# FY2013 Annual Report on Food, Agriculture and Rural Areas in Japan

Summary

Ministry of Agriculture, Forestry and Fisheries

Japan, 2014

The FY2013 Annual Report on food, agriculture and rural areas in Japan is based on Items 1 and 2 of Article 14 of the Food, Agriculture and Rural Areas Basic Act (Law No. 106 of 1999).

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 $\circ$  Numbers in figures and tables are rounded in principle and may not add up to the total.

 $\circ$  Maps in this report may not necessarily indicate Japan's territories comprehensively.

## Acronyms and abbreviations

Association of Southeast Asian Nations
Agriculture, forestry and fisheries Fund corporation for Innovation,
Value-chain and Expansion Japan
Consumer Affairs Agency
European Union
Cooperation Council for the Arab States of the Gulf
Japan Agricultural Standards
Ministry of Agriculture, Forestry and Fisheries
Ministry of Health, Labour and Welfare
Ministry of Internal Affairs and Communications
Ministry of Land, Infrastructure, Transport and Tourism
Ministry of Finance
nonprofit organization
United Nations Educational, Scientific and Cultural Organization

## Symbols

Hectare
Kilolitre
Are
Kilogram
tons

#### Foreword

Japan attracted global attention in 2013 with the International Olympic Committee's decision to hold the 2020 Olympics and Paralympics in Tokyo and the United Nations Education, Scientific and Cultural Organization's inscription of the "WASHOKU; traditional dietary cultures of the Japanese" on the UNESCO Representative List of the Intangible Cultural Heritage of Humanity.

As the Japanese dietary pattern has greatly changed in the meantime, it has become important to review Japan's dietary culture and transmit the culture to the coming generations.

Agriculture and rural areas, as the food production frontline, are plagued with urgent problems including the aging population and the expansion of abandoned cultivated land. After considering how best to solve these problems for nearly one year, the Ministry of Agriculture, Forestry and Fisheries compiled the Plan to Create Dynamism through Agriculture, Forestry, and Fisheries and Local Communities.

This report takes up the abovementioned two points as topics and describes global food supply and demand, food security measures, agriculture trade negotiations, the trends of Japan's food self-sufficiency ratio and food consumption, Japan's promotion of Shokuiku (food education), food industry trends and measures for securing food safety and consumer confidence in food from the viewpoint of securing stable food supply. From the viewpoint of creating strong, aggressive agriculture, this report discusses the promotion of structural agriculture reform, the development and conservation of the agricultural production infrastructure, the promotion of higher value-added on agriculture, the production trends for major farm and livestock products, latest research and technology development, agricultural production giving priority to environmental conservation, and agriculture organizations' efforts. Furthermore, from the viewpoint of promoting and revitalizing rural areas, this report discusses measures for maintaining and demonstrating multifunctional roles of agriculture and rural areas, the present conditions of and measures against damage by wild animals, the promotion of renewable energy, measures for harmonious coexistence and interactions between urban and rural areas, and the promotion of urban agriculture.

Regarding restoration and reconstruction from the Great East Japan Earthquake, this report, along with the previous one, describes farmland restoration in disaster-affected areas, and measures for securing farm and livestock product safety. It also introduces disaster-affected farm households' steps toward resuming farming.

While this report covers a wide range of topics, we have tried to avoid any disproportionate emphasis on statistical data analysis and comments and to introduce various efforts taken throughout Japan as much as possible to make this report easy to understand.

We hope that this report will help citizens deepen their interest in and understanding of Japan's food, agriculture and rural areas.

#### Topic 1 "WASHOKU" Designated by UNESCO as an Intangible Cultural Heritage – Japanese dietary cultures to be conveyed to next generations

#### (1) "WASHOKU" Designated by UNESCO as an Intangible Cultural Heritage

- O 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.
- O "WASHOKU" is a social practice associated with food embodying the Japanese people's spirit of "respect for nature" featuring (1) various fresh ingredients and respect for their natural flavors, (2) nutritionally well-balanced and healthy diets, (3) emphasis on the beauty of nature in the presentation and (4) deep ties to New Year's and other regular annual events.

O It is important to communicate the Japanese dietary cultures to the rest of the world towards the 2015 Expo Milano and the 2020 Tokyo Olympics and Paralympics.

#### "WASHOKU; Traditional Dietary Cultures of the Japanese"



A social practice associated with food embodying the Japanese people's spirit of "respect for nature"

#### Source: MAFF

#### (2) Protecting and transmitting local Japanese dietary cultures

- O Japan's dietary pattern has greatly changed from rice-based meals to those including large amounts of meat, eggs, milk, milk products and fats.
- O While prepared food and eating-out have increased their shares of total food consumption in Japan, the share for fresh food has decreased, with home-cooking opportunities declining.
- O Under the situation, dietary culture protection and transmission efforts are important, including the promotion of local Shokuiku (food education) and the expanded use of local food materials.
- O Local communities have various dietary cultures linked closely to their historical backgrounds and natural environments.

#### Local efforts for protecting and transmitting Japanese dietary cultures

#### 1. Local rice-cake summit and other events to invigorate local communities

The Ichinoseki mochi (rice cake) promotion council in Ichinoseki, Iwate Prefecture, in a bid to diffuse and transmit the local traditional mochi culture, has implemented initiatives to promote understanding about the culture through school lunches as well as cookery classes for the region's exclusive meal of "Mochi Honzen."

The council hosted a Japan summit for local mochi meals in 2013 to diffuse the mochi culture. It has also planned mochi-related events and developed mochi products to contribute to developing the regional economy and tourism.

#### 2. Providing a small-plate meal using local good materials

Ogawa Sakugoya Village in Nishimera, Miyazaki Prefecture, provides the "Ogawa Shiki Gozen (four-season meal)"including 16 local dishes on small plates. Village people take advantage of "Sakugoya" traditional buildings to provide local dishes, and accommodation and training services.

These efforts have developed the meal into the village's representative menu item and one of "Ogawa Shiki Gozen" (Nishimera its attractions for tourists.



"Mochi Honzen" (Ichinoseki City, Iwate Pref.)



Village, Miyazaki Pref.)

# Topic 2 Four reforms including establishing Regional Government Supported Institutions and revising Farming Income Stabilization Measures

- (1) Development of Plan to Create Dynamism through Agriculture, Forestry, and Fisheries and Local Communities and policy implementation direction
- O As conditions surrounding agriculture and rural areas are growing severer, revitalizing agriculture and rural areas is an urgent challenge. Therefore, the government and ruling parties have considered specific measures to this end.
- O As the MAFF Headquarters to Promote Aggressive Agriculture, Forestry and Fisheries compiled priority measures in December 2013, the Prime Minister-headed Headquarters on Creating Dynamism through Agriculture, Forestry, and Fisheries and Local Communities decided on the Plan to Create Dynamism through Agriculture, Forestry, and Fisheries and Local Communities, a grand design for agriculture policy reform.
- O The plan calls for rebuilding agriculture policy under four pillars to double agriculture and rural area income in the next decade, creating "Strong, Aggressive Agriculture, Forestry and Fisheries" and "Beautiful, Vibrant Rural Areas" on which young people can place hopes.

Overview of Plan to Create Dynamism through Agriculture, Forestry, and Fisheries and Local Communities



Source: Prepared by the Cabinet Secretariat

(2) New agriculture and rural area policy to promote the Plan – 4 Reforms

- O Stakeholders should tackle challenges facing agriculture and rural areas with two key policies an industrial policy for enhancing agriculture as industry and a local policy for maintaining and demonstrating the multifunctionality of agriculture and rural areas.
- O Based on the Plan, the industrial policy will (1) establish regional government supported institutions (farmland consolidation banks), (2) revise the Farming Income Stabilization Measures, and (3) fully use paddy fields and reform rice policy, and the local policy will (4) create a Japanese-type direct payment system.
- O The four reforms should be promoted to develop systems to allow farmers rich with originality and ingenuity to make challenging efforts. Local communities should be united to promote the maintenance and demonstration of the multifunctionality of agriculture and rural areas, maintain and improve the food self-sufficiency ratio and potential and establish food security in order to create "strong, aggressive agriculture, forestry and fisheries."

	Overview of 4 reforms	
Inc	lustrial policy to enhance agriculture	Secologica 1
Establishing regional government supported institutions (farmland consolidation banks)	The farmland consolidation for farmers improving farming efficiency and the prevention of abandoned cultivated lands will be accelerated.	Creating strong, aggressive agriculture - Developing systems to allow farmers rich with
Revising the Farming Income Stabilization Measures	Direct payments for rice that are not suitable for structural agricultural reform will be abolished.	originality and ingenuity to make challenging efforts
The full utilization of paddy fields and the rice policy reform	Promote production of the crops on demand, such as wheat, barley, soybeans and rice for feed, instead of staple rice. Develop environments so that motivated farmers can produce crops according to decisions on their own.	- Each region will be united to maintain and demonstrate multifunctionality of
		agriculture

Local policy to maintain and demonstrate multifunctionality

Creating a Japanese-style direct payment system

The government will support local activities and farming operations to maintain and demonstrate the multifunctionality of agriculture. The government will also reduce the burden on farmers motivated to expand production in order to support structural reform. agriculture - Maintaining and improving the food selfsufficiency ratio and capacity and establishing food security

Source: MAFF

# 1 Global food supply and demand, and efforts for establishing food security (1) Global food supply/demand trends

- O Among grain prices, international soybean and corn prices declined from record highs in 2012 in response to prospects for good harvest in the United States in 2013.
- O Global food demand is expected to increase 1.6-fold from 4.47 billion t. in 2000 to 6.93 billion t. mainly due to population and GDP growth.
- O Global grain output has increased thanks to the yield improvement through technology innovations while the harvested area has leveled off. In the future, the yield is expected to slow down growth. Over the medium to long term, the global food supply-demand balance is feared to tighten due to global population growth.





