

- Wild animal damage to farm products, though following a downtrend in recent years, has seriously affected rural areas. The capture of deer and wild boars to prevent such damage has made progress at various locations in Japan.
- The utilization of captured deer and wild boars for gibier is expected to increase rural income and stimulate ambitions to capture harmful animals, helping to mitigate damage to farm products and the human life environment.

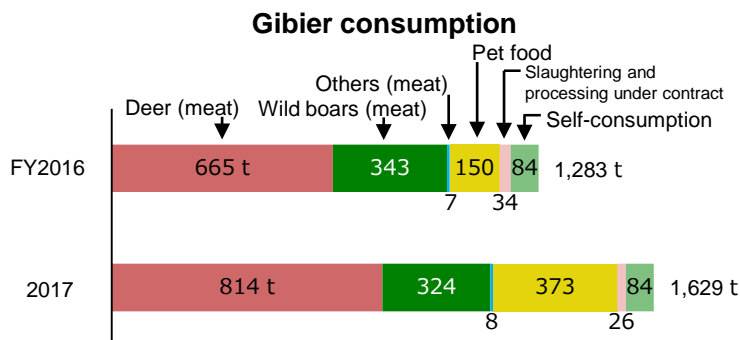
30% increase in captured wild animals utilized for gibier

- Wild animals processed for gibier at meatpacking facilities in FY2017 increased by 30% from the previous year to 1,629 tons.

Particularly, deer for gibier meat increased by 149 tons to 814 tons and pet food production using wild animals rose by 223 tons to 373 tons.

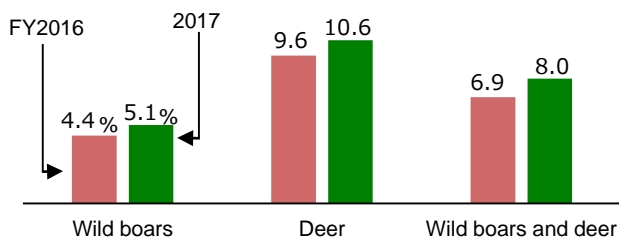
- The gibier utilization rate in 2017 stood at 5.1% for wild boars, at 10.6% for deer and 8.0% for wild boars and deer, increasing from the previous year while remaining low. Initiatives are required to further expand gibier utilization.

* The rate represents the percentage share of wild animals (deer and wild boars) processed for gibier in the total number of those captured.



Source: MAFF, Fact-finding Survey on Wildlife Resources Utilization

Gibier utilization rates for wild boars and deer

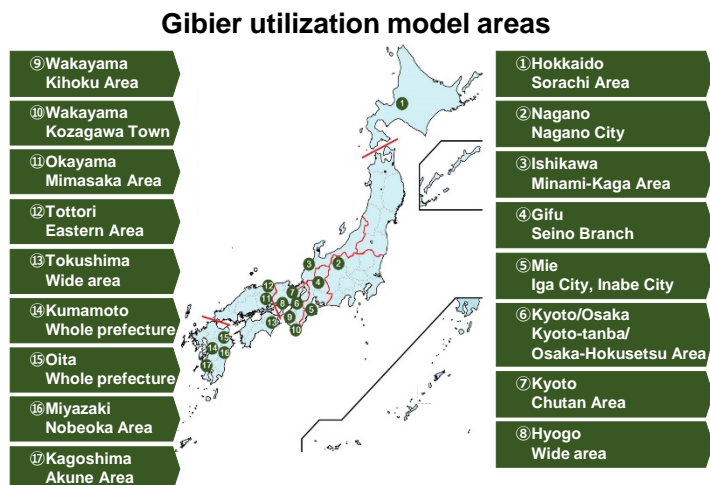


Sources: MAFF, Fact-finding Survey on Wildlife Resources Utilization; MOE, Wildlife Catches through Hunting and Harmful Wildlife Capture

Note: The numbers of animals captured in FY2017 are preliminary figures as of March 7, 2019.

17 gibier utilization model areas selected

- MAFF selected 17 gibier utilization model areas as Japan's pioneer models to provide safe, good-quality gibier for sustainable business purposes.
- These areas have been developing core meatpacking and refrigeration facilities and introducing gibier cars for gibier utilization since FY2018.



Source: MAFF

Domestic gibier certification system established to ensure consumers' security

- A domestic gibier certification system was established in May 2018 to ensure consumers' security concerning gibier.
- The system certifies meatpacking facilities that comply with sanitary control guidelines and unify standards and labeling for distribution.
- Certified meatpacking facilities indicate a certification mark on their gibier products to emphasize their safety.
- Three facilities – Kyotanba Shizen Kobo (Kyoto Prefecture), Iyanajibie (Tokushima Prefecture) and Shinshu Fujimi Kogen Farm (Nagano Prefecture) – have been certified under the system.

Gibier certification mark and product (wild boar)



Promoting campaigns for expanding nationwide demand for gibier

- The Gibierto website was opened in July 2018 to introduce gibier-serving restaurants, gibier events and other gibier information to expand nationwide demand for gibier.
- More than 1,000 shops including restaurants participated in two gibier fairs in summer and winter to create opportunities for consumers to eat gibier dishes.
- Gibier cooking seminars for professional were held at four locations in Japan to spread cooking methods.
- A gibier cooking contest was held for ordinary consumers, introducing prize-winning recipes.

Prize-winning recipes for cooking gibier

	Comments by recipe developers
	(Deer bibimpap and shank soup) [MAFF Minister's Prize] Maitake mushrooms including a protein-degrading enzyme were added to minced meat from deer shank to prevent the meat from hardening. Paprika including massive vitamin C was used as a bibimpap ingredient to facilitate the absorption of the massive iron found in deer meat. Soup was made using the gristle and bones produced by the mincing of the shank. Particularly, gristle can be used effectively through thorough boiling to produce good taste and soup stock.
	(Mountain food: Roasted deer with deer soup sauce) [MAFF Rural Development Bureau Director-General's prize] As deer bone soup is tasty, according to internet information, and is reportedly used for ramen noodles in some areas, I attempted to use the soup. I think that the shank, leg and bones may be used for more tasty dishes depending on the processing. The garnish of orange may be squeezed to produce a fresh smell to make the dish more delicious.
	(Deer meat couscous) [Japan Gibier Promotion Association Representative Director's prize] In Tunisia, I used lamb, chicken, fish, etc. for couscous. By using deer meat having a good chemistry with cumin, I made a delicious couscous dish featuring a gentle deer taste soaked fully into couscous. As vegetables were boiled with the couscous to soften the couscous, the deer meat became easier to eat and could be stuffed in the mouth. Eat the dish with light-body red wine or beer. Summer vegetables have the best chemistry with deer meat couscous. However, you may use seasonal vegetables such as daikon radish, carrot or white scallion in winter.

Source: Prepared by MAFF from Japan Gibier Promotion Association's "Gibier Cooking Recipes"

<Column>

Gibier attracting attention as low-calorie, nourishing ingredient

- Deer meat includes more iron and vitamins, over 50% less calories and 80% less fat than beef.
- Wild boar meat includes more vitamins and four times more iron than pork.
- Amid the growing health-conscious trend in recent years, gibier has attracted attention as a low-calorie, nourishing ingredient.

