

FY2017

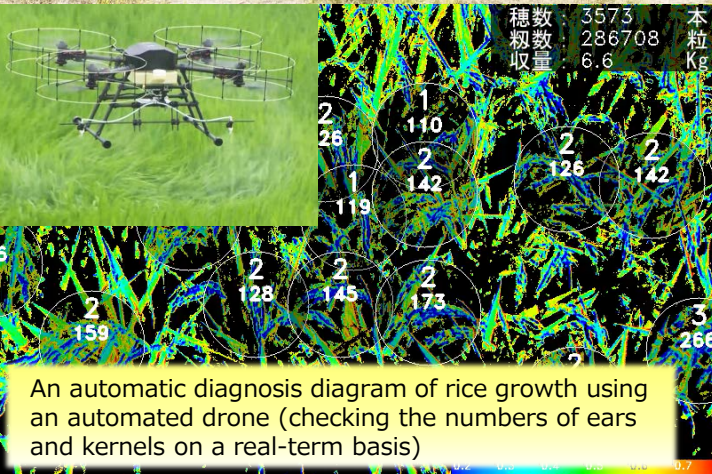
Summary of the Annual Report on Food, Agriculture and Rural Areas in Japan



Young members of an agricultural corporation conducting rice farming on a 130 ha land in Niigata Prefecture



"Shiomikan (salted orange)" seasoning made from Satsuma mandarin (*Citrus unshiu*) and a long-established high-end inn's menu using the seasoning



An automatic diagnosis diagram of rice growth using an automated drone (checking the numbers of ears and kernels on a real-term basis)



A farmer interviewed by female university students publishing a journal describing farmers as seen by university students

Ministry of Agriculture, Forestry and Fisheries
May 2018

- Numbers in figures and tables are rounded in principle and may not add up to the total.
- Maps in this report may not necessarily indicate Japan's territories comprehensively.

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- While business farmers have aged and decreased, the annual number of newcomers in agriculture has remained high in recent years. Young farmers responsible for the next generation should improve productivity through increased value added and greater business sizes to realize efficient, stable farming business.
- Focusing on young farmers aged 49 or less, the special topic confirms their business characteristics and thoughts about farming through the Census of Agriculture and Forestry and Web questionnaire surveys and analyzes the directions of relevant measures.

1. Analyzing business structure of commercial farm households including young farmers

* Hereinafter, commercial farm households with young farmers aged 49 or less are referred to as young farm households and those without such young farmers as non-young farm households.

<Business structures of young and non-young farm households>

- Of commercial farm households, young farm households account for 10% and non-young farm households for 90%.

<2015 Census of Agriculture and Forestry>

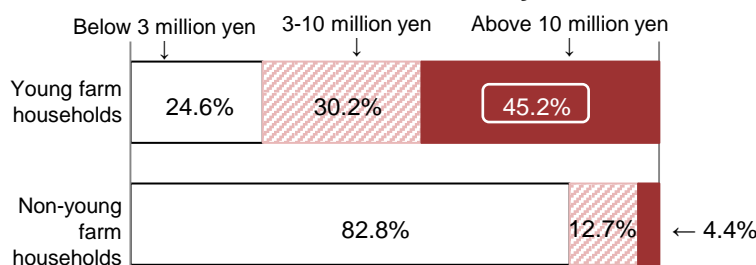
Commercial farm households: 1,329,591
Young farm households 140,675
Non-young farm households 1,188,916

- A breakdown of commercial farm households by sales amount of agricultural products indicates that 45.2% of young farm households earn 10 million yen or more in sales.
- A breakdown of commercial farm households by area of cultivated land under management indicates that 73.1% of young farm households have 10 ha or more of cultivated land under management.

<Cultivate land size expansion at young farm households>

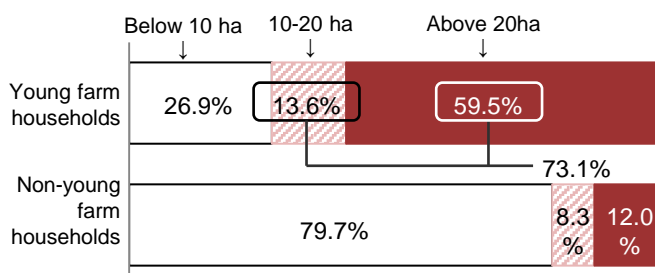
- In the latest decade, the average cultivated land size for single rice farm entities expanded 1.5-fold for young farm households while leveling for non-young farm households.

Commercial farm households by sales area



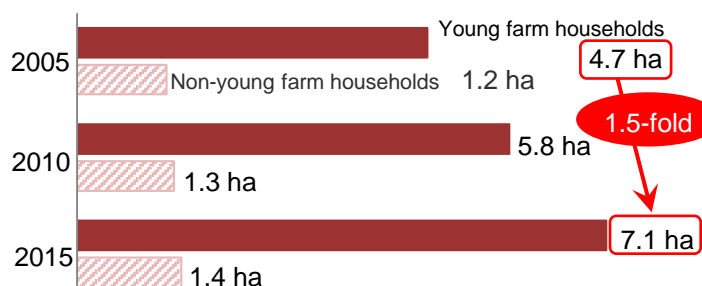
Source: MAFF, 2015 Census of Agriculture and Forestry (aggregate calculation after reclassification)

Commercial farm households by area of cultivated land under management



Source: MAFF, 2015 Census of Agriculture and Forestry (aggregate calculation after reclassification)

Average cultivated land size for single rice farm entities

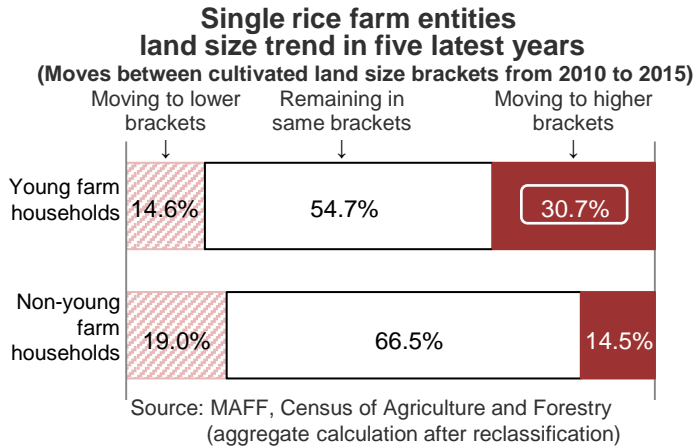


Source: MAFF, Census of Agriculture and Forestry (aggregate calculation after reclassification)

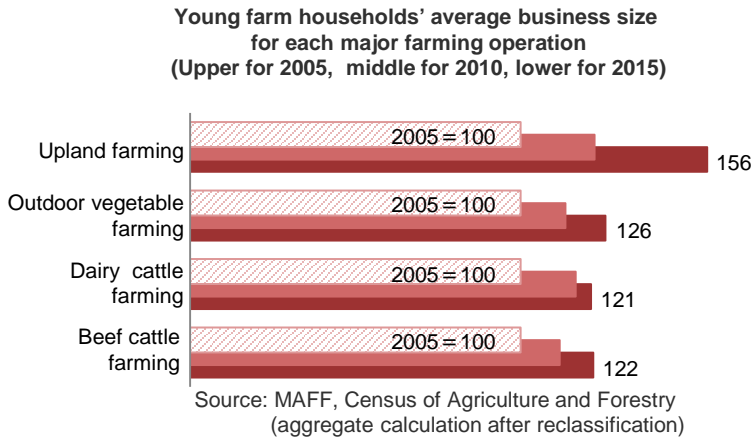
- Moves between cultivated land size brackets for single rice farm entities from 2010 to 2015 indicate that 30.7% of young farm households moved to higher brackets by expanding cultivated land.

<Reference>Size brackets for right figure (20 brackets)

①No cultivated land	⑧2.5-3.0ha	⑮20-25ha
②Below 0.3 ha	⑨3.0-4.0ha	⑯25-30ha
③0.3-0.5 ha	⑩4.0-5.0ha	⑰30-40ha
④0.5-1.0 ha	⑪5.0-7.5ha	⑱40-50ha
⑤1.0-1.5 ha	⑫7.5-10ha	⑲50-100ha
⑥1.5-2.0 ha	⑬10-15ha	⑳100 ha or more
⑦2.0-2.5ha	⑭15-20ha	

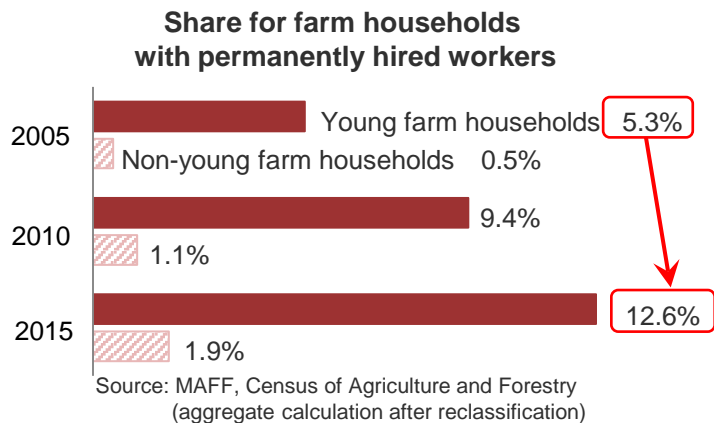


- Among non-single rice farm entities households as well, young households expanded their cultivated land.



<Young farm households increasing permanently hired workers >

- The number of young farm households with permanently hired workers increased in the latest decade, with their share rising from 5.3% to 12.6%.



<Investment and its effects at young farm households>

- In rice and dairy farming, young farm households feature less work hours per unit area or head than non-young farm households and a higher agricultural fixed asset equipment ratio indicating investment in machinery and facilities, indicating progress in investment for shortening work hours.

This might have led to young farm households' cultivated land size expansion and higher agricultural income.

Rice and dairy farming trends for young farm households

		Young farm households	Non-young farm households
Rice farming	Work hours per 10 a (hours/10 a)	34	58
	Agricultural fixed asset equipment ratio (yen)	2,930	2,420
	Farming income per farm household (10 thousand yen)	799	32
Dairy farming	Work hours per head of dairy cattle (hours/head)	129	176
	Agricultural fixed asset equipment ratio (yen)	6,628	3,480
	Farming income per farm household (10 thousand yen)	1,188	505

Source: MAFF, Statistics on Farm Management and Economy by Type of Management (of individual ownership) (aggregate calculation after reclassification)

Note: Data are averages for 3 years from 2013 to 2015.

2. Analysis of questionnaire survey of young farmers

Outline of questionnaire survey of young farmers

[Timing] October 26-November 5, 2017

[Method] Web questionnaire survey (using mail magazines and SNS services to announce the survey)

[Target] Farmers aged 49 or less as of October 1, 2017

[Contents] "Farm households or corporation directors" and "employees" (Those in the 2 categories were asked to respond)

[Respondents] 1,885 persons

* The questionnaire survey results are not statistically estimated thoughts of all young farmers but the aggregation of responses from 1,885 young farmers.

"Farm households or corporation directors"
(Numbers are of respondents)

Farm household heads: 1,357

Farm household members: 204

Corporation directors: 151

"Employees"
(Numbers are of respondents)

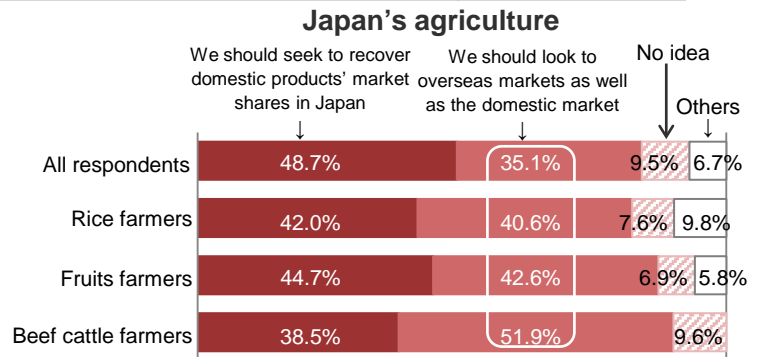
Farm household employees: 94

Corporation employees: 79

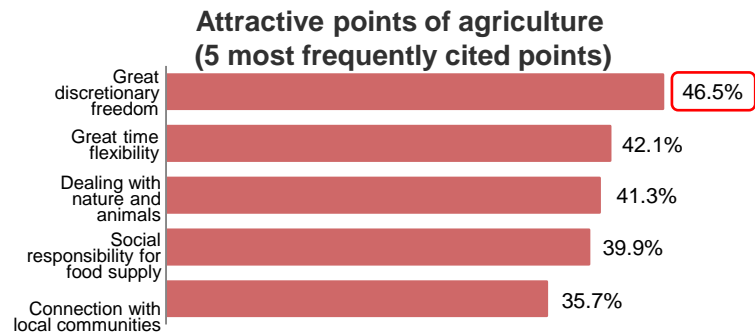
Thoughts about agriculture

(Farm household heads/members+corporation directors+farm household/corporation employees:1,885 persons)

- On Japan's agriculture, 35.1% of all respondents said that Japanese farmers should look to overseas markets as well as the domestic market. Those saying so accounted for 40.6% of rice farmers, 42.6% of fruits farmers and 51.9% of beef cattle farmers.



- The most frequently cited attractive point of agriculture was great discretionary freedom, cited by 46.5% of respondents.

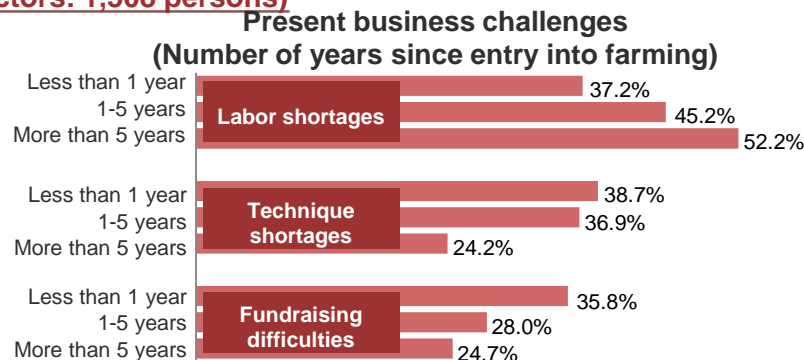


Note: Multiple answers were allowed

Farm business leaders' thoughts about farming

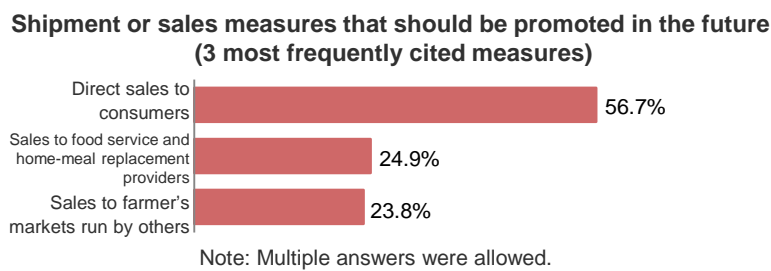
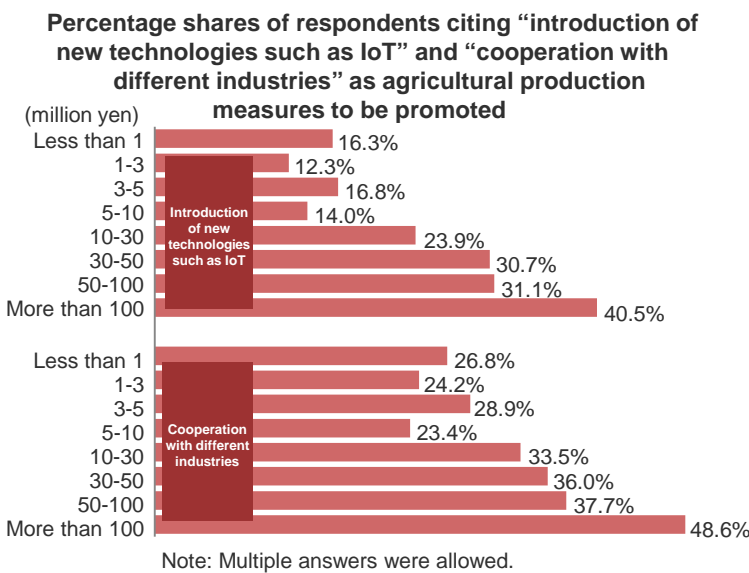
(Farm household heads + Corporation directors: 1,508 persons)

- Among present business challenges, "labor shortages" are more frequently cited by those who have engaged in farming longer. "Technique shortages" and "fundraising difficulties" are less frequently cited by them.



Note: Multiple answers were allowed

- Among agricultural production measures that should be promoted in the future, the "introduction of new technologies such as IoT (Internet of things)" and "cooperation with different industries" are more frequently cited by respondents with greater sales.
- Among shipment or sales measures that should be promoted in the future, "direct sales to consumers" were most frequently cited, followed by "sales to food service and home-meal replacement providers" and "sales to farmer's markets run by others."



3. Directions of measures to be promoted for efficient, stable farming

- A business structure analysis confirmed that young farm households are investing in the expansion of employment and the shortening of working hours per unit area or head in line with their business size expansion.
- A questionnaire survey of young farmers confirmed farming production, shipment and sales measures that they want to promote in the future.
- To foster efficient, stable farming, the environment should be developed to support the incorporation of farming, the development of innovative technologies introducing AI, IoT, robots and drones, and measures that farmers including questionnaire survey respondents want to promote.



<Case study>
Realizing efficient rice farming through investment and improvement of machinery capacity utilization rates (Niigata Prefecture)

- Hiroshi Maruta from a non-agriculture industry founded limited liability company Houmi Noko and became its representative at the age of 31 in 2005. In FY2017, the company produced mainly rice for food service providers at paddies totaling 130 ha.
- In line with business size expansion, the company introduced larger agricultural machines and improved their capacity utilization rates by producing 10 crop varieties to diversify cropping seasons. By developing multiple jobs, the company has secured 11 young employees.



Representative Hiroshi Maruta (leftmost person in the back row) and young employees

4. Young farmer employment trend, etc.

Trend of new young farmers

- The number of 49 or less year-old newcomers in agriculture topped 20 thousand for the third straight year. New employed farmers have followed an upward trend in recent years.

<New self-employed farmers>

Members of family management entities whose living status has changed anytime within a year of the survey date from “student” or “employed in other work” to “new graduate who has become a farmer” or “a new farmer who changed occupations”.