#### (2) Efforts for establishing food security



Projection for 2050" Note: In accordance with World Bank data (per capita gross national

income) for 2000, countries are divided into three groups -developed countries (\$9,266 or more), intermediate countries (\$756-9,265) and developing countries (\$755 or less).

- O Unusually high temperatures and drought in the United States in FY 2012 led Japan to increase feed grain supplies (including corn) from South America and other regions. Even in FY 2013, Japan made further progress in diversifying feed grain supply sources.
- O Japan depends on imports from some countries for most of its urea, phosphate ore, potassium chloride and other chemical fertilizer material supplies. The government will promote efforts to effectively use untapped domestic resources and correct compost consumption.
- O As large-scale agricultural investments into developing countries triggered by global food price hikes provoked international concerns, Japan at the 2009 G8 Summit proposed promoting investments for harmonized benefits to recipient countries, local communities including small farmers, and investors. In 2010, relevant international agencies drew up the Principles for Responsible Agricultural Investment (PRAI). The Committee on World Food Security has commenced consultation to secure broader ownership of the Principles by relevant stakeholders.



Source: Prepared by MAFF based on MOF, "Trade Statistics" Note: FY 2013 data include preliminary data for March 2014.



- O MAFF created the Food Security Guideline in case of Emergency, providing measures that it should take when food import interruptions or any other factor will affect food supply.
- O The guideline puts in order measures to secure minimum necessary food supply for the people according to emergency levels.
- O In February 2014, MAFF created the Guidebook of Household Reserves in case of Emergency based on the Guideline, indicating a list of household food reserves and how to reserve food.



Source: MAFF, "Food Security Guideline in case of Emergency"

#### (3) Trends in agriculture trade negotiations

Source: MAFF, "Guidebook of Household Reserves in case of Emergency"

- O Japan has signed economic partnership agreements with 12 countries and one region (as of the end of March 2014). Japan's EPA negotiations are ongoing with Mongolia, Canada, Colombia and the European Union, a Japan-China-South Korea FTA and RCEP (the Regional Comprehensive Economic Partnership). Japan confirmed the substantive agreement on the bilateral EPA negotiations with Australia at a bilateral summit meeting in April 2014.
- O Japan has participated in the TPP (Trans-Pacific Partnership) negotiations since July 2013.
- O On the Doha Round negotiations under the World Trade Organization, Ministers concluded the Ninth WTO Ministerial Conference in December 2013 with agreement on a package of: some parts of Agriculture, Agreement on Trade Facilitation, and Development and LDC issues.



RCEP RCEP (Regional Comprehensive Economic Partnership) is an EPA framework between the 10 ASEAN Member States and its Free Trade Agreement Partners (Australia, China, India, Japan, South Korea and New Zealand). Based on the consideration in the ASEAN + 3 (China, Japan and South Korea) meeting and the ASEAN + 6 (Australia, China, India, Japan, South Korea and New Zealand) meeting, the 10 ASEAN Member States and its Free Trade Agreement Partners (Australia, China, India, Japan, South Korea and New Zealand) meeting, the 10 ASEAN Member States and its Free Trade Agreement Partners (Australia, China, India, Japan, South Korea and New Zealand) set out to establish a new regional comprehensive EPA/FTA.

ASEAN Members: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam

TPP Participating countries: Singapore, New Zealand, Chile, Brunei, United States, Australia, Peru, Vietnam, Malaysia, Canada, Mexico, Japan Source: MAFF

#### 2 Japan's food self-sufficiency ratio trends

- O The food self-sufficiency ratio on a calorie supply basis has stayed around 40% since FY 2000. The ratio in FY 2012 remained unchanged from 39% in the previous year as a rice demand decline coincided with an increase in wheat and soybean output.
- O The food self-sufficiency ratio on a production value basis has stayed around 70% over recent years. The ratio in FY 2012 rose by 1 percentage point from the previous year to 68% due primarily to an increase in rice and beef production value.
- O It is also important to maintain and improve the food self-sufficiency potential indicating latent food supply.



# 3 Food consumption trends and promotion of Shokuiku (food education)(1) Food consumption trends

O In the future, single-member households are expected to greatly increase, with couple-and-child households decreasing. Those aged 65 or more are expected to account for a growing share of single-member households.

Breakdown of ordinary households by type and of single-person households by age group

(Breakdown of ordinary households by type )



Sources: MIC, "Population Census;" the National Institute of Population and Social Security Research, "Household Projections for Japan (nationwide estimates)" (Breakdown of single-person households by age group)



Sources: MIC, "Population Census," the National Institute of Population and Social Security Research, "Household Projections for Japan (nationwide estimates)"

- O Food consumption by single-member and elderly households features a fall in fresh food and an increase in ready-made meals, beverages and liquors.
- O These households' consumption has increased for tempura and fried foods among ready-made meals and for coffee drinks among beverages, indicating they prefer more convenient meals.

Real food consumption changes at single-person households 65 years of age and over (Comparison between 2003 and 2013)



Sources: Prepared by MAFF based on "Family Income And Expenditure Survey (nationwide, singleperson households, breakdown by use)" and "Consumer Price Index" by MIC.

#### (2) Promotion of Shokuiku (food education)

Top three products in real consumption growth at single-person households 65 years of age and over (Comparison between 2003 and 2013)

(Unit: yen/yea:				
	Product	Increase in value		
food	Tempura and fried food	937		
ked	Salad	792		
Coo	Prepared bread	704		
ges	Coffee drinks	1,029		
verag	Fruit and vegetable juice	886		
Be	Tea drinks	703		

Sources: Prepared by MAFF based on "Family Income And Expenditure Survey (nationwide, single-member households, breakdown by use)" and "Consumer Price Index" by MIC.

Note: Top three products among those excluding products that cannot be separated from others.

- O Shokuiku (food education) is an important initiative for fostering people who can acquire knowledge about food and food-selecting capacity and practice healthy eating habits.
- O "The Second Basic Plan for Shokuiku Promotion" (created in 2011) based on the Basic Act on Shokuiku sets Shokuiku targets towards FY 2015. In December 2013, the target of increasing domestically produced food ingredients' share of school lunches to 80% or more by FY 2015 (from 77% in FY 2012) was added.
- O The "Japan Revitalization Strategy" (Cabinet Decision on June 2013) included the target of raising the rate of people experienced agricultural, forestry and fishery activities from 31% of the total people in Japan in FY 2012 to 35% by FY 2018.

#### Initiatives for agricultural experiences and local consumption of local produce

1. Practice of Shokuiku by an agricultural high school

-- An integrated community project covering kindergarten, elementary, junior high and senior high schools -

Kenebetsu district in Nakashibetsu, Hokkaido Prefecture, is a region that has kindergarten, elementary, junior high and senior high schools even though it has a small population of 1,000. Hokkaido Nakashibetsu Agricultural High School invites local kindergarten, elementary and junior high school students to its "Shokuiku school" at its farm for an integrated community food and agriculture education project including vegetable production and livestock farming practices. At the "Shokuiku school," Agricultural High School students serve as teachers to improve learning effects for younger students.

2. An NPO promotes local consumption of local produce and protects local cultures Tomon-no-kai, an NPO in Kakegawa, Shizuoka Prefecture, works to maintain and promote dishes made from local products and traditional event meals and communicates the attractiveness of agriculture and rural areas to the public through agricultural experiences and local farm stands.

As the region produces traditional sugar, salt, vinegar, soy sauce and miso bean paste, the NPO promotes dietary cultures using these products.

The Minami Enshu Tomon-no-sato information center, a countryside museum serving as the NPO's base, attracts some 90,000 visitors annually, promoting local consumption of local farm powder with a grindstone) produce and communicating local cultural information to the public.



Students practice farming at the school farm



Students make rice dumplings using local products (making rice

#### 4 Food industry trends

- O The domestic production value of the food industry has remained in decline since the late 1990s against the background of aging and the like.
- O In order to achieve sustainable development amid the trend, the food industry should explore new domestic demand for nursing care foods (texture modified foods) and the global market which is expected to expand.
- O The working team composed of food-related businesses tested a measure to extend food product delivery deadline (to move the deadline for delivery to retailers from the end of the first one-third of the best-before period to the end of the first half of the period for some beverages and confectionery products in certain regions) and identified a considerable effect of reducing food losses (by about 40,000 tons or some 8.7 billion yen for beverages and confectionery products with a best-before period of 180 days or more.)



Trends of domestic food industry production value

### 5 Ensuring food safety and consumer confidence

#### (1) Efforts for improving food safety



Outline of pilot project on extending delivery deadline

Source: MAFF

Note: The best-before period is assumed at six months.

- O Risk management based on scientific evidence targeting throughout the food chain, from production to consumption, is essential to improve food safety.
- O The GAP (Good Agricultural Practices) scheme has been promoted in the production phase. The number of GAP-introducing production regions has steadily increased.
- O The HACCP (Hazard Analysis and Critical Control Point) introduction has been promoted. As the HACCP introduction rate was low among small and medium-sized enterprises, the Act on Temporary Measures for Enhancing the Control Method of the Food Production Process was revised in June 2013 to allow SMEs to steadily tackle improvement of food safety.





manufacturing industry"

Image of revised Act on Temporary Measures for Enhancing the Control Method of the Food Production Process



Source: MAFF

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

#### (2) Animal epidemic prevention and phytosanitary measures

- O Shoe sole disinfection, baggage checks with quarantine detector dogs, questions on overseas and domestic contacts with livestock animals and other measures are implemented for immigrants to prevent overseas infectious diseases of livestock animals from entering Japan.
- O In order to expand and enhance sanitary control at the farming phase, an advanced sanitary control approach (farm HACCP) is promoted to introduce the HACCP concept at livestock farms and control risk factors at farms.
- O Measures have also been taken to prevent overseas plant pests from entering and spreading in Japan.