Source: MEXT, Standard Tables of Food Composition in Japan - 2015 - (Seventh Revised Edition)

Chapter 1 Securing Stable Food Supply

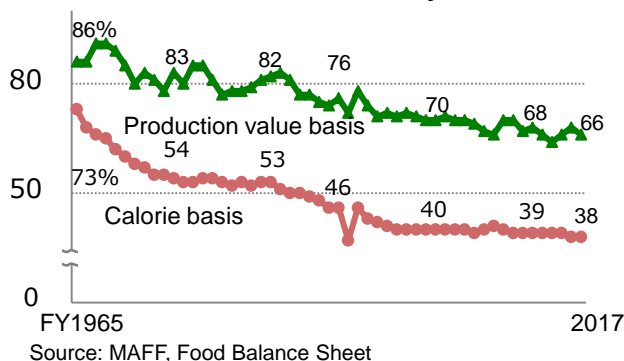
1. Food self-sufficiency ratio and food self-sufficiency potential index

- In recent years, the food self-sufficiency ratio has remained around 40% on a calorie basis and around a 65-75% range on a production value basis.

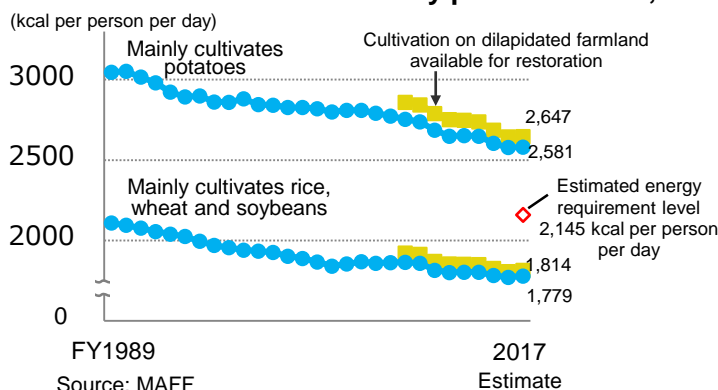
In FY2017, the food self-sufficiency ratio on a calorie basis remained unchanged from the previous year at 38% as a pickup in wheat and other production countered an increase in livestock imports. On a production value basis, the ratio decreased by 2 percentage points to 66% as livestock and seafood imports increased in value due to the yen's depreciation.

- The food self-sufficiency potential index, which shows potential food production capacity, exceeded the estimated energy requirement level in potato-oriented cultivation and slipped below the levels in rice/wheat/soybean-oriented cultivation.
- Given the factors expected to destabilize global food supply and demand in the future, it is necessary to increase the nation's food self-sufficiency by enhancing its production to meet product-specific demands and by consolidating farmlands.

Total food self-sufficiency ratio



Trends in Food self-sufficiency potential index, etc.



2. Strategic exploration of global market

Expanding agricultural, forestry and fisheries products and food exports

- See Topic 1

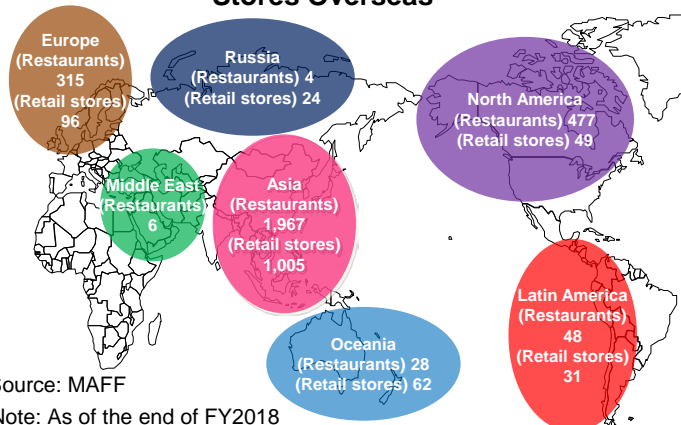
Promotion of Japanese food culture overseas

- A total of 4,112 overseas restaurants and retail shops have been recognized as Japanese Food and Ingredient Supporter Stores Overseas that proactively use food products made in Japan.
- A total of 92 persons in Japan and other countries serve as Special Goodwill Ambassadors to Spread Japanese Cuisine, who effectively transmit the allures of Japanese food and dietary culture in Japan and abroad.
- The "Taste of Japan" website, opened in 2013 to communicate the charms of Japanese food, lists 4,708 Japanese restaurants and 1,068 shops available for purchasing Japanese cooking ingredients in foreign countries, Japan and abroad.

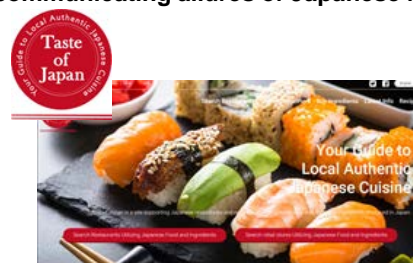
Utilizing standards, certification and intellectual properties

- See Topic 2

Japanese Food and Ingredient Supporter Stores Overseas



Top page and logo mark of "Taste of Japan" website for communicating allures of Japanese food



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

Global food supply/demand trends

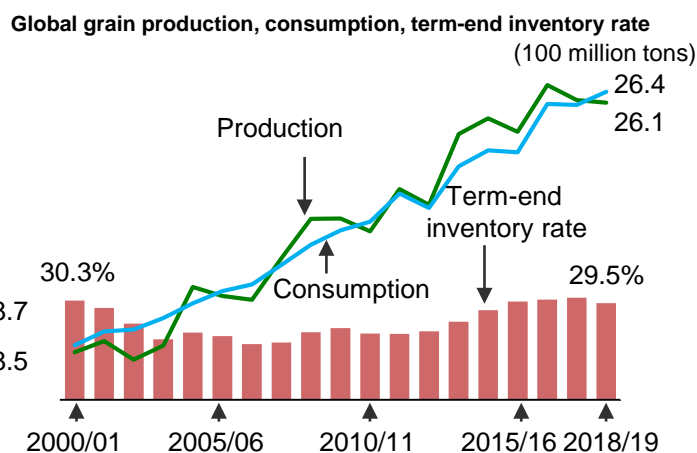
- Global grain production declined for the second straight year due to a wheat output fall attributable to drought, etc., while global grain consumption increased on population and income growth.

Establishing comprehensive food security

- MAFF secures stable food supply by increasing domestic production and combining it with imports and stockpiles and regularly analyzes and assesses risks in preparation for contingency.
- A monitoring survey of food industry business operators shows that only 9.7% of responding business operators have developed business continuation plans in preparation for natural disasters, indicating that more preparations are required for natural disasters.

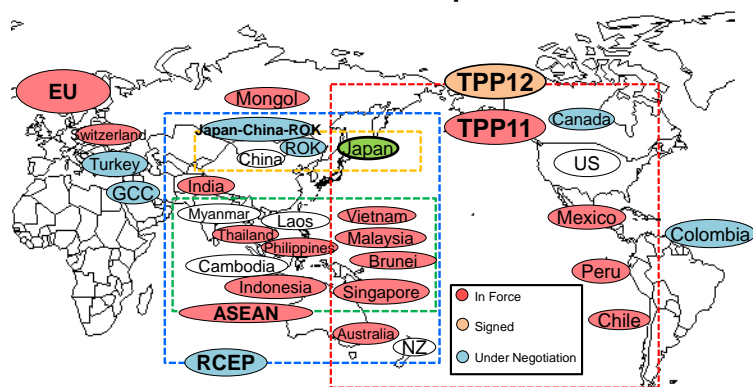
Agricultural products trade negotiations

- The TPP 11 and Japan-EU EPA have taken effect. Until the end of FY2018, Japan had effectuated or signed a total of 18 EPA/FTAs.
- Japan has secured border measures, including the maintenance of the state trading system, the tariff quotas and the longer tariff reduction staging, to enable agriculture, forestry and fisheries to ensure their reproductions, and also implemented comprehensive domestic measures, including those for enhancing their competitiveness.



