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2016 Production Status and Market Prospect of Eco-Friendly Agricultural Products at Home and Abroad

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◇ Abstract ◇

○ The cultivation area of environmentally friendly agricultural products (organic and non-pesticide) has declined since 2013, but is expected to grow again after 2016.
- As the requirements for certification of eco-friendly agricultural products were tightened due to the credibility issues, the cultivation area of these products has reduced by an annual average of 16.1% since 2013.
- However, it is expected to increase again after 2016 in case the 4th Five-Year Plan for the Development of Environmentally Friendly Agriculture, aimed at improving the certification system, expanding the distribution system, facilitating consumption and reinforcing the production infrastructure, is implemented well as planned.

○ The market size of eco-friendly agricultural products has also reduced due to the decrease in the number of certification cases. The market is estimated to be worth KRW 1.2718 trillion as of 2015, an 18.8% decline from the previous year.
- The market of environment-friendly agricultural products shrank in 2015 because the reduction in the area of farmland with eco-friendly certification led to the decrease in the volume of shipment.
- Among various commodities in the market, fruits take up 8.0%, which is very little compared to grains (42.8%) and vegetables (21.7%).

○ Thanks to the global trend of well-being, the size of the organic agri-food market has gradually increased since 2000 mainly in advanced countries, including the US and European countries.
- As of 2014, organic agricultural products are produced in 43.66 million ha of farmland in about 172 countries around the world, and the volume is on the steady increase.
- The scale of the global organic agri-food market rapidly grew from USD 15 billion in 1990 to USD 64 billion in 2012 (an increase by 4.3 times) and to USD 80 billion in 2014 (an increase by 5.3 times).

○ The market for eco-friendly agricultural products is expected to grow again from 2016 with the fostering policies of the government.
- The implementation of the 4th Five-Year Plan for the Development of Environmentally Friendly Agriculture starting from 2016 is predicted to lead to a steady growth of the market size, presumably reaching KRW 2.5242 trillion by 2020 and KRW 3.9862 trillion by 2025.

○ It is crucial to make efforts based on policies to facilitate the stable supply and consumption of environment-friendly agricultural products.
- In the short term, for a smooth supply of eco-friendly fruits in response to the abolition of the certification system for low-pesticide agricultural products, it is needed to come up with measures for enhancing the direct payment system, introducing the insurance system for producers, and designing and disseminating the cultivation manuals for organic fruits.
- In the medium and long term, it is necessary to expand the industrial foundation for eco-friendly processed food and the domestic and overseas markets in relation to the food service industry and export, thereby responding to the expansion of the market for environment-friendly agricultural products.

1. Current Status of Production of Domestic Eco-Friendly Agricultural Products

□ The cultivation area of organic and non-pesticide products has reduced since 2013.

○ The number of the certification cases of environmentally friendly agricultural products (organic and non-pesticide) gradually increased until 2012, but has declined since 2013 (see Table 1).

- The number of farm households with the eco-friendly certification and the certified farmland area surged by an annual average of 43.4% and 47.8%, respectively, from 2000 to 2012. Since 2013, however, the number of certified farms and the area of certified farmland have reduced by 17.5% and 16.1%, respectively, every year due to certification credibility issues and difficulties related to production techniques.
  - ▪ As the cases of inadequate certification by relevant institutions were frequently detected from 2008, the management of certification for eco-friendly agricultural products has been tightened by introducing the three-strikes law against private certification bodies violating the Act on the Promotion of Environment-Friendly Agriculture and Fisheries and the Management of and Support for Organic Foods, Etc., and strengthening the administrative dispositions on violators.
  - ▪ From 2000 to 2012, the number of organic-certified farms and farmland area increased by an annual average of 37.9% and 45.0%, respectively. Since 2013, however, the numbers of such farms and farmland area have reduced by 11.5% and 10.7%, respectively, each year.
  - ▪ From 2000 to 2012, the number of non-pesticide certified farms and farmland area increased by 44.8% and 48.6%, respectively, every

year. But since 2013, the two figures have decreased by an annual average of 18.8% and 17.5%, respectively.

○ The farmland area per eco-friendly certified farm continuously expanded by an annual average of 3.0% from 2000 to 2012. But since 2013, the annual growth rate has slowed down to 1.8%, leading to the farmland area per certified farm reaching 1.3 ha as of 2015.

○ Environment-friendly agricultural products accounted for 7.3% in the total farmland in 2012, and this proportion reduced to 4.5% in 2015.
- The proportion of organic agricultural products reduced from 1.5% in 2012 to 1.1% in 2015.
- The proportion of non-pesticide agricultural products fell from 5.9% in 2012 to 3.4% in 2015.

○ The volume of shipment of eco-friendly agricultural products increased at an annual average of 37.4% from 2000 to 2012. Since 2013, however, the volume has reduced annually by 23.1% due to the decrease in the area of certified farmland.
- The shipment volume of organic agricultural products increased at an annual average of 31.1% from 2000 to 2012, but has decreased by 17.4% every year since 2013.
- The shipment volume of non-pesticide agricultural products increased annually by 39.4% on average from 2000 to 2012, but has dropped annually by 24.3% since 2013.

○ In 2015, the area of eco-friendly certified farmland reduced by 9.9% in total compared to the previous year, with a 0.9% decrease in organic-certified farmland and a 12.4% decrease in non-pesticide certified farmland. But this figure is forecasted to increase again with the implementation of the 4th Five-Year Plan for the Development of Environmentally Friendly Agriculture, starting from 2016.