#### (3) Efforts to secure consumers' confidence

- O From October 2013, reports stated that food ingredients were falsely labelled at hotels, department stores, etc. A meeting of relevant government ministries and agencies on food labeling and related problems compiled a policy for correcting food labeling to restore consumers' confidence.
- O In June 2013, the Food Labeling Act was officially announced (for effectuation in two years) to integrate labeling provisions in three food labeling-related acts (the Food Sanitation Act, the Act on Standardization and Proper Quality Labeling of Agricultural and Forestry Products, and the Health Promotion Act) to secure safe food consumption and opportunities for ordinary consumers' voluntary, reasonable food selection.

Overview of measures to correct food labeling, etc.



Source: MAFF

Name Snack confectionerv Raw Potato (non-genetically-modified), vegetable fat and oil, common salt, dextrin, lactose, protein hydrolysate materials (including wheat), yeast extract powder, powder soy sauce, seafood extract powder (including crabs and shrimps), spices, seasoning agents (including amino acid), egg shell calcium Best-before date Written on the right of this side Content 81g Preservation method Avoid direct sunlight and hot/humid places for preservation Manufacturer's Seller XXXXXX Co., Ltd. 39 mark Address JAS Act Major nutrients per pack (81g) (our analysis data) 483 kcal Carbohydrate 37.6 g Energy Food Sanitation Act 3.8 g Sodium 330 mg Protein JAS Act and Food 35.3 g Salt equivalent 0.8 g Fat Sanitation Act Health Promotion Act



Example of labeling under present law

#### 1 Promoting structural agriculture reforms

(1) Agricultural output and income trends

- O Japan's total agricultural output has trended down since 1984, standing at 8.5 trillion yen in 2012. By item, vegetable output has increased from 1984, while rice, Livestock and its products and fruits and nuts output has trended down.
- O Agricultural income has trended down, standing at 3.2 trillion yen in FY 2011, about half the FY 1990 level. While the agricultural output value has trended down, the share for intermediate input, etc. has increased.



Source: MAFF, "Statistics of Agricultural Income Produced"

- Note: 1) Others covers wheat and barley, miscellaneous cereals and pulses, potatoes and sweet potatoes, flowers, industrial crops, other crops and processed agricultural products.
  - 2) In parentheses are percentage shares of total agricultural output.



- Source: MAFF, "Economic Accounts for Agriculture and Food Related Industries"
- Note: "Intermediate input, etc." covers intermediate input (costs of goods (including materials) and services required for production), fixed capital consumption and indirect taxes.
- (2) Establishing regional government supported institutions for farmland consolidation
- O As the mobilization of farmlands has made steady progress, the share of farmlands used by business farmers in the total farmland area has increased, standing at 49% in 2010.
- O The abandoned cultivated land area has trended upward due mainly to the retirement of elderly farmers, standing at 396,000 ha, almost equal to the Shiga Prefecture area, in 2010. Particularly, abandoned cultivated land owned by land tenure non-farm households has increased, accounting for 46% of the total abandoned cultivated land area in 2010.



Source: MAFF surveys

Note: "Farmlands used by business farmers" are those managed by certified farmers (including specified agricultural corporations), farmers who reach the level of schematic plan made by municipal government, specified farming communities (from FY 2003) and community-based farm cooperatives (managing and operating farming integrally within respective communities) (from FY 2005) based on ownership, land-utilization rights or contracts. Changes in abandoned cultivated land area by farm household category



Source: MAFF, "Census of Agriculture and Forestry" Note: In and before 1985, farm households had not been divided into commercial and noncommercial farm households.

- O Regional government supported institutions will be established in each prefecture as a reliable intermediary manager of farmlands to accelerate farmland consolidation to business farmers.
- O Regional government supported institutions (1) rent farmlands, (2) improve infrastructure if necessary, (3) lease the land to business farmers, which contribute to expanding farm size and consolidating of their farmlands, in order to optimize local land use.



#### Source: MAFF

#### (3) Trends of business farmers

O The number of corporation farms has increased and their share of the total farmland area has increased.
 O The entry of farms into the agriculture sector is in progress at the quintuple pace after the revision of Agricultural Land Act took place on 2009. To be precise, 1,392 farms newly entered in four years (436 firms in about seven years before the revision).



Changes in the number of corporation farms through leasing farmland

(Increases after the 2009 Agricultural Land Act revision)







1980 1985 1990 1995 2000 2005 2010 2013 Sources: Prepared based on MAFF, "Census of Agriculture and Forestry," "Survey on Movement of Agricultural Structure" and "Statistics on Cultivated Area and Planted Area"

1.5

Notes: 1) Corporation farms are those for sales among agricultural holdings other than farm households. They had been limited to corporations until 1990 and have included agricultural producers' cooperative corporations, agricultural cooperatives, special private corporations, etc. since 1995.

2.5

1.6

2) Corporation grass farms are covered for 2013.

2.0

2.8

0.4 0.4

2.8

0.4

4

2

0

2

- O As core persons mainly engaged in farming are aging, Japan's farming population is very unbalanced. Of these persons in 2013, those aged 65 or more accounted for 61% and those aged less than 50 for 10%.
- O The number of new farmers in 2012 totaled 56,000 (down 3% from the previous year). By type of employment, new entries numbered 3,000 (up 43% from the previous year) under the effects of new farmer promotion measures including the farming grant for young farmers. By age group, new farmers aged 39 or less accounted for 15,000 (up 6% from the previous year).



O Women farmers accounted for 42% of core persons mainly engaged in farming in 2013, playing a key role in invigorating local agriculture and promoting AFFrinnovation through processing and marketing of agricultural products. Women farmers who take advantage of their wisdom for various activities and develop farming with high goals and visions are faring well at various locations in Japan.

O In November 2013, the "Nougyou-Joshi Project" (Campaign for women farmers to be more active in agricultural business by cooperation with various industries to tap women farmers' knowledge and experiences) was launched for cooperation between women farmers and companies to develop new goods and services. At the end of FY 2013, 93 women farmers and 10 companies were participating in the project.

#### A woman farmer attempting proactive business expansion efforts

Hiroko Taka of NOTO Taka Farm in Nanao City, Ishikawa Prefecture, launched farming along with her husband on Notojima Island in 2000. The couple now grow about 300 varieties of traditional, Western, herb and other vegetables.

Taka was among the first students at the "Noto Nanano Josei Kigyojuku" school sponsored by the Nanao municipality to train women willing to start up businesses. Being ambitious to promote AFFrinnovation, she has founded Noto Daichi as the farm's sales arm and Riraku for growing, processing and marketing edible flowers.

In the future, she aims to promote Noto food materials inscribed on the **Globally Important** Agricultural Heritage Systems (GIAHS) list and nurture young people as new farmers.



#### "Nougyou-Joshi Project" to publicize women farmers' wisdoms in society

The "Nougyou-Joshi Project" started in November 2013 to enhance women farmers' presence and increase women choosing to engage in farming by linking women farmers' wisdoms to various companies.

The project includes individual projects under implementation for women farmers and companies to develop new products (including fast food items, light trucks, tours and farming wear).



A fast food development project cooperating with Subway Japan Inc.





A farming wear development project cooperating with mont-bell Co.

#### 2 Developing and conserving agricultural production infrastructure

- O Of paddy fields totaling 2.47 million hectares in Japan, about 60% have been integrated into 30-are or larger partitions. Only one-tenth have been integrated into large (1-hectare or larger) partitions. About one-third of integrated paddy fields have unfavorable drainage conditions. The government should promote the integration and improvement of paddy fields in cooperation with the regional government supported institutions ("Farmland Banks") to accelerate farmland integration for business farmers and increase value added for agriculture.
- O Agricultural irrigation facilities have been deteriorating on a nationwide basis. About 20% of major irrigation facilities have already exceeded their respective standard durable years. In order to make the national land more resilient, Japan should promote measures to lengthen service lives and enhance resistance against earthquakes for deteriorated irrigation facilities and measures against torrential rains.

#### State of paddy fields improvement (2012)

 Paddy fields totaling 2.47 million hectares

 Large-scale
 Integration-completed paddy fields:

 0,22 million hectares
 1.56 million hectares (63%)

 Before-integration paddy fields:
 0.91 million hectares (37%)

 Favorable water drainage conditions
 Unfavorable drainage conditions

 1.07 million hectares
 0.49 million hectares

#### Multipurpose paddy fields

Sources: MAFF, "Statistics on Cultivated Area and Planted Area" and "Basic Survey on Agriculture Infrastructure Information" Reasons for business farmers to reject cultivation requests



Source: MAPF surveys 0 20 40 60 80 Note: Interviews with business farmers who rejected requests from farmland owners (November 2010)

# 3 Promoting greater value added for agriculture (1) Promoting AFFrinnovation

#### Facilities that have already exceeded the standard durable years: State-run 3.1 trillion yen facilities (17% of total) 0.8 Prefecture-run dother facilities Adding those that State-run will exceed the facilities Total at standard durable 0.8 17.9 years in the next Prefecture decade to the (Unit: trillion un and above: yen) other 5.6 trillion yen facilities (31% of total) 1.7

State of outdated major irrigation facilities

Source: MAFF, "Basic Survey on Agriculture Infrastructure Information" Note: An asset value of major irrigation facilities (agricultural irrigation facilities benefitting from 100 hectares or more) (on a reconstruction cost basis) (2009)

- O Promote AFFrinnovation based on collaboration between people in Agriculture, Forestry, and Fisheries and diverse business operators through full-fledged deployment of Agriculture, forestry and fisheries Fund corporation for innovation Value-chain and Expansion Japan (A-FIVE). (At the end of March 2014, investment had been decided on in 41 sub-funds and eight enterprises composed of farmers and companies from other industries.)
- O In order to meet new domestic needs arising from the arrival of a super-aged society and the growing health trend, farmers should cooperate with companies in healthcare and welfare sectors to develop functional agriculture, forestry and fisheries products including food as well as nursing care foods (texture modified foods) and to form medicinal plants production fields.

