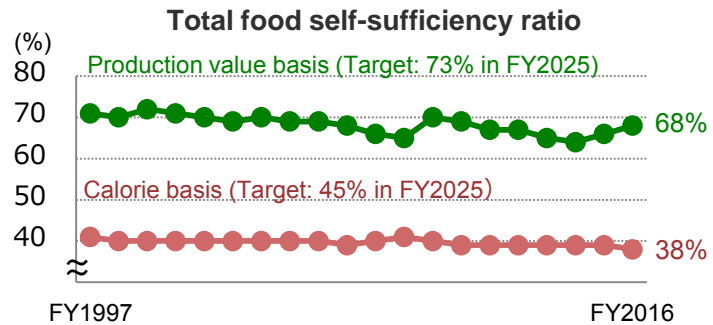


Chapter 1 Securing Stable Food Supply

1. Food self-sufficiency ratio and food self-sufficiency potential index

- In the latest 20 years, the food self-sufficiency ratio has remained around 40% on a calorie basis and around a 65-70% range on a production value basis.
In FY2016, the ratio fell by 1 point to 38% on a calorie basis due mainly to a decline in wheat production. On a production value basis, the ratio rose by 2 points to 68% due mainly to growth in vegetable and fruit production value.
- The food self-sufficiency potential index, which shows potential food production capacity, has been declining due primarily to shrinking farmland and stagnating average yields.
- The government will seek to maintain or improve the food self-sufficiency ratio and potential by increasing agricultural production through the intensification and integration of farmland use and by expanding demand for Japanese agricultural products at home and abroad.



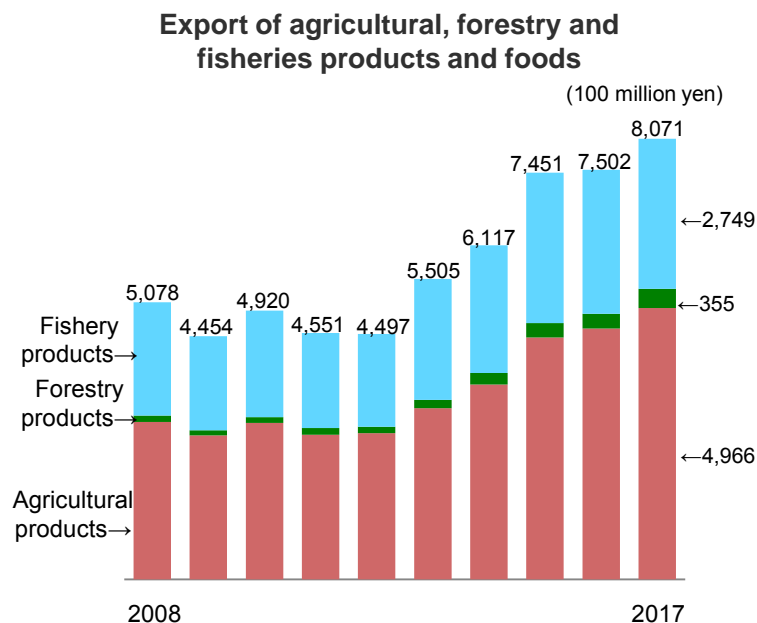
Example requests to consumers



2. Strategic exploration of global market

Promoting the export of agricultural, forestry and fisheries products and foods

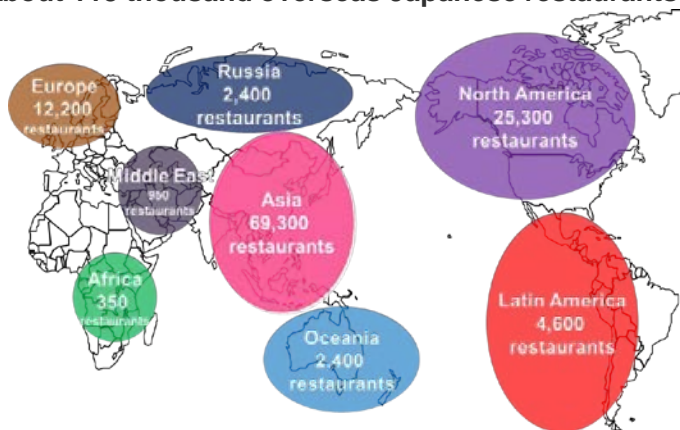
- Exports in value rewrote a record high for the 5th straight year. Among agricultural products, beef, garden trees, green tea, rice and strawberries hit record highs.
- A strategic project for expanding overseas rice markets was launched in September 2017 to dramatically increase rice exports.
- The "Japanese Food" Export EXPO, the first Japanese food export fair in Japan, was held in October 2017, attracting a large number of foreign buyers.
- The Japan Food Product Overseas Promotion Center (JFOODO) announced a promotion strategy for seven products including wagyu Japanese beef, launching their promotion.
- Import restrictions were lifted or eased on Japanese persimmon in the United States and Australia, on Japanese beef in Malaysia and on foods (related to radioactive materials) in the European Union.



Overseas expansion of Japanese food culture

- As overseas interests have grown in Japanese food and dietary culture, the number of overseas Japanese restaurants has reached about 118 thousand, increasing by 30% in 2 years.
- The number of overseas restaurant and retail stores certified by private organizations, etc. as Japanese cooking ingredient supporters that proactively use Japanese cooking ingredients stood at 2,931 in 35 countries and regions at the end of FY2017.
- The number of foreign chefs certified by private organizations, etc. as having a certain level of knowledge and cooking skills for Japanese cuisine stood at 470.

About 118 thousand overseas Japanese restaurants



Sources: Survey by MOFA, Estimated by MAFF
Note: As of October 2017

Cooking skill certification system and certified chefs

Certification logo mark	Certification standard	Certified chefs
Gold	2 years of experience	4
Silver	Graduate from Japanese cooking schools or 1 year of experience	168
Bronze	Undergoing short-term training	298

Source: MAFF

Note: The number of certified chefs is at the end of FY2017.

Utilizing standards, certification and intellectual properties

- GAP (good agricultural practice) certificates are useful for winning trading partners' confidence. The government aims to triple the number of GAP certified producers by the end of FY2019 from 4,500 at the end of April 2017.
- The government has promoted Japanese food safety standards (JFS) including the implementation of the HACCP (hazard analysis and critical control point) system to be approved as equivalent to international standards.
- As the JAS (Japanese agricultural standards) system was expanded to establish a diversity of standards emphasizing strengths of Japanese products, the government established 3 new standards in March 2018.