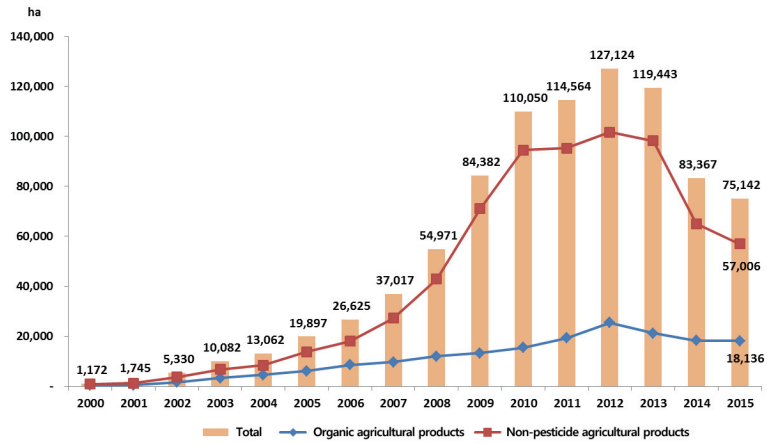
Table 1. Annual Changes in No. of Environment-Friendly Certification Cases

Category		2000	2010	2012	2013	2014	2015	Average Annual Change Rate in 2010-2012 (%)	Average Annual Change Rate after 2013 (%)
Organic	No. of farm households	353	10,790	16,733	13,963	11,633	11,611	37.9	-11.5
	Area (ha)	296	15,517	25,467	21,210	18,306	18,136	45.0	-10.7
	Area per farm household	0.8	1.4	1.5	1.5	1.6	1.6	5.1	0.9
	Proportion	0.02	0.90	1.47	1.24	1.08	1.08		
	Shipment (1,000 tons)	7	122	168	119	96	95	31.1	-17.4
Non-pesticide	No. of farm households	1,060	83,136	90,325	89,992	56,756	48,400	44.8	-18.8
	Area (ha)	876	94,533	101,657	98,233	65,061	57,006	48.6	-17.5
	Area per farm household	0.8	1.1	1.1	1.1	1.1	1.2	2.6	1.5
	Proportion	0.05	5.51	5.87	5.74	3.85	3.39		
	Shipment (1,000 tons)	16	1,040	842	691	479	366	39.4	-24.3
Total	No. of farm households	1,413	93,926	107,058	103,955	68,389	60,011	43.4	-17.5
	Area (ha)	1,172	110,050	127,124	119,443	83,367	75,142	47.8	-16.1
	Area per farm household	0.8	1.2	1.2	1.1	1.2	1.3	3.0	1.8
	Proportion	0.06	6.42	7.34	6.98	4.93	4.48		
	Shipment (1,000 tons)	22	1,162	1,010	811	575	460	37.4	-23.1
Farmland area (ha)		1,888,765	1,715,301	1,729,982	1,711,436	1,691,113	1,679,023	-0.7	-1.0

Source: Environment-friendly Agricultural Products Certification Information, provided by the National Agricultural Products Quality Management Service (NAQS, http://www.enviagro.go.kr).

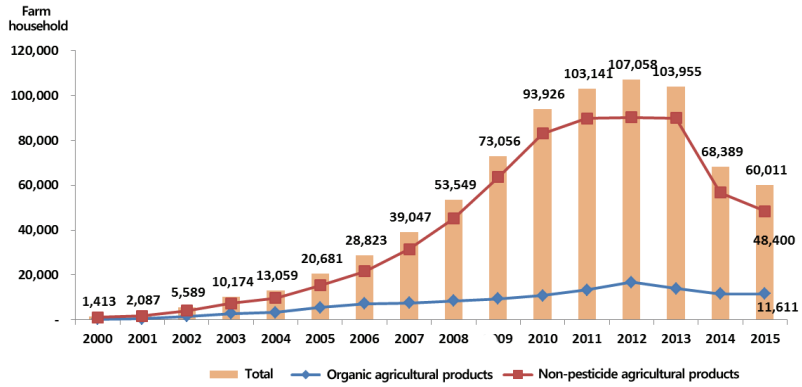
○ The total area of environment-friendly certified farmland steadily increased until 2012, reaching 127,124 ha in that year, but reduced to 75,142 ha in 2015. The number of certified farm households continued to surge until 2012, recording the highest figure of 107,058 households in that year, but also dropped to 60,011 in 2015 (see Figure 1).

Figure 1. Changes in Environment-Friendly Certified Farmland Area



Source: Environment-friendly Agricultural Products Certification Information, provided by the National Agricultural Products Quality Management Service (http://www.enviagro.go.kr).

Figure 2. Changes in No. of Environment-Friendly Certified Farm Households



Source: Environment-friendly Agricultural Products Certification Information, provided by the National Agricultural Products Quality Management Service (http://www.enviagro.go.kr).

○ In terms of the shipment volume of each commodity and certification level as of 2015, organic and non-pesticide agricultural products account for 20.5% and 79.5%, respectively. The shipment volume of grain is the highest, followed by vegetables, special crops, fruits and root and tuber crops (see Table 2).

○ Non-pesticide products and organic products account for the following proportions respectively: 74.3% and 25.7% in 169,729 tons of grains; 75.2% and 24.8% in 126,360 tons of vegetables; and 97.4% and 2.6% in 116,376 tons of special crops. Non-pesticide products also take up a larger part in root and tuber crops (66.1%) and fruits (79.9%) compared to organic products.

Table 2. Shipment of Eco-Friendly Agricultural Products by Commodity/Certification Level (2015)

Unit: Ton, (%)

Commodity	Organic	Non-pesticide	Total
Grains	43,538 (25.7)	126,191 (74.3)	169,729 (100.0)
Vegetables	31,278 (24.8)	95,082 (75.2)	126,360 (100.0)
Special Crops	3,078 (2.6)	113,298 (97.4)	116,376 (100.0)
Fruits	7,874 (33.9)	15,361 (66.1)	23,235 (100.0)
Root & Tuber Crops	2,844 (20.1)	11,295 (79.9)	14,139 (100.0)
Others	5,817 (56.9)	4,409 (43.1)	10,226 (100.0)
Total	94,429 (20.5)	365,636 (79.5)	460,065 (100.0)

Source: Environment-friendly Agricultural Products Certification Information, provided by the National Agricultural Products Quality Management Service (http://www.enviagro.go.kr).