Full implementation of the A-FIVE initiative



#### An initiative for cooperation with a medical/welfare firm

Cooperating with a medicinal plant user to form production fields Human Life Tosa in Ochi Town, Kochi Prefecture, controls production, processing and shipment of medicinal plants under a contract with Tsumura & Co. The integrated control allows Human Life Tosa to highly process and confect medicinal plants at production sites to improve value added to these products and stabilize producers' income.

#### (2) Initiatives for expanding agriculture, forestry and fishery products and foods exports

- O In 2013, exports of Japan's agriculture, forestry and fishery products and foods increased 22% from the previous year to 550.5 billion yen, the highest record since 1955 when export statistics began to be compiled.
- O MAFF released the Strategy to promote export of agriculture, forestry and fishery products and foods in August 2013 to expand exports of Japan's agriculture, forestry and fishery products and foods. In efforts to steadily implement the strategy, MAFF takes integrated approach of promoting the use of Japanese food as ingredients of world cuisines, expanding Japanese food culture and Japanese food industries internationally and promoting the export of Japanese food.



#### (3) Improving production and distribution systems



2020

Tea 5 billion yei

- In order to develop Japan's greenhouse horticulture towards the coming generations, MAFF will develop year-round Ο systematic production arrangements through the expansion of greenhouse sizes for saving costs and the exploitation of information and communications technology for advanced environmental control and will promote next-generation greenhouse horticulture using woody biomass and other local energy resources for breaking free from dependence on fossil fuels.
- The agriculture industry should develop new ideas using knowledge and know-how of other industries beyond its Ο traditional framework to enhance its competitiveness. MAFF will promote cooperation between the agriculture and business sectors in agricultural production, distribution, business management and other areas.



#### (4) Development, protection and extension of new varieties and technologies

- O Japan should take advantage of technological capabilities as its strength for promoting the development, protection and extension of new varieties and technologies and produce domestic farm and livestock products superb in quality and brand in various regions through cooperation among relevant parties including users.
- O Japan should promote new smart agriculture in which robot and information/communications technologies would be introduced for labor-saving, high-quality production.

## Development, protection and extension of new varieties

#### Development of "Akidawara" rice variety with triple features of high yield, good quality and good taste

The National Agriculture and Food Research Organization has developed the new rice variety of Akidawara that is close to Koshihikari in taste and yields 30% more than Koshihikari. The variety is more lodgingtolerant than Koshihikari and matured later, allowing farmers in Koshihikari-spread regions to extend harvesting season.



Comparison of lodging-tolerance (Left: Akidawara Right: Koshihikari)

## New agricultural initiatives using robot and information/communications technologies

**1 Development of automatic harvesting robots and assist suits** Stationary robots for automating the strawberry picking operation and assist suits for helping farmers in regions and processes where mechanization is difficult have been developed to save farming labor.



![](_page_18_Picture_11.jpeg)

Assist suit

2 Introducing information/communications technologies for growing high-quality mandarin oranges

Weather and other sensors are installed in an orchard to accumulate data to reform experience/intuition-based production into databased precision production. An information technology company is participating in demonstration tests to produce high-quality, high-sugar content mandarin oranges.

![](_page_18_Picture_15.jpeg)

A sensor installed in an orchard

#### 4 Production trends for major farm and livestock products

#### (1) Rice

- O Japan's total rice-planted area has levelled off at around 1.65 million hectares since 2008. A decline in staple rice has been offset by an increase in non-staple rice (including rice for feed and other new demands, and for processing).
- O Rice for restaurants and home-meal replacements accounted for about 30% of staple rice output in FY 2012.
- O The unit production cost of rice is lower for larger-scale production. The unit cost for the rice-planted area size of 15 hectares or more is 11,444 yen per 60 kilograms, 30% less than the average at 15,957 yen.

![](_page_18_Figure_22.jpeg)

Changes in total rice-planted area including paddies

![](_page_18_Figure_23.jpeg)

![](_page_18_Figure_24.jpeg)

#### (2) Wheat, soybeans

O Japan's wheat-planted area in 2013 came to 210,000 hectares, leveling off for the past decade.

- O In order to expand demand for domestically produced wheat, Japan should develop and diffuse new varieties linked to local dietary cultures and brands promoted jointly by producers and users, including "Sanukinoyume 2009" for Sanuki udon noodles and "Ayahikari" suitable for Ise udon noodles.
- O Japan's soybean-planted area has continued a downward trend since 2008 as farmers switched from soybean to other crops.
- O Soybeans must be available for processing into tofu soybean curd, natto (fermented soybeans) and other products. Therefore, soybean producers must adopt varieties meeting users' needs and expand production lots to secure homogenous supply.

Changes in wheat-planted area and wheat production

![](_page_19_Figure_6.jpeg)

![](_page_19_Figure_7.jpeg)

Changes in soybean-planted area and soybean production

Sources: MAFF, "Crop Statistics"

#### (3) Vegetables, fruits

- O Imported vegetables account for 2% of household consumption and 30% of those for processing and manufacturing uses. In order to maintain and expand demand for domestically produced vegetables, domestic production for processing and manufacturing uses should be promoted.
- O Fruit consumption has declined for all age groups other than the aged 70 or more group. The average fruit consumption for all age groups declined 14% in 10 years.
- O The development of and switching to varieties meeting consumers' various needs including tastiness and convenience for eating are important for expanding fruit consumption.

![](_page_19_Figure_13.jpeg)

Source: Surveys by MAFF Policy Research Institute

Changes in per capita daily fruit consumption by age group

![](_page_19_Figure_16.jpeg)

Source: MHLW, "National Health and Nutrition Survey"

#### (4) Flowers, tea

- O Japan's flower imports and exports in value have followed an upward trend. In 2012, imports increased 8% from the previous year to 54.5 billion yen and exports 22% to 8.6 billion yen.
- O Cut flower consumption has declined over the past decade. Consumption is particularly low for consumers aged below 30. The establishment of Flower Valentine and other new commemoration days and the diffusion of flower growing must be promoted to expand flower consumption.
- O Japan's domestic tea consumption has decreased over recent years. The tea growing area has decreased by 8% in 10 years from 2003 to 45,000 hectares.
- O The development of low-caffeine tea and other products meeting various needs, and research, development and diffusion efforts for new tea uses must be promoted to expand tea consumption.

10,000

Tea growing area

8

![](_page_20_Figure_5.jpeg)

Source: MIC, "Family Income and Expenditure Survey (nationwide multiple-member households)"

#### (5) Sugar crops, potatoes

- O Japan's sugar beet-planted area has decreased over recent years due mainly to labor shortages. The sugar beet yield has been recovering since a decline in 2010. But the sugar content has been low due to high temperatures and humidity.
- O Japan's sugar cane-harvested area has levelled off over recent years, standing at 23,000 hectares for 2012 crops. The issue is a steady production recovery from poor crops in 2011 and 2012 caused mainly by typhoons and a disease and pest outbreak.
- O Japan's potato production in 2012 increased by 5% from the previous year to 2.5 million tons.
- O Japan's sweet potato-planted area has declined slightly due to aging of producers. Excellent seeds and seedlings should be adopted to improve the yield to realize sweet potato production for each use in a manner to meet demand.

![](_page_20_Figure_12.jpeg)

Sources: MAFF, "Crop Statistics"

![](_page_20_Figure_14.jpeg)

Unprocessed tea

Changes in tea growing area and tea production

(right scale)

Domestic green tea consumption 10,000

 $\frac{tons}{7}$  12

8.7

8.5

10

8

Changes in sugar cane production and yield

![](_page_20_Figure_16.jpeg)

Sources: MAFF, "Crop Statistics"

#### (6) Livestock products

- O While the number of livestock farm households has declined over the past decade, the number of animals being raised per livestock farm household has increased.
- O While milk and milk product consumption has firmed over recent years, raw milk production has followed a downward trend. As beef, pork, chicken and hen egg consumption has firmed, production has leveled off.
- O MAFF has supported the stable supply expansion for raw milk for cheese for which demand has increased over recent years.
- O Livestock farming is structurally vulnerable to feed price fluctuations as feed costs account for as much as 40-50% of total production costs for cow and 60-70% for pigs and hen. Therefore, MAFF will expand the domestic production and utilization of feed and promote farming business stabilization programs meeting the characteristics of livestock categories.

Changes in the numbers of livestock farm households and animals being raised (Units: households, animals, %)

		Dairy	cattle	Beef cattle					
		(Hokkaido)	(Excluding	(Cows for	(Fattening	(Dairy cattle	Pigs	Broilers	Layers
		(HOKKaldo)	Hokkaido)	breeding)	cattle)	for beef)			
of farm lds	2003	9,200	20,600	84,500	14,400	7,740	9,430	2,839	4,340
umber stock useho	2013	7,130	12,200	53,000	10,000	5,810	5,570	2,420	2,650
Nu live	Change	-22.5	-40.8	-37.3	-30.6	-24.9	-40.9	-14.8	-38.9
of eing l	2003	863,500	855,300	642,900	729,800	1,101,000	9,725,000	103,729	137,299
umber nals b raised	2013	806,800	616,600	618,400	789,800	873,400	9,685,000	131,624	133,085
Nu anir	Change	-6.6	-27.9	-3.8	8.2	-20.7	-0.4	26.9	-3.1
: of eing er old	2003	93.9	41.5	7.6	50.7	142.2	1,031.3	36.5	31.6
umber nals b ised p usehc	2013	113.2	50.5	11.7	79.0	150.3	1,738.8	54.4	50.2
Nı anir ra ho	Change	20.6	21.7	53.9	55.8	5.7	68.6	49.0	58.9

Sources: MAFF, "Statistics on Livestock ," "Statistics on Livestock Products Marketing"

Note: 1) Layers are those raised by households having 1,000 or more layers.