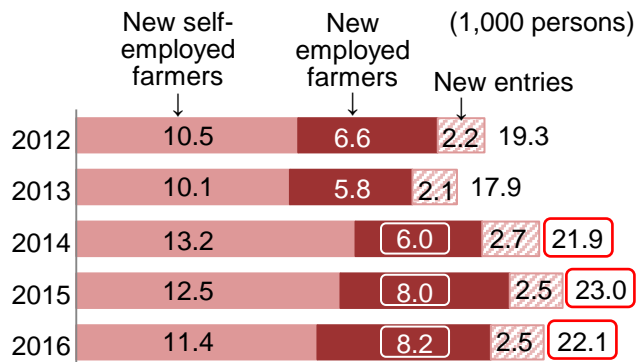
<New employed farmers>

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

<New entries>

Persons responsible for farming started anytime within a year of the survey date by securing land and funds on their own, and their partners

49 or less year-old newcomers in agriculture by job-finding status



Source: MAFF, Survey on Newcomers in Agriculture

- Among new employed farmers' previous statuses, non-agriculture employees account for the largest share of 61.3%, followed by 22.4% for students.

New employed farmers' previous statuses



Source: MAFF, Survey on Newcomers in Agriculture 2016

Note: Others include non-agriculture self-employed jobs, and domestic work or child rearing jobs.



<Case study>

An agricultural cooperative-affiliated farming corporation supports entries into farming (Nagano Prefecture)

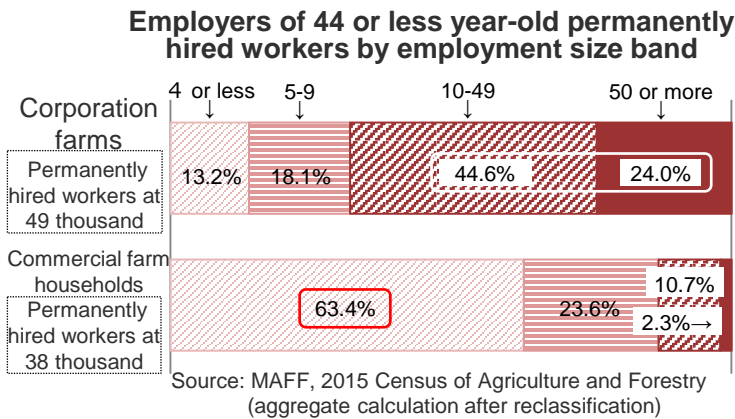
- Shinshu Ueda Farm, a limited liability company affiliated with a Japan Agricultural Cooperative, employs people willing to become independent farmers and trains them in cultivation techniques, etc. Those seeking to enter into farming devote themselves to training by receiving wages.
- Each employee is given a training farmland for a specific variety and undergoes 2 years of training before taking over the farmland to become independent. By FY2016, 20 people entered into local farming, including 13 from other prefectures.



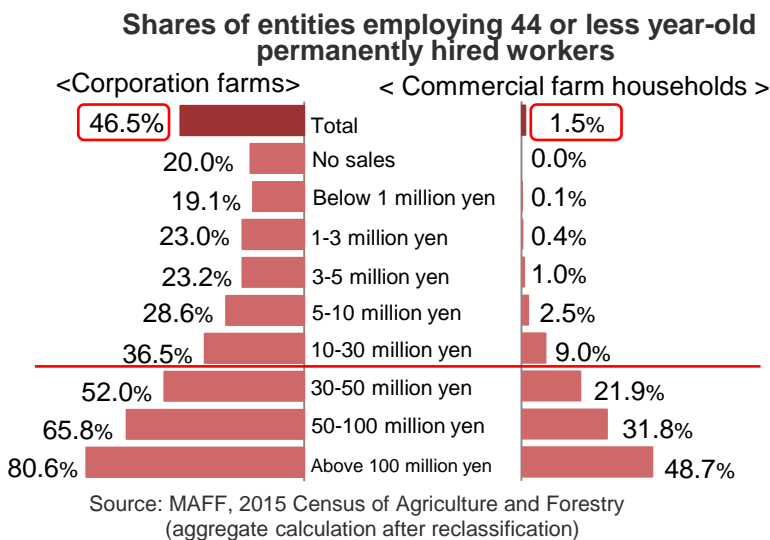
Mr. and Mrs. Udagawa who entered into farming after training at Shinshu Ueda Farm

Analysis on permanently hired workers aged 44 or less

➤ In 2015, permanently hired workers aged 44 or less totaled 49 thousand persons at corporate management entities and 38 thousand persons at commercial farm households. Of corporation farms, those with 10 or more permanently hired workers accounted for 68.7%. Of commercial farm households, those with 4 or less permanently hired workers accounted for 63.4%.

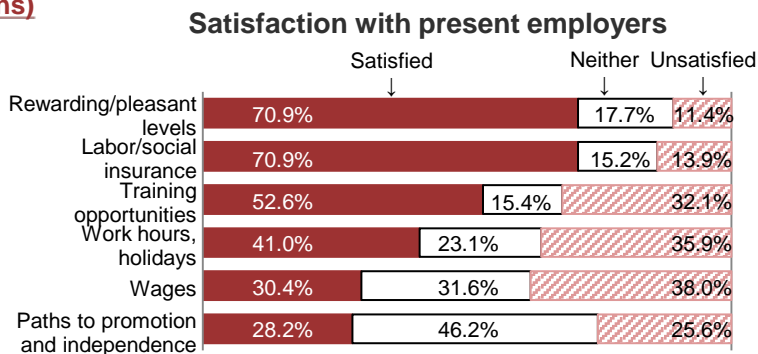


➤ Those that employed 44 or less year-old persons as permanently hired workers accounted for 46.5% of corporate management entities and for 1.5% of commercial farm households. Such share rose from 50% or less for corporate management entities with sales of less than 30 million yen to more than 50% for those with 30 million yen or more and from less than 10% for commercial farm households with sales of less than 30 million yen to more than 20% for those with 30 million yen or more.

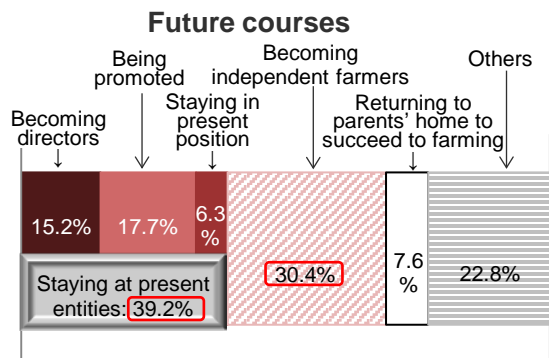


Corporate employees' satisfaction levels and thoughts about their future course (Questionnaire survey of young farmers: 79 persons)

➤ Respondents satisfied with their present employers exceed those unsatisfied for most items. As for wages, however, unsatisfied respondents exceed satisfied ones.



➤ On their future courses, respondents willing to "stay at their present entities" accounted for the largest share of 39.2%, followed by 30.4% for those willing to "become independent farmers."

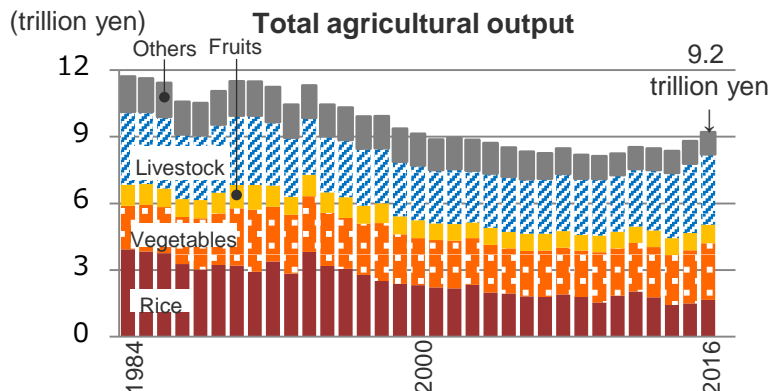


Agriculture expanded output for 2nd straight year, looking to overseas markets for further development

- Total agricultural output grew for the 2nd straight year.
- As food demand is expected to decline in Japan and increase in other countries, Japan must look to overseas markets as well as domestic ones for the sustainable development of agriculture.

Total agricultural output grew for the second straight year exceeding 9 trillion yen for the first time in 16 years

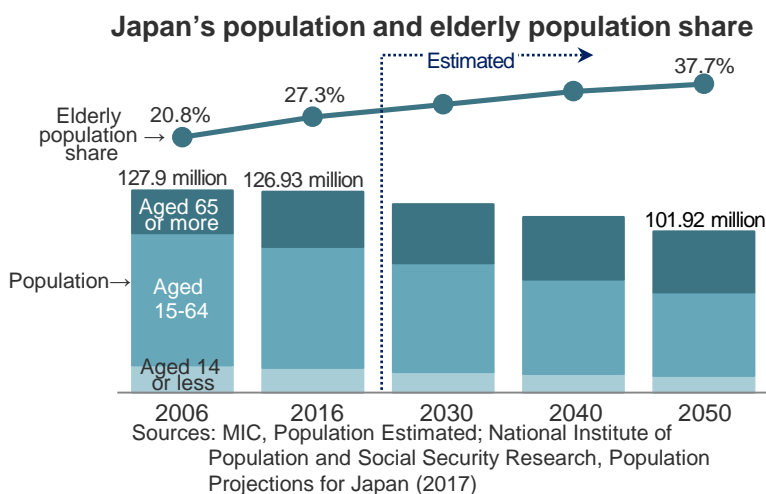
- Total agricultural output had continued declining long until 2014 due primarily to falling rice consumption.
- In the latest two years, total agricultural output continued growing. In 2016, total agricultural output rose back above 9 trillion yen for the first time in 16 years since 2000 thanks to progress in production meeting rice and vegetable demand.



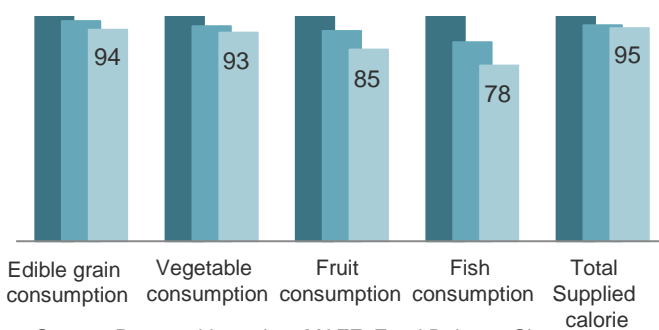
Source: MAFF, Agricultural Production Income Statistics

Falling domestic food demand and growing global food demand

- In Japan, population decreased by 0.97 million in 10 years from 2006 to 2016, with the elderly population share rising by 6.5 points to 27.3%, the highest among developed countries.
- In such circumstances, food demand in Japan has been declining.
- About 30 years later, in 2050, Japan's population is estimated to decline by 19.7% (25.01 million) to 101.92 million compared with 2016 levels, with the elderly population share rising by 10.4 points to 37.7%.
- Given the estimate, food demand in Japan is expected to decrease faster than in the past.

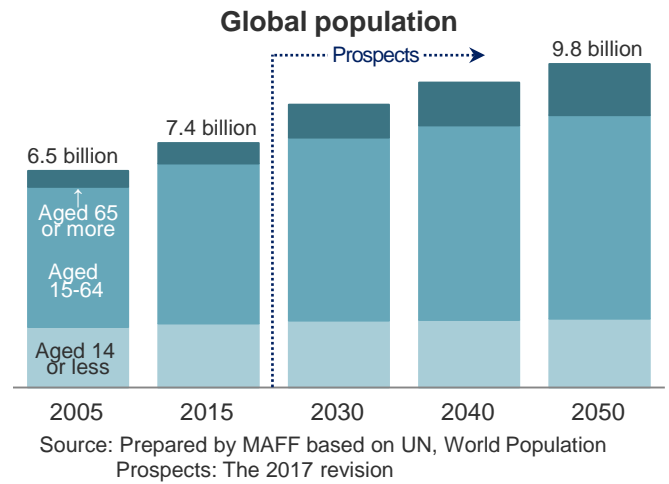


Domestic demand for major food products (100 for FY2006) (From left, FY2006, FY2011, FY2016)



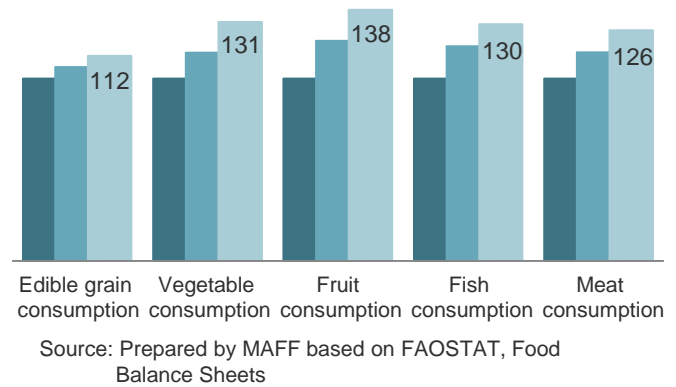
Source: Prepared based on MAFF, Food Balance Sheet

- Meanwhile, global population increased by 840.85 million (12.9%) in 10 years from 2005 to 2015, with GDP expanding 1.3-fold. As a result, global food demand increased substantially.
- About 30 years later, in 2050, global population is estimated to increase by 32.4% (2.4 billion) to 9.8 billion compared with 2015 levels.



- As economic growth makes progress in line with population increasing, global grain consumption in 2050 is expected to rise 1.5-fold from the 2005-2007 average. Global food demand is expected to continue increasing.

Global demand for major food products (100 for 2003)
(From left, 2003, 2008, 2013)



From agricultural production for domestic demand to that for global demand as well

- Japan's agriculture has so far carried out production meeting only domestic demand and avoided sales price drops.
- As population declines and ages, Japan's agriculture under the traditional production approach will be forced to cut production in line with falling demand. The traditional approach will make agricultural development difficult and affect food security.
- By adding export to its sales channels, Japan's agriculture could avoid sales price drops even on production expansion and increase sales value to improve farming income.
- Japan should switch from agricultural production targeting domestic demand alone to that looking to foreign demand as well as domestic demand to sustainably develop agriculture and rural areas.
- Expectations are placed on aggressive challenges by more ambitious farmers, farming organizations and export groups.

Farmers ambitious to export rice
(Rice farmers from Yuzamachi of Yamagata Prefecture surrounding a buyer in Hong Kong)



Conclusion of Japan-EU EPA negotiations and countermeasures

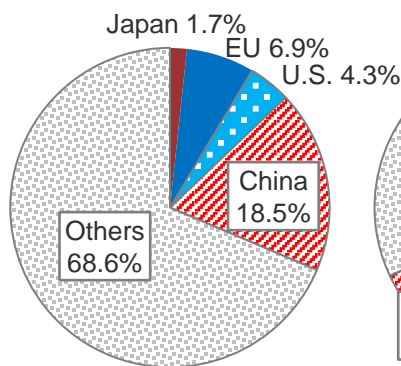
- Japan and the European Union concluded their negotiations on a bilateral economic partnership agreement in December 2017, securing border measures to allow continued reproduction.
- Even in a new international environment, the government will implement full-blown measures to surely allow reproduction by leading ambitious agriculture, forestry and fisheries workers to do business with security.

1. Overview of negotiations

- Japan-EU EPA negotiations lasted for 4 years and were concluded as confirmed in telephone talks between the Japanese and EU leaders on December 8, 2017.
- Japan and the EU account for 8.6% of global population and 28.4% of global GDP.
- An analysis on the Japan-EU EPA's economic effects by the Cabinet Secretariat indicates that the pact would work to expand GDP by about 1% (about 5 trillion yen) and labor supply by about 0.5% (about 0.29 million persons).
- At present, Japan and the EU are making preparations to sign and effectuate the EPA as early as possible.

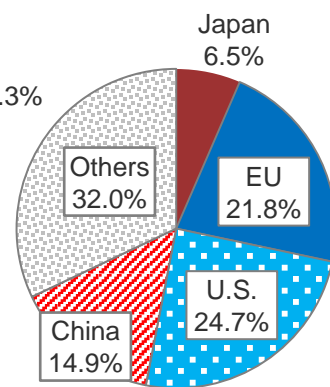
Global population share of Japan and EU (2016)

Japan+ EU = 8.6%



Global GDP share of Japan and EU (2016)

Japan + EU = 28.4%



Source: Prepared by MAFF based on data from MOFA

2. Details of Japan-EU EPA

- Rice has been exempted from tariff reduction or repeal. The existing state trading system has been maintained for wheat and barley, with a small tariff quota established.
- Among dairy products, soft cheese has been subjected to the tariff quota system, with the quota limited to a level balanced with domestic production expansion. The state trading system has been maintained for skimmed milk powder and butter, with limited private trade quotas established.
- The differential duty system has been maintained for pork, with a long tariff phaseout period (9 years) and a safeguard against import surges secured. For beef, a long tariff phaseout period (15 years) and a safeguard against import surges have been secured.
- An immediate tariff repeal has been avoided for structural laminated wood among forestry products, with a certain tariff phaseout period secured.
- The EU has agreed to repeal tariffs on almost all products including beef, tea and fish products. As for geographical indications of 48 Japanese products and 71 EU products are subject to high-level protection.