Source: Prepared by MAFF, based on the United States Department of Agriculture, PS&D; World Agricultural Supply and Demand Estimates (as of March 2019)

EPA/FTAs in Japan



Source: MAFF (As of the end of FY2018)

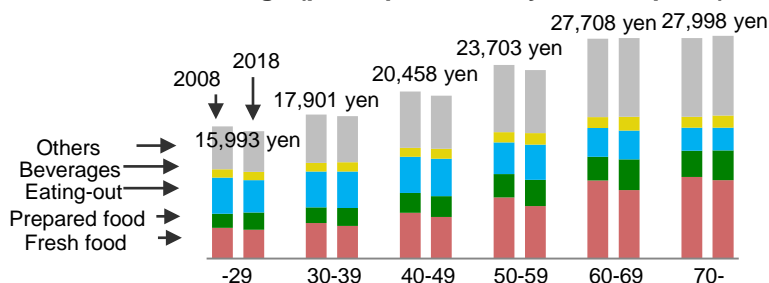
4. Food consumption trends and promotion of Shokuiku (food and nutrition education)

- The more aged householders are, the more food consumption expenditure is in two-or-more-person households.

From a decade earlier, consumption decreased for fresh food while increasing for prepared food.

- Two-or-more-member households including 60-year-old or older householders tend to pay higher unit prices for major food products.
- The Food Action Nippon Award program gives awards for excellent products contributing to expanding consumption of domestic agriculture, forestry and fisheries products and allows award-winning products to be sold through sales channels of 10 companies serving as judges.
- To promote protection and inheritance of traditional dietary cultures of the Japanese, workshops were provided to dietitians, childminders, etc. The government and private companies jointly launched the "Let's! Wagohan (Washoku) Project" in FY2018 to increase opportunities to eat Washoku at familiar sites easily.

Food consumption expenditure by category and household age (per capita monthly consumption)



Source: MIC, Family Income and Expenditure Survey (Two-or-more-person Households)



"Let's! Wagohan Project" logo mark

5. Ensuring food safety and consumers' confidence

Improving food safety

- MAFF develops and disseminates measures for preventing or reducing contamination in food as necessary throughout the food chain from production to consumption based on scientific evidence.
- The Agricultural Chemicals Regulation Act as revised in December 2018 introduces a reevaluation system based on the latest scientific knowledge from the viewpoint of improving the safety of agricultural chemicals.

Ensuring consumer confidence

- To secure proper labelling of countries of origin, and details of raw materials and their production areas, etc., Regional Agricultural Administration Office officials conduct surveillance and enforcement based on the Food Labelling Act.

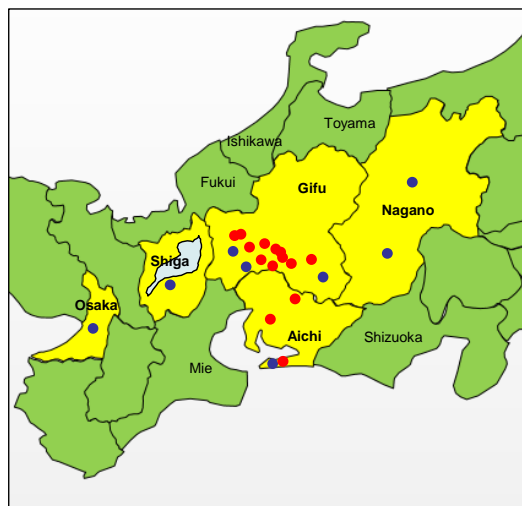
Animal and plant quarantine

- To prevent Japan's first classical swine fever epidemic in 26 years from spreading, the government reaffirmed the compliance with livestock sanitary control standards and instructed improvements.

The government also thoroughly informed citizens that classical swine fever does not infect humans and that eating pork from swine infected with the disease has no health problems.

- To prevent overseas livestock infectious diseases such as African swine fever from being brought into Japan, the government has given relevant warnings to passengers and conducted inspections using animal and plant quarantine detector dogs at airports and seaports.
- To prevent the introduction into Japan of plant diseases and pests damaging agricultural production, the government has implemented quarantine inspections on imported plants.

Classical swine fever epidemic locations (FY2018)



Source: MAFF

Notes: 1) As of the end of FY2018

2) Red points are for epidemic farms and blue points for relevant farms.

Key points of classical swine fever prevention measures (excerpts)

- ① **Preventing humans, goods and vehicles from bringing viruses into Japan**
 - Full arrangements for cleaning and disinfection when people go into and out from sanitary control zones and pig houses.
 - Full arrangements for establishing and using exclusive clothing and shoes for sanitary control zones
 - Recording humans and goods going into and out from sanitary control zones
 - Full arrangements for at least 30 minutes of heating treatment at 70 degrees Celsius or at least 3 minutes of such treatment at 80 degrees Celsius for cases in which feed includes or has the potential to include meat
- ② **Wild animal measures**
 - Preventing excretion of mice and other wild animals from being mixed into feed at storage and other sides.
 - Cleaning and decluttering around pig houses
 - Dead livestock animals should be appropriately kept from being exposed to wild animals until treatment.



An animal and plant quarantine detector dog patrolling at an airport



Posters informing travelers of goods subject to import bans (Left: English Right: Chinese)

6. Trends of food industry

Present status and challenges of food industry

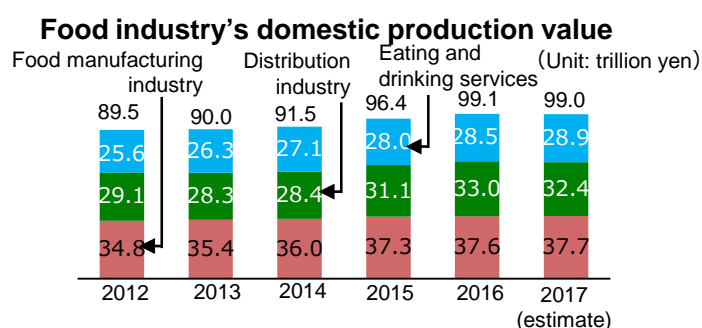
- The food industry's domestic production value has followed an uptrend in recent years, standing at 99 trillion yen in 2017, unchanged from the previous year.
- The food industry has close relations with the domestic agriculture, forestry and fisheries sector, receiving 70% of the sector's domestic food products.
- The food manufacturing industry won the largest share of the manufactured goods shipment value each in nine prefectures, indicating its key role in regional economies.
- MAFF published a food industry strategy in April 2018, putting in order the food industry's challenges and proposing the industry's targets for 2020.

Streamlining and upgrading food distribution

- In June 2018, an act to amend the Wholesale Market Act and the Act on the Food Marketing Structure was promulgated.
- Under the Agricultural Competitiveness Enhancement Support Act put into effect in August 2017, five corporate restructuring plans in the food and drink manufacturing industry were approved along with three such plans in the food and drink wholesale industry.