2) Broilers in 2013 are those raised by households with annual shipments totaling 3,000 broilers or more.

	(Units: 1,000 tons, %)							
		Milk, milk products	Beef	Pork	Chicken	Eggs		
uo	2002	8,380	520	1,246	1,229	2,529		
oducti	2012	7,608	514	1,295	1,457	2,507		
Pro	Change	-9.2	-1.2	3.9	18.6	-0.9		
s	2002	3,783	763	1,101	662	120		
mport	2012	4,191	722	1,141	736	123		
Ι	Change	10.8	-5.4	3.6	11.2	2.5		
tion	2002	12,170	1,333	2,350	1,898	2,647		
dunst	2012	11,718	1,227	2,447	2,204	2,629		
Col	Change	-3.7	-8.0	4.1	16.1	-0.7		

#### Changes in livestock production and consumption

Source: MAFF, "Food Balance Sheet"

Notes: 1) Estimates for FY 2012

2) Milk and milk products are in terms of raw milk.

![](_page_21_Figure_15.jpeg)

- Sources: MAFF, "Statistical Survey on Farm Management and Economy (Production Cost of Livestock)," "Statistics on Meat Marketing," "Statistical Survey on Farm Management and Economy (Management Statistical by Farming Type (individual management))"
- Notes: 1) Fattening cattle data represent a weighted average based on total production costs for castrated yearling feeder cattle, dairy male fattening cattle and hybridized fattening cattle and on the number of slaughter cattle.
  - Milk and fattening pigs data represent total production costs, and layer and broiler data indicate production costs by farming category.

#### 5 Promoting research and technology development

- O Arrangements should be developed to establish research priorities based on user needs and seamlessly promote all phases from basic research to commercialization to allow research achievements to be steadily commercialized.
- O MAFF has created the Promotion of Integration Research for Agriculture and Interdisciplinary Fields as a strategy for using medical, pharmaceutical, scientific, engineering and other technologies to enhance agriculture, forestry and fisheries to promote research projects where interdisciplinary cooperation is effective.

## Research and technology development initiatives using basic research and other achievements

## Development of sterilization technology to substantially reduce qualitative deterioration of liquid food

The HEF-AC (high electric field alternating current) technology has been developed to substantially reduce qualitative deterioration, which is caused by conventional heat treatment, by applying high-voltage electricity for a short time to liquid food products.

The technology can reduce the heating-induced change in color to onefifth of the change and vitamin C loss to one-tenth, compared with those caused by the conventional heating-based sterilization method and the vitamin C loss to one-tenth. A decision has been made to introduce this technology for manufacturing juice products.

![](_page_22_Figure_7.jpeg)

Image of interdisciplinary research promotion

![](_page_22_Figure_9.jpeg)

#### 6 Promoting agricultural production giving priority to environmental conservation

- O Over recent years, some 200,000 people have been annually certified as eco-farmers who try to integrally improve soil and reduce chemical fertilizer and agrichemical consumption in a bid to harmonize agricultural production with the environment and contribute to the sound development of agriculture.
- O The certified field area under the Certification system for the Organic JAS standards has been increasing despite a decline in the cultivated land area in Japan.

![](_page_22_Figure_13.jpeg)

Trends of certified eco-farmers

Trends of the certified field area under the certification system for the Organic JAS standards

(Unit: hectares)

		Domestic			
	Total	Paddies	Upland fields	Others	cultivated land area (1,000 hectares)
2010	9,084	2,998	6,076	10	4,609
2011	9,401	3,214	6,169	17	4,593
2012	9,529	3,149	6,365	16	4,561
2013	9,889	3,098	6,676	115	4,549

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

Note: The certified field area under the Certification system for Organic JAS standards is for April 1 each year. The domestic cultivated land area is for July 15 in the previous year of each year. "Others" include mushroom production fields.

#### Source: MAFF

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

#### 7 Agriculture-related organizations supporting agriculture

- O Major agriculture-related organizations to support farmers include agricultural cooperatives, agricultural committees, agricultural mutual relief organizations and land improvement districts that conduct operations contributing to the stability and development of farming and to stable food supply.
- O In order to draw a specific conclusion by June, the government will deepen discussions on how agricultural committees and agricultural cooperatives should be.

	J U	0
Organization name	M ajor duties	Number of organizations
Agricultural cooperatives	Agricultural cooperatives are mutual aid organizations that farmers and others voluntarily found for the purpose of increasing agricultural production capacity and improving farmers' economic and social positions. They implement such operations as the distribution of farm products and the provision of production materials.	723 cooperatives (as of March 31, 2012)
Agricultural committees	Agricultural committees are municipal administrative committees to permit farmland buying/selling and leasing deals, concentrate farmland uses, and prevent and eliminate idled farmlands.	1,710 committees (as of October 1, 2012)
Agricultural mutual relief organizations	Agricultural mutual relief organizations include agricultural mutual relief associations for regional mutual relief operations and their prefectural federations for insurance operations, implementing the agricultural disaster compensation system.	<ul> <li>235 agricultural mutual relief associations</li> <li>38 federations of agricultural relief associations</li> <li>(as of June 3, 2013)</li> </ul>
Land improvement districts	Land improvement districts are organizations founded by regional farmers to develop regional irrigation and drainage facilities, implement land improvement projects such as farmland partition adjustment, and maintain and manage land improvement facilities.	4,869 districta (as of March 31, 2013)

#### Overview of major agriculture-related organizations

#### Agricultural cooperatives trying to enhance sales capacity

Realizing product development and sales channel expansion

JA Chikuzen Asakura in Asakura City, Fukuoka Prefecture, has created a division specialized in developing new products and expanding sales channels. The division has created direct and other sales channels. It also accepts irregular persimmons and figs and processes them into persimmon chips and fig jam for sales.

![](_page_23_Picture_8.jpeg)

Processed farm products

Source: MAFF, "Comprehensive Agricultural Cooperative Statistics" and MAFF survey

Note: The number of agricultural cooperatives is as compiled in the Comprehensive Agricultural Cooperative Statistics.

# 1 Maintaining and demonstrating multifunctional roles of agriculture and rural areas (1) Maintaining and demonstrating multifunctional roles of agriculture and rural areas

- O According to the population projection (in 30 years), population will decrease in all Japanese prefectures. Particularly, municipalities in hilly and mountainous regions will see a sharp population drop. In municipalities where agriculture, forestry and fisheries workers have larger shares, the population decline will be more rapid.
- O As the population decline is projected to accelerate in rural areas, agricultural production and joint activities developed over a long period of time are feared to weaken, with regional resources and settlement infrastructure collapsing.

Municipal population indexes in 2040 (100 for 2010)

More than 90 70-90 Less than 70

Source: Prepared by MAFF based on "Population Projections for Japan by Region (March 2013)" released by the National Institute of Population and Social Security Research Changes in municipal population indexes (By share for agriculture, forestry and fisheries workers)

![](_page_24_Figure_8.jpeg)

Source: Prepared by MAFF based on "Population Projections for Japan by Region (March 2013)" released by the National Institute of Population and Social Security Research

- O Agriculture and rural areas have various roles including not only food supply but also national land conservation, water recharge, biodiversity conservation, good landscape formation and cultural succession. The entire people have benefitted from these roles.
- O Rice terraces, canals and irrigation ponds with long histories and traditions have formed beautiful rural landscapes against the backdrop of locally nurtured cultures and should be conserved and inherited as regional resources by future generations.

#### Ground water recharge function

![](_page_24_Picture_13.jpeg)

#### Rice terrace conservation initiative

Higashi-ushirobata in Nagato City, Yamaguchi Prefecture, has a beautiful landscape where extended rice terraces are harmonized with the Sea of Japan.

A community-based farm cooperative undertakes the maintenance and management of rice terraces, producing rice without pesticides and chemical fertilizers. An incorporated nonprofit organization uses an abolished school for exchanges with urban residents and children's on-site training to help invigorate the regional community.

![](_page_24_Picture_17.jpeg)

Newly designated sites by the Food and Agriculture Organization of the United Nations (FAO) as the Globally Important Agricultural Heritage Systems (GIAHS)

![](_page_24_Picture_19.jpeg)

The Kakegawa Region, Shizuoka Prefecture

![](_page_24_Picture_21.jpeg)

The Aso Region, Kumamoto Prefecture

![](_page_24_Picture_23.jpeg)

The Kunisaki-Usa Region, Oita Prefecture

#### (2) Present conditions of and measures against damage by wild animals

- O Crop damage by wild animals in FY 2012 increased by 0.4 billion yen from the previous year to 23.0 billion yen. Damage by deer and wild boars still remained great.
- O The number of municipalities having prepared damage prevention plans under the "Act on special measures for the prevention of damage due to wildlife" has increased to 1,369. The number of those having established teams for implementing measures to prevent damage by wild animals has risen to 745. But damage prevention efforts should be enhanced further.
- O Comprehensive regional measures under damage prevention plans have been promoted, including the capture of wild animals, the installation of invasion-preventing fences, the training of regional leaders, the utilization of wildlife meat and the development of new capturing techniques.
- O Relevant government agencies are cooperating in setting wildlife reduction targets and implementing thorough wildlife capture programs intensively.