Japan's 48 geographical indication products subjected to Japan-EU mutual protection

Aomori Cassis / Aomori	KAGAMARUMO / Kaga Marumo / Ishikawa	MAESAWA BEEF / Maesawa Gyu / Iwate	Kishu Kinzanj Miso / Wakayama	Dojo Hachiya Gaki / Gifu
Tajima Gyu / Tajima Beef / Hyogo	MICHIMA BAREISHO / Michima Bareisho / Shizuoka	Kurosaki Chamame / Niigata	Mito Gobou / Yamaguchi	Lake Ogawara Brackish Water Crabs / Ogawara San / Yamanashi
KOBE BEEF / Kobe Beef / Hyogo	Shimonoseki Fuku / Shimonoseki Fuku / Yamaguchi	NIGASHINE CHERRY / Nigashine Sakurabito / Yamagata	Kito Yuzu / Tokushima	NYUZEN JUMBO WATERMELON / Nyuzen Jumbo Suika / Toyama
YUBARI MELON / Yubari Melon / Hokkaido	NOTO-SHIKA KOROGLAKI / Noto Shika KoroGLAKI / Ishikawa	MIYAGI SALMON / Miyagi Salmon / Miyagi	Kamishio Saitomo / Fukushima	Kagawa Charentais/Mikan Mikan / Kagawa
Traditional Japanese YAMBE DORINGO / Yame Dorin / Kagoshima	TOKACHI KAWANISHI NAGAMBO / Tokachi Kawanishi Nagambo / Hokkaido	Odate Tonburi / Akita	Ryukyu Moromi / Okinawa	Miyazaki Wagyu / Miyazaki Gyu / Miyazaki
Kagoshima no Tsubozukuri Kurozu / Kagoshima	Juzankosen Yamato Shijimi / Juwato San Yamato Shijimi / Aomori	Oita Kabosu / Oita	Wakasa Obama Kodai Sasazuke / Fukui	OMI BEEF / Omi Gyu / Shiga
KUMAMOTO-GUSA / KUMAMOTO-GUSA / Kumamoto Gusa / Kumamoto	TURAJIMA GOBOU / Turajima Gobou / Okayama	Sunki / Nagano	Sakurajima Komikan / Kagoshima	Hetsuka Daidai / Kagoshima
Tottori Sanjo Rikyojo / Tottori Sanjo Rikyojo / Tottori	TOKUSAN MATSUSAKA UMI / Tokusan Matsusaka Umi / Mie	Tagonoura Shirasu / Shizuoka	Iwate Nodamura Aramii Hotate / Iwate	KAGOSHIMA WAGYU / Kagoshima Wagyu / Kagoshima
Miwa Soumen / Nara	YONEZAWAGYU / Yonezawa Gyu / Yamagata	Manganji Amatau / Kyoto	Okuhito Yamanomura Kanboshi Daiton / Gifu	Hatcho Miso / Aichi
ICHIDA SAKI / ICHIDA SAKI / Ichida Saki / Nagano	Nishio Matcha / Nishio no Matcha / Aichi	Iinuma Kuri / Ibaraki		

Vegetables Fruits Livestock Fish products Processed goods, etc.

3. Revision of General Principles of Comprehensive TPP-related Policies

- The conclusion of Japan-EU EPA negotiations has put Japan's agriculture, forestry and fisheries into a new international environment.
- The government revised the General Principles of Comprehensive TPP-related Policies in November 2017 to prepare for the effectuation of the Trans-Pacific Partnership free trade agreement and the Japan-EU EPA. The government made revisions to TPP measures in the General Principles based on the verification of trade results, included into the General Principles new measures required under the Japan-EU EPA, including the enhancement of competitiveness for domestic cheese and structural laminated wood and systematically organized policies for the TPP agreement.
- The government will responsively secure financial resources for agriculture, forestry and fisheries measures through annual budget formulation without affecting the existing agriculture, forestry and fisheries budget. For competitiveness enhancement measures based on the revised General Principles, the government earmarked 317 billion yen in a supplementary budget for FY2017. Earlier, 312.2 billion yen was set aside for such measures in a supplementary budget for FY2015 and 345.3 billion yen in such budget for FY2016.

- The Ministry of Agriculture, Forestry and Fisheries published estimated effects of the TPP agreement on agriculture, forestry and fisheries production in December 2017. MAFF estimated agriculture, forestry and fisheries production to decline by about 60 billion to 110 billion yen, expecting that while the production value would fall due to price drops accompanying tariff cuts, domestic measures would be taken to secure production and farm household income, with production volume being maintained. MAFF also reflected the estimates in the food self-sufficiency ratio and found that the ratio remained unchanged despite the reflection.

Outline of General Principles of Comprehensive TPP-related Policies (Related to agriculture, forestry and fisheries)

<Agriculture, forestry and fisheries>

1 Building strong agriculture, forestry and fisheries (competitiveness enhancement measures)

Since the General Principles were set out, various competitiveness enhancement measures have been implemented. Such measures will continuously be implemented as necessary.

- Nurturing business farmers who have excellent business sense and who will be responsible for the next generation
- Promoting the innovation of internationally competitive production sites
- Promoting comprehensive projects to enhance the profitability of livestock and dairy farming
 - Enhancing the competitiveness of domestic cheese, etc.
- Exploring demand frontiers including the export of high-quality agricultural, forestry and fisheries products
- Enhancing the international competitiveness of wood products including plywood, lumber and structural laminated wood
- Switching to sustainable, highly profitable business arrangements
- Enhancing cooperation with consumers, reforming regulations and the tax system

2 Preparations for stable business and supply (related to five major products)

To secure business stability after the effectuation of the TPP or Japan-EU EPA agreement, the government will expand business stabilization measures upon the effectuation.

- Rice (revising the management of public rice reserves)
- Wheat/barley (implementing business income stabilization measures steadily)
- Beef/pork, dairy products (enhancing livestock and dairy farming stability)
- Sweetening resource crops (subjecting sweetened preparations to adjustment money)

<Food safety and security>

- Enhancing training arrangements for monitoring imported food, diffusing and publicizing the country-of-origin labeling system for raw materials of processed food products

Source: Prepared by MAFF based on documents from the Cabinet Secretariat's Government Headquarters for TPP Measures

Effects on agriculture, forestry and fisheries production value (estimated)

While the production value would fall due to price drops accompanying tariff cuts, domestic measures would be taken to secure production and farm household income, with production volume being maintained.

Agriculture, forestry and fisheries production value drop
About 60-110 billion yen

Effects on food self-sufficiency ratio (FY2016)

Calorie basis 38% → Reflecting estimates: 38%
Production value basis 68%
→ Reflecting estimates: 68%

Policy theme for 150th anniversary of Meiji Restoration -- Sericulture's great contributions to modernizing Japan

- Japan's raw silk exports dramatically expanded in the Taisho Era (1912-1926) after various initiatives were taken in the Meiji Era (1868-1912), with an earlier failure in exports to Europe taken into account.
- The production of high quality raw silk sought by the United States as an export destination was realized, making great contributions to Japan's modernization.

Exports to Europe started on opening of ports but stagnated

- During the end of the Edo Era (1603-1867), a silkworm disease epidemic in France prompted the European silk fabric industry to procure imported raw silk.
- Japan began to export raw silk to Europe upon its opening of Yokohama and other ports to external trade in 1859, making progress in raw silk production expansion.
- However, raw silk quality differed from producer to producer, with waste raw silk mixed into exports. As Japanese raw silk lost credibility, raw silk exports plunged in 1866.

Raw silk production at a farm household – Manual operation –

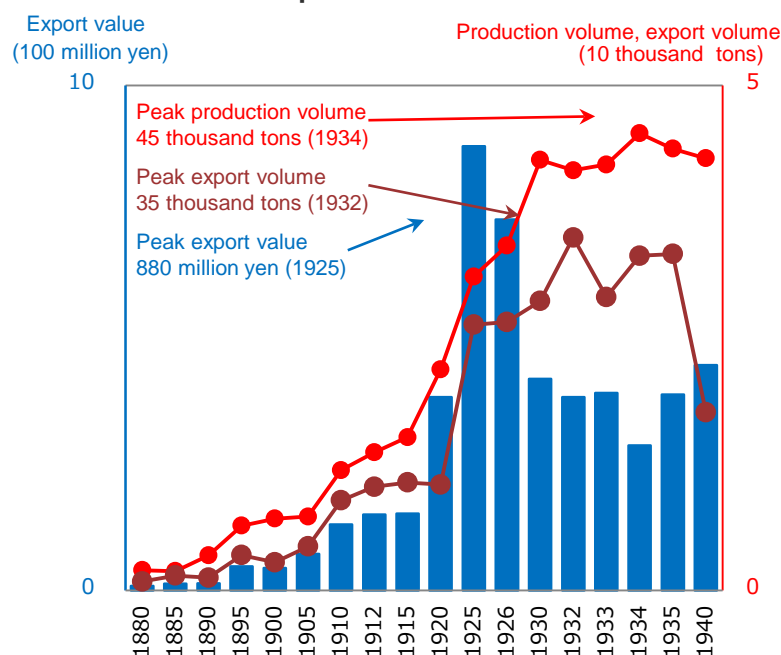


Source: Possessed by Yokohama Archives of History

Exports to U.S.: Dramatic expansion in Taisho Era after quality improvement efforts in Meiji Era

- Demand for tough raw silk expanded in the United States where the silk fabrics industry was introducing sophisticated machines and facilities.
- Learning lessons from failed exports to Europe, Japan:
 - ① Established the Tomioka Silk Mill to use machines for raw silk production (1872).
 - ② Established a state facility to test silkworms to nurture excellent silkworm varieties (1874).
 - ③ Established raw silk inspection offices in Yokohama and Kobe to launch inspection on raw silk exports (1896).
- Japanese raw silk whose reputation was improved through these efforts remained as Japan's largest import item from 1876 to 1933.

Raw silk export value and volume, and production volume



Source: MAFF "Sericulture Industry Directory"

Raw silk produced by Japan's sericulture brought about benefits to raw silk merchants and traders in Japan, making great contributions to Japan's modernization through capital accumulation.

Lesson: Market-in approach can expand exports

- The introduction of new yarn-making technologies, the nurturing of excellent silkworm varieties and the introduction of export inspection allowed Japan to produce better-quality raw silk and dramatically expand raw silk exports.
- Japan's raw silk exports, after plunging once, recovered thanks to a Meiji Era market-in approach meeting needs in the United States, a new export destination. This episode represents a lesson that Japan should implement now.
- As domestic food demand is set to decline with global demand increasing, Japan should position export as one of the sales channels for agricultural products to realize agriculture's sustainable development.
- Japan could further expand agricultural, forestry and fisheries products and food exports if more farmers and agricultural groups undertake agricultural production under a market-in approach.



<Column>

Tomioka Silk Mill as model government-run factory

- The Meiji government constructed the Tomioka Silk Mill as a model government-run factory in the region now called Tomioka City, Gunma Prefecture, where it was easy to secure water and coal supply, in a bid to spread machine-using yarn-making technologies that could produce massive high-quality raw silk.
- The silk mill was privatized in 1893 and continued operation for more than 100 years until 1987. Along with historical sericulture sites, the building was registered as a UNESCO (United Nations Educational, Scientific and Cultural Organization) World Heritage site in 2014.

Nishiki-e (colored woodblock print) of Tomioka Silk Mill



Source: Provided by Gunma Prefectural Museum of History



<Column>

Present sericulture – Purely domestic silk product production initiative and new raw materials' roles

- Japan's cocoon production has decreased due to falling demand for Japanese dresses and growth in raw silk and silk product imports. Meanwhile, silk farmers, yarn-making companies, silk fabric producers and kimono shops are cooperating in an initiative to produce purely domestic silk products.
- In recent years, luminescent silk using genetically modified silkworms has been produced along with brittle-bone disease test drugs and animal pharmaceuticals using protein produced by silkworms. The development of artificial blood vessels and intractable disease drugs has made progress.

Purely domestic silk mark



<Explanation>

The mark is attached only to silk products produced only with domestic cocoons and raw silk.

Source: The Dainippon Silk Foundation

- Countryside Stay represents long-stay tours in which tourists experience traditional Japanese lives and enjoy exchanges with farmhouse and other local residents in rural areas.
- The government plans to improve rural income and invigorate rural communities by creating 500 areas prepared for countryside stay business by 2020.

Seeking to create 500 countryside stay areas by 2020

- Rural areas may increase their income and invigorate themselves by providing a variety of services to tourists including foreigners visiting Japan to obtain repeaters and new tourists.
- Rural areas accepting tourists are urgently required to create tourism contents and arrangements utilizing local resources.
- Under regional empowerment and tourism-oriented country policies, the government seeks to create 500 areas prepared to do countryside stay business by 2020.

Countryside stay promotion measures for the FY2017 rural area promotion subsidy program supported 206 out of about 400 areas applying for the program.

Foreign tourists enjoying rural stays



Third selected "Discover Countryside Treasures" area
(Semboku, Akita Prefecture)

Creating opportunities to get tourists aware of local initiatives

- The attractiveness of countryside stay should be publicized at home and abroad to strategically create opportunities for people to become aware of local initiatives.

<FY2017 initiatives to create opportunities>

- ① A video using an informative foreign talent to introduce Japanese communities tackling countryside stay was broadcast in 7 Southeast Asian countries and communicated throughout the world through video distribution websites.
- ② Monitor tours were implemented for foreign agents and informative bloggers to communicate food, landscapes, old folk houses and other attractive things in rural Japanese areas through social networking services.

A video using a foreign talent



(Broadcast by Southeast Asian cable television station LiTV)

- ③ A collection of countryside stay process cases was produced, covering 12 forerunning farm accommodation areas.
 - ④ The countryside stay symposiums were held 14 times in major cities in Japan.
- By FY2017, 15 areas were designated for the SAVOR JAPAN initiative to attract foreign and other tourists with local food and its producers in agriculture, forestry and fisheries industries.

Countryside stay symposium



<Case study>



A challenge to develop processed gibier as a new local specialty (Ishikawa Prefecture)

- Jun Ishizaka of Noto Island founded a countryside stay promotion organization in April 2017, launching a challenge to secure good wild boar meat in cooperation with local business operators and develop wild boar mince cutlet and other new products.
- The organization pursues a highly profitable initiative to develop impressive products and experiences for tourists including overseas visitors to make Noto Island a brand.

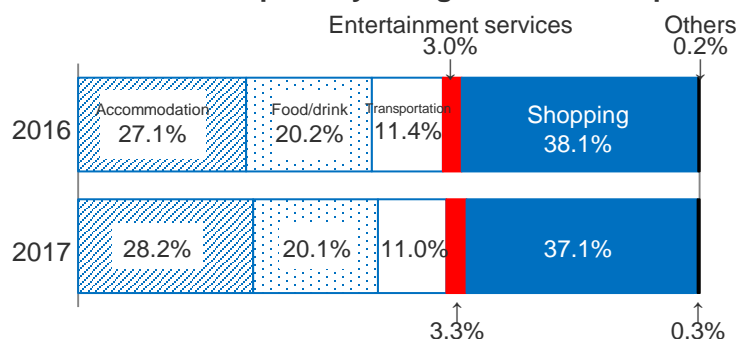


Selling wild boar mince cutlet at an exchange event

Foreign tourists visiting Japan frequently tend to go to rural areas

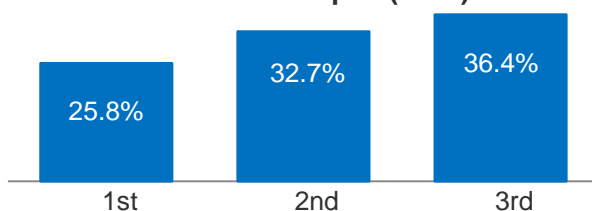
- Japan has set a target of increasing the number of foreign visitors to Japan to 40 million and their tourism consumption to 8 trillion yen by 2020. In 2017, the number reached a record 28.69 million with consumption hitting an all-time high of 4,416.2 billion yen.
- While shopping consumption's share of total consumption has declined, entertainment service consumption's share has increased. Consumption has thus been shifting from goods to entertainment services.
- Tour destinations by the frequency of visits to Japan indicate that overseas visitors to Japan more frequently tend to go to rural regions.

Breakdown of consumption by foreign tourists to Japan



Source: Prepared by MAFF based on JTA, Consumption Trend Survey for Foreigners Visiting Japan

Rural destinations' shares by frequency of visits to Japan (2017)



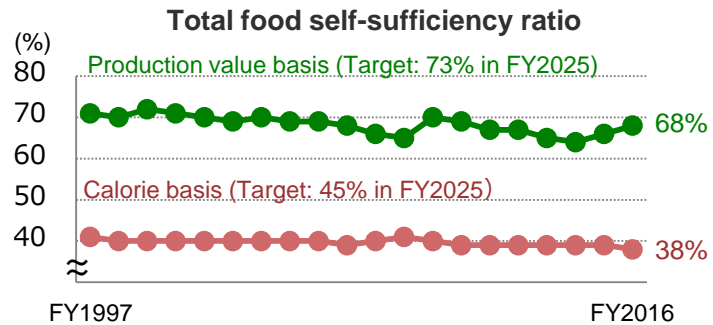
Source: Prepared by MAFF based on JTA, Consumption Trend Survey for Foreigners Visiting Japan

Note: Rural regions are prefectures other than the three major urban regions' 8 prefectures (Saitama, Chiba, Tokyo, Kanagawa, Aichi, Kyoto, Osaka and Hyogo).

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.