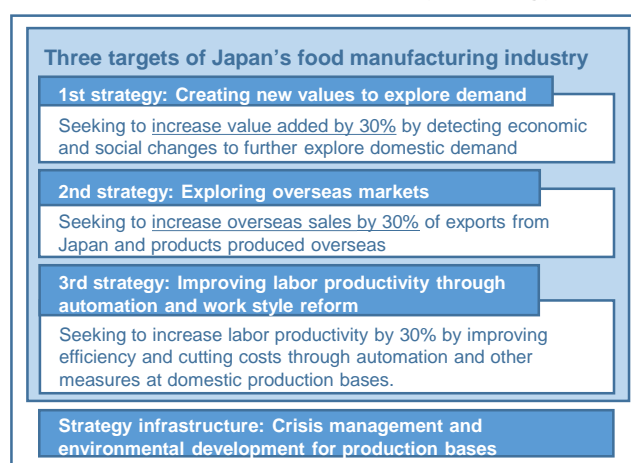
Addressing environmental and other social challenges

- Japan's food loss and waste (edible part) is estimated at 6.43 million tons per year. Per capita food loss and waste (edible part) stands at 51 kg per year or 139 g per day.
- In view of the Sustainable Development Goals, the government is considering a target for reducing the edible part of food loss and waste from business operators while reviewing the basic policy of the Food Waste Recycling Law.
- Food-related business operators, consumers, local governments and other stakeholders are cooperating in implementing reduction initiatives for the edible part of food loss and waste, being supported by the central government.



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

Direction of food industry strategy



Source: MAFF

Japan's food loss and waste

Per capita food loss and waste (edible part)

139 g per day

* Amounting to a bowl of rice

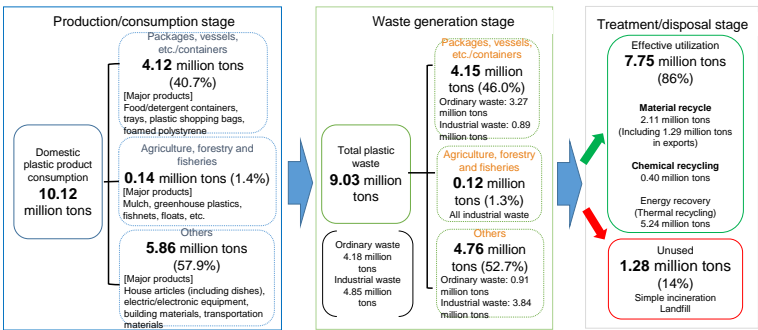
51 kg per year

* Amounting to annual per capita rice consumption (56 kilograms)



- In 2017, 9.03 million tons of plastic waste was generated, including 1.28 million tons (14%) subjected to incineration or landfill.
- The food industry has taken several measures, including switching to lighter/thinner containers or easily recyclable packages.
- MAFF provides information on food industry initiatives to promote cyclical use of plastic.

Material Flow of Plastics (2017)



Source: Prepared by MAFF from Plastic Waste Management Institute's "2017 plastics products production, Waste generation, recycling and treatment/disposal"

<Column> **SDGs×Food Industry**

- Sustainable development goals (SDGs) consist of 17 global goals and 169 global targets to realize an environmentally friendly, economically strong and socially balanced society.
- Not only public organizations but also private businesses should take part in initiatives to achieve the SDGs.
- A rising number of food business operators in Japan are implementing initiatives to achieve the SDGs.
- MAFF has opened the "SDGs×Food Industry" website to introduce these initiatives.

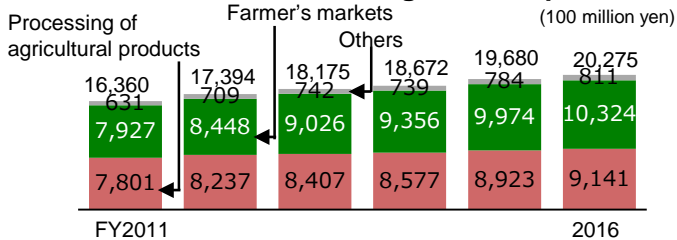
Example initiatives introduced on "SDGs×Food Industry"

Initiatives	SDGs for contribution
Developing goods contributing to resolving health problems	
Introducing ordering methods to reduce food losses	

7. Creation of new values through production, processing and distribution stages

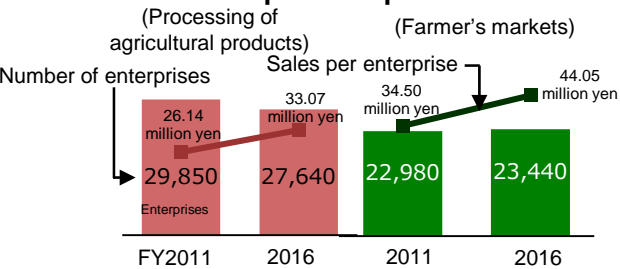
- Total sales from agricultural production-related initiatives such as processing and farmers' markets in FY2016 increased by 59.5 billion yen from the previous year to 2, 027.5 billion yen.
- Sales per enterprise in FY2016 increased from FY2011 both for processing of agricultural products and for farmer's markets.
- Municipal governments consider AFFrinnovation policies and cooperate with commercial and manufacturing business operators, universities and other local stakeholders to jointly promote AFFrinnovation.

Total annual sales related to agricultural production



Source: MAFF, Comprehensive Survey on AFFrinnovation
Note: "Others" cover tourism farms, farm inns and farm restaurants.

Number of agricultural product processing and farmer's market enterprises and sales per enterprise



Source: MAFF, Comprehensive Survey on AFFrinnovation

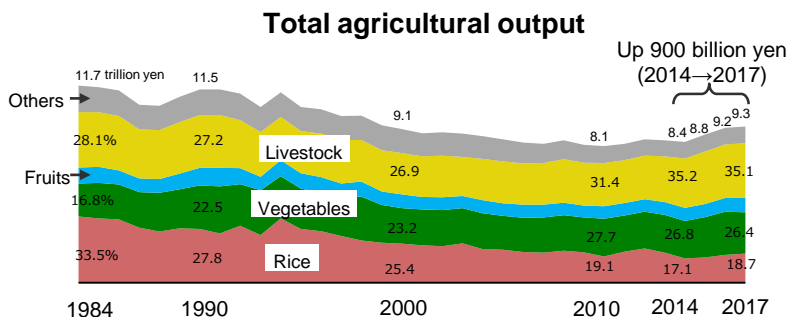
Chapter 2 Creating Strong Agricultural Structure

1. Trends of agricultural output, agricultural production income, etc.

- Total agricultural output continued a downtrend over a long time after a peak in 1984, before increasing from 2015.

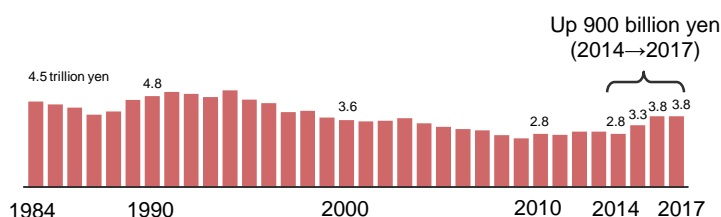
Total agricultural output in 2017 increased for the third straight year due to price hikes through demand-based production for staple food rice, pork price rises amid robust demand, a chicken production increase, etc., reaching 9.3 trillion yen.

- Livestock output accounted for the largest share of 3.3 trillion yen in the total agricultural output, followed by 2.5 trillion yen for vegetable output.
- Livestock output accounted for the largest share in prefectural total agricultural output each in Hokkaido, Kagoshima and Miyazaki among the top-five prefectures in total agricultural output. Vegetable output captured the largest share each in the remaining two prefectures – Ibaraki and Chiba.
- Agricultural production income continued a downtrend for a long time before switching to an uptrend in recent years, rising to 3.8 trillion yen in 2017 for the third straight year of growth.