![](_page_25_Figure_5.jpeg)

#### Preparation of damage prevention plans and establishment of damage prevention measure implementation teams

	Total number of municipalities	Number of municipalities having prepared damage prevention plans*	Number of municipalities having established damage prevention measure implementation teams
April 2008		40	0
April 2009		724	33
March 2010		933	58
April 2011	1,742	1,128	87
April 2012	(As of January 1,	1,195	418
October 2012	2013)	_	521
April 2013		1,331	674
October 2013		1,369	745

Source: MAFF

Note: \*Including those consulting with prefectural governments on damage prevention plans

#### (3) Maintenance of community functions and conservation of regional resources

- O It is important to support agricultural production undertakers, and maintain and enhance community functions in order to maintain and demonstrate the multifunctionality of agriculture and rural areas and invigorate rural communities.
- O The "direct payment to farmers in hilly and mountainous areas" has been provided for various activities including the prevention of farmers abandoning cultivated lands, the management of such facilities as canals and farm roads, and the planting of landscape-improving crops to maintain agricultural production and secure multifunctional roles in hilly, mountainous and other areas with unfavorable conditions.
- O The "payment for conserving farmland and water" has been provided to conserve and manage farmlands and farming water resources and improve the rural environment (community collaborative support) and to implement repair and renewal operations to lengthen the service lives of facilities (improvement support).
- O The "direct payment for environmentally friendly agriculture" has been provided for farming operations to reduce chemical fertilizer and agrichemical consumption by 50% or more in principle, prevent global warming and conserve biodiversity.

![](_page_25_Figure_15.jpeg)

Implementation of the direct payment to farmers

FY2007 FY2008 FY2009 FY2010 FY2011 FY2012 FY2013

Implementation of the payment for conserving farmland and water

![](_page_25_Figure_18.jpeg)

Source: MAFF

Note: Data for FY 2013 are estimates as of January 2014.

Note: Data for FY 2013 are estimates as of January 2014.

#### 2 Promotion of renewable energy

- O The rural area renewable energy act, enacted and promulgated in November 2013, is designed to promote renewable energy power generation using land, water, biomass and other rural resources to invigorate rural areas.
- O Industrialization using regional biomass is promoted to build biomass industrialized communities to enhance the local consumption of local renewable energy and develop towns and villages that are environmentally friendly and invulnerable to disasters.

![](_page_26_Figure_3.jpeg)

Electric Power Generation Harmonized with Sound Development of Agriculture, Forestry and Fisheries

#### 3 Harmonious coexistence and interactions between urban and rural regions

- O In order to meet the diversifying needs of urban residents, rural regions should explore new tourism demand by combining green tourism operations, including agricultural, forestry or fishery activities, with other tourism operations.
- O Children's activities in rural areas are useful for them to learn the importance of food, deepen understanding of rural communities and agriculture and develop their rich humanity and sociality through experiences with agriculture. These activities not only bring about such educational effects but also contribute to invigorating rural communities.
- O Paying attention to farming operations' contributions to health maintenance and improvement, welfare and other facilities are implementing initiatives for cooperation between agriculture, and healthcare and welfare services. Some companies have founded special subsidiaries for these initiatives.

![](_page_26_Figure_9.jpeg)

Number of regions accepting exchange projects	Specific initiatives for a	oricultural operations thr	ough special subsidiaries*
i tumber of regions decepting exchange projects	opeenie minuuives for ug	Encontant operations in	ough special substatutes

Source: MAFF

		Company A	Company B	Company C	Company D	Company E
	Parent's business operations	Housing construction and sales	Stationery manufacturing	Agricultural machine manufacturing	Logistics	Computer network system sales and maintenance
)	Location	Close to an urban zone	Agricultural park/facility complex	Agricultural zone	Abolished school	Urban zones and farmlands are mixed
)	Produced farm products	Vegetables (greenhouses, outdoor) (lettuce, asparagus, etc.)	Hydroponic culture (mainly salad spinach)	Hydroponic culture (vegetables)	Hydroponic culture (vegetables) Mushroombed	(Farming services under contract)
	Major sales channels	Distributors (sales under contract) Wholesale markets Agricultural cooperatives	Supermarkets, etc. (sales under contract)	Supermarkets, etc. (sales under contract)	Local markets Consignees (sales under contract)	-

Source: MAFF Policy Research Institute, "Physically Challenged People Working for Agriculture and Invigoration of Rural Areas" (released in October 2012)

Note: \*If a business owner founds a subsidiary for giving special considerations to employment of physically challenged people, those employed by the subsidiary may be deemed employed by the parent on certain conditions under the special subsidiary system to promote and stabilize employment of physically challenged people.

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#### 4 Promotion of urban agriculture

- O Urban agriculture plays various roles including the provision of fresh farm products and green and farming experiences and has growingly been expected over recent years to help prevent disasters.
- O Of farmlands within urbanization promotion areas, those designated as productive green zones have been generally conserved. But the others have been declining.
- O As urban residents seek to promote their health, find motivation in life and communicate with farmers through agricultural experiences, initiatives for farming-based lives are ongoing, including facilities for enjoying local farm products and citizen farms.

Changes in farmlands in urbanization promotion areas

![](_page_27_Figure_5.jpeg)

Sources: MIC, "Overview of Fixed Asset Prices;" MLIT, "Urban Planning Almanac"

#### Initiatives for farming-based lives

## A farming experience farm for elderly people

The Ishisaka Farm House in Hino City, Tokyo, has opened a farming experience farm for promoting elderly people's mental and physical health. It provides elderly people with opportunities to closely interact with farming through an "upland field farming course" and "meetings to enjoy natural blessings (through the production of miso bean paste, rice dumplings, konjac, etc.). Participants in these events have formed a community.

A welfare farm pursuing year-round employment of physically challenged people Kaze, an agricultural production corporation, in Tokorozawa, Saitama Prefecture, has employed physically challenged people as a Type-A business establishment for supporting continued employment. It has taken advantage of its urban location for allowing physically challenged people to commute by train for farming and marketing. It has introduced greenhouse farming for the year-round employment of physically challenged people.

![](_page_27_Picture_11.jpeg)

Three-generation exchange through konjac making

![](_page_27_Picture_13.jpeg)

Triple greenhouse introduced for physically challenged people

\*A Type-A business establishment concludes employment agreements to provide workplaces and vocational training services to people who have difficulties in working at ordinary companies. 1 Earthquake and tsunami damage and restoration/reconstruction efforts

- O The Great East Japan Earthquake inflicted damage worth 2,384.1 billion yen on the agriculture-forestry-fisheries sector (including 904.9 billion yen for the agriculture sector).
- O As for the tsunami-damaged farmlands totaling 21,480 hectares, restoration and salt removal have been being implemented to allow farming to be resumed in three years or by FY 2014 under the Basic Guidelines for Reconstruction of Agriculture and Rural Communities.
- O By the FY 2013 planting season, farming was allowed to resume for 13,470 ha (63% of the tsunami-damaged farmlands), almost attaining the target under the Basic Guidelines.

Agriculture restoration conditions after the Great East Japan Earthquake

![](_page_28_Figure_6.jpeg)

Source: MAFF

- Notes: 1) The six prefectures are Aomori, Iwate, Miyagi, Fukushima, Ibaraki and Chiba
  - 2) "Others" are farmlands subjected to the enlargement of partitions or coordination with town-building and other restoration/reconstruction projects.
  - 3) Farmland data as of January 31, 2014, farms data as of February 1, 2014
  - 4) Farms that have resumed farming include those that have resumed part or all of plowing, sowing and other operations, or of preparations for them.
- O MAFF has conducted demonstration research on land-extensive farming, greenhouse horticulture and other technologies in Miyagi Prefecture since FY 2011. Research results have diffused steadily, including those used at part of a strawberry production complex in a disaster-damaged site in Miyagi Prefecture.
- O In Iwaki City, Fukushima Prefecture, MAFF conducted demonstration research on flower growing and other technologies, including the new nutrient film technique (NFT) for stable year-round production of Eustoma grandiflorum in disaster-damaged areas.

Scheme for large-scale demonstration research on highly advanced agricultural technology

![](_page_28_Figure_15.jpeg)

Source: MAFF

Large-scale demonstration project (Iwaki City, Fukushima Prefecture)

![](_page_28_Picture_18.jpeg)

Establishing a new transplant technology suitable for hydroponic culture with the closed-type transplant production system with artificial light

![](_page_28_Picture_20.jpeg)

Developing a highquality/efficiency production system using the new nutrient film technique (NFT)

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

- O To secure distribution of safe agricultural and livestock products, radioactive cesium reduction measures, radioactive cesium concentration inspections, shipment restrictions and other measures have been combined to allow only products with a radioactive cesium below the maximum limit to be distributed.
- O As a result of these measures, detection cases of radioactive cesium exceeding the maximum limit has declined year by year. Moves to resume shipments have expanded.
- O The Ministry of the Environment and other relevant government agencies have cooperated in radioactive decontamination of farmland soil. MAFF has promoted research and development for effective and efficient decontamination techniques of farmlands.

## Results of the inspections on radioactive cesium levels in agricultural and livestock products (17 prefectures)

	FY2013 (Ap	oril 1, 2013, to Mar	Percentage of	Percentage of	
Category	Number of reported samples	Number of samples above the maximum limit	Percentage of samples above the maximum limit (%)	samples above the maximum limit in FY 2012 (April 1, 2012, to M arch 31, 2013) (%)	maximum limit until the end of FY 2011 <sup>*1</sup> (to March 31, 2012) (%)
Rice	10.99 million	28	0.0003	0.0008	2.2
Wheat and barley	592	0	0	0	4.8
Pulse <sup>*2</sup>	5,163	21	0.4	1.1	2.3
Vegetables	19,657	0	0	0.03	3.0
Fruits	4,243	0	0	0.3	7.7
Tea	447	0	0	1.5	8.6
Other cultivated plants (including buckwheat)	1,618	0	0	0.5	3.2
Raw milk	2,040	0	0	0	0.4
Meat and eggs (excluding wildlife meat)	194,945	0	0	0.003	1.3

Processing and shipment of Anpogaki persimmons resumed in Date, Fukushima for the first time in three years

The Date area in Fukushima was forced to refrain from processing persimmons into the local specialty product, Anpogaki, after the nuclear accident. Local stakeholders cooperated in decontaminating more than 250,000 persimmon trees, tested persimmon materials for radioactive contamination with the participation of

![](_page_29_Picture_8.jpeg)

Processing persimmons into Anpogaki

all relevant farming households and selected model zones where processing was permitted. Furthermore, they developed and introduced special nondestructive inspection equipment to secure the safety of the products after processing, resuming the shipment in December 2013 for the first time in three years.