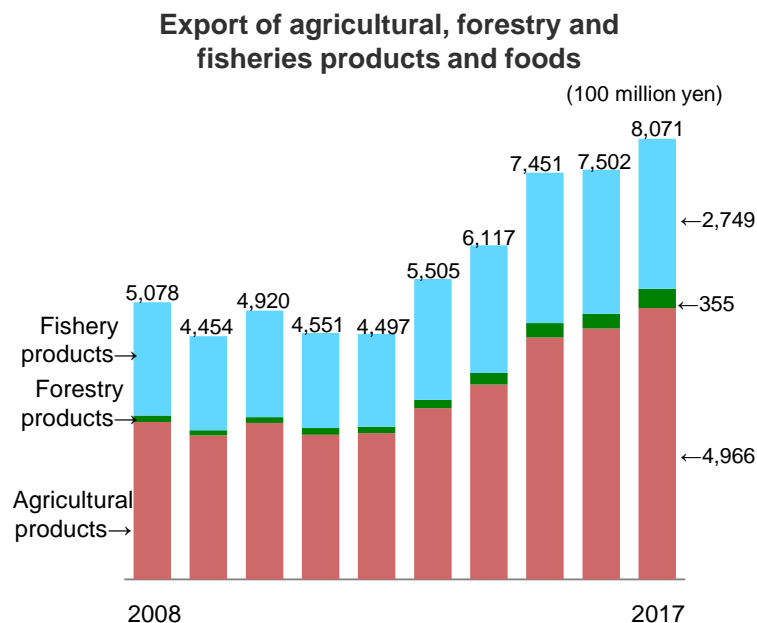
Example requests to consumers



2. Strategic exploration of global market

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

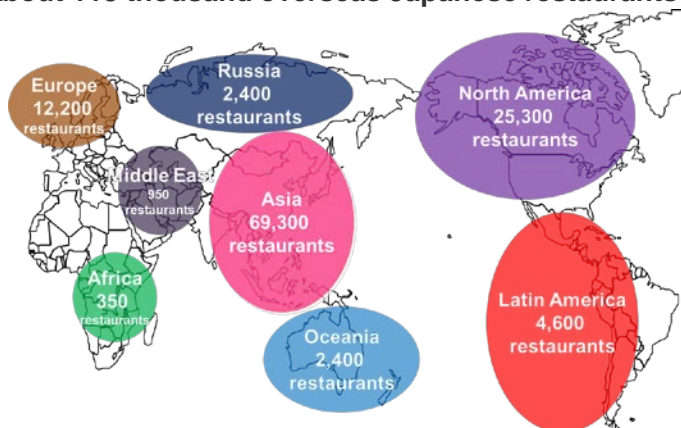
- Exports in value rewrote a record high for the 5th straight year. Among agricultural products, beef, garden trees, green tea, rice and strawberries hit record highs.
- A strategic project for expanding overseas rice markets was launched in September 2017 to dramatically increase rice exports.
- The "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

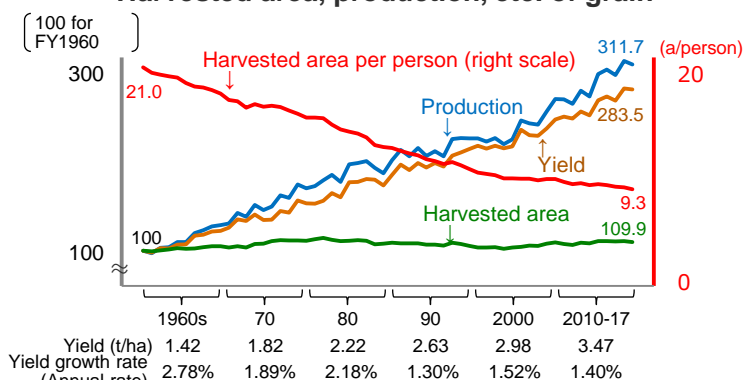
- Japan heavily depends on certain countries for major agricultural product imports.
- Securing stable food supply is based on increasing domestic agricultural production in combination with imports and stockpiles.
- In preparation for unforeseeable events, MAFF regularly analyzes and assesses the impacts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

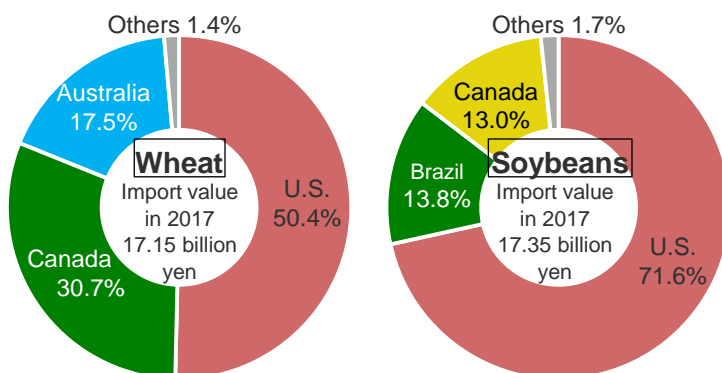
Harvested area, production, etc. of grain



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



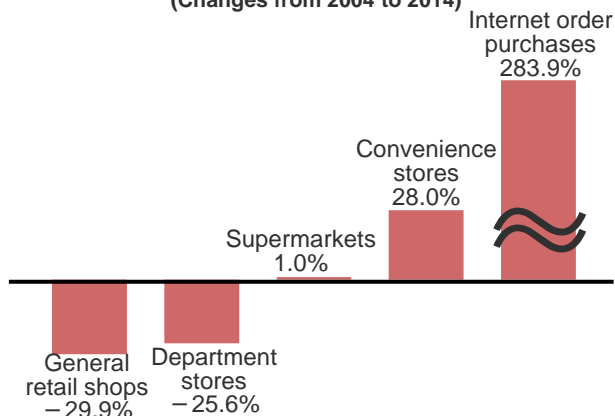
Source: Prepared by MAFF, based on MOF, Trade Statistics

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

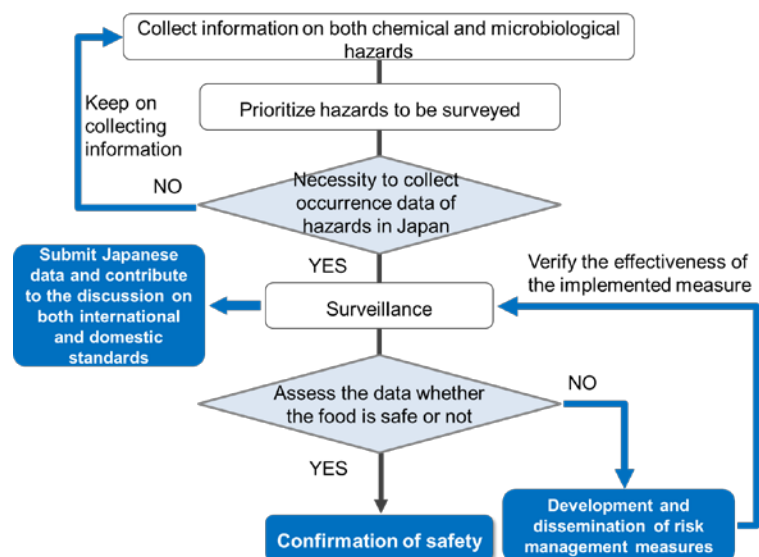


5. Ensuring food safety and consumers' confidence

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%

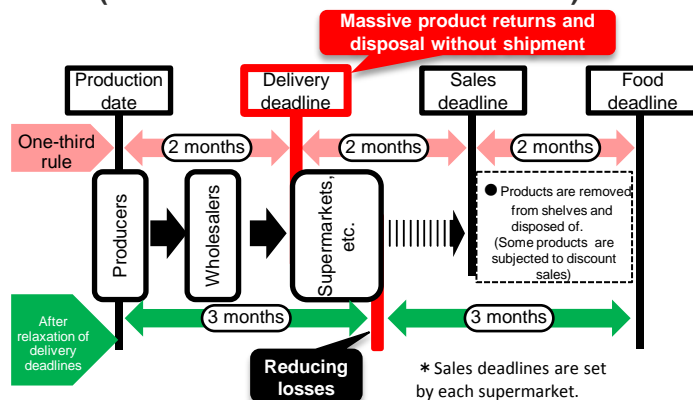
Source: METI, Market Survey on E-Commerce Transactions

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)



Source: MAFF



<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.

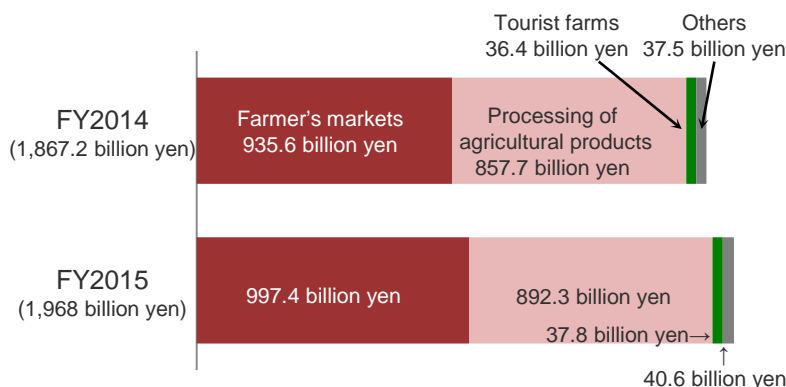


A bar code seal printer and a tablet computer

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.

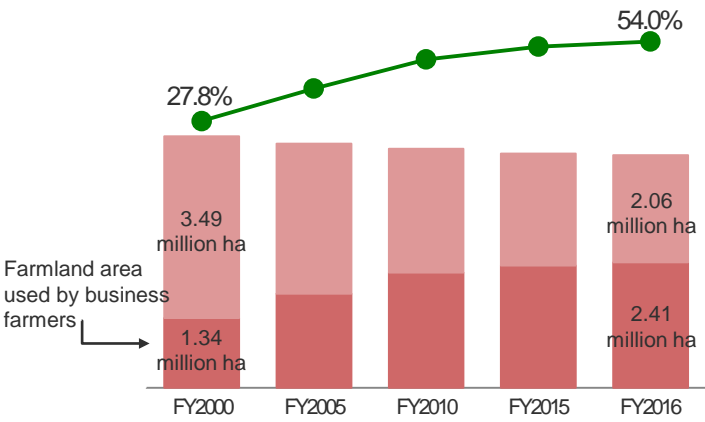
Consolidation of farmland through operation of the Public Corporation for Farmland Consolidation to Core Farmers through Renting and Subleasing (Farmland Banks)

- 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.

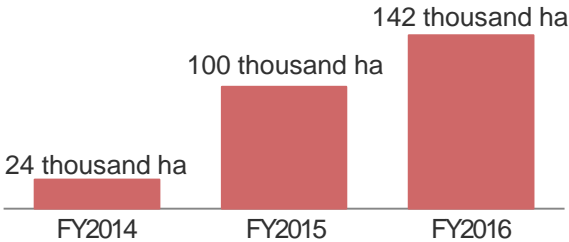
- In order to make use of unclaimed farmland that accounts for 20% of the total farmland, a bill has been submitted to the National Diet allowing farmland successors to rent unclaimed farmland up to 20 years to Farmland Banks with simple procedures.

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)



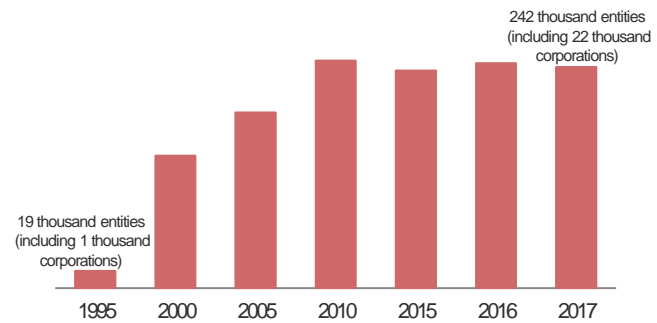
Source: MAFF
Note: As of the end of fiscal year

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.

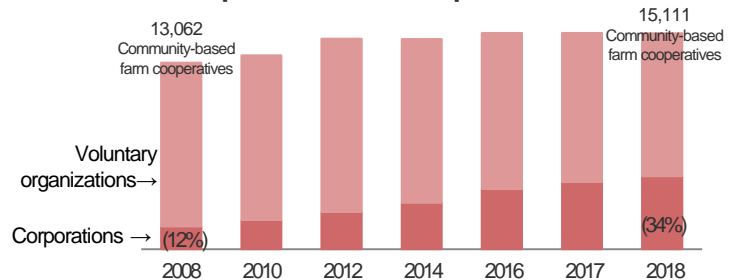
Number of certified farmers



Source: MAFF

Note: As of the end of March each year

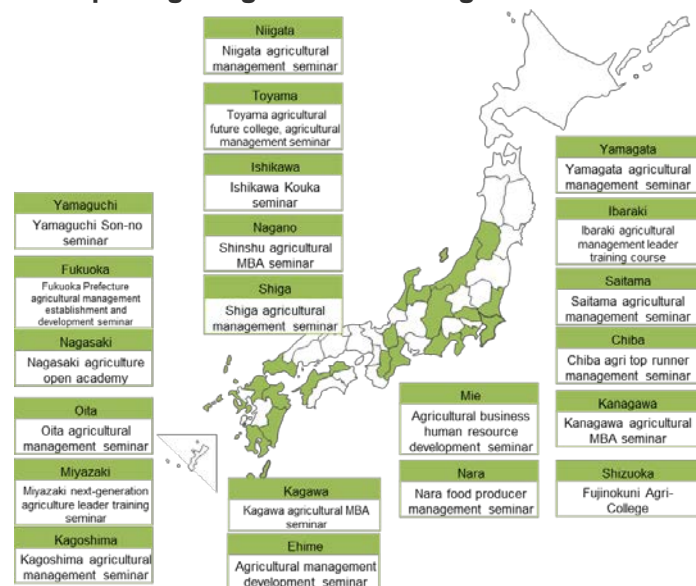
Number of community-based farm cooperatives and corporations' share

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.

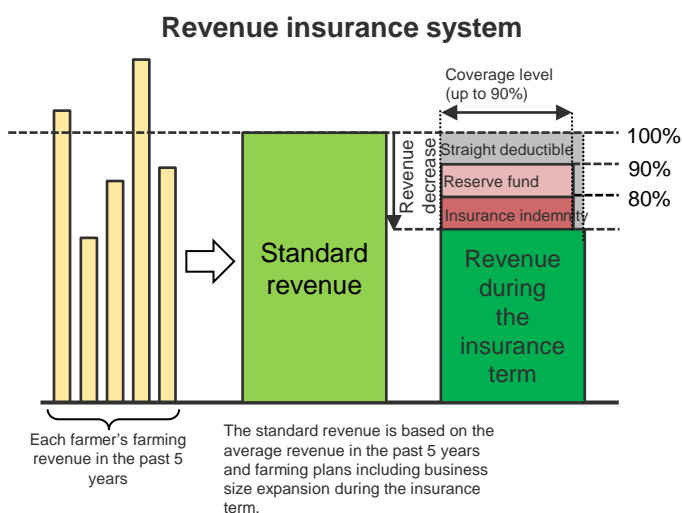
Women's share of agricultural labor force
(thousand persons)

	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

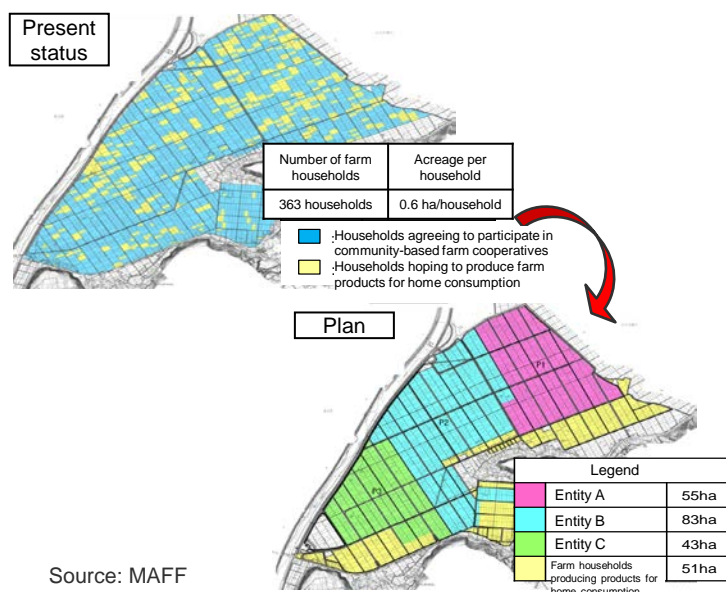
- A revenue insurance system will be launched in January 2019 as a comprehensive safety net covering total revenue.



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)

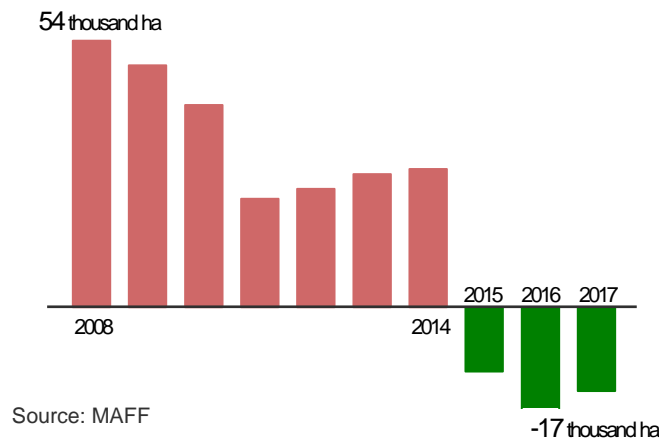
Prefectures with increases	Prefectures with high vegetable or livestock farming share	Prefectures with decreases	Prefectures with high rice farming share
34	28	13	8

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

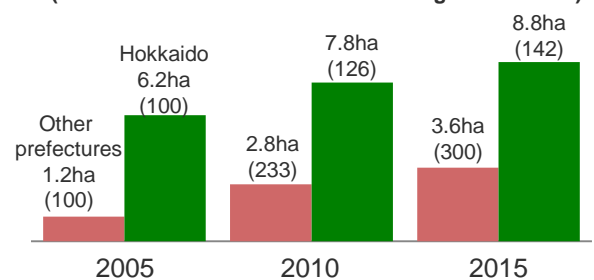
Source: Japan Rice Flour Association

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)



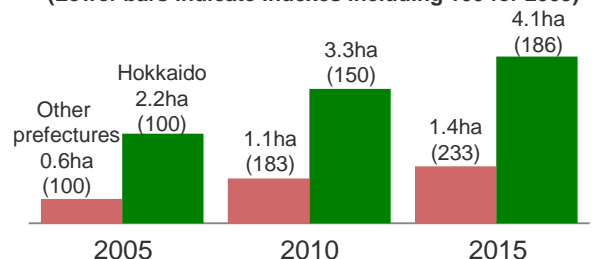
Source: MAFF, Census of Agriculture and Forestry

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.