Source: MAFF, Agricultural Production Income Statistics

Agricultural production income



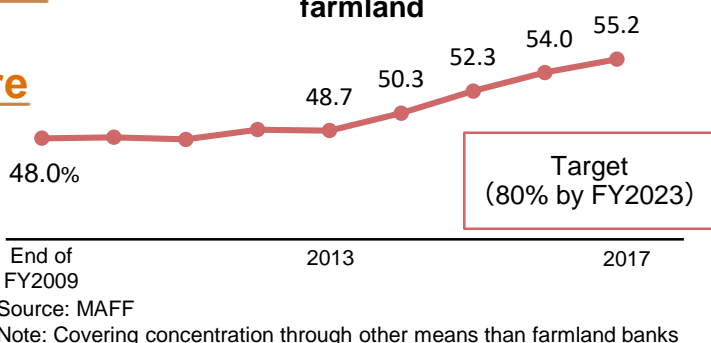
Source: MAFF, Agricultural Production Income Statistics

2. Promoting structural reform of agriculture

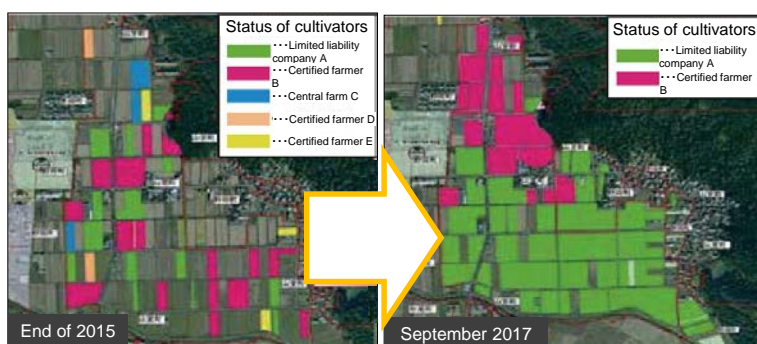
Farmland concentration and intensification through operation of the Public Corporation for Farmland Consolidation to Core Farmers through Renting and Subleasing (Farmland Banks)

- The total farmland area in 2018 decreased by 24,000 ha from the previous year to 4.42 million ha.
- As a result of the Farmland Bank initiative launched in 2014, business farmers' share of total farmland rose to 55.2% at the end of FY2017.
- In some cases, Farmland Banks have been used for eliminating farmland dispersion and confusion.

Business farmers' share of total farmland



Case for using a Farmland Bank to eliminate farmland dispersion and confusion (Echizen, Fukui Prefecture)



- Farmland bank utilization has run its course in flat paddy fields where demand for farmland concentration and intensification had gained momentum. In most other paddy fields, farmland concentration and intensification efforts must begin with preparatory local consultations. The challenge is how to revitalize such consultations.
- The government has submitted to the National Diet a bill for farmland banks, municipal governments, agricultural cooperatives, agricultural committees, land improvement districts and other stakeholders to promote local consultations.

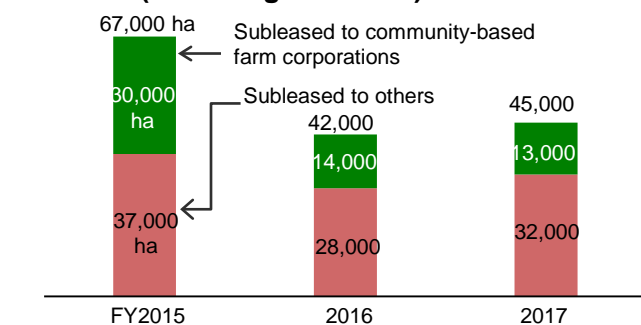
Developing and securing business farmers and strengthening human resources

- The number of core persons engaged mainly in farming in commercial farming households in 2018 decreased by 3.8% from the previous year to 1.451 million, with their average age standing at 67.

The number of farms decreased by 3.0% from the previous year to 1.221 million farms. While the number of farms decreased, the number of corporation farms increased by 4.1% to 23 thousand due to their easier employment and business continuation.

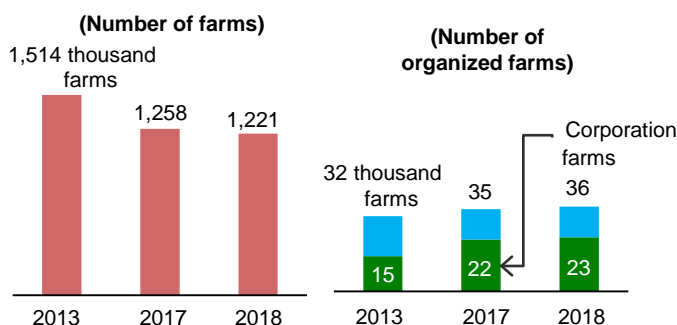
- Farms with 10 ha or more of cultivated land under management increased their share of total farms year by year to 52.7% in 2018.

Farmland subleased by Farmland Banks (excluding Hokkaido)



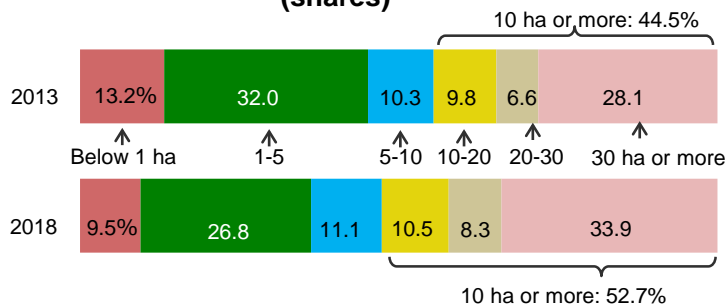
Source: MAFF

Numbers of farms and organized farms



Source: MAFF, Survey on Movement of Agricultural Structure

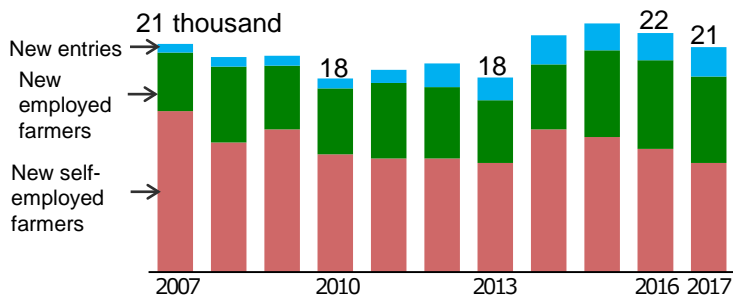
Farms by area of cultivated land under management (shares)



Source: MAFF, Survey on Movement of Agricultural Structure

Number of 49 or less year-old newcomers in agriculture

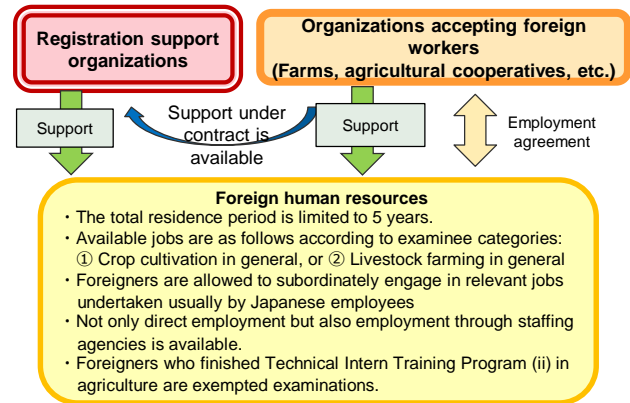
- The number of 49 or less year-old newcomers in agriculture totaled 20,760 in 2017, topping 20 thousand for the fourth straight year.