□ The cultivation area for environment-friendly agricultural products in Jeollanam-do is 36,742 ha, the largest figure compared to other provinces in the country.

○ In terms of eco-friendly certified farmland area in each province, that of Jeollanam-do is 36,742 ha as of 2015, the largest area that takes up 48.9% in the total certified farmland area in the nation, followed by Jeollabuk-do (6,561 ha, 8.7%), Chungcheongnam-do (6,218 ha, 8.3%) and Gyeonggi-do (5,319 ha, 7.1%). The certified farmland areas in

Chungcheongbuk-do (3,049 ha, 4.1%) and Jeju-do (2,556 ha, 3.4%) are relatively small (see Table 3).

○ In terms of the proportion of certified farmland in the total cultivation area in each province, the proportion is highest in Jeollanam-do, reaching 11.7%, as 36,742 ha out of 315,060 ha has obtained the environment-friendly certification, followed by Jeju-do (4.1%) and Gangwon-do (3.9%).

Table 3. Environment-Friendly Certification Performance in Each Province (2015)

Unit: ha, ton, %

Category		Organic	Non-pesticide	Total	Proportion in the Country's Total Certified Area	Proportion in Each Province's Total Cultivation Area
Gyeonggi	Area	1,703	3,616	5,319	7.08	2.71
	Shipment	10,096	69,372	79,468		
Gangwon	Area	1,575	2,626	4,201	5.59	3.92
	Shipment	12,337	35,132	47,469		
Chungcheongbuk-do	Area	891	2,158	3,049	4.06	2.73
	Shipment	8,862	27,024	35,886		
Chungcheongnam-do	Area	2,467	3,751	6,218	8.27	2.69
	Shipment	14,524	23,906	38,430		
Jeollabuk-do	Area	1,798	4,763	6,561	8.73	3.22
	Shipment	8,823	23,609	32,432		
Jeollanam-do	Area	5,333	31,409	36,742	48.90	11.66
	Shipment	17,987	80,532	98,519		
Gyeongsangbuk-do	Area	1,319	3,961	5,280	7.03	1.87
	Shipment	9,224	65,705	74,929		
Gyeongsangnam-do	Area	1,603	3,613	5,216	6.94	3.09
	Shipment	7,604	31,162	38,766		
Jeju	Area	1,447	1,109	2,556	3.40	4.08
	Shipment	5,085	9,193	14,278		
Total	Area	18,136	57,006	75,142	100.00	4.48
	Shipment	94,542	365,635	460,177		

Note: The data of a metropolitan city is included in that of the relevant province.

Source: Environment-friendly Agricultural Products Certification Information, provided by the National Agricultural Products Quality Management Service (http://www.enviagro.go.kr); Statistics Korea.

☐ The imports of organic food have been on the steady rise.

○ Organic food accounts for less than 1% in the total imported food products based on the amount of imports. In terms of its average annual change rate after 2010, the number of import cases declined by 7.5%, while the volume and amount of imports increased by 0.3% and 10.3%, respectively.

Table 4. Status of Imported Food Products for the Recent Five Years

Unit: 1,000 cases; 1,000 tons; USD 1,000

Category	Imported Food Products			Imported Organic Food Products		
	Case	Volume	Amount	Case	Volume	Amount
2009	255	11,302	8,434,081	3.7(1.5%)	21(0.2%)	39,920(0.5%)
2010	294	12,906	10,335,539	4.1(1.4%)	26(0.2%)	49,73(0.5%)
2011	313	13,471	13,195,077	4.0(1.3%)	27(0.2%)	59,249(0.4%)
2012	326	13,757	14,370,106	2.3(0.7%)	22(0.2%)	43,707(0.3%)
2013	353	13,645	14,690,746	2.4(0.7%)	21(0.2%)	54,040(0.4%)

Note: The figures in the brackets indicate the proportion of processed organic food in the total imported food products.

○ In terms of the weight of each commodity of imported organic food, processed fruit and vegetable products top the list, followed by fresh and refrigerated bananas, processed sugar food, and brown sugar. The largest weight of processed organic foods are imported from Peru, followed by Australia, Turkey and Colombia.

Table 5. Status of Imported Organic Food by Commodity/Country (As of 2014)

Rank	Commodity (Order of Weight)	Weight (kg)	Producing Country (Order of Weight)	Weight (kg)
1	Processed fruits and vegetables	2,034,693	Peru	2,017,954
2	Banana (fresh & refrigerated)	1,990,222	Australia	1,813,702
3	Processed sugar food	1,860,181	Turkey	1,670,486
4	Brown sugar	1,609,592	Colombia	1,597,229
5	Soybean (dried)	1,362,230	US	1,387,437
6	Wheat (wheat for milling)	1,192,705	Canada	1,126,151

Rank	Commodity (Order of Weight)	Weight (kg)	Producing Country (Order of Weight)	Weight (kg)
7	Wheat (grain)	1,151,120	Brazil	1,085,030
8	Leached tea	741,169	China	811,046
9	Fruit & vegetable beverage	372,439	Italy	747,584
10	Flour	325,924	Argentina	363,510
11	Sugar syrups	125,686	Germany	342,617
12	Banana (fresh)	122,694	Mexico	335,637
13	White sugar	122,500	Thailand	324,942
14	Processed pulses (soybean flour)	119,800	Chile	162,959
15	Coffee (dried)	108,012	Netherlands	158,792
16	Cowberry (blueberry) (berries, frozen)	102,861	Philippines	144,205
17	Soybean oil	87,241	Cuba	109,425
18	Pasta	86,490	Ethiopia	96,000
19	Fruit and vegetable juice	85,467	Austria	56,114
20	Other processed foods	82,022	Paraguay	48,204

Note: Sorting criteria for commodity and country: The top 20 commodities in the order of weight.
Source: Ministry of Food and Drug Safety (2015). Yearbook of Imported Food Inspection.