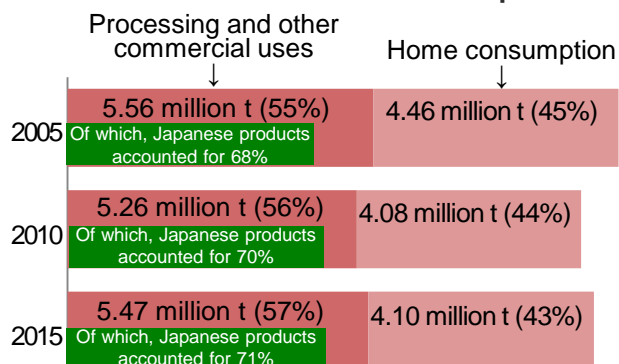
Fruits

- 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

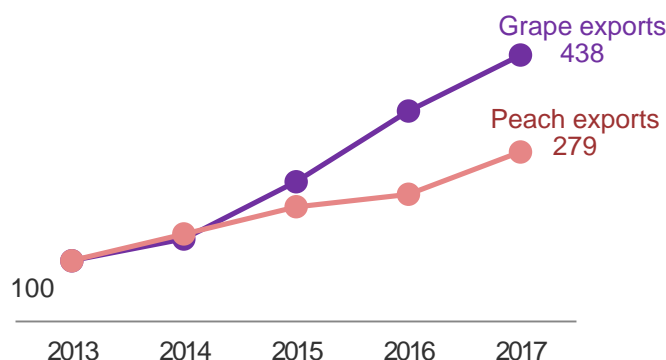
- Livestock farming households decreased in 2017 for all species, boosting the number of livestock animals per household.
- Raw milk production has declined in line with a decrease in the number of delivered cow heads. This is mainly because beef calf prices have remained high in recent years, prompting 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



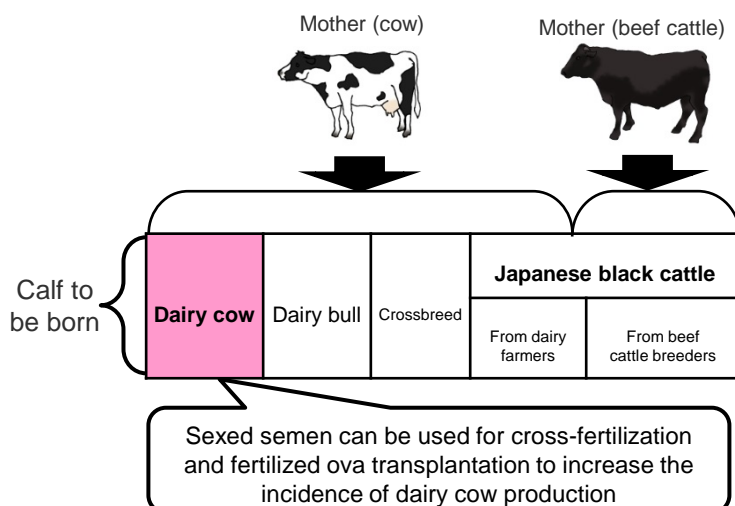
Source: Prepared by MAFF based on data from Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries (PRIMAFF)

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

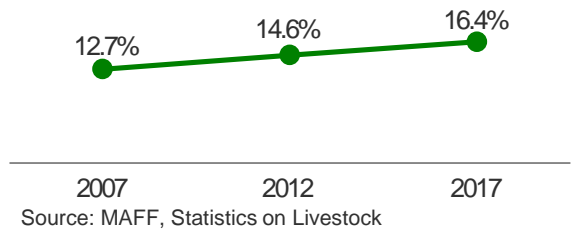
Note: Japanese beef cattle from dairy farmers mean Japanese black cattle produced through the transplantation of fertilized ova from Japanese black cattle to dairy cow.

- 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.

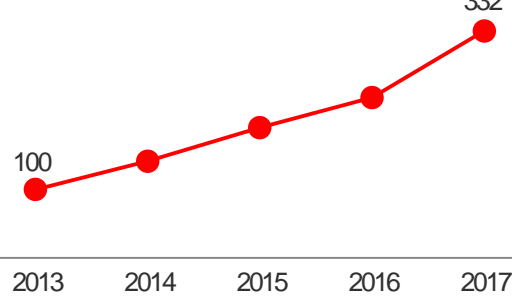
Integrated production covering from breeding to fattening should be promoted to enhance beef cattle production infrastructure.

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)

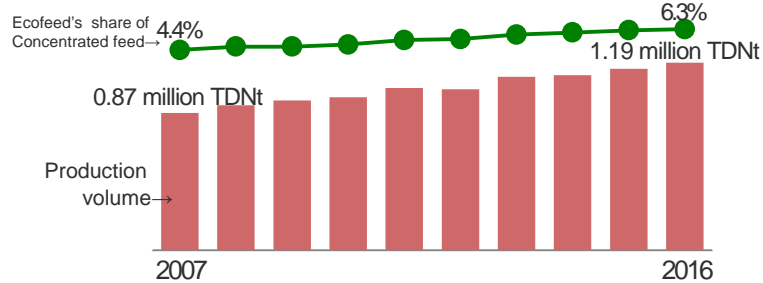


- The land area planted with feed and forage crops has continued an uptrend due mainly to increasing production of rice for feed in the past several years.

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



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)



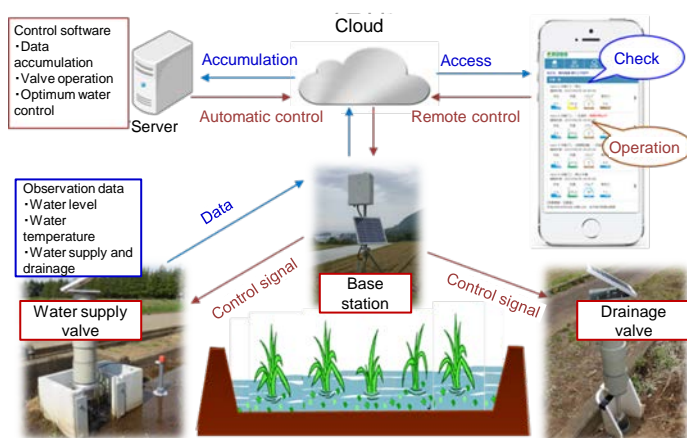
A damaged stable (Hokkaido)

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

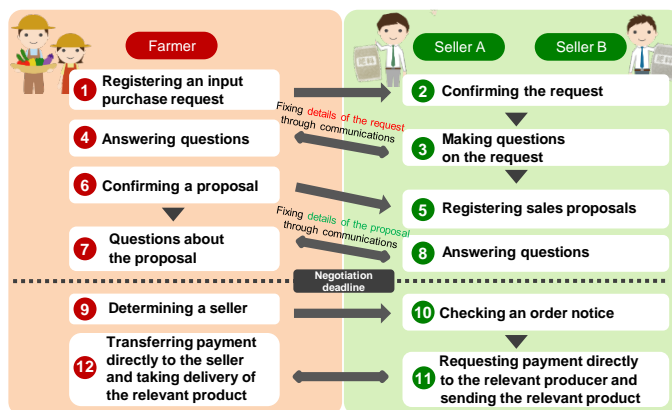


Source: Prepared by MAFF based on data from National Agriculture and Food Research Organization (NARO)

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 scaffoldings 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.

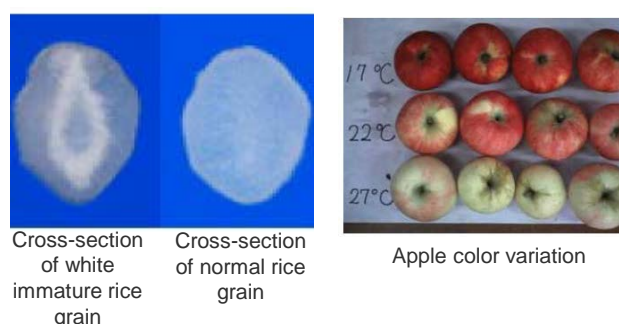
(Points for improvement)
Operation on right conditions for brush cutting can enhance safety and efficiency. Full preparations are required, including the wearing of spiked boots.

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.

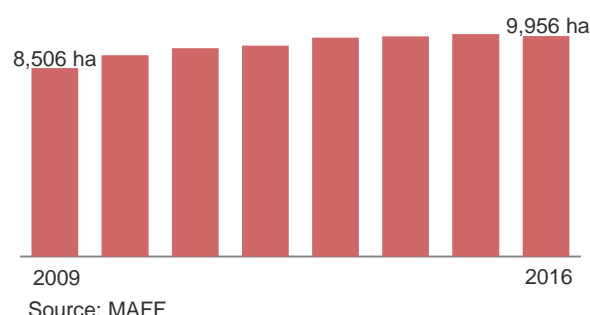
5. Promotion of environmental policy such as responses to climate change

- 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

Chapter 3 Taking Advantage of Local Resources to Promote and Vitalize Rural Areas

1. Present status of rural areas and regional empowerment moves

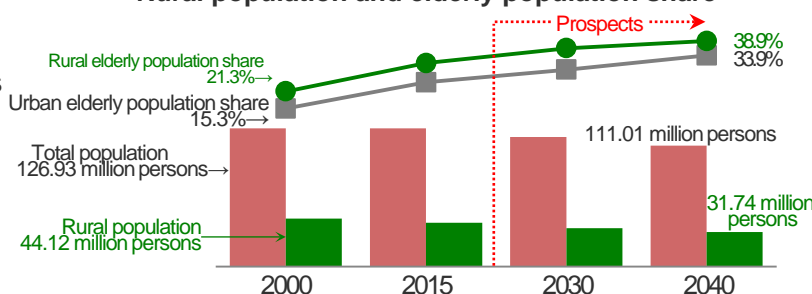
- Rural population has been declining faster than total Japanese population. The elderly population share in rural areas has been 6 to 7 points higher than those in urban areas in recent years.

A population fall in rural areas may bring about the withdrawal of living-related services, a decrease in job-finding opportunities and a decline in convenience, leading to a further population fall.

- The government is promoting “small hubs” to allow rural residents to receive living-related services. To secure jobs, the government has enacted 2 laws to introduce businesses to rural areas and is promoting AFFrinnovation, countryside stay, and local revitalization cooperation team.
- The number of those seeking consulting services from the Furusato Kaiki Shien Center on their moves to rural areas has been increasing.

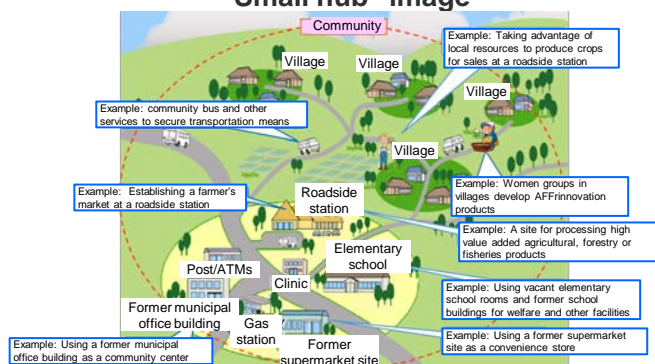
- To nurture human resources for the Regional Empowerment for Japan's Growth initiative and local agricultural administration, the government launched an e-learning system in 2016 for local government officials to learn necessary skills and knowledge. The National Association of Towns & Villages also started its own human resources training program.

Rural population and elderly population share



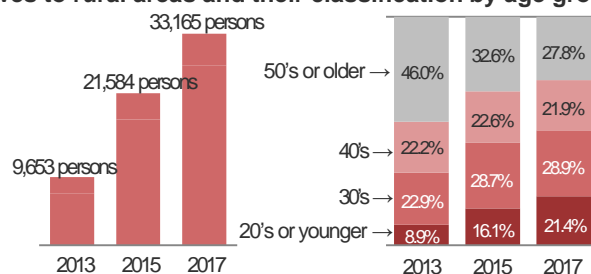
Sources: Prepared by MAFF based on MIC, Population Census; National Institute of Population and Social Security Research, Regional Population Projection for Japan (2018)

“Small hub” image



Source: Prepared by MAFF based on data from Cabinet Secretariat

Total number of people seeking consulting services in moves to rural areas and their classification by age group



Source: Survey by Furusato Kaiki Shien Center



<Case study>

Former local revitalization cooperation team member implements special rice farming (Niigata Prefecture)

- Hiroki Miyahara, a former company employee in Yokohama, joined a local revitalization cooperation team before becoming a farmer in Niigata Prefecture's Tokamachi City at the age of 37 in 2015 to implement rice farming on paddies totaling 1.2 ha along with his wife.
- Believing that a simple message would be required, Miyahara produces rice under the keywords of “no agrichemicals,” “no chemical fertilizers,” “transplantation of rice seedlings by hand,” “harvesting by hand” and “natural drying,” selling rice to urban consumers at an average price of 900 yen per kilogram.



Hiroki Miyahara transplanting rice seedlings by hand

2. Vitalizing agriculture in hilly and mountainous areas

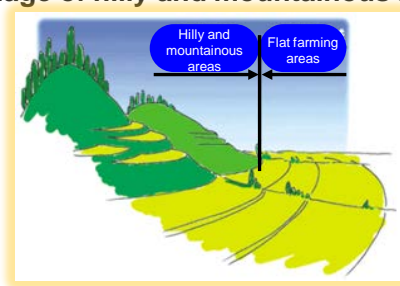
- Hilly, mountainous areas and their vicinity, accounting for certain shares of the total farmland area and output. Hilly, mountainous and rural areas in even severer geographical conditions have the potential to utilize local resources as a treasure to increase profitability.

- Excellent examples should be explored and analyzed for horizontal spreading.

- The Agriculture Renaissance Project in hilly and mountainous areas to set preferential budget and ease area requirements is implemented to support motivated farmers' new business initiatives.

Measures to support income improvement initiatives in hilly and mountainous areas are also implemented.

Image of hilly and mountainous areas



Source: MAFF

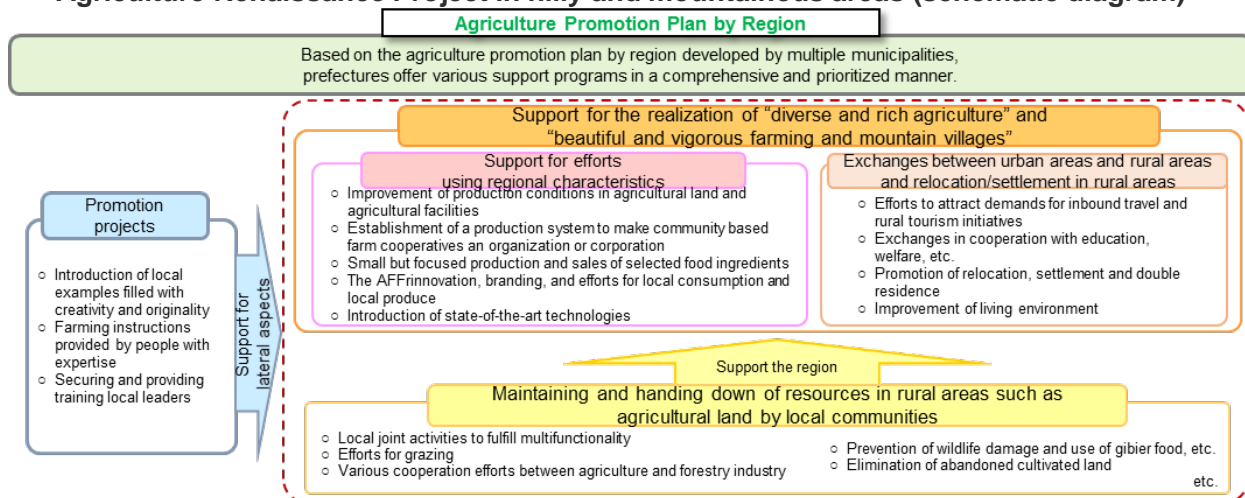
Major indicators for hilly and mountainous areas

	National total	Hilly and mountainous areas	Share
Population (2015)	127 million persons	14 million persons	11.2%
Farmland (2015)	4.50 million ha	1.82 million ha	40.6%
Agricultural output (2015)	8.86 trillion yen	3.57 trillion yen	40.3%

Sources: MIC, 2015 Population Census; MAFF, 2015 Statistics on Cultivated Land and Planted Area; Agricultural Production Income Statistics 2015

Note: Data for hilly and mountainous areas represent estimates made by MAFF based on the above sources.

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



Source: MAFF



<Case study>

Developing community arrangements for interaction with urban residents and AFFrinnovation (Fukushima Prefecture)

- A community named "Mine", Inawashiro Town, Fukushima Prefecture has incorporated a farming service organization as Yuinomura Nogakudan to promote interaction with urban residents and operate a farmhouse restaurant.
- The corporation attracts numerous urban residents to the village through interaction with community associations in Tokyo and a rice paddy ownership program. Its farmhouse restaurant employs two persons, contributing to expanding local food consumption.



Experiencing asparagus harvest

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

- All Japanese citizens benefit from the effects of agriculture's and rural areas' multifunctional roles including land conservation.
- The law-based Japanese agricultural direct payment system was launched in FY2015 to maintain and demonstrate the multifunctional roles of agriculture and rural areas.
- A questionnaire survey of organizations subject to the multifunctional payment indicates that 85% of those organizations see the multifunctional roles as effective for landscape formation and life environment conservation.
- The average farmland area per agreement for the direct payment to farmers in the hilly and mountainous areas expanded from the 3rd period to the 4th one.
- The total land size for the direct payment for environmentally friendly agriculture in FY2017 is estimated at 89,778 ha, up 5,213 ha (6.2%) from the previous year.

Outline of the Japanese agricultural direct payment system

Payment for activities to enhance multi-functionality

[Farmland maintenance payment]

Supporting local resources conservation activities including mowing of farmland slopes



Mowing of farmland slopes

[Resource improvement payment]

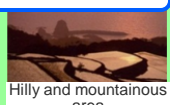
Supporting simple repair of channels, agricultural roads and ponds, and other cooperative activities to qualitatively improve local resources



Repairing a channel

Direct payment to farmers in the hilly and mountainous areas

Supporting the continuation of agricultural production in hilly and mountainous areas



Hilly and mountainous area

Direct payment for environmentally friendly agriculture

Supporting agricultural production activities contributing to natural environment conservation



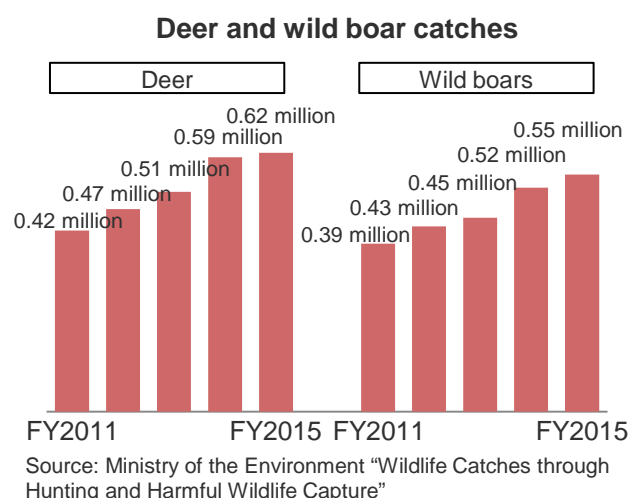
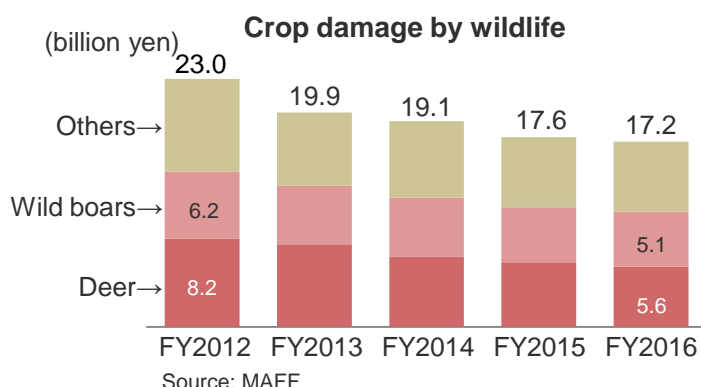
Cover crop

Source: MAFF

4. Wildlife damage and gibier

Present status of wildlife damage and countermeasures

- Wildlife damage to farm products in FY2016 came to 17.2 billion yen, the lowest since such damage began to be surveyed in FY1999. Nevertheless, such damage discourages farmers from continuing agriculture, indicating more serious impacts than signaled by the damage value decline.
- The number of hunting license holders has remained almost unchanged in recent years. Among them, however, young people aged 49 or less and women have been increasing.
- The government has set a target of increasing the number of municipalities having teams for implementing wildlife damage prevention measures to 1,200 in FY2020 from 1,140 at the end of April 2017.
- While the government has set a target of halving the numbers of living deer and wild boars by FY2023, their catches have increased in recent years.