Source: Prepared by MAFF based on materials from MHLW and local governments

Notes: 1) Products and regions for which radioactive cesium levels exceed the maximum limit are subjected to shipment restrictions or voluntary shipment suspensions.

2)\*1 The frequency of samples exceeding the maximum limit which was enforced in April 2012 \*2 Of pulse, 2012 soybean crops inspected in FY 2013 are counted into FY 2012 results.

O In efforts to support disaster-damaged regions, MAFF promoted sales fairs for food products from these regions and their proactive use in company dining rooms under the slogan of "Support by Eating." MAFF's and other dining rooms and shops also used and sold food products from disaster-damaged regions.

O Many foreign countries and regions tightened their import controls measures on Japanese agricultural, forestry and fishery products including food due to the nuclear Fukushima Daiichi power plant accident. As a result of the negotiation with those countries and regions, some of them have relaxed or lifted these control measures.

"Eating for support" campaign

![](_page_29_Picture_17.jpeg)

A private group sponsored a sales fair to support Tohoku reconstruction

![](_page_29_Picture_19.jpeg)

A MAFF cafeteria provided the "Tennotsubu" rice produced in Fukushima Prefecture

# Example of countries which have relaxed or lifted their import control measures

_
Ecuador
Lifted all import control measures in April 2013
Russia
Eased import control measures for all prefectures in April 2013
Vietnam
Lifted all import control measures in September 2013
Brunei
Eased import control measures for all prefectures other than
Fukushima Prefecture in October 2013
Australia
Lifted all import control measures in January 2014
EU
Eased import control measures by reducing products and
prefectures subject to safety certification requirements in April
2014

Source: MAFF

#### Summary

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

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

- Initiatives to maintain and improve Japan's food self-sufficiency ratio and potential
- Measures to achieve the target volumes for individual major products

#### II Measures to achieve stable supply of food

- Ensuring food safety and consumer confidence
- Promoting Shokuiku (food education), local consumption of local produce, etc.
- Sustainable development of food industry
- Establishing comprehensive food security
- Tackling international negotiations

#### III Measures for sustainable development of agriculture

- Utilizing regional government supported institutions ("farmland consolidation banks") to secure fine farmlands and to promote their effective use
- Nurturing and securing various farmers
- Implementing new farming income stabilization measures
- Developing and conserving agricultural production infrastructure, etc. to enhance competiveness and national infrastructure resilience
- Promoting measures to increase value added for agriculture
- Implementing production promotion measures
- Compensating for damage from agricultural disasters
- Promoting farming safety measures
- Promoting efforts to support sustainable agricultural production

#### **IV** Measures to support rural areas

- Maintaining and demonstrating multifunctional roles of agriculture and rural areas
- Expanding the introduction of renewable energy utilizing local resources
- Harmonious coexistence and interaction between urban and rural areas
- Promoting urban agriculture
- Conservation of rural community functions, local environments and resources

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

- Measures for full-scale reconstruction of agriculture and rural areas
- Restoration and development of farmlands and other production infrastructure
- Continuation and reconstruction of farming
- Restoration of production means using subsidies for agricultural production measures in response to the Great East Japan Earthquake
- Introduction of renewable energy
- Measures for rural areas
- Measures for the Accidents of the Fukushima Daiichi Nuclear Plant of Tokyo Electric Power Company
- Reconstruction Grant in response to the Great East Japan Earthquake
- VI Measures applying comprehensively to food, agriculture and rural areas

#### VII Measures for the reorganization of relevant organizations

## VIII Items necessary to comprehensively and methodically promote policies related to food, agriculture and rural areas

#### [Definitions]

#### 1. Basic statistical terminology

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

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

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

Terminology	Definition
Agriculture	An establishment that either performs agricultural production directly or on contract and fulfills one
management entities*	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	Individual management entities (farm household) or a single-household corporation (a farm
management	household that is incorporated).
entities	
Individual	Agriculture management entities that operates as a household. This category excludes
management	single-household corporations.
entities	
Corporation	Agriculture management entities that has been incorporated. This category includes
management	single-household corporations.
entities	

\*"Agriculture management entities" is described as "Farms" in this annual report.

#### (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	Earnings from agriculture-related production (earnings from businesses such as agricultural
agriculture-related	processing, country inns, restaurants and tourist farms, which are related to agriculture and managed
production	by individuals engaged in farming) - Expenditures from agriculture-related production (expenditures
	such as labor and material costs required for the aforementioned businesses)
Non-agriculture	Non-agriculture earnings (e.g. earnings from independent part-time nonagricultural businesses,
income	salaries and wages) - Non-agriculture expenses (e.g. expenses for independent part-time
	non-agricultural businesses, transportation expenses for commuting)
Production cost	The production cost is the total cost (combining property and labor costs) for production of farm
	products minus by-product values
Material cost	The material cost combines liquid goods costs (seeding, fertilizers, agricultural chemicals, heating,
	lighting, power and other materials costs) and depreciation costs for fixed goods (depreciable assets
	including buildings, automobiles, agricultural machines and production management equipment).
Land rent	The land rent for a crop subject to the survey is calculated by multiplying the actually paid farm rent
	by the contribution rate for the relevant crop.
Interest payment	Interest payments are classified by use of underlying loans and multiplied by a contribution rate for
	a crop subject to the survey to calculate the borrowed capital interest to be shouldered by the crop.
Family labor cost	The family labor cost is calculated by multiplying family working hours by an average hourly wage
	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
<b>T</b> 1 111	Report (by the Ministry of Health, Labor and Welfare).
Employed labor cost	The employed labor cost represents wages paid to workers employed on an annual, seasonal or daily
	basis for producing farm products. Boarding and material compensations are assessed based on
Empire empirel inter t	market prices. The cost includes rewards paid separately from wages.
Equity capital interest	The equity capital interest is calculated by multiplying equity capital – gross capital minus debt capital – by an annual interest rate of $40^{\circ}$
Dont for owned low d	capital – by an annual interest rate of 4%.
Kent for owned land	I ne rent for owned land is based on a rent for similar farmlands (having capabilities similar to the
	farmand for a crop subject to the survey) within the same region.

![](_page_32_Figure_2.jpeg)

![](_page_33_Figure_0.jpeg)

#### (4) Agricultural labor by farm household members

		Labor status			Household member		
		Engaged only in self-employed farming	Engaged self-employ and othe Mainly self-employed farming	in both ed farming er work Mainly other work	Engaged in other work only	Not engaged in any work	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
Status during regular hours	Other Engaged mainly in Engaged mainly housework and child rearing in work	Core pe mainly en farm (1) Popula mainly er in farm	(2) tion ngaged ning	Household members engaged in own farming	)		<ul> <li>mainly in farming), those who are working mainly in agriculture during regular hours.</li> <li>(2) Population mainly engaged in farming <ul> <li>Persons engaged only in self-employed</li> <li>farming, or persons who are also engaged in work other than farming but spend more time engaged in farming on a yearly basis.</li> <li>(3) Household members engaged in own farming</li> <li>Household members 15 years old and over who are engaged in self-employed farming for more than one day per year.</li> </ul> </li> <li>Full-time farmers <ul> <li>Among persons engaged in self-employed farming, those who are engaged in self-employed farming for more than 150 days per year</li> </ul> </li> </ul>

	Type of involvement in farming			New farmers
	Self-employed	Employed fulltime	Just entering	Defined as individuals who fulfill one of the
	farming	by corporations, etc.	farming	following conditions:
nt	Entrantata	6		(1) New self-employed farmers Members of farm households whose living
nde	after graduati	on from school		status has changed anytime within a year of the
St	arter graduati			survey date from "student" or "employed in other
				work" to "new graduate who has become a
er				farmer" or "a new farmer who changed
yed in oth work	New self-employed farmers	New	New entries Ployed mers	(2) New employed farmers
		employed		Persons engaged in farming who have been
		Tarmers		hired by corporations anytime within a year of
nple				the survey date and work for their employers for
Er				7 months a year or more.
	(1)			(3) New entries Persons who have started farming anytime
ork ther				within a vear of the survey date by securing land
owes / Ot				and funds on their own.
nous ring				- Entrants to farming soon after graduation from
in l rea				school
iged nild				Self-employed farmers who have changed
nga id cl				their status from "student" to "engaged mainly in
an		(2)	(3)	recently students
	Engaged in housework Employed in other Student and child rearing / Other work	Entrants to after graduati New self-employed in other work New self-employed farmers (1) (1)	Type of involvement in fa         Self-employed farming       Employed fulltime by corporations, etc.         Entrants to farming soon after graduation from school       Employed farming soon after graduation from school         New self-employed farmers       New employed farmers         (1)       (1)	Type of involvement in farming         Self-employed farming       Employed fulltime by corporations, etc.       Just entering farming         Entrants to farming soon after graduation from school       Image: Construct of the self-employed farmers       New employed farmers       New entries         (1)       (1)       (2)       (3)