Source: MAFF, Survey on Newcomers in Agriculture

- Labor shortages in agriculture are serious. An estimated 70 thousand more farmers were required as of 2017.
- An act to amend the Immigration Control and Refugee Recognition Act and the Ministry of Justice Establishment Act, as promulgated in December 2018, established a “specified skilled worker” as a new status of residence to accept foreign human resources with specified expertise/skills and some Japanese language proficiency in 14 fields including agriculture.

Specified skilled worker system for agriculture



Source: MAFF

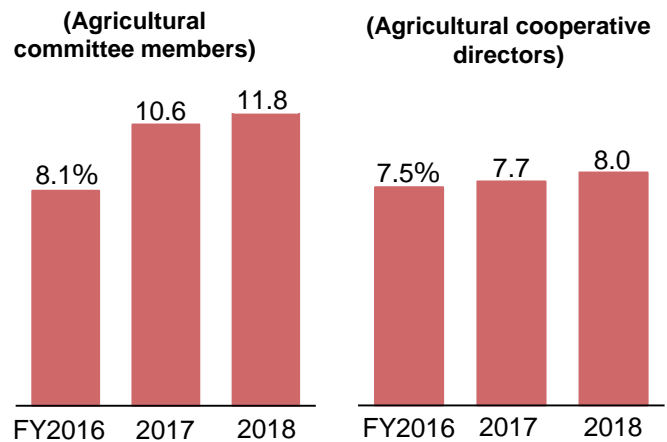
Participation of women farmers

- Under the Agricultural Committee Act revised in April 2016 and other measures, women's shares of Agricultural Committee members and agricultural cooperative directors have increased.

Particularly, women accounted for 11.8% of Agricultural Committee members in FY2018, indicating that women's shares of leading posts were rising.

- 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 was launched in 2013, marking its fifth anniversary in November 2018. At the end of FY2018, the number of project members stood at 740, with 34 companies participating in the project, increasing opportunities for project members' performance.

Women's shares of Agricultural Committee members and agricultural cooperative directors



Source: MAFF

Note: Data for agricultural cooperative directors in FY2018 are from the Central Union of Agricultural Cooperatives (Zenchu).

Revenue insurance system launched

- Under the Agricultural Insurance Act revised in April 2018, a revenue insurance system was launched in January 2019 as a new safety net covering the whole farm revenue.

Overview of revenue insurance

- Insurance premium rates are around 1%, with 80% or more of the standard revenue being insured.
- The revenue insurance covers not only natural disasters but also a wide range of agricultural business risks such as price drops for all agricultural products including rice, upland field crops, vegetables, fruits, flowers, tobacco, tea, shiitake mushrooms and honey, in principle.

<Example risks covered by revenue insurance>



Source: MAFF

3. Developing and conserving agricultural production infrastructure

- The government implemented the Land Improvement Act's revision and other institutional measures and fiscal ones to substantially enhance the agriculture and rural area development project.

Enhancing agriculture's competitiveness through expanding farmland partitions and developing multipurpose farmland

- In 2017, 65.3% of rice paddies had been consolidated into 30 a or larger partitions. Irrigation facilities had covered 24.1% of upland fields.
- Of rice paddies consolidated into 30 a or larger partitions, 70% are well drained and available as upland fields. By developing multipurpose rice paddies, farmers can switch to agriculture business giving priority to vegetables and other highly profitable products to increase their income.
- To accelerate farmland consolidation for business farmers, MAFF has created and promoted a farmland development project related to Farmland Banks to implement farmland development without farmers' applications, approvals or costs.
- Informatization measures using information and communications technologies, drones, etc. are being introduced to improve the productivity of the agriculture and rural area development project.

Extending service lives of agricultural irrigation facilities

- Developed agricultural irrigation facilities include core channels totaling 50,927 km and 7,556 core facilities including dams and diversion weirs.
- To save labor for the maintenance and management of agricultural irrigation facilities, MAFF is promoting the utilization of new technologies for improving functional diagnosis and other operations.

Disaster prevention/reduction and national resilience enhancement to protect agriculture and rural areas from disaster risks

- In response to reservoirs affected the Heavy Rain Event of July 2018, the government has conducted emergency checkups on reservoirs throughout Japan.
- The government has set specific standards for selecting reservoirs subject to priority disaster prevention/reduction measures as "reservoirs that have potential to be broken to flood houses and public facilities and cause human damage."
- A bill to develop a mechanism for the adequate management and conservation of agricultural reservoirs has been submitted to the National Diet.
- See Special Topic 1 for 3-year emergency measures package for preventing/reducing disasters and enhance national resilience.

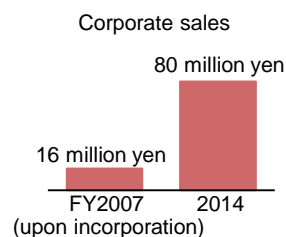
<Case study>

Boosting profit by using rice paddies for multiple purposes (Kyoto Prefecture)

- Kumihama Town in Kyotango City has conducted rice paddy partition realignment and underdrainage since FY1983 to use rice paddies for multiple purposes, establishing a block rotation system to produce rice, black soybeans, etc. and a community-based farm organization for the system.
- The community-based farm organization was incorporated in 2007 to mobilize 37 ha of farmland for producing Kyoto vegetables. In FY2013, a groundwater level control system was developed to expand Kyoto vegetable production.
- The corporation's sales have quintupled from the level at the time of the incorporation.



Farmland where a groundwater level control system was developed to enable winter cropping

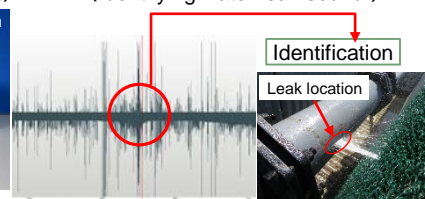


Using robots for functional diagnosis and surveillance on pipe channels

(Water leak detection robot)



(Identifying water leak sound)

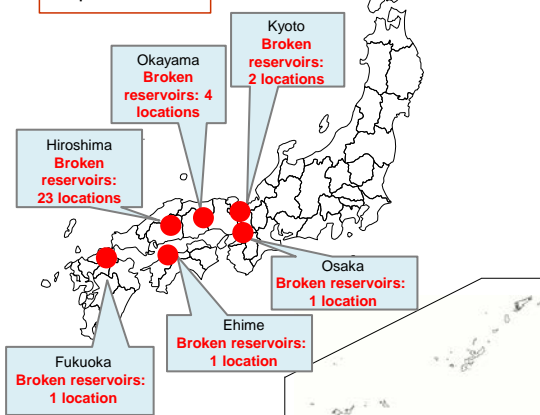


Source: National Agriculture and Food Research Organization (NARO)