□ Support is needed to boost the export of processed organic food.

○ With the spread of the well-being trend, the organic agri-food market is growing around the globe, particularly in the US, Europe and other advanced countries, more rapidly than the production area.

○ Although domestic processed organic foods are rarely exported for now, the export of these foods can be facilitated by providing sufficient information about major target markets and customs in promising export partner countries, supporting the expenses for the organic food certification, customs clearance and delivery of samples, and establishing customized strategies for each market (Kim Changgil et al. 2016, *Measures for Development of Environment-Friendly Agriculture and Reinforcement of Agricultural Environmental Resource Management*).

2. Market Size of and Outlook for Domestic Eco-Friendly Agricultural Products

□ Current state of consumption of environmentally friendly agricultural products

○ For the recent five years (2011-2015), the gap between the prices of major commodities of organic agricultural products and those of general agricultural products is similar to the gap five to ten years ago (2006-2010).

- In both periods, the prices of organic agricultural products are approximately 1.7 times higher than those of general ones.

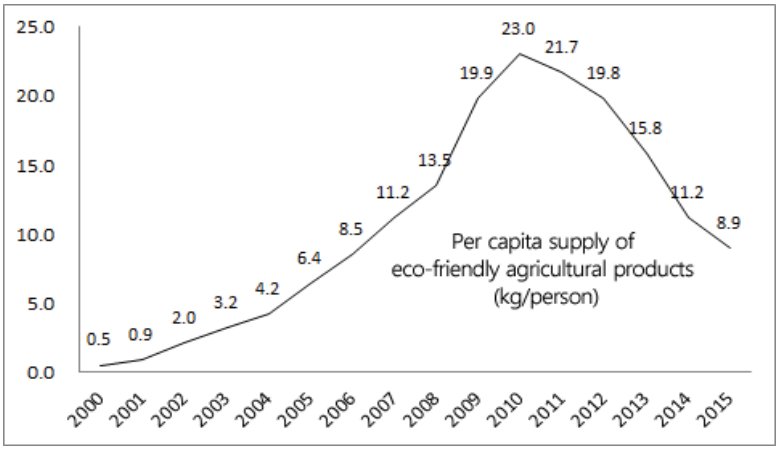
Table 6. Gap between the Prices of Major Commodities of Organic Agricultural Products and Those of General Agricultural Products

Organic/General	Rice	Lettuce	Tomato	Potato	Green Chilli	Sesame Leaves	Onion	Tangerine	Average
2006-2010 (A)	1.96	1.43	1.29	1.45	1.51	2.23	1.98	1.96	1.73
2011-2015 (B)	1.89	1.64	1.31	1.43	1.64	2.44	1.75	1.79	1.74
B-A	-0.07	0.21	0.02	-0.03	0.13	0.21	-0.23	-0.17	0.01

Note 1) Based on red lettuce (except *chima* in 2015), superior potato, and *nokgwang* green chilli.
2) The data of tangerine is based on non-pesticide products.
3) The data is the result of the average of the total data converted by using the consumer price index (2010=100).
4) The price data provided by the Korea Agricultural Marketing Information Service (KAMIS, http://www.kamis.co.kr) is used.

○ The per capita supply of eco-friendly agricultural products was on the steady rise from 2000 to 2010, reaching 23 kg in 2010, the record high figure, but has declined, reaching 8.9 kg in 2015.

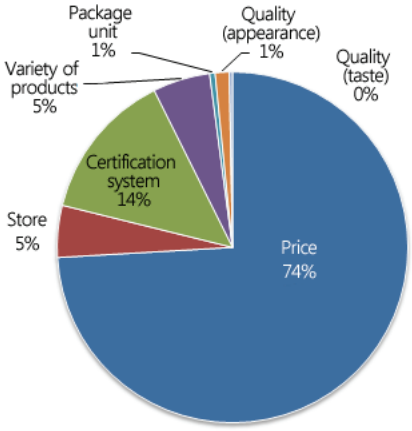
Figure 3. Changes in Per Capita Supply of Eco-Friendly Agricultural Products (2000-2015)



Source: The figures estimated by the Korea Rural Economic Institute (KREI) (July 2016).

○ Among various difficulties in purchasing environmentally friendly agricultural products, the expensive price is the most common problem (74%), followed by low awareness and credibility of the certification system (14%), the absence of preferred products and unstable supply (5%), and difficulties in finding proper stores (5%).

Figure 4. Difficulties in the Purchase of Eco-Friendly Agricultural Products



Source: Kim Changgil et al (2016). *Measures for Development of Environment-Friendly Agriculture and Reinforcement of Agricultural Environmental Resource Management*.

☐ The domestic agricultural product market is valued at KRW 1.2718 trillion in 2015.

○ The market size of environment-friendly agricultural products was calculated by estimating the output based on the cultivation area of each eco-friendly farming method and yield per unit, calculating the sales volume of each farming method, and considering the commission for distributors, marketing expenses, and selling price.

○ According to the result of the estimation of the environment-friendly agricultural product market (organic and non-pesticide) as of 2015, the transaction volume of grains is valued at KRW 544 billion, accounting for 42.8% of the total eco-friendly agricultural products (see Table 7).
- Vegetables are ranked second, taking up 21.7% (KRW 275.4 billion), followed by fruits, accounting for 8% (KRW 102.1 billion).

○ The total transaction volume of environment-friendly agricultural products in Korea is worth KRW 1.2718 trillion as of 2015, an 18.8% decline from the previous year.
- This is because the shipment volume has significantly decreased due to the reduction in certified farmland.

