



Example of dividing agricultural land into larger blocks (Omagari District, Higashimatsushima City, Miyagi)



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

- As a result of efforts for the restarting of the farm, reconstruction is making steady progress as follows:
 - [1] Full-scale planting of rice restarted in about 2,500 hectares of land in Minamisoma City, Hirono Town, Kawauchi Village, Tamura City and Naraha Town.
 - [2] Shipment of 'ANPOGAKI' (a kind of semi-dried persimmon fruit) was restored to about 80% of that before the earthquake.
- According to the survey results of radioactive materials conducted in FY 2016, no agricultural and livestock products exceeded the maximum limits. After April 2016, the restriction of distribution was removed from agricultural and livestock products and areas whose safety has been confirmed.
- In order to accelerate the restarting of the farm,
 - [1] From July 2016, Fukushima Prefecture, municipalities and MAFF worked together to visit certified farmers in 12 disaster-affected municipalities individually, took a survey on requests and explained support measures.
 - [2] Under the second supplementary budget for fiscal 2016, support programs for the introduction of machines, equipment and livestock, etc. necessary to restart the farm were provided.
- The basic principle for the acceleration of Fukushima's restoration from nuclear damage was decided on by the Cabinet in December 2016. Based on the principle, efforts for the restarting of the farm and eliminating harmful rumors will be strengthened.



In Minamisoma City, an experimental cultivation of rice was carried out in 2013 and rice crop restarted in 2014.

Total planted area
in FY 2014: 99ha
Total planted area
in FY 2015: 720ha
Total planted area
in FY 2016: 1,781 ha



'ANPOGAKI,' a specialty in the Date region exercised their self-control in processing operation for the second consecutive year after the nuclear accident. After cleaning persimmon trees and the development of nondestructive inspection equipment, shipment restarted after 3 years in December 2013.

Total shipment in FY 2016: 1,154 t
(About 80% of shipment before the earthquake)

Summary of FY2017 Measures for Food, Agriculture and Rural Areas

Summary

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

I. Measures to maintain and improve Japan's food self-sufficiency potential and ratio

- Initiatives to maintain and improve Japan's food self-sufficiency potential and ratio
- Measures to realize the production effort target for each major item

II. Measures for securing a stable supply of food

- Securing food safety compatible with international trends and securing consumer confidence
- Promotion of food and nutrition education by various people concerned, expansion of consumption of domestic agricultural products, and the preservation/succession of WASHOKU (traditional dietary cultures of Japanese people)
- Exploration of demand through the creation of new values through production, processing and distribution stages
- Strategic exploration of global market
- Establishment of comprehensive food security compatible with various risks
- Strategic reactions to international negotiations

III. Measures for sustainable development of agriculture

- Development of/securing business farmers for realizing a strong and sustainable agricultural structure
- Development of an environment wherein female farmers can fully exert their potential capacity
- Consolidation of farmland to business farmers and securing farmland through full-capacity operation of the Public Corporations for Farmland Consolidation to Core Farmers through Renting and Subleasing (Farmland Banks)
- Promotion of the Farming Income Stabilization Measures for business farmers and consideration of the income insurance, etc.
- Development of an agricultural production base that contributes to the acceleration of structural reform and building national resilience
- Reform of production/supply systems compatible with changes in the demand structure, etc.
- Technological innovation, etc. at production/distribution sites for realizing cost reduction and high added value
- Promotion of environmental policy such as responses to climate change

IV. Measures for promotion of rural areas

- Maintenance/succession of local resources through steady promotion of the multifunctional payment system, promotion of agriculture in hilly and mountainous areas, and performance of local community functions
- Creation of employment and income through active utilization of various local resources
- Exchanges between urban and rural areas and migration/settlement to rural areas through collaboration with various sectors

V. Measures for restoration/reconstruction from the Great East Japan Earthquake

VI. Measures for reorganization/restructuring of relevant bodies

VII. Matters necessary for comprehensively and systematically promoting measures for food, agriculture and rural areas