#### (5) New farmers (definition used in the survey on Newcomers in Agriculture)

#### (6) Classification of agriculture area

(0) 01000110001011	-0
Terminology	Definition
Classification of	Classification of former cities, wards, towns, and villages (hereinafter referred to as
agriculture area	"municipalities") based on fundamental conditions (e.g. the rate of cultivated land or forest
	land and grazing land area, gradient of farmland) that define the structure of agriculture area.
Category	Standard index (fulfills one of the following conditions)
Urban area	- Former municipalities where the rate of DID is 5% or more of habitable land, and which have
	either a population density of 500 or more or have a DID population of 20,000 or more.
	- Former municipalities where the rate of residential area is 60% or more of habitable land, and
	which have a population density of 500 or more.
	Regions where the rate of forest land and grazing land are 80% or more of the total area are
	excluded.
Flat farming area	- Former municipalities where the rate of cultivated land accounts for 20% or more of the total
	area and the rate of forest land and grazing land account for less than 50% of the total area.
	However, areas where the total area of all paddy fields with gradients of 1/20 or more and
	upland fields with gradients of 8° or more account for 90% or more of the total area are
	excluded.
- Former municipalities where the rate of cultivated land accounts for 20% or more of th	
	area and the rate of forest land and grazing land account for 50% or more of the total area, and
	where the total area of all paddy fields with gradients of 1/20 or more and upland fields with
	gradients of 8° or more account for less than 10% of the total area.
Hilly farming area	- Former municipalities other than urban and flat farming area where the rate of cultivated land
	is less than 20% of the total area.
	- Former municipalities other than urban and flat farming area where the rate of cultivated land
	is 20% or more of the total area
Mountainous	- Former municipalities where the rate of forest land and grazing land is 80% or more and the
farming area	rate of cultivated land is less than 10% of the total area.
Notes: 1) Order of priorit	y: Urban area $\rightarrow$ Mountainous farming area $\rightarrow$ Flat and hilly farming area
2) As a rule, DII	O (Densely Inhabited Districts) are defined as areas where basic district units, as defined by the national
census, with po	pulations densities of 4,000 per km <sup>2</sup> or more are adjacent to each other and the total population of these
conjoined distric	ts is 5,000 or more.

3) Gradient refers not to the gradient of cultivated land per parcel, but to the main topographical gradient as grouped land.4) The combination of the hilly and mountainous farming area categories is referred to as hilly and mountainous area.

5) Former municipalities are those that were classified as of February 1, 1950.

#### (7) Agricultural regions nationwide

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

#### (8) Food self-sufficiency ratio

Terminology	Definition
Food self-sufficiency ratio	<ul> <li>This index indicates how much food for domestic consumption is being supplied by domestic sources.</li> <li>Self-sufficiency ratio for individual items: The following equation is used to calculate the self-sufficiency ratio on a weight basis for individual items.</li> </ul>
	Food self-sufficiency ratio calculation equation         Self-sufficiency ratio =       Domestic production volume         =       Domestic production volume
	<ul> <li>Domestic production volume + Import volume - Export volume ± Fluctuations in inventory</li> <li>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.</li> <li>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> (2010), 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.</li> <li>Total food self-sufficiency ratio on production value basis: Weight values are converted to 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.</li> <li>Feed self-sufficiency ratio: This index indicates how much feed is being supplied by domestic sources, calculated in</li> </ul>

#### 2. Basic Terminology

2. Dusie reminore	67
Abandoned	Abandoned cultivated land represents a section in the statistical survey conducted by the
cultivated land	Ministry of Agriculture, Forestry and Fisheries. In the Census of Agriculture and Forestry,
	it is defined as land that was cultivated in the past but has not been farmed for more than a
	year and will not be farmed for the next several years. Land that has not been farmed for
	more than a year but may be farmed in the next several years is called unplanted land and
	also includes cultivated land under management.
AFFrinnovation	AFFrinnovation means adding value to agricultural products, forest products and fishery
	products in an innovative way, making new combinations, or creating a value chain.
Agricultural	These facilities are roughly divided into two types irrigation facilities for providing
irrigation facilities	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.
Agricultural	According to the Agricultural Cooperative Act, more than three farmers are necessary to
producers'	establish such as corporation. These corporations are meant to facilitate cooperation in
cooperative	agricultural production between cooperative members and increase common profit.
corporation	There are two types of these corporations. One aims to establish communal facilities for
1	equipment and resources or promote communalization of agricultural operations, and the
	other aims to manage a corporation agricultural business such as farming. Both are called
	agricultural producers' cooperative corporations.
Agricultural	This is a legal person that can acquire rights to farmlands and satisfy all of the following
production legal	requirements: (1) Requirements for incorporation (a stock corporation (not a publicly
person (or	traded company), a membership company or agricultural producer's cooperative
corporation)	corporation), (2) Requirements for business operations (main business is farming), (3)
i ,	Requirements for members of the corporation (farming people account for at least three
	quarters of the voting rights), (4) Requirements for executives (the majority of executives
	are engaged in farming full time).
ASEAN	ASEAN stands for the Association of Southeast Asian Nations. ASEAN was established in
	the Thai capital of Bangkok in 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.
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 <sub>2</sub>
	through photosynthesis using solar energy falling on the earth. This type of resources is
	renewable throughout its life cycle as long as there are organisms and solar energy.
Calorie	Calorie supply refers to the total amount of calories from food that is supplied to the
supply/Calorie	public, and calorie intake refers to the total amount of calories actually consumed by the
intake	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.

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 policy measures are primarily implemented,
	including low interest financing from the Super L loan system and other programs, measures to prevent mobilization of farmlands and infrastructure improvement efforts to support business farmers.
Community based farm cooperatives	These farm cooperatives consist of farming households in certain regions that have developed a relationship through the local community or other geographical bases. In these cooperatives, farming households conduct agricultural production as a collaborative enterprise. Adopting the three basic tenets of (1) aggregation of diverted paddy fields, (2) communal use of communally purchased equipment and (3) communalization of the entire farming process from production to marketing with farming leaders playing a central role. These cooperatives take different forms and approaches depending on their geographical location
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).
Good Agricultural Practice (GAP)	GAP stands for Good Agricultural Practices. GAP are sustainable improvement activities through the accurate implementation, recording, inspection and assessment of each process in agricultural production operations in line with checklists worked out according to relevant laws.
НАССР	HACCP (Hazard Analysis and Critical Control Point) is a management system in which food safety is addressed through the analysis and control of biological, chemical and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.
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.
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.
Intensive use of farmland	This term means intensive use of farmland through ownership, lease, or consignment of agricultural operations.
Local consumption of local products	The program for local consumption of local products is designed to expand the consumption of home-grown agricultural, forestry and fisheries products by promoting the utilization of local agricultural, forestry and fisheries products.
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 non-profit corporations and are allowed to open bank accounts and lease office spaces under their respective organization titles.

Total agricultural	In agricultural production, the total agricultural output is the total output of all finally
output	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.
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.
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.

## 3. Multifunctional roles of agriculture, forestry and the fisheries

(1) Agriculture	
Flood prevention by	Paddy fields surrounded by furrows and water absorbent soil in dry fields are capable of
retention and	temporarily storing water, which in turn prevents floods.
storage of rainwater	
Landslide	Production activities in rice terrace farming prevent landslides and collapse of slopes.
prevention	
Soil erosion	Proper maintenance and management of paddy and dry fields prevents soil erosion.
prevention	
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.
Processing of	Microorganisms within paddy and dry fields such as bacteria decompose livestock waste
organic 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	Rice paddies and upland fields are properly and sustainably managed to form and maintain
biodiversity	a secondary natural environment with ecosystems rich in plants, insects and animals, etc.
	to secure biodiversity.
Maintenance of	Japan features many annual events and festivals which trace their origins to prayers for
cultural tradition	rich harvests. Agriculture plays a role in passing on these traditions to future generations.
Formation of a good	Agricultural activities combined with farmland, old farmhouses, surrounding water sources
landscape	and mountains create attractive natural landscapes.

(2)	Forestry

Conservation of	Forests inhabited by a wide variety of plants and animals contribute to conserving the
biodiversity	diversity of genes, species and ecosystems.
Conservation of the	Forests can adjust the natural environment on a global scale through transpiration and
global environment	absorption of $CO_2$ which causes global warming.
Prevention of	Brush, fallen leaves and branches suppress soil erosion, and the network of roots from
landslide disasters	forest trees prevents landslides.
and conservation of	
soil	
Watershed	Forest soil mitigates floods and stabilizes river flow by storing rainwater and moderating
capabilities	the volume of water running into rivers.
Formation of	Forests help form comfortable environments by moderating climate through transpiration,
comfortable	reducing wind shear and noise, adsorbing dust through tree crowns and alleviating the heat
environments	island phenomenon.
Benefits for health	Trees release volatile substances such as phytoncides that are known to directly improve
and recreation	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	An appropriate level of fishery can help recycle nitrogen and phosphorus absorbed by
contributions of	marine wildlife through the food chain to land.
fishery to the	
nitrogen and	
phosphorus cycle	
Conservation of	Bivalve shellfish such as oysters and clams filter and purify seawater by feeding on
coastal	organic suspension such as plankton.
environments	
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	Appropriate fishery operations can contribute to preserving mudflats, seaweed beds and
ecosystems	other ecosystems that provide inhabitation environments for a wide variety of water
	creatures.
Transfer of cultural	Cultural assets such as traditional fishing practices are passed down to future generations
assets such as	through the activities of people living in fishing villages.
traditional fishing	
practices	
Rescue operations	Fishery workers help emergency rescue operations when ships sink, capsize, become
in the event of	stranded, go adrift, collide or catch fire.
marine emergencies	
Rescue operations	Fishery workers conduct emergency operations such as supply transportation and oil
in the event of	recovery during natural catastrophes, oil tanker accidents and other disasters.
disasters	
Monitoring of	The fisheries monitors abnormalities in coastal environments. For example, fishery
coastal	workers assist in early detection of red tides, blue tides and jellyfish outbreaks.
environments	
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	The mariner industry can provide places for leisure such as marine recreation facilities and
providing places for	places to learn the importance of nature.
exchange	