Table 7. Transaction Volume in the Market of Environment-Friendly Certified Agricultural Products (2015)

Unit: KRW 100 million, %

Category	Grain	Rice	Vegetable	Fruit	Root & Tuber Crops	Special Crops & Others	Total
Transaction Volume	5,440	5,089	2,754	1,021	544	2,960	12,718
Proportion (%)	42.8	40.0	21.7	8.0	4.3	23.3	100.0

Note: The transaction volume of eco-friendly agricultural products in 2015 was estimated by applying the shipment volume data provided by NAQS.
Source: The figures estimated by KREI (July 2016).

○ In the total market size of eco-friendly agricultural products in Korea in 2015, organic-certified products account for 25.8% (KRW 327.9 billion) and non-pesticide-certified products for 74.2% (KRW 944 billion) (see Table 8).

Table 8. Transaction Volume in the Market of Environment-Friendly Agricultural Products by Certification Level (2015)

Unit: KRW 100 million, %

Category		Organic	Non-pesticide	Total
Grain		1,758	3,682	5,440
	Rice	1,639	3,450	5,089
	Others	119	232	350
Vegetable		797	1,956	2,754
Fruit		355	666	1,021
Root & Tuber Crops		120	424	544
Special Crops & Others		249	2,711	2,960
Total		3,279	9,440	12,718
Proportion		25.8	74.2	100.0

Source: The figures estimated by KREI (July 2016).

□ The transaction volume of eco-friendly agricultural products (organic and non-pesticide) is forecasted to grow in 2016 by 8.2% from the previous year.

○ The transaction volume of environmentally friendly agricultural products was predicted by considering major changes in the relevant policies, including the abolition of the low-pesticide certification system in 2016. In other words, it was assumed that part of the crops currently cultivated with the low-pesticide certification would be switched to either organic- or non-pesticide-certified products. The degree of such a change was forecasted based on the result of the farm household survey (Jeong Hakkyun & Moon Donghyun 2013, *Response Strategy to the Abolishment of Low-Pesticide Agricultural Product Certification*, KREI).

- The survey result showed that farm households with the low-pesticide certification were planning to change their farming methods to organic (5.7%) or non-pesticide (30.7%) methods.

○ Based on the output of an average year, the transaction volume of eco-friendly agricultural products in 2016 is expected to reach KRW 1.3759 trillion, an 8.2% increase from 2015.

□ The domestic environment-friendly agricultural product market will continue to expand even after 2017.

○ The transaction volume of the eco-friendly agricultural product market from 2017 to 2025 was estimated by considering the increase in cultivation area predicted in a study (Kim Changgil et al. 2016) by using the linear function, and assuming that the output would increase thanks to the enthusiasm and goals of the government towards the policy for fostering environment-friendly farming. The government is now planning to implement a proactive policy to boost eco-friendly farming by improving the certification system, expanding the distribution system, stimulating consumption, reinforcing the production infrastructure, and stabilizing the supply of organic farming materials. The transaction volume is expected to reach KRW 1.5411 trillion by 2017, KRW 2.5242 trillion by 2020, and KRW 3.9862 trillion by 2025 (see Table 9).

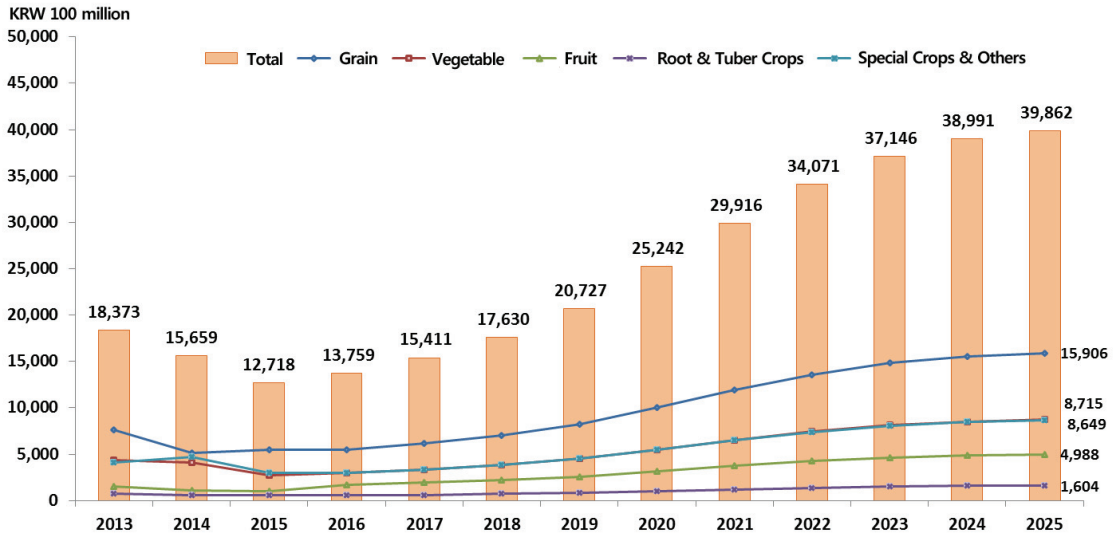
Table 9. Prospect for Market Size of Eco-Friendly Agricultural Products by Commodity Category

Unit: KRW 100 million

Category		2014	2015	2016	2017	2018	2020	2025
Grain		5,095	5,440	5,490	6,149	7,035	10,072	15,906
	Rice	4,778	5,089	5,136	5,753	6,581	9,423	14,880
	Others	317	350	354	397	454	650	1,026
Vegetable		4,146	2,754	3,008	3,369	3,854	5,519	8,715
Fruit		1,062	1,021	1,722	1,928	2,206	3,158	4,988
Root & Tuber Crops		622	544	554	620	710	1,016	1,604
Special Crops & Others		4,735	2,960	2,985	3,344	3,825	5,477	8,649
Total		15,659	12,718	13,759	15,411	17,630	25,242	39,862

Source: The figures estimated by KREI (2016).