New JAS established after JAS expansion

	Standard	Advantages for utilization
1	JAS for cut flowers produced under controls for vase life in growers	JAS-certified cut flowers can be advertised for long keeping at home and abroad.
2	JAS for Determination of the O-methylated Catechin in 'Benifuuki' Green Tea (<i>Camellia sinensis</i> L.) — High-performance liquid chromatographic method	Advantages of Japanese products can be objectively explained and proven. When advantages are explained and proven by measured date, it is unnecessary for business operators to develop each testing method by themselves and it may reduce the burdens of operators.
3	JAS for Determination of the β -cryptoxanthin in Satsuma Mandarin — High-performance liquid chromatographic method	

Source: MAFF

Note: As of the end of FY 2017

34 prefectures' 58 products registered as geographical indication

Hokkaido	2	Saitama	0	Fukui	5	Tottori	1	Saga	0
Aomori	3	Chiba	0	Gifu	2	Shimane	0	Nagasaki	0
Iwate	2	Tokyo	0	Aichi	2	Okayama	1	Kumamoto	2
Miyagi	1	Kanagawa	0	Mie	1	Hiroshima	0	Oita	2
Akita	2	Yamanashi	0	Shiga	1	Yamaguchi	2	Miyazaki	1
Yamagata	2	Nagano	2	Kyoto	1	Tokushima	1	Kagoshima	4
Fukushima	0	Shizuoka	2	Osaka	0	Kagawa	1	Okinawa	1
Ibaraki	3	Niigata	1	Hyogo	2	Ehime	1		
Tochigi	1	Toyama	1	Nara	1	Kochi	0		
Gunma	0	Ishikawa	2	Wakayama	1	Fukuoka	1		

Source: MAFF

Note: In addition to the above, 1 Italian product has been registered.

3. Global food supply and demand, and efforts for establishing food security

Global food supply/demand trends

- Global demand for grains for food, feed and bioethanol has been increasing due mainly to population growth while yield growth to support production expansion has decelerated. Over a medium to long term, the grain supply-demand balance is feared to tighten.

Establishing comprehensive food security

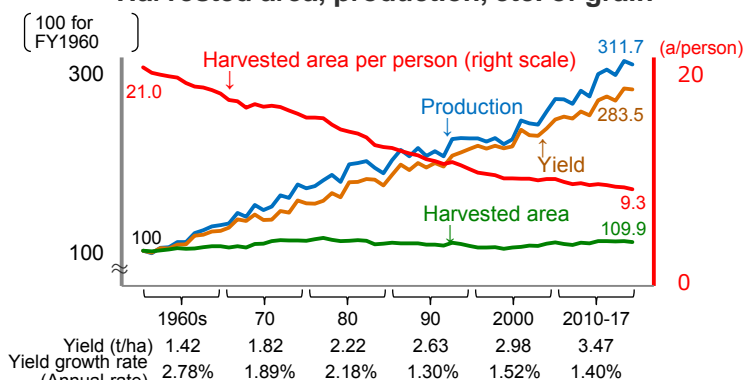
- Japan heavily depends on certain countries for major agricultural product imports.
- Securing stable food supply is based on increasing domestic agricultural production in combination with imports and stockpiles.
- In preparation for unforeseeable events, MAFF regularly analyzes and assesses the impacts of risks in preparation for emergency.

Agricultural products trade negotiations

- The Trans-Pacific Partnership free trade agreement signed by 12 countries was renegotiated as an 11-country pact in response to the United States' announcement to withdraw from the TPP agreement in January 2017. The 11-country agreement was fixed in January and signed in March 2018.

The agreement will take effect in 60 days after at least 6 countries complete relevant domestic procedures.

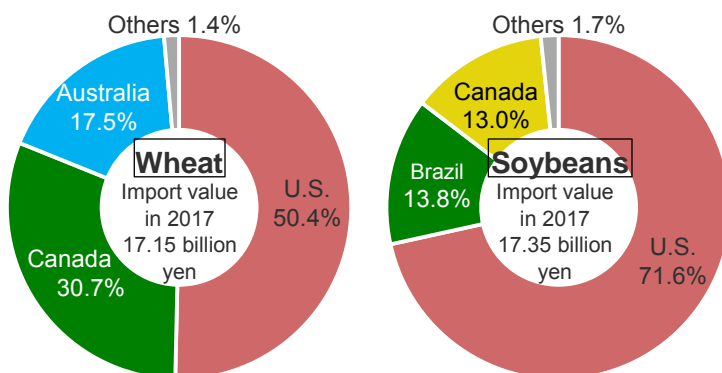
Harvested area, production, etc. of grain



Source: Prepared by MAFF, based on the United States Department of Agriculture, PS&D; United Nations, World Population Prospects: The 2017 Revision (as of March 2018)

Note: Grains cover wheat, coarse grains (including corn and barley) and rice (polished rice).

Japan's wheat and soybean imports by exporting country



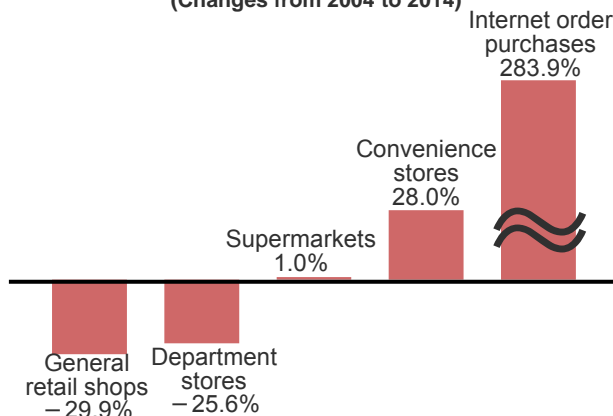
Source: Prepared by MAFF, based on MOF, Trade Statistics

4. Food consumption trends and promotion of Shokuiku (food and nutrition education)

- Prepared food's share of food consumption expenditure increased for all generations in the past decade, while the eating-out share fell in the group aged 29 or less and rose in 50s.
- Food sales via the internet increased rapidly in the past decade. Particularly, expenditure on fresh fruits, fresh vegetables, fresh meat and dairy products expanded substantially.

Food consumption expenditure changes by retailer category

(Changes from 2004 to 2014)



Source: MIC, 2014 National Survey of Family Income and Expenditure

- Under the Food Action Nippon Award program, top leaders of large food-related companies select excellent processed products using made-in-Japan agriculture, forestry and fisheries products and sell them at their stores.
- Training courses for the protection and succession of Japanese food culture are provided to dietitians having contacts with the child-rearing generation. The Washoku Association of Japan and other private organizations implement public awareness activities for the protection and succession.