<Case study>

"Kariyonokai" linking women interested in hunting in Ishikawa and other prefectures (Ishikawa Prefecture)

- After acquiring a hunting license, Fujiko Nagata in Hakusan City launched "Kariyonokai (women hunters' club)" along with 4 of her friends in March 2016 for communications among women hunters.
- After receiving press coverage by mass media, "Kariyonokai" now has more than 30 members from Ishikawa and other prefectures, conducting dialogue and communications through social networking services.



Fujiko Nagata in front of a café she runs

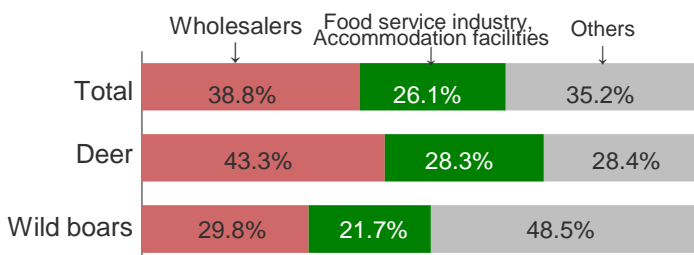
Expanding gibier use

- Captured deer and wild boars, which have mostly been buried or incinerated, have been increasingly used for gibier (wild meat) in recent years.
- Gibier consumption totaled 1,283 tons in FY2016, when wholesalers accounted for the largest share of gibier purchases.
- The government has set a target of doubling gibier consumption in FY2019, designating 17 districts as gibier utilization models.
- The government has held gibier cooking contests and published prize-winning recipes. It has also opened gibier cooking seminars for cooks at various sites in Japan.
- The number of elementary and junior high schools providing gibier for school lunches stood at 320 at the end of October 2017.

Consumption of gibier from wildlife disassembled at meatpacking facilities (FY2016)

Source: MAFF "Fact-finding Survey on Wildlife Resources Utilization (FY2016)"

Note: "Others" include meat delivered to those who requested facilities to disassemble wildlife, as well as meat for home consumption.

Gibier sales from meatpacking facilities by buyer category (FY2016)

Source: MAFF "Fact-finding Survey on Wildlife Resources Utilization (FY2016)"

Note: The above percentages represent buyer categories' shares of meat subjected to wholesale and retail. Others include retailers and direct sales to consumers.



<Case study>

Gibier put into a cooking school curriculum for the first time (Kumamoto Prefecture)

- In Kumamoto Prefecture, meat processors, food service providers and municipalities launched Kumamoto Gibier Study Group in FY2012 to promote Kumamoto gibier.
- In FY2015, a cooking school in Kumamoto cooperated with the study group in putting gibier cooking into a curriculum for the first time in Japan. Graduates from the school are expected to help diffuse gibier dishes.



A gibier cooking class

5. Proactive utilization of local resources

- Rural areas' abundant local resources including water and biomass should be utilized for regional invigoration. Agriculture and rural area development projects promote the construction of small hydropower plants. Solar photovoltaics power generation above farmland, while cultivating, has increased in recent years.
- The number of biomass industrialized areas to base town development on the biomass industry stood at 79 at the end of FY2017.

Farmland used for solar power generation, while being cultivated (Image)

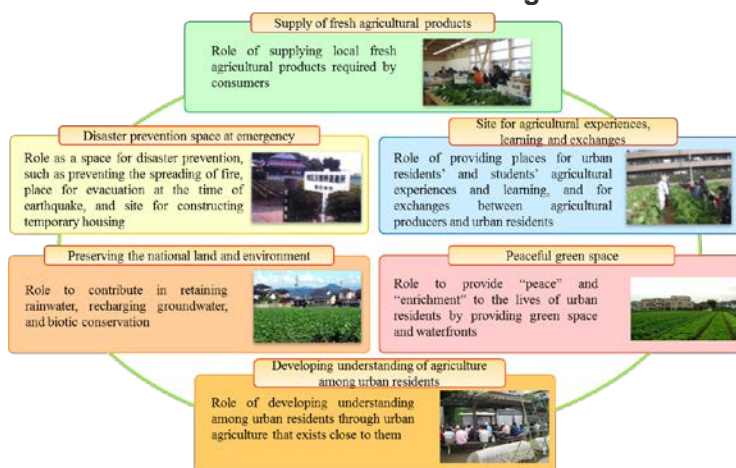


Source: Chiba People's Energy

6. Promotion of urban agriculture

- Urban agriculture takes advantage of its proximity to consumption sites to play diverse roles.
- Urban farmland had been positioned as transitional farmland destined to be used for non-farming purposes amid urbanization. The Basic Plan for the Promotion of Urban Agriculture prepared in May 2016 changed urban farmland's position from a candidate site for residential land to what should be required to exist in urban areas. Hyogo Prefecture and other prefectural governments, and Kunitachi City in Tokyo and other municipal governments have also been preparing their respective urban agriculture promotion plans.

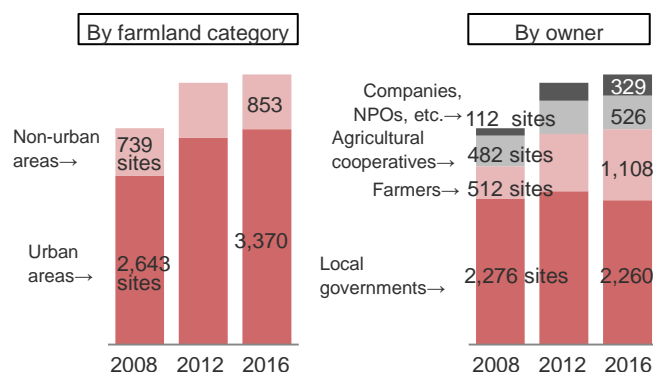
Multifunctional roles of urban agriculture



Source: MAFF

- As farmlands designated as productive green zones by municipalities are set to become available for their owners' sale to municipalities in 30 years, a system for farmlands to be designated as specified productive green zones for the next 10 years was launched in April 2018.
- A bill has been submitted to the National Diet to make it easier for urban farmlands to be leased for effective utilization by motivated urban farmers.
- As requested by urban residents, allotment gardens are increasing mainly in urban areas.

Number of allotment garden sites by farmland category and owner



Source: MAFF

In recent years, farmers have increasingly opened allotment gardens.

7. Coordination between agriculture and various other areas

Cooperation with the education field

- MAFF, MEXT (Ministry of Education, Culture, Sports, Science and Technology) and MIC (Ministry of Internal Affairs and Communications) launched an exchange project for children to experience farming and rural lives in FY2008.
- The number of model areas having accepted children under the project stood at 185 at the end of FY2016.
- As educational tour facilities are difficult to develop due to the low profitability of educational tours put under time limits, an increasing number of rural communities are tackling countryside stay in addition to educational tours.

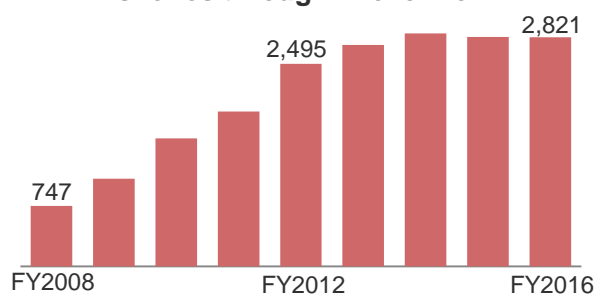
Children experiencing apple harvest under an exchange project for children to experience farming and rural lives



Cooperation with the welfare field

- The annual number of persons with disabilities finding jobs in agriculture, forestry and fisheries through “Hello Work” public employment security offices quadrupled in 5 years from FY2008 to FY2013 and has remained just below 3 thousand.
- The procurement standards for farm and livestock products for the 2020 Tokyo Olympics/Paralympics, as published in January 2018, explains that prefectural governments would confirm some farm and livestock products as produced mainly by persons with disabilities.
- Kyoto Prefecture created a system in FY2017 to assess and certify farming knowledge and skills to encourage persons with disabilities to work.

Annual number of persons with disabilities finding jobs in agriculture, forestry and fisheries through “Hello Work”



Source: Ministry of Health, Labour and Welfare “Hello Work Job Placements for Persons with Disabilities”



<Case study>

A stable sales channel leading to far higher wages than average (Hokkaido)

- At Kyujinfarm Co. founded as a Type A business establishment for supporting continuous employment in Memuro, Hokkaido, 19 persons with disabilities are engaged in potato production and primary potato processing operations including peeling.
- As a prepared food production and sales company serves as a stable sales channel by purchasing all primary processed products from Kyujinfarm, the wages for these persons with disabilities reaches 115 thousand yen, far above the national average in a 65–70 thousand yen range.



Potato peeling

1. Restoration/Reconstruction from Great East Japan Earthquake

Earthquake and tsunami damage and restoration/reconstruction

- Salt removal, rice paddy boundary reconstruction and other restoration operations have made progress in tsunami-damaged farmlands, making 89% of the affected farmlands available for farming resumption.
- Farmland partitions have been expanded in line with the restoration of tsunami-damaged farmlands. Farmland development projects were implemented at 16 sites of 10 municipalities by the end of January 2018 in conjunction with residents' collective relocation for disaster prevention.
- From FY2011 to FY2017, a total of 34 large-scale industry-academia-government demonstration studies involving agriculture and rural areas were conducted. In the future, initiatives to diffuse and utilize the fruits of these studies should be developed and enhanced.

Fruits of advanced technology development projects for restoring food production regions

<Iwate Prefecture>

Demonstration research for farming technology for small and medium-sized farmland partitions

Direct water seeding of rice costs 22-24% less than transplanting culture.



Sowing using a power granule applicator

<Miyagi Prefecture>

Demonstration research for land-extensive farming technology

A 2-year, 3-crop rotation system for large farmland partitions was established, covering rice, wheat or barley, and soybeans for dry seeding.



Sowing using a grain drill

<Fukushima Prefecture>

Demonstration research for stable year-round flower production technology

The stable shipment of summer and autumn small chrysanthemum based on outdoor light culture increased income per unit area in August and September by 16%.



Small
chrysanthemum for
outdoor light culture

Impacts of the accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Station and restoration/reconstruction

- By April 2017, the government lifted evacuation orders for all accident-affected areas other than difficult-to-return zones, for which the revised Fukushima Special Measures Act has created reconstruction and restoration plans* and systems. 4 municipalities have prepared such plans under the act.
- *Reconstruction/restoration plans for special reconstruction/restoration zones*

**Reconstruction/restoration plans for special reconstruction/restoration zones*

- The rice production resumption area in 2017 expanded from about 2,500 ha in the previous year to about 3,000 ha.

- To enhance initiatives to eliminate harmful rumors:
 - ① The Fukushima Special Measures Act provides for a fact-finding survey on slack sales, and instructions and advice based on the survey.
 - ② Comprehensive assistance covering from production to distribution and sales started in FY2017.
 - ③ A strategy to enhance harmful rumor elimination and risk communications was put in place in December 2017.

- Fukushima Prefecture in May 2017 proclaimed “Fukushima GAP Challenge Declaration” with the aim of achieving the largest number of GAP certified producers among Japanese prefectures.

Example of special reconstruction/restoration zones (Futaba Town)



Rice harvesting at a paddy where rice planting was restarted (Katsurao Village)



2. Restoration/Reconstruction from Kumamoto Earthquake

- In August 2016, Kumamoto Prefecture came up with a plan for reconstruction/restoration from the Kumamoto Earthquake to be completed by FY2019.
- At the end of FY2017, 40.2% of farm restoration under prefectural and other organizational projects was completed. 3 districts in the prefecture have launched infrastructure development projects to expand farmland partitions and consolidate farmlands.
- Soybeans have been planted at about 660 ha out of some 1,000 ha of paddies forced to switch to non-rice crops due to water channel losses. Large farms undertake most of the soybean production, making progress in the enhancement of farming arrangements.
- At the end of FY2017, 24 of 33 projects for livestock farmers' reintroduction of livestock and construction of livestock barns were completed.
- The restoration of fruit sorting and other joint use facilities with national government subsidies was almost completed at the end of FY2017.
- The Kumamoto Prefectural Union of Agricultural Cooperatives plans to expand a project for supporting farming labor supply in model areas to cover the whole of the prefecture by FY2019.

Farmland/farming facility restoration conditions

(Unit: plans, %)

	Restoration plans	Implemented plans		Completed plans	
			Implementation rate		Completion rate
Total	2,239	1,975	88.2	901	40.2
Prefectural	183	152	83.1	10	5.5
Other organizational	2,056	1,823	88.7	891	43.3

Note: As of the end of FY2017

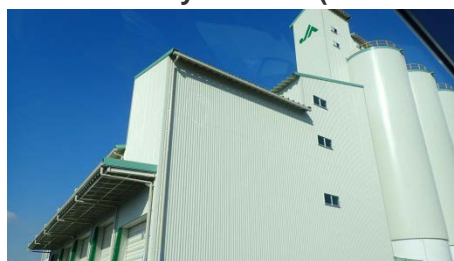
Soybean harvesting at a vast farm (Kashima Town)



A refurbished barn (Kikuchi City)



A restored country elevator (Kashima Town)



<Case study>



Creative reconstruction through readjustment of rice paddies including destroyed sites (Kumamoto Prefecture)

- In Minami Aso Village's Otogase district, massive sediments flooded farmlands when a mountainside collapsed due to the Kumamoto Earthquake.
- Farmland readjustment will be implemented in 2 years from FY2018 to raise business farmers' share of farmlands to 71% and produce napa cabbage, takana and satoimo potatoes as well as rice.



A rendering of farmland readjustment

Summary of FY2018 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 implementation 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 payment for activities to enhance multi-functionality, 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

1. Confusing terms

Production value, income

Purpose

To know the value of sales of agricultural products produced in Japan

To know the value added of agricultural products produced in Japan, or their sales value minus physical costs

To compare the value added by agriculture as part of gross domestic product (GDP) with values in other industries and foreign countries

Term

Total agricultural output^{*1}

Agricultural production income

Gross agricultural production

Statistical data <source>

9.2 trillion yen (2016)
<Agricultural production income statistics>

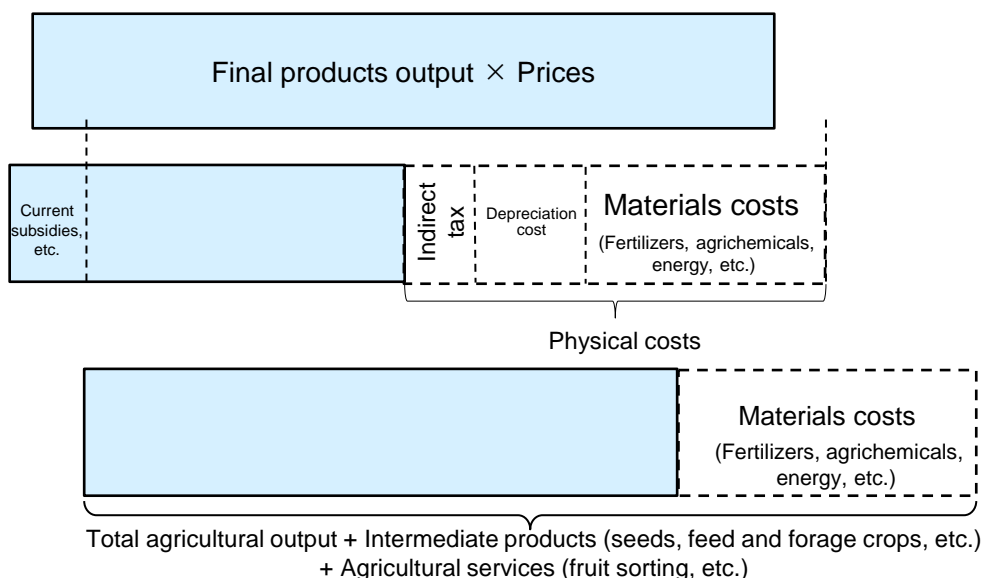
3.8 trillion yen (2016)
<Agricultural production income statistics>

5.2 trillion yen (2016)
<National accounts>

· Total agricultural output:
9.2 trillion yen

· Agricultural production income: 3.8 trillion yen

· Total agricultural output:
5.2 trillion yen



Agriculture management entities

Purpose

To know the number of entities engaged in agricultural production or agricultural work under contract

To know the number of households engaged in agriculture

To know the number of households producing mainly agricultural products for sales out of farm households

To know the number of agriculture business companies, community-based farm cooperatives, etc.