Figure 5. Prospect for Market of Eco-Friendly Agricultural Products by Commodity Category



○ Table 10 shows the market size of each certification level of eco-friendly agricultural products.

- The organic agricultural product market is expected to continuously grow to KRW 346.6 billion by 2016, KRW 388.2 billion by 2017, KRW 635.9 billion by 2020, and KRW 1.0041 trillion by 2025.

- The non-pesticide agricultural product market is also forecasted to steadily grow to KRW 1.0293 trillion by 2016, KRW 1.1529 trillion by 2017, KRW 1.8884 trillion by 2020, and KRW 2.982 trillion by 2025.

Table 10. Prospect for Market Size of Eco-Friendly Agricultural Products by Certification Level

Unit: KRW 100 million

Category	2014	2015	2016	2017	2018	2020	2025
Organic	3,156	3,279	3,466	3,882	4,441	6,359	10,041
Non-pesticide	12,503	9,440	10,293	11,529	13,189	18,884	29,820
Total	15,659	12,718	13,759	15,411	17,630	25,242	39,862

Source: The figures estimated by KREI (2016).

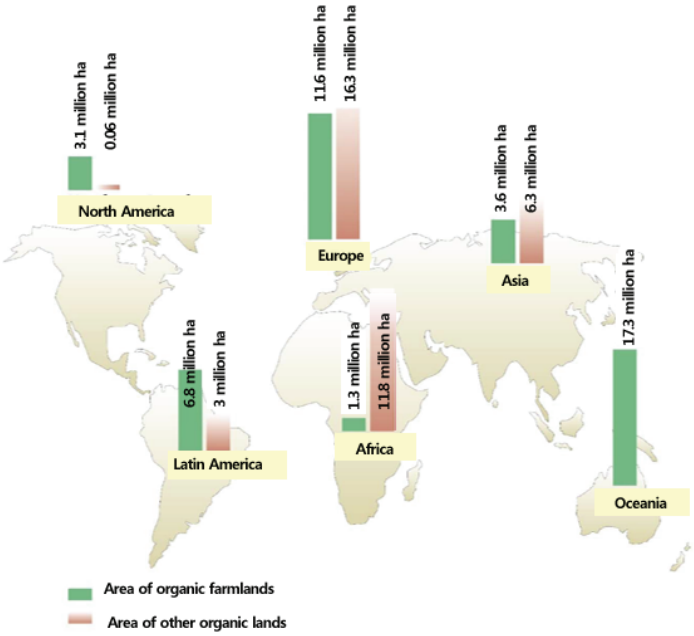
3. Current Status of Global Organic Farming and Its Market Size[1)]

□ **Organic farming is carried out in 81.2 million ha in about 172 countries around the world.**

○ 43.66 million ha of farmlands are used for organic farming, and 37.55 million ha of lands are used for other organic-related purposes.

- The area of organic farmland increased by about 0.5 million ha from 2013, and approximately 1% of the total farmland in the world is used for organic farming.
- Other organic lands are used mostly for wild harvest, including forest, aquaculture and grassland.

Figure 6. Distribution of Lands Used for Organic Farming (2014)



Source: FIBL and IFOAM (2016). *The World of Organic Agriculture: Statistics and Emerging Trends*.

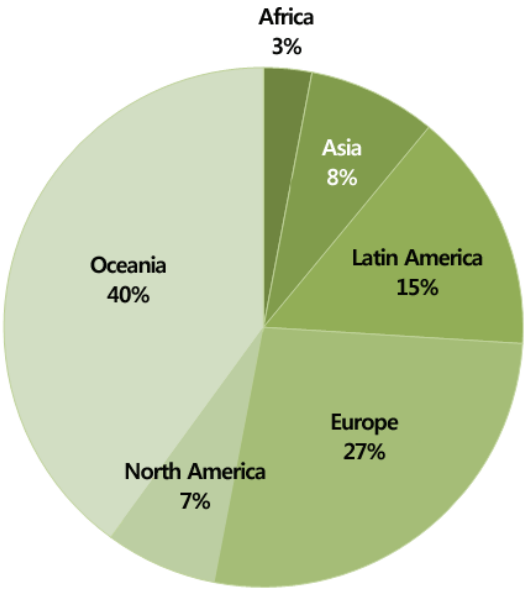
1) The contents of this chapter are based on key points of FIBL and IFOAM (2016).

□ A majority of the world's organic farmlands are concentrated in Oceania and Europe.

○ In terms of the distribution of the world's organic farmlands, Oceania (17.3 million ha) and Europe (11.6 million ha) combined account for about two thirds of the total organic farmland in the world (see Figure 7).

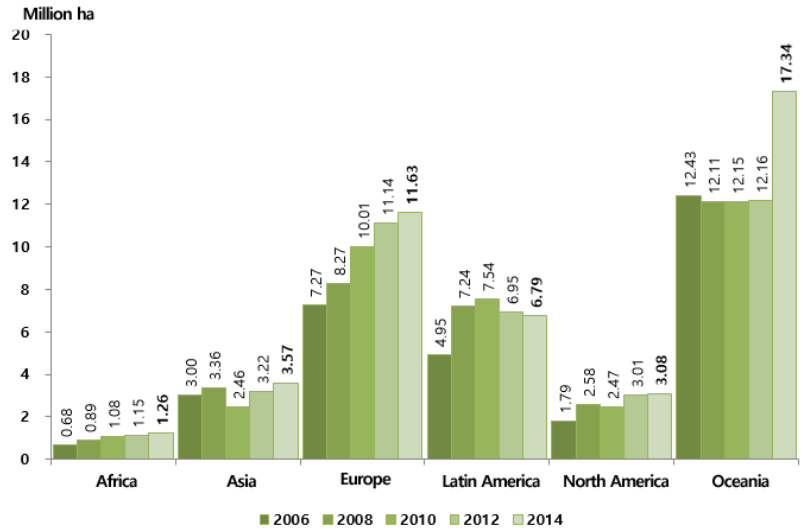
○ The organic farmland area in 2014 is 43.66 million ha, increased by about 0.5 million ha (1.2%) from the previous year (see Figure 8).
- The organic farmland area has expanded in all continents except for Latin America, where the grazing land area has reduced.
- Compared to 2013, the growth rate of the organic farmland area is the largest in Asia and Africa.