Food Action Nippon Award 2017 ceremony

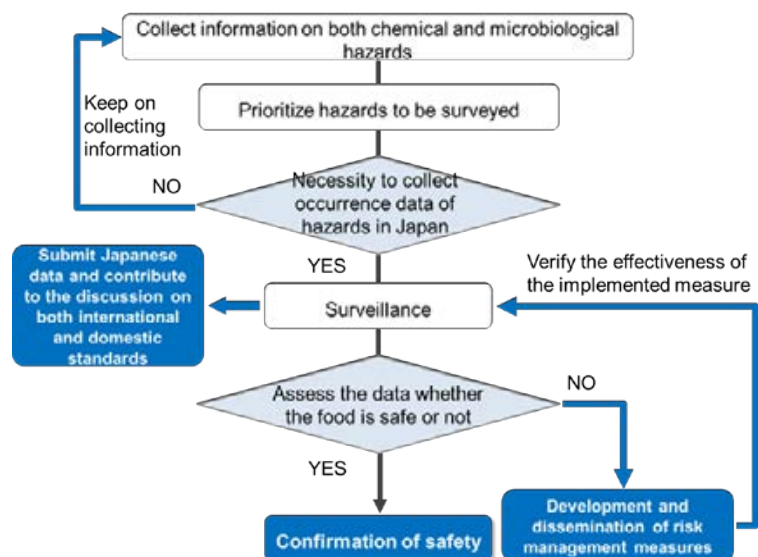


5. Ensuring food safety and consumers' confidence

Improving food safety

- It is important to develop and disseminate measures for preventing or reducing contamination in foods as necessary throughout the food chain from production to consumption based on scientific evidence.
- MAFF conducts surveillance of chemical and microbiological hazards in agricultural and dairy products, and processed foods and develops and disseminates risk management measures.
- In FY2017, MAFF developed and disseminated a leaflet for preventing food poisoning during barbecue parties and a handbook for hygiene practice for pork in primary production.

Flow of risk management on food safety



Source: MAFF

Ensuring consumer confidence

- MAFF provides consulting services regarding a new food labelling system and Regional Agricultural Administration Office officials' surveillance and enforcement based on the Food Labelling Act.
- A new system was launched in September 2017 to extend the mandatory country of origin labeling for ingredients which had covered only some processed foods to cover all processed foods made or processed in Japan.
- The Consumer Affairs Agency compiled the results of a study on a revised labelling system for genetically modified food products in March 2018 and is considering specific revisions.

Labelling examples for a new system for country of origin labeling for ingredients of processed food products

If the most predominant ingredient by weight is perishable food, the countries of origin should be labeled in descending order by weight

Past labelling
Name: Pork sausage(wiener)
Ingredients: Pork, pork fat, protein hydrolysate, ...



New labelling	Country of origin for pork	Labelling for pork
1 country		Pork (U.S.)
2 countries		Pork (U.S., Japan)
3 or more countries		In case where all countries of origin are labelled →Pork (U.S., Japan, Canada, Denmark)
		In case where third and lower-ranked countries are labelled as "others" →Pork (U.S., Japan others)
		* Third and lower-ranked countries can be labelled as "others."

If the most predominant ingredient by weight is semi-processed ingredient, the country of origin should be labeled as "produced in XX"

Past labelling
Name: Chocolate cake
Ingredients: Chocolate, flour, ...



New labelling
Name: Chocolate cake
Ingredients: Chocolate (produced in Belgium), flour, ...

Source: MAFF

Animal and plant quarantine

- Given that the risk of animal infectious diseases being introduced into Japan has increased in line with growth in the number of international travelers, the government increased animal quarantine officers and animal and plant quarantine detector dogs at airports and ports for international services in FY2017.

The government also disseminated feeding sanitation control and implemented quarantine training.

- Japan saw a highly pathogenic avian influenza epidemic in FY2017. Prompt responses allowed the designation of restricted movement areas to be lifted in 1 month from the epidemic detection.
- To prevent the introduction of plant diseases and pests damaging agricultural production into Japan, the government increased plant protection officers at airports and ports for international services in FY2017.

Border control on travelers at airports and ports for international services



An animal quarantine officer questions an entrant into Japan from a country plagued with an animal infectious disease epidemic.



An animal and plant quarantine detector dog checks baggage of an entrant into Japan.

Highly pathogenic avian influenza epidemic seen in FY2017

Epidemic	Epidemic detection day and day for lifting designation of restricted movement areas	Number of chickens for feeding and type
Sanuki City, Kagawa Prefecture	1/11 – 2/5	About 91 thousand chickens for meat

6. Trends of food industry

- The Agricultural Competitiveness Enhancement Support Act was put into effect in August 2017 to support corporate restructuring in the food industry. In FY2017, four corporate restructuring plans were approved in the food distribution and processing sectors under the act.
- Food, etc. account for 20% of the 8 trillion yen consumer e-commerce market.
- A bill has been submitted to the National Diet to rationalize the food distribution process including the wholesale market and secure a fair trade environment for fresh food, etc.
- The “agreach” website was opened in June 2017 to support matching between distributors, users and producers for transactions in agricultural, forestry and fisheries products.

Consumer e-commerce market size in FY2016

Product category	e-commerce market (A)	Share	Commerce market size (B)	e-commerce share (A/B)
Food, etc.	1.5 trillion yen	18.1%	64.5 trillion yen	2.3%
Home appliances, audio/video equipment, etc.	1.4 trillion yen	17.8%	4.8 trillion yen	29.9%
Books, video/music software	1.1 trillion yen	13.4%	4.4 trillion yen	24.5%
Miscellaneous good, furniture, etc.	1.4 trillion yen	16.9%	7.2 trillion yen	18.7%
Clothes, accessories, etc.	1.5 trillion yen	19.1%	14.0 trillion yen	10.9%
Others	1.2 trillion yen	14.7%	52.6 trillion yen	2.2%
Total	8.0 trillion yen	100%	147.5 trillion yen	5.4%

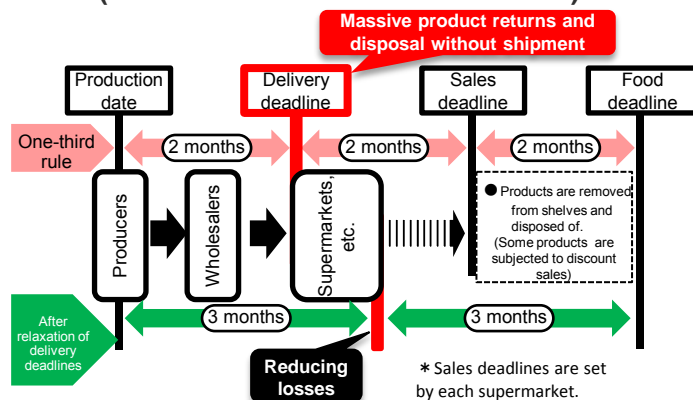
Source: METI, Market Survey on E-Commerce Transactions

Agriculture, forestry and fisheries distribution matching site “agreach”



- MAFF prepared a handbook in March 2018, which offers food industry managers the key points to promote work style reforms.
- While the global undernourished population reaches 815 million (as announced by the Food and Agriculture Organization (FAO) in September 2017), Japan disposes of food equivalent to 2 times the food aid volume of the United Nations World Food Program (WFP).
Initiatives to extend food deadlines through the relaxation of delivery deadlines and technological development have been expanded to reduce food losses.

Revising one-third rule (For food with a six-month deadline)



<Case study>

System for sales to retailers allowing farmers to determine shops and prices (national)

- Nounsouken Corporation's shipment system allows farmers to attach seals of self-selected retail shops and prices to their products at shipment sites and get their products put on retail shop shelves the next morning in principle.
- Farmers can get 60-65% of prices. Shop and price information provided by the corporation is used by farmers for devising packages, selecting shops and determining prices.