Term

Agriculture management entities^{*2}

Farm households^{*2}

Commercial farm households^{*3}

Organized farms^{*2}

Statistical data <source>

1.26 million entities (2017)
<Survey on Movement of Agricultural Structure >

1.22 million households (2017)
<Survey on Movement of Agricultural Structure>

1.2 million households (2017)
<Survey on Movement of Agricultural Structure>

0.03 million entities (2017)
<Survey on Movement of Agricultural Structure>

*1: See Definitions 3 (1)

*2: See Definitions 2 (1)

*3: See Definitions 2 (2)

Farm households

Purpose

To know the number of all farm households including those producing agricultural products for their own consumption

To know the number of households producing agricultural products mainly for sales

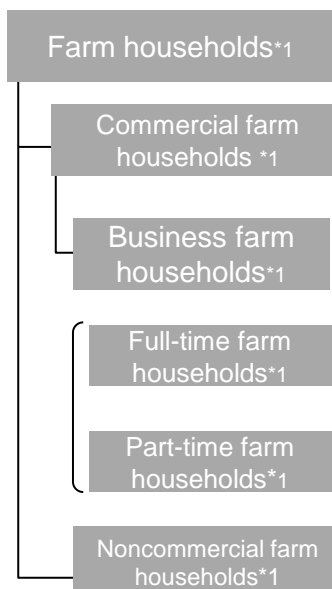
To know the number of households headed by less than 65-year-old persons whose main income is from agriculture

To know the number of farm households having no non-agricultural job holders (without any age limit)

To know the number of farm households including non-agricultural job holders (without any age limit)

To know the number of farm households producing agricultural products mainly for their own consumption

Term



Statistical data <Source>

2.16 million households (2015)
<Census of Agriculture and Forestry 2015>

1.2 million households (2017)
<Survey on Movement of Agricultural Structure >

0.27 million households (2017)
<Survey on Movement of Agricultural Structure >

0.38 million households (2017)
<Survey on Movement of Agricultural Structure >

0.82 million (2017)
<Survey on Movement of Agricultural Structure >

0.83 million (2015)
<Census of Agriculture and Forestry 2015>

Members of commercial farm households

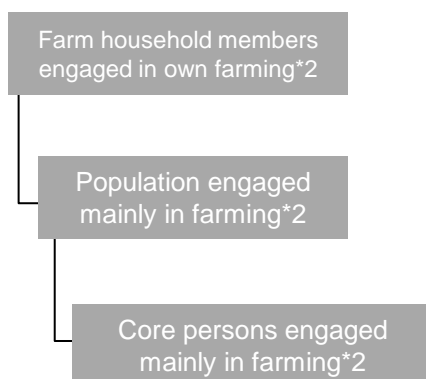
Purpose

To know the number of farm household members who worked as self-employed farmers for one day or more per year

To know the number of farm household members who worked mainly as self-employed farmers (including housewives engaged mainly in housework and childcare, students, etc.)

To know the number of farm household members who usually worked mainly as self-employed farmers (excluding housewives engaged mainly in housework and childcare, students, etc.)

Term



Statistical data <source>

3 million persons (2017)
<Survey on Movement of Agricultural Structure >

1.82 million persons (2017)
<Survey on Movement of Agricultural Structure >

1.51 million persons (2017)
<Survey on Movement of Agricultural Structure >

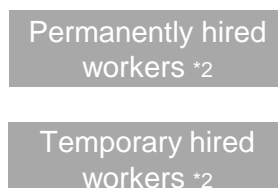
Employed farmers

Purpose

To know the number of persons employed as farmers for a long term (seven months or more)

To know the number of persons employed as farmers for a short term (temporarily)

Term



Statistical data <source>

0.24 million persons (2017)
<Survey on Movement of Agricultural Structure >

2.46 million (2017)
<Survey on Movement of Agricultural Structure >

*1: See Definitions 2 (2)

*2: See Definitions 2 (4)

2. Basic statistical terminology

(1) Classification of agriculture management entities (definitions used since the 2005 Census of Agriculture and Forestry)

Terminology	Definition
Agriculture management entities*	An establishment that either performs agricultural production directly or on contract and fulfills one of the following conditions: (1) manages 30 ares or more cultivated land, (2) possesses a planted area or cultivated area or a number of livestock being raised or delivered that is equal to or greater than a predetermined standard (e.g. 15 ares for outdoor grown vegetables, 350 square meters for vegetables grown in facilities, one cow), (3) accepts farm work on contract. (Censuses from 1990 to 2000 regard agriculture management entities as the combination of commercial farm households, agricultural holdings other than a farm household, and agricultural service enterprises.)
Family management entities	Individual management entities (farm household) or a single-household corporation (a farm household that is incorporated).
Organized management entities	Agriculture management entities that do not fall under family management entities.
Single farming entities	Entities whose main agricultural product sales account for more than 80% of income from all agriculture product sales.
Semi-multiple farming entities	Entities whose main agricultural product sales account for 60% to less than 80% of income from all agriculture product sales.
Multiple farming entities	Entities whose main agricultural product sales account for less than 60% of income from all agriculture product sales (excluding the management entities without any sales).

*“Agriculture management entities” is described as “Farms” in this annual report

(2) Classification of farm households (definitions used since the 1990 World Census of Agriculture and Forestry)

Terminology	Definition
Farm household	Household engaged in farming and managing cultivated land of 10 ares or more, or earning more than 150,000 yen per year from sales of agricultural products.
Commercial farm household	Farm household managing cultivated land of 30 ares or more, or earning more than 500,000 yen per year from sales of agricultural products.
Business farm household	Farm household whose main source of income (50% or more) is farming, and which possess at least one family member under the age of 65 who is engaged in self-employed farming for more than 60 days a year
Semi-business farm household	Farm household whose main income (50% or more) is from sources other than agriculture and which possess at least one family member under the age of 65 who is engaged in self-employed farming for more than 60 days a year.
Side-business farm household	Farm household without any members under the age of 65 engaged in self-employed farming for more than 60 days a year (farm households other than business and semi-business farm households).
Full-time farm household	A farm household without family members who are part-time farmers.
Part-time farm household	A farm household with one or more members who are part-time farmers.
Farm household earning main income from farming	A part-time farm household earning more income from farming than from others
Farm household earning main income from other jobs	A part-time farm household earning more income from non-farming jobs than from farming
Non-commercial farm household	A farm household managing cultivated land of less than 30 ares, and earning less than 500,000 yen per year from sales of agricultural products.
Agricultural holding other than farm household	A holding other than farm household managing cultivated land of 10 ares or more, or earning 150,000 yen or more per year from sales of agricultural products.
Agricultural service enterprise	An enterprise conducting farm work on contract (including enterprise other than agricultural holding, specializing in production and sale of seedlings).
Land tenure non-farm households	A household other than a farm household possessing 5 ares or more in cultivated land and abandoned cultivated land

(3) Farm household economics

Terminology	Definition
Total income	Agricultural income + Income from agriculture-related production + Nonagricultural income + Income from pensions, etc.
Agriculture income	Gross agricultural income (total income from farming) – Agricultural expenditures (all expenses necessary for farming)
Income from agriculture-related production	Earnings from agriculture-related production (earnings from businesses such as agricultural processing, farm-inns, restaurants and tourist farms, which are related to agriculture and managed by individuals engaged in farming) – Expenditures from agriculture-related production (expenditures such as labor and material costs required for the aforementioned businesses)
Non-agriculture income	Non-agriculture earnings (e.g. earnings from independent part-time nonagricultural businesses, salaries and wages) – Non-agriculture expenses (e.g. expenses for independent part-time non-agricultural businesses, transportation expenses for commuting)
Production cost	The production cost is the total cost (combining property and labor costs) for production of farm products minus by-product values
Material cost	Liquid goods costs (seeding, fertilizers, agricultural chemicals, heating, lighting, power and other materials costs) + Depreciation costs for fixed goods (depreciable assets including buildings, automobiles, agricultural machines and production management equipment).
Family labor cost	The family labor cost is calculated by multiplying family working hours by an average hourly wage as computed based on wage data for business establishments with five to 29 workers in the construction, manufacturing and transportation/postal industries in the Monthly Labor Survey Report (by the Ministry of Health, Labor and Welfare).
Equity capital interest	The equity capital interest is calculated by multiplying equity capital – gross capital minus debt capital – by an annual interest rate of 4%.
Rent for owned land	The rent for owned land is based on a rent for similar farmlands (having capabilities similar to the farmland for a crop subject to the survey) within the same region.

(4) Agricultural labor by farm household members

		Involvement in farming				Household member
		Engaged only in farming	Engaged in both farming and other		Not engaged in farming	As a rule, people who live and earn a living together (1) Core persons mainly engaged in farming Among household members involved in self-employed farming (population engaged mainly in farming), those who are working mainly in agriculture during regular hours. (2) Population mainly engaged in farming Persons engaged only in self-employed farming, or persons who are also engaged in work other than farming but spend more time engaged in farming on a yearly basis. (3) Household members engaged in own farming Household members 15 years old and over who are engaged in self-employed farming for more than one day per year. - Full-time farmers Among persons engaged in mainly farming, those who are engaged in self-employed farming for more than 150 days per year
			Mainly farming	Mainly other		
Status during regular hours	Engaged mainly in work	<div><div><div>Core persons mainly engaged in farming</div><div>(1)</div></div><div><div>Population mainly engaged in farming</div><div>(2)</div></div><div><div>Household members engaged in own farming</div><div>(3)</div></div></div>				
	Other (housework and school, etc.)					
Permanently hired worker on farm		Refers to workers hired mainly for farm management with an employment agreement (including verbal agreement) covering a period of seven months or more (including the workers hired regardless of an employment period).				
Temporary hired worker on farm		Refers to Day and/or seasonal workers hired on a temporary basis for farm management (including mutual help among farm households (labor exchange) and assistants (labor accepted for free)), but not including the laborers employed under a partial farm work contract. It includes cases in which workers are hired mainly for non-farm management work but engaged in farm management during the busy season, as well as those who had an employment agreement for longer than seven months but quit before reaching seven months.				

(5) Newcomers in agriculture (definition used in the survey on Newcomers in Agriculture)

		Type of involvement in farming			Newcomers in agriculture
		Mainly engaged in agriculture as self-employed	Employed fulltime by corporations, etc.	Just entering farming	Newcomers in agriculture Defined as individuals who fulfill one of the following conditions:
Status before farming	Student	<div>Entrants to farming soon after graduation from school</div> <div>New self-employed farmers</div> <div>(1)</div>	<div>New employed farmers</div> <div>(2)</div>	<div>New entries</div> <div>(3)</div>	<p>(1) New self-employed farmers Members of family management entities whose living status has changed anytime within a year of the survey date from “student” or “employed in other work” to “new graduate who has become a farmer” or “a new farmer who changed occupations”.</p> <p>(2) New employed farmers Persons engaged in farming who have been hired by corporations anytime within a year of the survey date and work for their employers for 7 months a year or more.</p> <p>(3) New entries Persons responsible for farming started anytime within a year of the survey date by securing land and funds on their own, and their partners - Entrants to farming soon after graduation from school New self-employed farmers who have changed their status from “student” to “engaged mainly in farming”, as well as new employed farmers who were recently students.</p>
	Employed in other work				
	Engaged in housework and child rearing / Other				

(6) Classification of agriculture area

Terminology	Definition
Classification of agriculture area	Classification of present and former cities, wards, towns, and villages (hereinafter referred to as “municipalities”) based on fundamental conditions (e.g., cultivated, forest and grazing land shares, farmland gradients) that define the structure of regional agriculture
Category	Standard index (fulfills one of the following conditions)
Urban area	<ul style="list-style-type: none"> - Present and former municipalities where the DID’s share of habitable land is 5% or more with a population density of 500 persons per square kilometer or more or a DID population of 20,000 or more. - Present and former municipalities where the residential area’s share of habitable land is 60% or more with a population density of 500 persons per square kilometer or more. Regions with forest and grazing land’s share of 80% or more are excluded.
Flat farming area	<ul style="list-style-type: none"> - Present and former municipalities where cultivated land accounts for 20% or more of the total area with forest and grazing land accounting for less than 50% of the total area. However, areas where all paddy fields with gradients of 1/20 or more and all upland fields with gradients of 8° or more account for 90% or more of the total area are excluded. - Present and former municipalities where cultivated land accounts for 20% or more of the total area, with forest and grazing land accounting for 50% or more of the total area and with all paddy fields with gradients of 1/20 or more and all upland fields with gradients of 8° or more accounting for less than 10% of the total area.
Hilly farming area	<ul style="list-style-type: none"> - Present and former municipalities where cultivated land accounts for less than 20% of the total area, other than urban and mountainous farming areas. - Present and former municipalities where cultivated land accounts for 20% or more of the total area, other than urban and flat farming areas.
Mountainous farming area	<ul style="list-style-type: none"> - Present and former municipalities where forest and grazing land accounts for 80% or more of the total area, with cultivated land accounting for less than 10% of the total area.
<p>Notes: 1) Order of priority: Urban area → Mountainous farming area → Flat and hilly farming area</p> <p>2) As a rule, DID (Densely Inhabited Districts) are defined as areas where basic district units, as defined by the national census, with populations densities of 4,000 per km² or more are adjacent to each other and the total population of these conjoined districts is 5,000 or more.</p> <p>3) Gradient refers not to the gradient of cultivated land per parcel, but to the main topographical gradient as grouped land.</p> <p>4) The combination of the hilly and mountainous farming area categories is referred to as hilly and mountainous area.</p> <p>5) Former municipalities are those that were classified as of February 1, 1950.</p>	

(7) Agricultural regions nationwide

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

3. Basic Terminology

A	
AFFrinnovation	AFFrinnovation which means initiatives for agriculture, forestry and fisheries operators to voluntarily cooperate with others to comprehensively and integrally promote agriculture, forestry and fisheries as the primary industry, manufacturing as the secondary industry and retailing as the tertiary industry to utilize regional resources for producing new added value.
Agricultural irrigation facilities	These facilities are roughly divided into two types -- irrigation facilities for providing irrigation water for farmlands and sewerage facilities for discharging surplus surface and soil water at farmlands. Irrigation facilities include dams and other water storage facilities, water intake facilities such as weirs, drains, pumping facilities, circular tank diversion works, farm ponds and other water supply and distribution facilities. Sewerage facilities include drainage canals and drainage pump stations. In addition, there are water control facilities to monitor, control and operate irrigation and sewerage facilities.
AI	AI stands for artificial intelligence, referring to computer systems that have human intelligence functions including learning, inference and judgment.
ASEAN	ASEAN stands for the Association of Southeast Asian Nations. ASEAN was established in the Thai capital of Bangkok in 1967 for cooperation in addressing the promotion of economic growth, and social and cultural development, the achievement of political and economic stability and other challenges in Southeast Asia. Upon its establishment, it consisted of five countries -- Indonesia, Malaysia, the Philippines, Singapore and Thailand. Brunei acceded to ASEAN in 1984, Vietnam in 1995, Laos and Myanmar in 1997 and Cambodia in 1999. ASEAN now thus comprises 10 countries. Prompted by the 1997 Asian currency crisis, Japan, China, South Korea and ASEAN have formed the ASEAN+3 framework for cooperation in East Asia.
Associated income in rural regions	Associated income in rural regions is calculated for seven growth-promising fields (processing and direct sales, export, exchanges between urban and rural areas, collaboration between medical care, welfare, food and agricultural sectors, local consumption of local products (facility food services, etc.), ICT utilization and distribution, and biomass/renewable energy) for initiatives for agriculture, forestry and fisheries business operators' integration of production, processing and sales using rural resources and their collaboration with secondary and tertiary industries (including food, medical care and welfare, and tourism).
B	
BCP	BCP stands for business continuity plan, meaning a plan to secure the continuation of key operations even in the event of risks such as disasters. It is also a peacetime plan to strategically prepare for restoring key operations within a target time and minimizing risks even if business operations are suspended.
Big data	Big data refers to huge data collected in real-time from location information, action history, etc. through the internet, etc. In recent years, technologies have been developed to analyze big data faster and more easily, indicating that big data is expected to be used for gaining knowledge useful for business and society and producing new mechanisms and systems. Open data held by the government sector and public organizations are part of big data.
Biomass	Biomass means organic resources of flora and fauna origin, excluding fossil resources. Biomass is made by organisms that create organic matter from inorganic water and CO ₂ through photosynthesis using solar energy falling on the earth. This type of resources is renewable throughout its life cycle as long as there are organisms and solar energy
Business plan approved under the AFFrinnovation Act	These business plans are for agriculture, forestry and fishery business operators to integrate the production of agriculture, forestry and fisheries products and by-products (including biomass) with their processing or sales to improve their operations under the Act on Promotion of the "Sixth Industry" to Create New Value Added Using Agricultural Products in Rural Areas (AFFrinnovation Act).

C	
Calorie supply (Calorie intake)	Calorie supply refers to the total amount of calories from food that is supplied to the public, and calorie intake refers to the total amount of calories actually consumed by the public. As a rule, the value for calorie supply is taken from the Food Balance Sheet issued by the Ministry of Agriculture, Forestry and Fisheries, while the value for calorie intake is taken from the National Health and Nutrition Examination Survey issued by the Ministry of Health, Labor and Welfare. Although it is necessary to keep in mind that calculations for both values are entirely different, since the calorie supply value includes leftovers and food destroyed in the distribution stage, the difference between this value and calorie intake can be used as an approximate measure of food wastes including food residue emerging inevitably in food industry processes, home food leftovers, etc.
Cattle breeding station (CBS)	A cattle breeding station is an organization to intensively undertake breeding cow deliveries and settlements and calf incubation and nurturing that consume much time in breeding operations. A cattle station (CS) is an organization to intensively undertake the incubation and nurturing of calves produced in breeding operations and occasionally take care of breeding cows.
Certified farmer (system)	The certified farmer system certifies plans for improving agricultural management drafted by farmers to attain targets for efficient and stable farm management in basic plans prepared by municipal governments to meet their respective conditions under the Agricultural Management Framework Reinforcement Act. For certified farmers, or those whose plans have been certified, various measures are primarily implemented, including low interest financing from the Super L loan system and other programs, measures to facilitate farmland consolidation and infrastructure improvement efforts to support business farmers.
Codex Alimentarius Commission	The Codex Alimentarius Commission is an international intergovernmental organization created by the United Nations Food and Agriculture Organization (FAO) and the World Health Organization (WHO) in 1963 to secure the protection of consumer health and fair food trade. It develops the Codex Alimentarius. Japan joined the commission in 1966.
Community based farm cooperatives	Farm cooperatives consist of farming households in certain regions that have developed relations through local communities or other geographical bases. Cooperative member households conduct joint agricultural production. These cooperatives' forms and operations vary depending on regional conditions. Their operations range from the aggregation of diverted paddy fields and the communal use of communally purchased machines to joint production and sales in which farming leaders play a central role.
Crop condition index	The index indicates rice crop conditions, taking the form of a percentage ratio of a (forecast) yield per 10 ares to a standard yield per 10 ares. The standard yield is a yield anticipated before annual planting, based on average-year meteorological conditions and disaster incidence, the recent advancement of cultivation technologies and the recent actual yield trend.
Cross-ministerial Strategic Innovation Promotion Program (SIP)	This is a program for the Council for Science, Technology and Innovation established at the Cabinet Office to allocate budgets for initiatives covering from basic research to exits (practical application or commercialization) beyond the bounds of ministries and fields and promote them. SIP stands for Cross-ministerial Strategic Innovation Promotion Program.
D	
Dilapidated farmland	A dilapidated farmland is a farmland that has been left uncultivated and dilapidated due to the abandonment of cultivation and is viewed objectively as unable to be used for growing crops with conventional farming methods.
Direct seeding (rice)	Direct seeding, where rice seeds are directly scattered into paddies, can skip seedling-raising and transplanting steps required for the conventional practices including transplanting. There are various direct seeding methods, which are roughly divided into two groups – flooded direct seeding where seeds are scattered into flooded paddies after plowing and soil puddling, and dry direct seeding where seeds are scattered into non-flooded paddies.