Reservoirs affected by the Heavy Rain Event of July 2018

Number of broken reservoirs

32 reservoirs in 6 prefectures

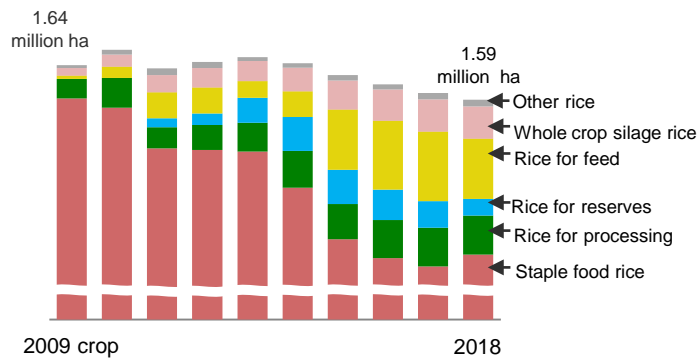


Source: MAFF

4. Rice policy reform trends

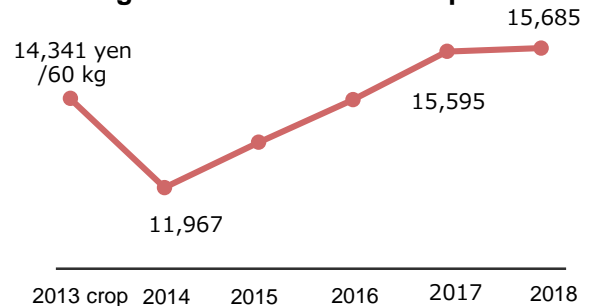
- Given a decline in annual rice consumption, the government abolished its allocation of a production target from 2018 and switched to a policy of leading production areas and producers to produce and sell rice in line with demand.
- MAFF provides information in a fine-tuned manner, promotes the expansion of stable transactions and supports planting of wheat, soybeans, rice for feed and other crops at rice paddies.
- While Japan's staple food rice planting area in 2018 increased by 16 thousand ha from the previous year, the rice crop condition index was limited to 98, allowing production to be almost the same as a projection in a supply and demand outlook. Rice prices were firm.
- As demand for staple food rice is expected to continue decreasing, it is important to promote switching rice paddy products from rice to wheat/barley, soybeans, rice for feed and highly profitable crops. The government has improved procedures for the public rice reserve system by expanding priority quotas by production area to make it easier for production areas to operate the system.
- Rice for food services and home-meal replacements accounts for 30% of staple food rice demand and is expected to remain in robust demand. To prevent mismatching between producers willing to provide higher-priced rice and consumers seeking rice at affordable prices, the government supports matching between supply and demand.
- The government has repealed the Main Crop Seed Act requiring prefectural governments uniformly to supply rice, wheat/barley and soybean seeds and is promoting the development of seed supply arrangements meeting various demands. Prefectural governments have been establishing regulations reflecting public-private collaboration and regional characteristics.
- As rice flour certified under the third party certification system for non-gluten rice flour products has been distributed since June 2018, rice flour demand is expected to increase, including demand for exports.

Rice planting area



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

Negotiated rice transaction price

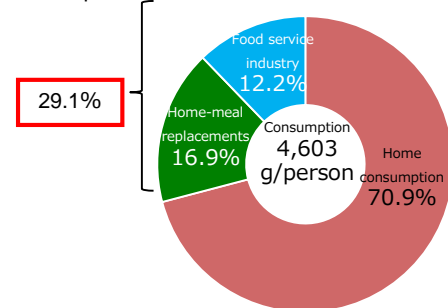


Source: MAFF "Rice Transactions Report"

Notes: 1) The negotiated rice transactions price is the price for transactions between shipping organizations and wholesalers.
2) The price represents the average of prices from initial annual shipments to October next year (prices for 2018 cover transactions until March 2019).

Breakdown of staple food rice consumption (FY2017)

Food service industry and home-meal replacement share



Source: Beikoku Antei Kyokyu Kakuho Shien Kiko "Rice Consumption Trends"

Logo mark for certification of non-gluten rice flour products and the first certified product



5. Production trends for major farm and livestock products

Wheat

- Benchmark 2019 wheat crop prices increased for multiple brands due to worse production in the previous year and consumers' growing demand for domestic wheat.
- MAFF promotes wheat quality and yield stabilization and improvement initiatives including thorough farmland drainage measures and the introduction of excellent varieties.

Vegetables/Fruits

- Production expanded for cabbage and some other vegetables in strong demand for processing and commercial purposes as demand was growing for food services and home-meal replacements.
- Among fruits, Shine Muscat grapes, which can be eaten with their peel and feature excellent taste, and some others posted production growth.
- As work hours per land area unit for vegetable and fruit production are longer, MAFF promotes productivity improving initiatives including work system revisions, automation and the introduction of labor-saving fruit tree forms.

Livestock products

- While the number of livestock farms decreased for each livestock category in 2018, the number of animals raised per farm increased.
- While the number of dairy cattle raised in Hokkaido turned upward, the number in the other prefectures continued declining. Given that raw milk output per cattle is increasing despite the downtrend in total raw milk output, securing cows is expected to lead to a recovery in raw milk output.
- As the number of breeding cows turned upward, beef production increased for the first time in five years. Beef calf prices have remained high. Guaranteed standard prices under the beef calf producer subsidization system are raised in line with present business conditions, considering current situations of small-scale production and in the direction of business modernization.

Auction results for major wheat brands

(Unit: yen, %)

Production area	Brand	Previous year benchmark price	2019 crop benchmark price	Compared with previous year
Hokkaido	Kitahonami	51,989	59,956	115.3
Hokkaido	Yumechikara	49,248	58,127	118.0
Hokkaido	Haruyokoi	53,966	63,696	118.0
Aichi	Kinuakari	42,925	46,402	108.1
Ibaraki	Satonosora	36,591	42,880	117.2

Source: Prepared by MAFF from the National Rice Wheat and Barley Improvement Association's "Auction results for wheat/barley produced in 2019"

Work hours for harvest using cabbage harvesters

	Manual harvest	Machine-using harvest
Harvest hours	32 hours/10a	17 hours/10a

Source: MAFF "New Agriculture/Forestry Technologies"



Source: National Agriculture and Food Research Organization (NARO)

The left photo shows cabbage harvest using a harvester for processing and commercial purposes. The right one shows sorting, preparation and containing operations on a harvester.

Numbers of livestock farms and animals per farm

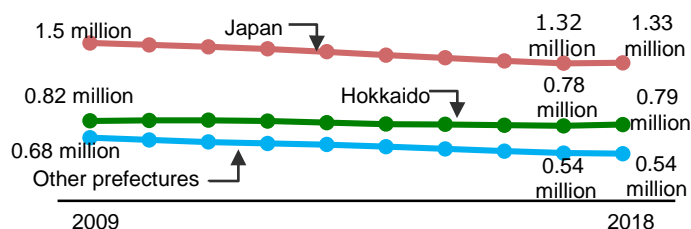
(Unit: household, animal, poultry)

		Number of livestock farms		Number of animals per farm	
		2008	2018	2008	2018
Dairy cattle	Hokkaido	8,090	6,140	101.3	128.8
	Excluding Hokkaido	16,300	9,540	43.8	56.3
Beef cattle		80,400	48,300	35.9	52.0
	Cows for breeding	69,700	41,800	9.6	14.6
	Fattening cattle	11,900	7,620	64.7	96.7
	Dairy cattle for beef	7,230	4,650	147.6	174.8
Pigs		7,230	4,470	1,347.9	2,055.7
Layers (×1000)		3,300	2,200	43.2	63.2
Broilers (×1000)		2,456	2,260	41.9	61.4

Source: Prepared by MAFF based on MAFF, Statistics on Livestock; Statistics on Livestock Products Marketing

Note: As of February 1 each year

Number of dairy cattle raised



Source: MAFF, Statistics on Livestock

Note: As of February 1 each year

6. Promoting measures to enhance agricultural production competitiveness

Development and extension of new agricultural technologies

- Industry-academia-government research collaboration is promoted to introduce various fields' technologies into the agriculture, forestry and fisheries, and food field to create innovations.
- The Strategic Innovation Promotion Program (SIP) and other initiatives have accelerated crop improvements using genome editing.
- See Special Topic 2 for smart agriculture

GABA-containing tomatoes



Tsukuba University has developed tomatoes containing massive GABA that has hypotensive effects.