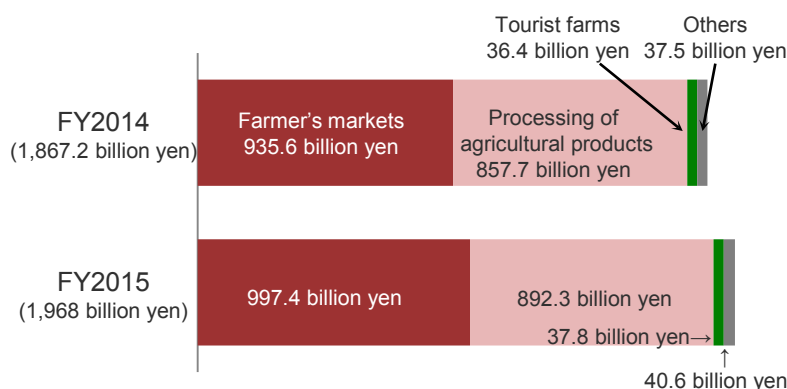


A bar code seal printer and a tablet computer

7. Exploring new demand for agriculture, forestry and fisheries products and food

- Total sales related to agricultural production in FY2015 increased by 100.8 billion yen from the previous year to 1,968 billion yen.
Women accounted for 70% of employees in business operations related to agricultural production, indicating their remarkable presence.
- A state infrastructure project is being implemented for research and development to discover health functions of Japanese agricultural, forestry and fisheries products and food, with medical institutions participating.
The project aims to acquire evidence and commercialize 15 or more products by FY2018 after clinical tests in FY2017.

Total annual sales related to agricultural production



Source: MAFF, "Comprehensive Survey on AFFrinnovation"

1. Promoting structural reform of agriculture

Agricultural income trend

- Paddy farming income per farming entity in 2016 was the highest in 5 years.
- Agricultural production income, which represents value added through agricultural production in Japan, totaled 3.8 trillion yen in 2016, up 500 billion yen from the previous year.

Agricultural income per farming entity

(10 thousand yen)

Farming type	2012	2013	2014	2015	2016
Paddy farming	70.2	61.5	34.3	63.3	77.6
20ha or more	1,822.4	1,629.8	1,363.5	1,808.8	1,967.2
Vegetables grown in facilities	451.2	445.1	429.5	509.9	572.9
1ha or more	843.1	863.9	1,051.5	1,270.1	1,663.6
Dairy cattle	711.3	806.7	900.5	1,125.0	1,558.2
100 heads or more	2,125.3	2,539.8	2,689.0	3,174.2	4,771.0

Source: Prepared based on MAFF, Statistics on Farm Management and Economy by Type of Management
Note: The results of a survey on unorganized and organized farming entities and the number of farming entities in the Census of Agriculture and Forestry were used for weighted average calculation to determine income per entity.

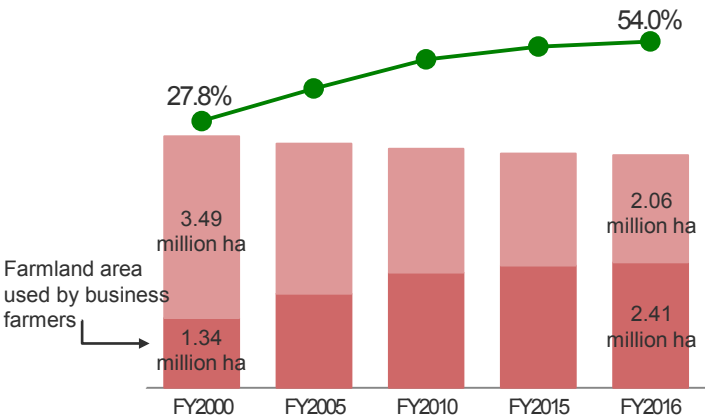
Consolidation of farmland through operation of the Public Corporation for Farmland Consolidation to Core Farmers through Renting and Subleasing (Farmland Banks)

- The total farmland area in 2017 decreased by 0.6% from the previous year to 4.44 million ha.
- Business farmers' share of the total farmland size in FY2016 increased by 1.7 points from the previous year to 54.0%.
- Farmland subleased by Farmland Banks in FY2016 totaled 43 thousand ha. Farmland subleased by Farmland Banks by the end of FY2016 totaled 142 thousand ha.

Given the target of raising business farmers' share of the total farmland area to 80% by FY2023, Farmland Banks are required to accelerate farmland consolidation in cooperation with Agricultural Committee Members for promotion of optimized farmland usage and infrastructure development projects.

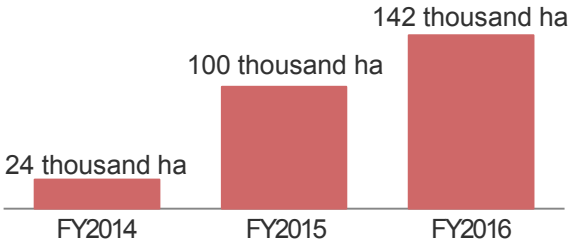
- In order to make use of unclaimed farmland that accounts for 20% of the total farmland, a bill has been submitted to the National Diet allowing farmland successors to rent unclaimed farmland up to 20 years to Farmland Banks with simple procedures.

Business farmers' share of total farmland



Sources: Prepared base on MAFF, "Statistics on Cultivated Land and Planted Area," "Survey on Community-based Farm Cooperatives" (aggregate calculation after reclassification), MAFF surveys
Note: As of the end of fiscal year

Farmland subleased by Farmland Banks (accumulated total)



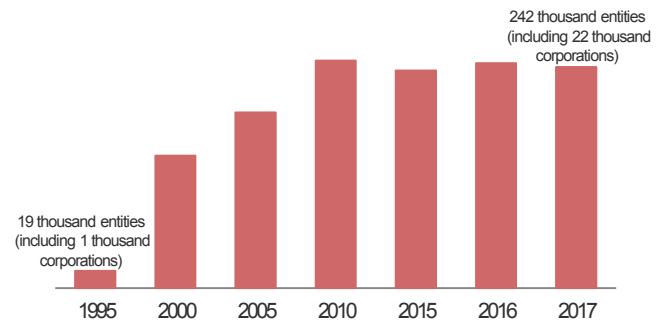
Source: MAFF
Note: As of the end of fiscal year

Developing and securing business farmers

- The government has set a target of increasing the number of corporate management entities to 50 thousand by 2023. In 2017, the number increased by 1 thousand (4.8%) from the previous year to 22 thousand.