DMO	DMO stands for destination management organization. At the helm of regional tourism development, the organization cooperates with various stakeholders to work out regional strategies based on clear concepts and coordinate between stakeholders for implementing those strategies.
E	
Ecofeed	Ecofeed is feed that makes effective use of food residual, etc., representing a combination of ecological or economical and feed.
EPA/FTA	EPA stands for Economic Partnership Agreement and FTA for Free Trade Agreement. An FTA is a treaty between particular countries or regions created for the purpose of reducing and repealing tariffs on goods and services trade barriers. An EPA is a treaty that adds rules on investment and protection of intellectual property to the basic contents of an FTA in order to enhance a wider range of economic relations. Under the General Agreement on Tariffs and Trade (GATT), member countries are allowed to liberalize trade with EPA or FTA partners as an exception to most-favored nation status on the following conditions: (1) “abolishment of tariffs and other restrictive trade regulations” for “essentially all trade”, (2) abolishing such practices within a reasonable time frame (as a rule, within 10 years), and (3) refraining from enhancing tariffs and other trade barriers for nations other than EPA or FTA partners (under Article 24 and other sections of the General Agreement on Tariffs and Trade).
F	
Family business agreement	A family business agreement is a written arrangement that clarifies business plans, each family member’s role, working conditions, etc. for a farming family based on talks between family members. In family farming, it is important to clarify each family member’s role, working conditions, etc. to pursue effective, stable business management. This agreement clarifies the roles of farming family members including women and successors, allowing a farming family to become subject to farmer annuity schemes and utilize joint applications for the certified farmer system.
Farmland concentration and intensification	Farmland “concentration” means owning or leasing farmland to expand farmland for utilization. Farmland “intensification” means exchanging farmland use rights to allow farming to be conducted continuously without difficulty.
Food security	As for food security in Japan, the Food, Agriculture and Rural Areas Basic Act states, “Even in the case that domestic supply is insufficient to meet demand or is likely to be for a certain period, due to unexpected situations such as a bad harvest or interrupted imports, the minimum food supply required for the people shall be secured in order not to be a hindrance to the stability of peoples' lives and smooth operation of the national economy.” As for global food security, meanwhile, the Food and Agriculture Organization (FAO) states, “Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” This widely accepted definition points to the following dimensions of food security: the availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (food availability), the legal, political, economic and social entitlements of individuals to access foods for a nutritious diet (food access), utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met (utilization), and stable access to adequate food at all times for a population household or individual (stability).

Food self-sufficiency potential	<p>This concept expresses the potential capacity of food production in the Japanese agriculture, forestry and fisheries sectors. The components of the food self-sufficiency potential for agricultural production are agricultural resources such as farmland and irrigation systems, agricultural technology, and people engaged in farming. The components of the food self-sufficiency potential for fishery production are potential production volume and people engaged in fishery.</p> <p>○ “Food self-sufficiency potential indicator”</p> <p>Based on the premise that farmlands are fully utilized and calorie efficiency is maximized, this indicator shows the amount of calories which could be supplied per person per day in the Japanese agriculture, forestry and fisheries sector. The indicator is comprised of the following four patterns.</p> <p>(Pattern A) When major grains such as rice, wheat and soybeans are mainly cultivated by maximizing the calorie efficiency with certain consideration to nutritional balance</p> <p>(Pattern B) When major grains such as rice, wheat and soybeans are mainly cultivated by maximizing the calorie efficiency</p> <p>(Pattern C) When potatoes are mainly cultivated by maximizing the calorie efficiency with certain consideration to nutritional balance</p> <p>(Pattern D) When potatoes are mainly cultivated by maximizing the calorie efficiency</p>
Food self-sufficiency ratio	<p>This index indicates how much food for domestic consumption is being supplied by domestic sources.</p> <p>- Self-sufficiency ratio for individual items: The following equation is used to calculate the self-sufficiency ratio on a weight basis for individual items.</p> <div style="border: 1px solid black; border-radius: 10px; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">Food self-sufficiency ratio calculation equation</p> $\text{Self-sufficiency ratio for individual items} = \frac{\text{Domestic production volume}}{\text{Supply for domestic consumption}}$ $= \frac{\text{Domestic production volume}}{\text{Domestic production volume} + \text{Import volume} - \text{Export volume} \pm \text{Fluctuations in inventory}}$ </div> <p>- Total food self-sufficiency ratio: This ratio is an index for the total volume of food, and is expressed in both calorie basis and production value basis. Products made from domestic livestock raised with imported feed are not included in calculations.</p> <p>- Total food self-sufficiency ratio on calorie supply basis: Weight values for each item are converted to calories using the <i>Standard Tables of Food Composition in Japan</i> (2015), after which the calories of all items are totaled. This is equivalent to the ratio calculated by dividing the value for the sum of the domestic calorie supply per person per day by the value for the calorie supply per person per day.</p> <p>- Total food self-sufficiency ratio on production value basis: Weight values are converted to production values using farm gate prices and import prices from domestic agricultural price and trade statistics, after which all production values are totaled. This is equivalent to the ratio calculated by dividing the sum of the domestic production value of food by the total food supply value for domestic consumption.</p> <p>- Feed self-sufficiency ratio: This index indicates how much feed is being supplied by domestic sources, calculated in terms of total digestible nutrients (TDN) using the <i>Standard Tables of Feed Composition</i>.</p>
G	
GAP	Good Agricultural Practices (GAP) are management activities in the agricultural production process to ensure various components of sustainability including food safety, environmental conservation and worker safety.
Genetic resources	Genetic resources are materials from all living things including plants, animals, and microorganisms that have actual or potential value. For example, they include crops used as materials for breeding (including not only the latest varieties but also old varieties and those that are not clearly useful but considered potentially useful.)

GFSI	GFSI stands for Global Food Safety Initiative, referring to an organization of globally operating food companies for implementing various initiatives to improve food safety and enhance consumer confidence in food products. It was established in May 2000 as a subsidiary of the Consumer Goods Forum (CGF), an international organization of about 400 manufacturers, retailers and service providers from 70 countries.
GLOBALG.A.P.	GLOBALG.A.P. is a GAP certification program established by Germany's FoodPLUS GmbH. Its fruit and vegetables standard and aquaculture standard are GFSI-recognized. This program has been diffused mainly in Europe.
GPS	GPS stands for global positioning system, referring to a positioning system that uses satellites to accurately locate any position in the world. In the agriculture field, unmanned tractors and other equipment using the GPS are being developed.
Greenhouse gas (GHG)	Greenhouse gases heat the earth's surface by absorbing and radiating a portion of infrared radiation reflected from the ground. The Kyoto Protocol designates carbon dioxide (CO ₂), methane (CH ₄ , generated by rice paddies and final waste disposal sites), dinitrogen monoxide (N ₂ O, generated during the process of manufacturing some raw ingredients for chemical products and from livestock waste), hydrofluorocarbons (HFCs, used as coolants for air conditioning devices), perfluorocarbons (PFCs, used in the production of semiconductors), sulfur hexafluoride (SF ₆ , used in the production of semiconductors) and nitrogen trifluoride (NF ₃ , used in the production of semiconductors; added in the second commitment period) as greenhouse gases that should be reduced.
Gross domestic product (GDP)	GDP refers to the total of value added for all goods and services produced in a country within a designated time frame, which is usually one year. It is used as an index to measure domestic economic activity levels. GDP stands for gross domestic product.
H	
HACCP	HACCP (Hazard Analysis and Critical Control Point) is a management system in which food safety for each process is addressed through the analysis and control of biological, chemical and physical hazards by continually monitoring and recording to guarantee the CCPs in control.
Halal Certification	The Halal Certification System certifies food products as allowed to be eaten under traditional Islamic Law.
Highly Pathogenic Avian Influenza (HPAI)	Highly Pathogenic Avian Influenza (HPAI) is a kind of Avian Influenza that is highly fatal to poultry. When poultry are infected with HPAI, they show general symptoms such as neurological, respiratory and digestive ones, and many of them die. In Japan, there hasn't been any case where humans were infected with HPAI through eating of eggs or chicken meat.
Home meal replacement	Home meal replacements are between eating out at restaurants and preparing meals at home. They include commercially sold lunch boxes, ready-to-eat dishes and foods cooked and processed outside of the home that are consumed without being cooked or heated at school or at the workplace. These meals are perishable.
I	
Idle farmland	An idled farmland meets either of two provisions in Item 1, Article 32, Agricultural Land Act. The first provision cites a farmland that is unused for cultivation and is expected to remain unused for the purpose. The second cites a farmland that is used far less than other farmlands in the vicinity.
Import tolerance	Import tolerance is the maximum residue limit set for importing agricultural products using chemicals for which countries or regions importing the products have no such limit in the absence of their domestic registration.
IoT	IoT stands for Internet of Things, meaning that various things in the world are connected through the internet to exchange information for automatic recognition, automatic control, remote control, etc.

J	
JGAP/ASIAGAP	Both JGAP and ASIAGAP are GAP programs established by the Japan GAP Foundation with third-party audit. JGAP covers fruit and vegetables, grains, tea, and livestock, while ASIAGAP covers fruit and vegetables, grains and tea. The Japan GAP Foundation applied to GFSI for recognition of ASIAGAP in November 2017 so that ASIAGAP could become a GFSI-recognized international certification program.
L	
Local consumption of local products	This is an initiative for agriculture, forestry or fishery products (limited to food products) produced in domestic regions to be consumed in those regions. The initiative contributes to improving the food self-sufficiency ratio and to promoting AFFrinnovation through farmer's market and processing operations.
Livestock industry cluster	This is an initiative for livestock farms and local livestock stakeholders (including contractors and other outside supporters, distribution and processing business operators, agricultural organizations and the administration sector) to enhance profitability of livestock industry in a region, working together in close coordination (based on a plan).
N	
NPO	NPO stands for non-profit organization. These organizations perform various activities to contribute to society and do not distribute profits to their members. NPOs are expected to play an important role in responding to diversified needs of society in various areas (including welfare, education, culture, community building, ecology and international cooperation). Organizations that have been incorporated through the Act to Promote Specified Nonprofit Activities are called corporations engaging in specified non-profit activities and are allowed to open bank accounts and lease office spaces under their respective organization titles.
O	
OIE	OIE stands for Office International des Epizooties in French. In English, it is called the World Organization for Animal Health. It is an intergovernmental organization founded in 1924 to improve animal health. As of 2018, the number of OIE member countries and regions stands at 181. Japan acceded to the OIE in 1930. The OIE conducts animal health, food safety, animal welfare and other operations, handling mammals, avian species, bees, fishes, shellfishes, mollusks, amphibian species and reptiles.
P	
People and Farmland Plan	The plan compiles the results of thorough talks between regional farmers to solve regional agriculture challenges. It is updated annually and used as a blueprint for the future of regional agriculture.
R	
Replotted land	Replotted land is land deemed as land before readjustment or development (traditional land) under the allocation of replotted land for a project to readjust land or develop farmland to change farmland boundaries and shapes. The allocation of replotted land is an administrative action to fix new land after readjustment or development (replotted land) replacing land before readjustment or development (traditional land) and take some legal procedures to deem the replotted land as land before readjustment or development (traditional land).
Rural community	The rural community is a fundamental regional unit where households are connected by local and family ties for farming or utilization of farming water in some municipal localities. These communities have close relationships for a wide range of activities including maintenance and management of irrigation facilities, use of farming equipment, and marriages and funerals. They have developed many characteristic traditions and function as autonomous or administrative units.

S	
Sustainable development goals (SDGs)	<p>Sustainable development goals (SDGs) are the entire international community's development goals for 2030, adopted unanimously at a United Nations summit in September 2015. There are 17 SDGs including those for the eradication of famine and poverty, economic growth and employment, and climate change countermeasures. The SDGs are non-binding goals urging each country to take voluntary actions commensurate with its conditions.</p> <p>Japan created the SDGs Promotion Headquarters under a Cabinet decision in May 2016 to implement the SDGs. The headquarters decided on the SDGs Implementation Guideline spelling out Japan's vision and priorities for implementing the SDGs in December 2016 and the SDGs Action Plan 2018 including the direction and major initiatives for providing Japan's SDGs models in December 2017. SDGs stands for "sustainable development goals."</p>
T	
TMR center	TMR stands for total mixed ration, a cow feed into which roughage, concentrated feed and additives are mixed in a well-balanced manner. A TMR center is an organization that produces TMR for supply to livestock farms.
Total agricultural output	In agricultural production, the total agricultural output is the total output of all finally completed agricultural goods. It is the amount of the item-based production volume of agricultural products minus intermediate products such as seeds and fodder to prevent overlapping calculations, multiplied by the price of each item when delivered from the farms.
V	
Value chain	A value chain is a process of adding value at each step of production, processing, distribution and sales that are organically connected to each other.
W	
"WASHOKU; traditional dietary cultures of the Japanese"	In December 2013, the United Nations Education, Scientific and Cultural Organization registered "WASHOKU; traditional dietary cultures of the Japanese" as a UNESCO Intangible Cultural Heritage. "WASHOKU" is a social practice associated with food, embodying the Japanese people's spirit of "respect for nature" with characteristics such as (1) various fresh ingredients and respect for their natural flavors, (2) nutritional balance that supports healthy diets, (3) emphasis on the beauty of nature and changing of seasons in the presentation and (4) deep ties to New Year's and other regular annual events. It is considered that Japanese people as a whole promote its protection and succession
WCS rice	WCS stands for whole crop silage, meaning a feed that is made by harvesting berries, stems and leaves integrally for lactic fermentation. WCS rice is produced for WCS for livestock, contributing to the effective utilization of rice paddies and the improvement of the feed self-sufficiency ratio.
WTO	The World Trade Organization (WTO) is an international organization established in January 1995 as a result of the Uruguay Round negotiations, which has set a wide variety of multilateral trade rules. The WTO not only addresses new trade agenda but also implements and operates these current trade rules through a dispute settlement mechanism. The headquarters is located in Geneva, Switzerland.

4. Multifunctional roles of agriculture, forestry and the fisheries

(1) Agriculture

Flood prevention by retention and storage of rainwater	Function to prevent/alleviate flood by temporarily collecting rainwater in paddy fields surrounded by ridges and cultivated field soil.
Landslide prevention	Function to prevent slope failure by detecting and repairing the failure of farmlands at an early stage through agricultural production activities in sloping farmlands, or to prevent landslides by holding down sudden rises in the groundwater level by allowing rainwater to permeate slowly underground through the cultivation of fields.
Soil erosion prevention	Function to prevent the erosion of soil caused by rainwater and wind, with the surface of water covering paddy fields or with the foliage and stems of crops in fields.
Water recharge	Rainwater and agricultural water for paddy fields seep underground and over time returns to the river, and water that seeps further below cultivates underground watersheds.
Water purification	Water purification is achieved the decomposition of organic material in paddy and dry fields, the absorption of nitrogen by crops, and the removal of nitrogen by microorganisms.
Decomposition of organic waste	Microorganisms within paddy and dry fields such as bacteria decompose livestock waste and compost made from household waste. The decomposed material is eventually reabsorbed by crops.
Climate mitigation	Crops growing on farmland absorb heat through transpiration and paddy fields absorb heat through water evaporation, resulting in lower climate temperatures.
Conservation of biodiversity	Rice paddies and upland fields are properly and sustainably managed to form and maintain a secondary natural environment with ecosystems rich in plants, insects and animals, etc. to secure biodiversity
Formation of a good landscape	Agricultural activities combined with farmland, old farmhouses, surrounding water sources and mountains create attractive natural landscapes.
Maintenance of cultural tradition	Japan features many annual events and festivals which trace their origins to prayers for rich harvests. Agriculture plays a role in passing on these traditions to future generations.

(2) Forestry

Conservation of biodiversity	Forests inhabited by a wide variety of plants and animals contribute to conserving the diversity of genes, species and ecosystems.
Conservation of the global environment	Forests can adjust the natural environment on a global scale through transpiration and absorption of CO ₂ which causes global warming.
Prevention of landslide disasters and conservation of soil	Brush, fallen leaves and branches suppress soil erosion, and the network of roots from forest trees prevents landslides.
Watershed capabilities	Forest soil mitigates floods and stabilizes river flow by storing rainwater and moderating the volume of water running into rivers.
Formation of comfortable environments	Forests help form comfortable environments by moderating climate through transpiration, reducing wind shear and noise, adsorbing dust through tree crowns and alleviating the heat island phenomenon.
Benefits for health and recreation	Trees release volatile substances such as phytoncides that are known to directly improve health, and forests provide areas for sports and leisure.
Culture	As a foundation for the succession of culture and traditions, forest scenery plays a vital role in the shaping of the traditional Japanese outlook on nature, and they also provide a place for forest environment education and practical learning.
Material production	The ability of forests to produce a wide variety of materials including wood, extracts and various types of fungi

(3) Fisheries

Supplementary contributions of fishery to the nitrogen and phosphorus cycle	An appropriate level of fishery can help recycle nitrogen and phosphorus absorbed by marine wildlife through the food chain to land.
Conservation of coastal environments	Bivalve shellfish such as oysters and clams filter and purify seawater by feeding on organic suspension such as plankton.
Water purification	Mudflats and seaweed beds, and plants and animals that inhabit them purify seawater by decomposing organic matters, absorbing nutrient salts and carbon dioxide gas, and supplying oxygen.
Preservation of ecosystems	Appropriate fishery operations can contribute to preserving mudflats, seaweed beds and other ecosystems that provide inhabitation environments for a wide variety of water creatures.
Transfer of cultural assets such as traditional fishing practices	Cultural assets such as traditional fishing practices are passed down to future generations through the activities of people living in fishing villages.
Rescue operations in the event of marine emergencies	Fishery workers help emergency rescue operations when ships sink, capsize, become stranded, go adrift, collide or catch fire.
Rescue operations in the event of disasters	Fishery workers conduct emergency operations such as supply transportation and oil recovery during natural catastrophes, oil tanker accidents and other disasters.
Monitoring of coastal environments	The fisheries monitors abnormalities in coastal environments. For example, fishery workers assist in early detection of red tides, blue tides and jellyfish outbreaks.
Border monitoring	Activities to monitor illegal poaching of precious marine resources also protects the national interest by preventing smuggling and illegal immigration.
Functions related to providing places for exchange	The mariner industry can provide places for leisure such as marine recreation facilities and places to learn the importance of nature.