Figure 7. Distribution of Organic Farmland by Continent (2014)



Source: FIBL and IFOAM (2016). *The World of Organic Agriculture: Statistics and Emerging Trends*.

Figure 8. Changes in Area of Organic Farmland by Continent (2006-2014)



Source: FIBL and IFOAM (2016). *The World of Organic Agriculture: Statistics and Emerging Trends*.

□ Australia has the largest organic farmland (17.15 million ha) as it did in the previous year.

○ Australia has the overwhelmingly largest organic farmland in the world (17.15 million ha), followed by Argentina (3.06 million ha), the US (2.18 million ha) and China (1.93 million ha).

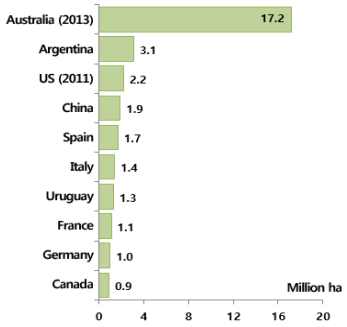
- Grazing lands take up a large part in the total organic farmland in Australia.
- The organic farmland areas in the top ten countries account for more than 73% in the total organic farmland in the world.

○ The proportion of organic farmland in the total farmland tends to be high in European nations.

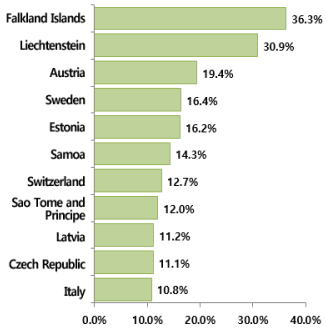
- The proportion of organic farmland is 36.3% and 30.9% in the Falkland Islands and Liechtenstein, respectively, the very high figures, followed by Austria, Sweden, Estonia, Samoa and Switzerland.

Figure 9. Area and Proportion of Organic Farmland in Major Countries (2014)

<Top 10 Countries with Largest Organic Farmland Area>



<Top 10 Countries with Largest Proportion of Organic Farmland Area>



Source: FIBL and IFOAM (2016). *The World of Organic Agriculture: Statistics and Emerging Trends*.

□ The global organic agri-food market is valued at USD 80 billion as of 2014, with the US and Europe taking a large part.

○ The market size rapidly grew from USD 15 billion in 1999 to USD 72 billion in 2013 and USD 80 billion in 2014.

- The market size increased in all countries about which data and materials are available. The market in Sweden showed the highest growth rate of 40%, followed by Norway with 25%.

○ About 47% of the global sales of organic agri-food are found in the US, and 42% in Europe.

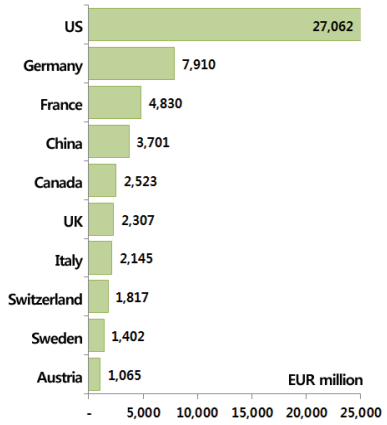
- The largest organic agri-food market is the US, valued at EUR 27.1 billion, followed by the EU at EUR 23.9 billion.
- One third of the global organic farmland is located in North America and Europe, while over 90% of the global organic food sales take place in these two regions.

○ The proportion of the per capita purchase of organic food is the highest in Switzerland, where one spends EUR 221 to buy organic foods, followed by Luxembourg with EUR 164.

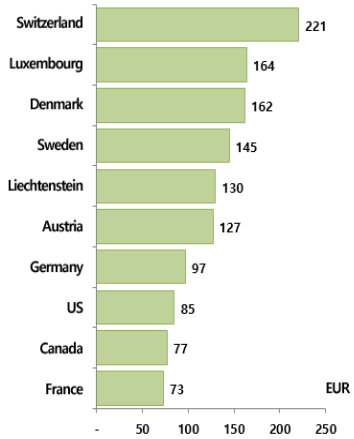
- The market share of organic food is the highest in Denmark (7.6%), followed by Switzerland (7.1%), Austria (6.5%, 2011), the US (5%) and Germany (4.4%).

Figure 10. Size and Distribution of Organic Food Market (2014)

<Top 10 Countries with Largest Organic Food Market>



<Top 10 Countries with Highest Proportion of Per Capita Expenditure on Organic Food>



Source: FIBL and IFOAM (2016). *The World of Organic Agriculture: Statistics and Emerging Trends*.

○ Table 11 illustrates the overall status of global organic farming.

- The production and consumption of organic agri-food have continued to grow with the lead of Europe, North America and Oceania. In particular, the organic food markets have been established in most countries in Europe and North America, while nations in Asia, Latin America and Africa produce organic crops mostly for the purpose of export.
- The global organic agricultural lands consist of wild harvest areas (46%) and farmland areas (54%). A majority of organic farmlands

are located in Europe and Oceania, while most organic lands for wild harvest are located in African and Asian countries with the exception of Finland. The actual figures are expected to be higher, given the limitation in collecting wild harvest-related data.