- As productive population has continued declining from a peak in 1995, numerous industries are plagued with labor shortages.
- Amid the intensification of competition to secure personnel among industries, MAFF established a panel for a work style reform in agriculture and compiled specific reform measures for farmers in March 2018.
- While the number of certified farmers at the end of March 2017 fell by 1.5% from a year earlier, the number of corporate management entities among certified farmers increased by 8.0%.
- While the number of community-based farm cooperatives has leveled off at around 15 thousand in recent years, corporation farms' share of the number has steadily increased.
- The number of corporations that entered into farming by taking advantage of leasing methods deregulated fully under the revised Agricultural Land Act in 2009 stood at 2,676 at the end of 2016.

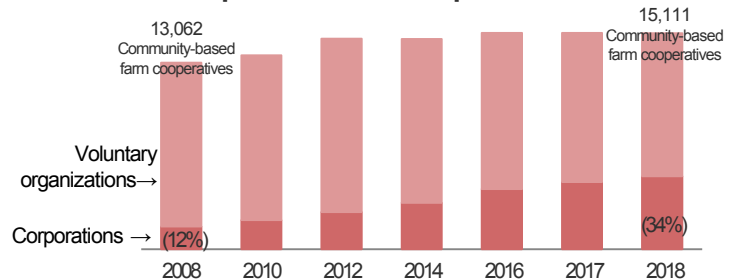
Number of certified farmers



Source: MAFF

Note: As of the end of March each year

Number of community-based farm cooperatives and corporations' share



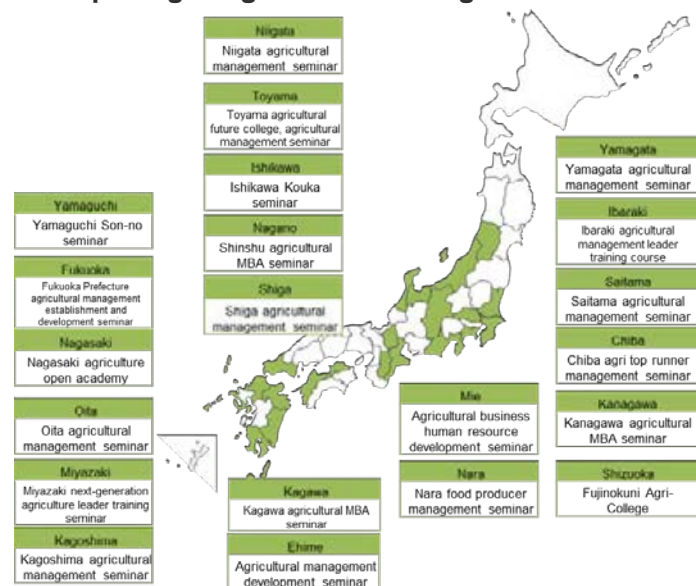
Source: MAFF "Fact-finding Survey on Community-based farm cooperatives"

Note: As of February each year

Strengthening human resources

- In FY2017, 21 prefectures opened agricultural management seminar attracting 441 students.
- Under a Public – Private Partnership Encouraging Students Study Abroad launched in FY2013, 137 agricultural university students and 15 agricultural senior high school students conducted study abroad by the end of FY2017.
- Project to Accept Foreigners for Agricultural Support in National Strategic Special Zones was launched in September 2017.

Opening of agricultural management seminars



Source: MAFF

Participation of women farmers

- While women among core persons engaged mainly in farming have decreased, permanently hired female workers of organized farms have been increasing, expanding female farmers' presence at organized farms.
- Under the "Nougyou-Joshi Project" campaign for women farmers to be more active in agricultural business through cooperation with various industries to tap women farmers' knowledge and experiences, project members hold public relations events at Hong Kong department stores and other sites and cooperate with educational institutions in promoting the "Team Hagukumi (development)" campaign.

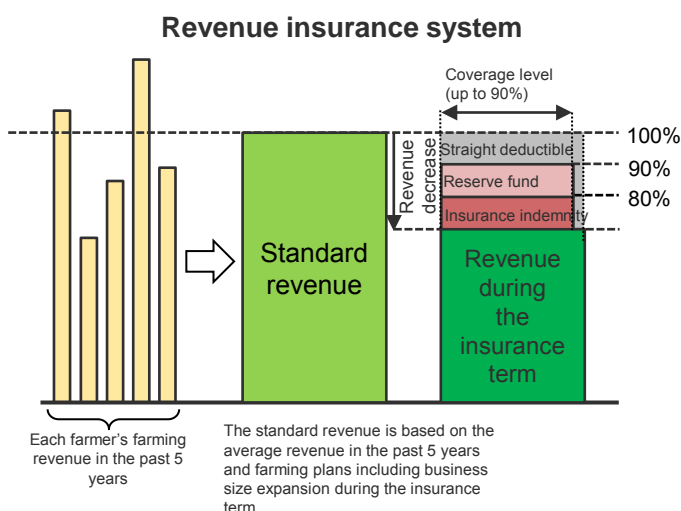
Women's share of agricultural labor force
(thousand persons)

	2016			2017		
	Total	Number of women	Women's share	Total	Number of women	Women's share
Core persons engaged mainly in farming (in commercial farm households)	1,586	656	41.4%	1,507	619	41.1%
Permanently hired workers (at organized farms)	125	52	41.9%	128	57	44.2%

Source: MAFF, "Survey on Movement of Agricultural Structure" (aggregate calculation after reclassification)

Revenue insurance system

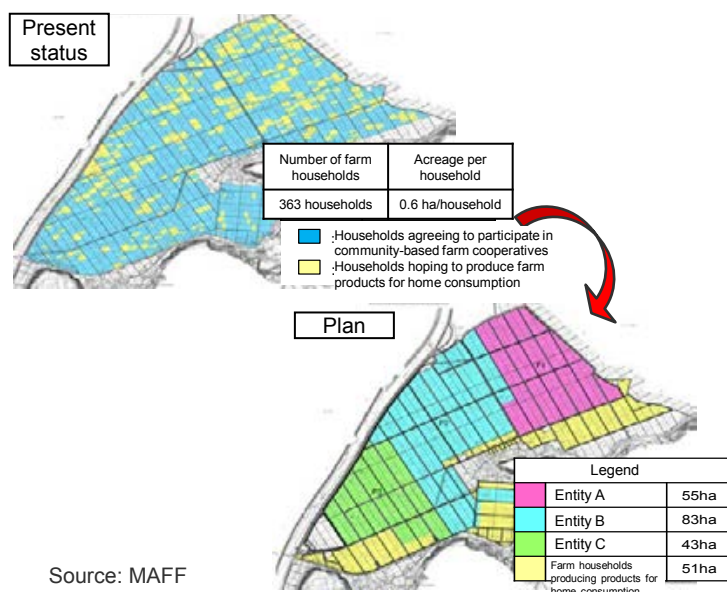
- A revenue insurance system will be launched in January 2019 as a comprehensive safety net covering total revenue.