Potatoes containing far less natural toxins



Osaka University and Riken developed potatoes in which natural toxins (such as solanine and chaconine) have been reduced substantially.

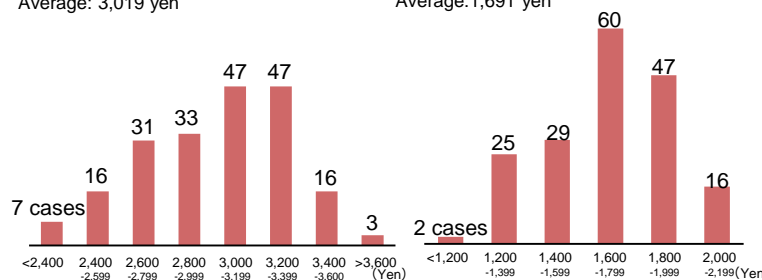
Moves to lower agricultural input prices

- Domestic prices of fertilizers and agrichemicals largely vary even though the products' components and standards are the same. Overseas prices cannot be simply compared with domestic prices because of wide differences in farmers' production conditions and agricultural inputs situations but are generally lower than domestic prices.
- Based on the Act on the Support for Strengthening Agricultural Competitiveness Act, one fertilizer and two feed companies' business restructuring plans have been approved. A plan for expansion into agricultural machinery business has been approved, making progress in industrial restructuring.

Fertilizer/agrichemical sales price distribution

(Calcium cyanamide (granular) 20 kg)
Usual prices: 1,900-4,258 yen
Average: 3,019 yen

(Mancozeb wettable powder 80% 1 kg)
Usual prices: 847-2,117 yen
Average: 1,691 yen

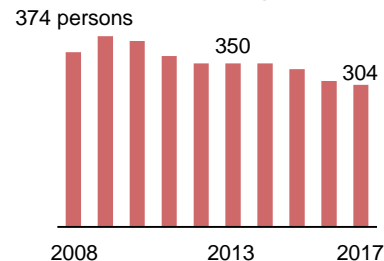


Source: MAFF "Survey on Agricultural Materials Supply in Japan and Other Countries"

Promoting farming safety measures

- The number of people who died due to accidents during farming in Japan in 2017 decreased by eight to 304.
- To enhance safety guidance for aged farmers vulnerable to accidents, MAFF promotes experts' safety checkups and the dissemination of GAP (good agricultural practices) that can contribute to forestalling farming accidents.

Deaths from farming accidents



Source: MAFF "Overview of Fatal Farming Accidents in 2017"

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

Promoting climate change mitigation/adaptation measures, etc.

- The 24th Conference of Parties to the United Nations Framework Convention on Climate Change (COP24) agreed on common guidelines for all countries for implementing the Paris Agreement.
- The Climate Change Adaptation Act to promote initiatives to avoid and mitigate climate change impacts took effect in December 2018, following the Law Concerning the Promotion of the Measures to Cope with Global Warming to promote the reduction of greenhouse gas emissions. Japan has thus developed two laws to promote climate change mitigation and adaptation.

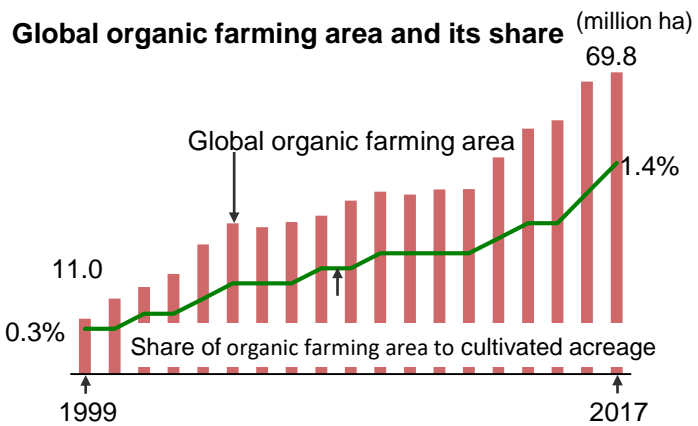
Chronology of events after Paris Agreement adoption



Source: MAFF

Promotion of ecofriendly agriculture

- The global organic farming area expanded six-fold from 1999 to 2017, with global organic food sales reaching 11 trillion yen. The Japanese organic food market also grew to 185 billion yen.
- MAFF has supported initiatives in various locations for establishment of stable organic food supply systems such as making manuals for organic farming and holding seminars for promoting new entries into organic farming, etc.



Source: Prepared by MAFF based on FiBL & IFOAM, THE WORLD OF ORGANIC AGRICULTURE STATISTICS & EMERGING TRENDS 2019

8. Agriculture-related organizations supporting agriculture

- Agricultural cooperatives are reforming themselves. Under one of new initiatives, the National Federation of Agricultural Cooperative Associations known as Zenno compiled opinions of business farmers and ordered tractors with limited functions.
- As the Agricultural Committee Members for promotion of optimized farmland usage were established under the Act on Agricultural Committees and Related Organizations as revised in April 2016, the number of Agricultural Committee Members increased throughout Japan, with the number of committee members aged below 50 rising to rejuvenate Agricultural Committees.
- MAFF has promoted the consolidation of agricultural mutual relief associations into one in each prefecture to streamline their operations. In April 2018, the Federation of Agricultural Mutual Relief Associations was established, launching revenue insurance systems.
- In land improvement districts where nonfarming landowner households have increased, MAFF promotes transition to farming arrangements in which cultivators' opinions are appropriately reflected and steps up administrative streamlining. An act to amend the Land Improvement Act was promulgated in June 2018.

<Case study>

Zenno's joint tractor purchase initiative

- Zenno requested four companies to develop a 60-horsepower tractor reflecting opinions of farming groups and business farmers and selected one through an auction.
- Functions were limited to necessary ones such as a fuel tank which requires no refueling for one day, as well as an automatic brake.
- Zenno has taken advantage of joint purchases and an auction to cut prices by 20-30%.
- Other companies have released new tractors at low prices, indicating that the effects of the Zenno initiative have made an impact on the agricultural machinery industry.



Developed 60-horsepower tractor

Status of Agricultural Committees

(Unit: number of committees, persons)

	Before revision	After revision
Number of Agricultural Committees	1,707	1,703
Number of Agricultural Committee Members	35,488	23,196
Women	2,650	2,747
Members aged below 50	1,233	1,662
Number of members for promotion of optimized farmland usage	—	17,824
Total number of Agricultural Committee Members and members for promotion of optimized farmland usage	35,488	41,020

Source: MAFF

Note: Data before the revision are for 1,707 Agricultural Committees as of October 1, 2015, before the April 2016 revision. Data after the transition to the new system are as of October 1, 2018, when all Agricultural Committees completed transition to the new system under the revised act (the numbers of Agricultural Committees before and after the revision do not match because of mergers and abolitions).