Table 11. Major Indicators of Global Organic Farming

Category	Total Scale	Major Countries
Organic Farmland	2014: 43.7 million ha (1999: 11 million ha)	• Australia: 17.2 million ha (2013) • Argentina: 3.1 million ha • US: 2.2 million ha (2011)
Proportion of Organic Farmland in the Total Farmland	2014: 0.99%	• Falkland Islands: 36.3% • Liechtenstein: 30.9% • Austria: 19.4%
Other Organic Farming Areas (Mostly for Wild Harvest)	2014: 37.6 million ha 2013: 35.1 million ha (2012: 30.4 million ha)	• Finland: 9.1 million ha • Zambia: 6.8 million ha • India: 4 million ha
No. of Producers	2014: 2.3 million (2013: 2 million) (2012: 1.9 million)	• India: 650,000 (2013) • Uganda: 190,552 • Mexico: 169,703 (2013)
Organic Market Size	2014: USD 80 billion 2013: USD 72 billion (1999: USD 15.2 billion)	• US: EUR 27.1 billion (2013: EUR 24.3 billion) • Germany: EUR 7.9 billion (2013: EUR 7.6 billion) • France: EUR 4.8 billion (2013: EUR 4.4 billion)
Per Capita Consumption	2014: USD 11 (2013: USD 10.05)	• Switzerland: EUR 221 (2013: EUR 210) • Luxembourg: EUR 164 (2013: EUR 157) • Denmark: EUR 162 (2013: EUR 163)
No. of Countries with Organic Farming-related Regulations	87 countries as of 2015	

Source: FIBL and IFOAM (2016). *The World of Organic Agriculture: Statistics and Emerging Trends*.

4. Implications and Challenges

□ The area of lands with eco-friendly agricultural product certification is expected to increase again after 2016.

○ As the government facilitated the eco-friendly farming industry as a growth engine for future agriculture, the farmland area with environment-friendly product certification (organic and non-pesticide) was on the steady rise until 2012, but has reduced since 2013 by an annual average of 16.1% as the certification process was tightened due to credibility issues.

○ In 2015, the eco-friendly certified farmland area reduced by 9.9% in total, with 0.9% and 12.4% decreases in organic-certified lands and non-pesticide-certified lands, respectively. However, the area of certified farmland is predicted to expand again after 2016 in case the 4th Five-Year Plan for the Development of Environmentally Friendly Agriculture is adequately implemented as planned, improving the certification system, expanding the distribution system, facilitating consumption, reinforcing the production infrastructure, and stabilizing the supply of organic farming materials.

□ The proportion of organic agricultural products is the lowest in the category of special crops (2.6%).

○ As of 2015, organic agricultural products and non-pesticide ones account for 20.5% (94,542 tons) and 79.5% (365,635 tons), respectively, in the total shipment volume of eco-friendly agricultural products (460,177 tons).

○ A majority of 116,376 tons of special crops are non-pesticide products (97.4%), while organic products take up only 2.6%. It seems necessary to make efforts with policies to switch non-pesticide farming methods to organic ones in the future.

□ Differentiated policies to foster eco-friendly farming are needed for local governments.

○ The proportion of eco-friendly certified farmland in the total cultivation area is relatively high in Jeollanam-do (11.7%), while it is low in Jeju-do (4.1%) and Gangwon-do (3.9%), implying that the proportions are significantly different among provinces depending on the policies of each local government for fostering eco-friendly farming.

○ Proactive policies of local governments for fostering eco-friendly farming are crucial to disseminate such farming methods in each province. Moreover, local governments should come up with region-specific differentiated fostering strategies by developing commodities and brands customized with consideration for regional characteristics.

□ In the short term, it is necessary to establish measures in response to the reduced size of the eco-friendly fruit market.

○ In 2015, the total transaction volume of the eco-friendly agricultural product market in Korea is estimated to reach KRW 1.2718 trillion, an 18.8% decline from 2014. Such a reduction is attributed to the sharp decrease in the shipment volume from the previous year.

○ In terms of the market size of each commodity in 2015, fruits take up only 8%, a small proportion compared to grains (42.8%) and vegetables (21.7%). This structure is predicted to be maintained in the

short term, calling for measures to address the reduced size of the eco-friendly fruit market.

- The direct payment system for environment-friendly agriculture is the most effective policy to foster eco-friendly farming, which needs plans for improving the unit cost of payment and period. The system should be differentiated from the current types of certification and unit cost of payment classified only into rice paddy and field, by considering income and production cost of each commodity. In terms of the direct payment for organic farming, moreover, the system should be shifted from the temporary direct payment to the continuous direct payment, considering the environmental conservation function.
- Korea is known to have undesirable climate and soil conditions for cultivating fruits. Accordingly, in order to expand organic farming, it is urgent to develop fruit cultivation techniques that can be utilized by farm households in the field, and develop and disseminate manuals for farmers.
- The biggest problem in cultivating fruits in the organic and non-pesticide methods is the management of diseases and insect pest. Therefore, an insurance system for eco-friendly farming should be established to prevent any decrease in farm income due to the outbreak of diseases and pest, and for stable and continuous production.
- It will be desirable to designate farms with exemplary cases of organic fruit farming as honorary trainers, encouraging them to provide struggling farmers with production skill training.

□ In the medium and long term, marketing and consumption measures are needed to deal with the expansion of the eco-friendly agricultural product market.

○ The proactive government policies, including the implementation of the 4th Five-Year Plan for the Development of Environmentally Friendly Agriculture, are expected to trigger an increase in the size of the eco-friendly agricultural product market from 2016, and such a growth will continue until 2025.

○ With the expectation for the continuous growth of the eco-friendly agricultural product market, it is necessary to reinforce the industrial infrastructure for environment-friendly processed food and carry out projects for expanding the domestic and overseas markets for food service and export.

- Facilitating the connection with downstream industries, such as processing, food service, export and tourism, and promoting the 6th industrialization of the sector by linking with processing, sales and experience programs related to eco-friendly agricultural products
- Establishing the certification and labeling standards for processed food made with non-pesticide agricultural products

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