2. Developing and conserving agricultural production infrastructure

- The agriculture and rural area development project comprises (1) the development of strong farming infrastructure meeting business farmers' needs, (2) the extension of service lives of irrigation facilities indispensable for continuing farming production and (3) the prevention and reduction of disasters to protect agriculture and rural areas from disaster risks.
- By the end of FY2015, 64.7% of rice paddies were consolidated into 30 a or larger partitions.
- Stock management is implemented to conserve functions of outdated farm irrigation facilities.
- Dam bodies including priority irrigation ponds for disaster prevention are refurbished with hazard map preparation promoted.

Image of farmland consolidation for business farmers through infrastructure development



3. Production trends for major farm and livestock products

Trends in agricultural output

- The number of prefectures that have increased agricultural output in the past decade stands at 34 including those where vegetable or livestock farming accounts for a high share of output. The number of those that have reduced agricultural output in the period comes to 13 including those where rice farming accounts for a high share.

Numbers of prefectures with increases and decreases in agricultural output (2006-2016 changes)

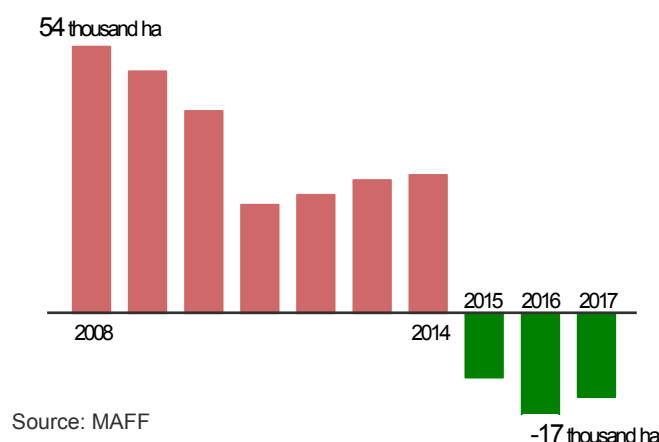
Prefectures with increases	Prefectures with high vegetable or livestock farming share	Prefectures with decreases	Prefectures with high rice farming share
34	28	13	8

Source: MAFF, Agricultural Production Income Statistics
 Note: A "high share" in the table means a 30% or higher share and the largest share of agricultural output.

Rice

- No excess planting for staple food rice was seen for the third straight year as strategic crop initiatives expanded.
- Business farmers' rice production costs are some 30% lower than the national average for 2011.
- As rice for food services and home-meal replacements has recently expanded its share of staple food rice demand, rice farming areas are expected to tackle production and sales meeting demand from ordinary households and that from commercial users.
- A new system for rice production meeting demand without the administration sector's allocation of a production quota has been under development since 2013 and will be launched for rice to be produced in 2018.
- The first Brand Japan contest was held for livestock grown with rice for feed.
- In December 2017, a certification system for rice flour products meeting non-gluten labeling guidelines was launched along with a system for recommending rice flour products meeting standards by usage.

Excess planting for staple food rice



Marks for certification of non-gluten rice flour products



Non-gluten rice flour certification logo mark



Rice flour recommendation logo mark for expanding rice flour use

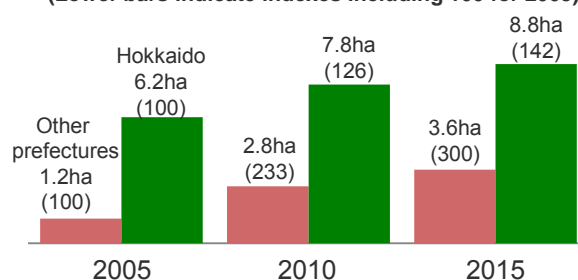
Source: Japan Rice Flour Association

Wheat

- The wheat planted area per entity has steadily expanded, posting large growth in prefectures other than Hokkaido.
- In recent years, demand for wheat produced in Japan has increased on the development of products using Japanese wheat and the development and diffusion of new excellent varieties.

Wheat planted area per entity

(Lower bars indicate indexes including 100 for 2005)



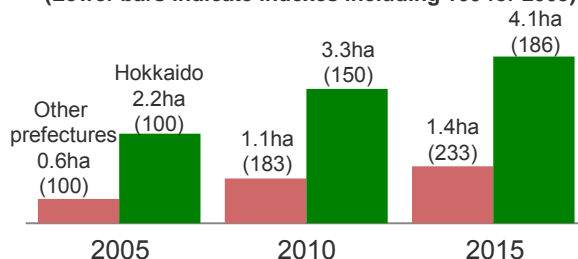
Source: MAFF, Census of Agriculture and Forestry

Soybeans

- The soybean planted area per entity has steadily increased, posting greater growth in prefectures other than Hokkaido.
- In recent years, demand for Japanese soybeans has increased in line with growth in sales of tofu soybean cake and natto using Japanese soybeans.

Soybean planted area per entity

(Lower bars indicate indexes including 100 for 2005)



Source: MAFF, Census of Agriculture and Forestry

Vegetables

- The vegetable planted area in 2016 decreased slightly from the previous year. While Japanese radish posted the largest production decline among vegetables, production increased for some vegetables such as green soybeans and paxi.
- Vegetables for processing and other commercial uses have increased their share of total vegetable demand in Japan, Japanese vegetables' share of vegetable demand for processing and other commercial uses has followed an uptrend. Japanese vegetables' share of total vegetable demand in Japan has been recovering.

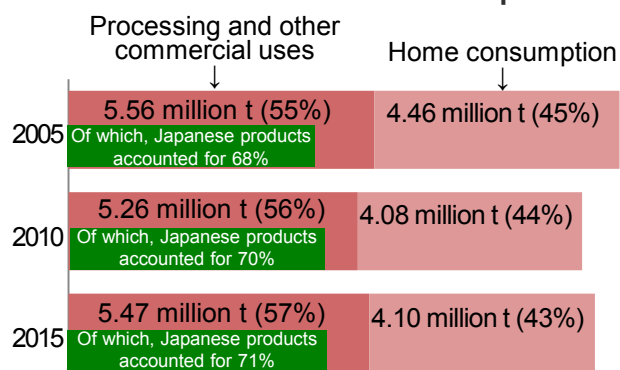
Fruits

- In 2016, the total fruit production area declined slightly from the previous year. Satsuma mandarin (Citrus unshiu) production posted the largest fall. However, production expanded for good-tasting citrus fruits such as Benimadonna and Kanpei and for the high-sugar content apple of Shinano Sweet. Shine muscat grape shipments increased in response to robust domestic demand, leading prices in 2017 to exceed the previous year's levels.
- In recent years, grape and peach exports in value have continued growing. Particularly, grape exports to Singapore and peach exports to Malaysia posted substantial growth.

Livestock products

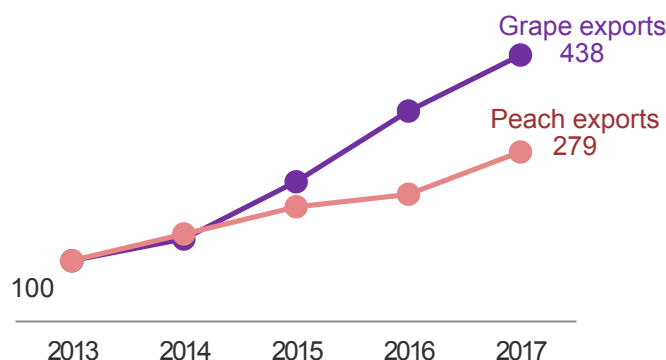
- Livestock farming households decreased in 2017 for all species, boosting the number of livestock animals per household.
- Raw milk production has declined in line with a decrease in the number of delivered cow heads. This is mainly because beef calf prices have remained high in recent years, prompting dairy farmers mainly in prefectures other than Hokkaido to expand crossbreed production and Japanese black cattle production through fertilized ova transplantation. Required for expanding raw milk production are the expansion of sexed semen use for dairy cattle and the development of a system for entrusting calves to secure successor cattle.

Demand for vegetables for processing and other commercial uses and for home consumption



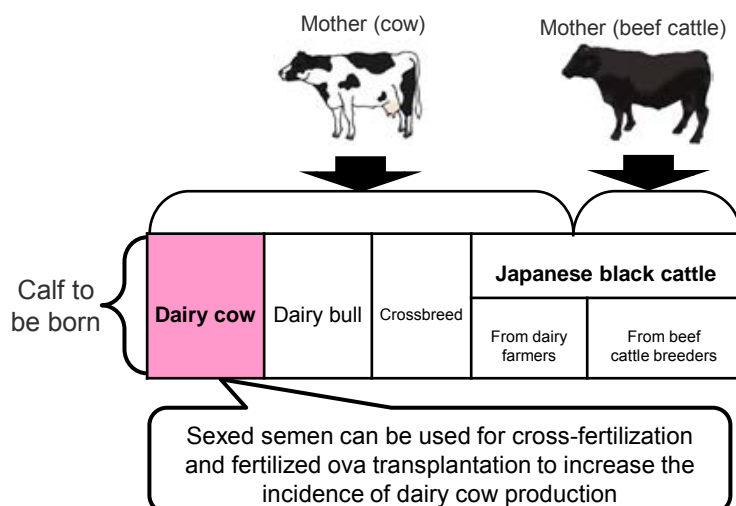
Source: Prepared by MAFF based on data from Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries (PRIMAFF)

Continuing growth of fruit export value (100 for 2013)



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

Image of securing cow through sexing semen



Source: MAFF

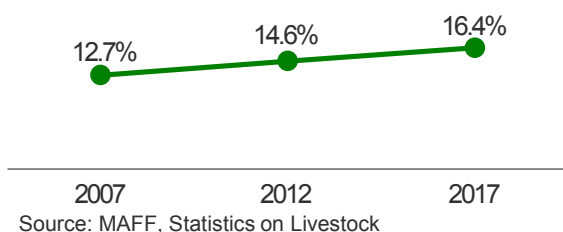
Note: Japanese beef cattle from dairy farmers mean Japanese black cattle produced through the transplantation of fertilized ova from Japanese black cattle to dairy cow.

- A decline in the number of beef cattle for fattening has been limited. The number of beef cows for breeding increased for the second straight year.

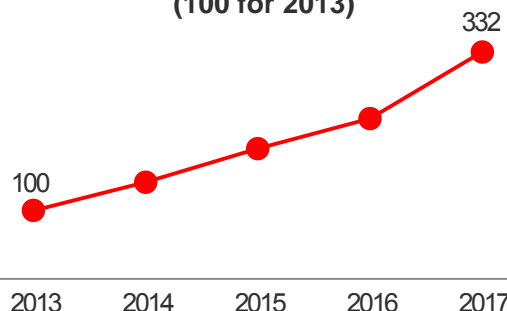
Integrated production covering from breeding to fattening should be promoted to enhance beef cattle production infrastructure.

Beef exports in value have continued growing, expanding 3.3-fold in the past 5 years.

Integrated production's share of beef cattle



Continuing growth of beef export value (100 for 2013)

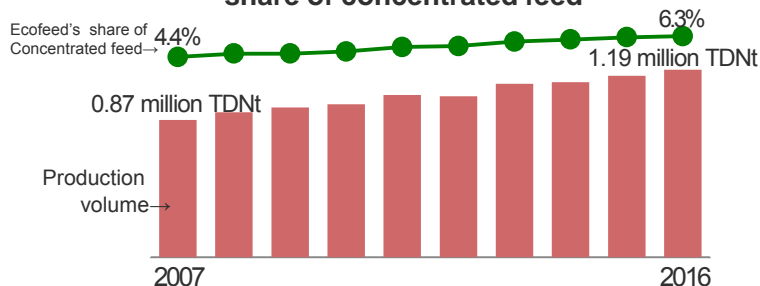


- The land area planted with feed and forage crops has continued an uptrend due mainly to increasing production of rice for feed in the past several years.

Ecofeed production volume has increased almost persistently.

Given that feed accounts for 30-70% of livestock farming costs, switching from imported feed vulnerable to the influence of international prices and currency exchange rates to domestic feed is important for enhancing livestock farming infrastructure.

Ecofeed production volume and ecofeed's share of concentrated feed



Note: TDN stands for total digestible nutrients, meaning the volume of nutrients livestock can digest.

Agricultural damage from natural disasters in FY2017

- Heavy rains and windy storms caused by five typhoons and rainy season fronts brought about 126.4 billion yen in agricultural damage (by the end of January 2018).

The dispatch of technicians to disaster-hit areas and prompt mutual aid money payments supported disaster-affected farmers.

Heavy rains from Typhoon No. 3 and rainy season fronts, Typhoon No. 18 and Typhoon No. 21 were designated as serious disasters.

- Heavy snow caused 4.4 billion yen in agricultural damage (by March 29, 2018). Subsidies for greenhouse introduction and other support measures were taken for disaster-hit farmers.

Heavy rains in northern Kyushu



Collapsed rice paddy boundary (Oita)



Sediment flowing into a persimmon orchard (Fukuoka)

Heavy snow in Hokuriku and Hokkaido



Collapsed agricultural greenhouse (Fukui)



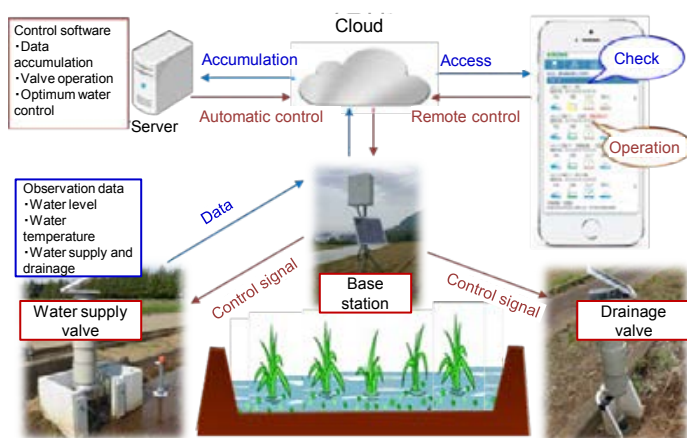
A damaged stable (Hokkaido)

4. Promoting measures to enhance agricultural production competitiveness

Promoting smart agriculture

- 11 consortium-based AI technology development projects are being implemented. Regarding IoT technology, a remotely controlled water control system was developed in FY2017.
- Regarding robot technology, a self-driving system for a tractor under human surveillance is being developed for commercialization in 2018.
- Guidelines for the development and introduction of automatic flying objects were revised for promoting crop-dusting drones.
- A prototype was built in December 2017 for agricultural data cooperation infrastructure contributing to Society 5.0 for agriculture.
- Initiatives to use advanced technologies for agriculture in cooperation with the industrial world are making progress.

Rice paddy water control system using IoT technology

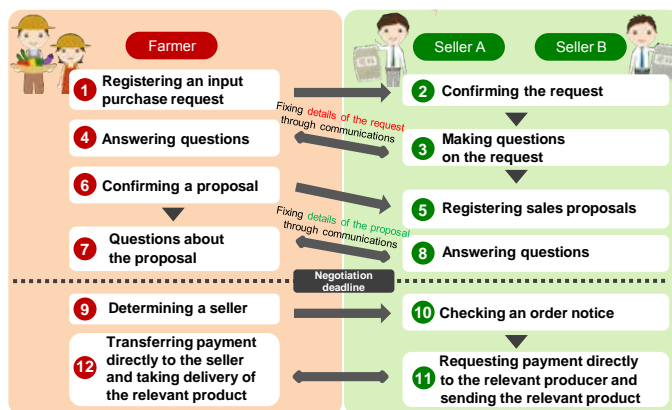


Source: Prepared by MAFF based on data from National Agriculture and Food Research Organization (NARO)

Moves to lower Agricultural input prices

- “AGMIRU,” a website for the comparison of agricultural inputs, was opened in June 2017 in order for farmers to compare and select agricultural material sellers.
- For agricultural chemicals, a new registration system for use on crop group was introduced to fruit group in April 2017.
- Fertilization standards that have led to small-volume production of numerous fertilizers are being revised.
- Feed companies are taking advantage of the business restructuring scheme created by the Agricultural Competitiveness Enhancement Support Act.

Mechanism of “AGMIRU” agricultural input comparison website



Source: MAFF

Promoting farming safety measures

- The annual number of farming accident deaths remained around 350 in recent years.
- In March 2017, “Risk Chart for Farmers Safety” was developed as an enlightenment material applicable to various types of farmers for distribution to agriculture extension advisers who diffuse and use the material for farmers.

Risk Chart for Farmers Safety (Excerpts on brush cutters)

1. Work environment				
Item	Points for checking	Checking space		priority
		Yes	No	
Work site	A slippery slope has scaffolds or small stairs.			
	Before brush cutter operation, you should confirm the work site and check if there are structures, stocks, wires, stones or cans.			
	You should not do brush cutter operation when the work site is slippery due to morning dew or rain.			

☒ You should not do brush cutter operation when the work site is slippery due to morning dew or rain.

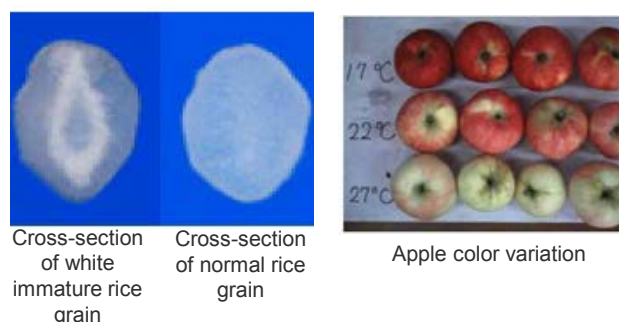
(Points for improvement)
Operation on right conditions for brush cutting can enhance safety and efficiency. Full preparations are required, including the wearing of spiked boots.

① Brush cutting operation should be limited to two hours per day, with one continuous operation limited to 30 minutes followed by a 5-minute rest (to prevent vibration disorder).
② You should avoid brush cutting operation under the blazing sun and replace water carefully during rest.

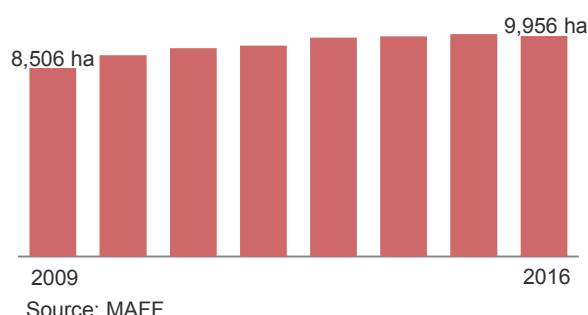
5. Promotion of environmental policy such as responses to climate change

- The United Nations' sustainable development goals (SDGs) include climate change mitigation and adaptation, and biodiversity loss prevention.
- As some agricultural products have had quality losses on global warming, the introduction of varieties mitigating such quality losses is promoted.
- Measures are promoted to reduce methane emissions from paddy fields as well as methane and dinitrogen monoxide emissions from livestock excrement.
- Ecofriendly agriculture including organic farming contributes to conserving the habitat/growth environment for living things.
- The total size of farmland certified as meeting organic JAS standards has remained around 10 thousand ha in recent years.

Rice and apple quality losses on average temperature change



Farmland certified as meeting organic JAS standards



6. Agriculture-related organizations supporting agriculture

- A questionnaire survey of general agricultural cooperatives and farmers on agricultural cooperative reform indicates an increasing percentage share of those that started business reform initiatives. However, general agricultural cooperatives have some gap with farmers over business reform.
- The new post of agricultural committee member for farmland use optimization promotion, created through an agricultural committee reform, has been being given to agricultural committee members upon their elections.
- Agricultural mutual relief associations are preparing for establishing their national federation to implement a new revenue insurance.
- Regarding land improvement districts, a bill has been submitted to the National Diet for switching to a land improvement system reflecting cultivators' opinions adequately and increasing procedural efficiency for land improvement at a time when non-farm households having farmland are increasing.

Questionnaire survey on agricultural cooperative reform

Category	Respondents	FY2016 survey	FY2017 survey
Those who answered that they have started specific initiatives to reform agricultural products sales	General agricultural cooperatives	68.0%	87.7%
	Farmers	25.6%	32.2%
Those who answered that they have started specific initiatives to reform production materials purchases	General agricultural cooperatives	65.5%	88.3%
	Farmers	24.0%	34.1%
Those who answered that agricultural cooperatives are having thorough talks with cooperative members on how to sell agricultural products and how to select cooperative executives.	General agricultural cooperatives	48.9%	76.6%
	Farmers	21.9%	30.6%

Source: MAFF