

THE FRAME OF AGRICULTURAL POLICY AND RECENT MAJOR AGRICULTURAL POLICY IN KOREA

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Abstract

Korean agriculture is characterized by small-sized family farming. The implementation of the Uruguay Round agreement and FTAs with major trading partners has led to important changes in its agriculture. The Korean government has implemented a series of agricultural policy reforms over the last two decades to cope with significant changes in both the international environment and the domestic situation. As an effort to strengthen the agricultural competitiveness, the government has implemented a number of agricultural programs that would reduce production cost through farm consolidation, foster competitive farm entities, and encourage farmers to specialize, as well as promote the development of agricultural technology. Also, significant policy efforts have been made to improve farm household income through agricultural direct payment and crop insurance programs. The government has initiated a wide variety of certification systems, such as Traceability System, Good Agricultural Practices (GAP), and Hazard Analysis Critical Control Point (HACCP) to ensure food safety. In addition, policy efforts for strengthening the linkage between traditional agriculture and food industry is currently increasing so as to make a sustainable development in agro-food industry.

Keywords: Policy Reform, FTA, Farm, Income, Direct payment, Food Safety, Agro-Food Industry

1. INTRODUCTION

Korea's agriculture has developed rapidly over the last half century. Until 1960s, Korea suffered from severe food shortages but it become self-sufficient in rice since the end of 1970's due to the rapid agricultural development. Subsequently, agricultural productivity including rice has been greatly enhanced with improvements in the agricultural production base and technology innovation. In addition, the agricultural sector has greatly contributed to the development of the Korean economy by providing land, labor and capital to the secondary and tertiary industries in the process of economic development, as well as contribution to the preservation of land resources and the environment.

Although the roles and functions of agriculture have greatly changed, it cannot be denied that the agricultural structure was still very weak, and was not properly prepared to compete with foreign countries. As a result, the globalization and liberalization that started in the late 1980s was a big shock to the Korean agricultural sector, and such changes provided momentum for agricultural policy reforms and structural adjustment in the 1990s.

The Korean government has implemented a series of agricultural policy reforms over the last two decades to cope with significant changes in both the international environment and the domestic situation. Through the implementation of the Uruguay Round agreement, import restrictions on major agricultural products except rice were transformed into a tariff system. As a result, agriculture in Korea is more exposed to international competition and increasing the competitiveness of this sector and adjusting policies accordingly have become urgent goals for policy-makers. The focus of domestic societal interests in the agricultural sector has also changed significantly. Consumer interest in environmentally-friendly agricultural products has increased, outbreaks of animal disease have drawn national attention to food safety, and the rapid migration from rural to urban areas with the increase of industrialization has led to rural areas being left behind and spurred increased interest in rural development.

Korean farmers, still in a very difficult situation, are paying close attention according to the extension of Free Trade Agreements (FTAs). FTA with major trading partner is considered to be inevitable for the continuous growth of Korean economy, which is heavily dependent on the foreign trade. However the market liberalization pressures through the greater market opening of FTAs are the biggest challenges that Korean agriculture is facing. The purpose of this paper is to overview the Korean agricultural situation and policy reforms which were taken to cope with these challenges over the last two decades and to provide recommendations for continuing the reform process in the future.

2. AGRICULTURAL SITUATION IN KOREA

2.1 IMPORTANCE OF AGRICULTURE IN THE KOREA ECONOMY

The total area of South Korea is 10,109 thousand hectares. Agricultural land in Korea occupies 1,730 thousand hectares, approximately 17% of its total area. Total population of South Korea is about 50 million and the proportion of rural population is about 17.5% of the total population.

The rapid development of the Korean economy is reflected strongly in the changing role of agriculture. Until the 1960s, agriculture made almost half of Korea's GDP and in 1970, agricultural production continued to contribute 27.4% of GDP and the labor force employed in the agricultural sector accounted for 50.4% of the country's total employment. As the industrialization process progressed, however, the share of agriculture in the national economy declined sharply. In 2012, the share of agricultural production in GDP was 2.3%

and the agricultural employment accounted for 6.2% of the total employment. Nevertheless, agricultural sector still plays an important role in the Korean national economy, accounting for a relatively large share of GDP with a large rural population and employment as compared to other OECD countries. In this regard, agriculture contributes significantly to the land use and employment, social and economic stability and livelihood in rural area.

<Table 1> Share of Agriculture in the Korean Economy

Unit: USD Billion, Number of Million

	1970	1980	1990	2000	2012
National GDP (A)	8.1	270.3	534.2	1,014.4	1,129.1
Agricultural GDP (B)	2.2	39.9	42.1	42.6	26.0
%(B/A)	27.4%	14.8%	7.9%	4.2%	2.3%
Total population (C)	32.2	38.1	42.9	47.0	50.0
Agricultural population (D)	14.4	10.8	6.7	4.0	2.9
Over 60 years (E)	1.14	1.14	1.19	1.33	1.34
%(D/C)	44.7%	28.4%	15.6%	8.6%	5.8%
%(E/D)	7.9%	10.6%	17.8%	32.4%	46.1%
Total Employment(F)	9.6	13.7	18.1	21.2	24.7
Agricultural Employment(G)	4.8	4.6	3.2	2.2	1.5
%(G/F)	50.4%	34.0%	17.9%	10.6%	6.2%

Source: Ministry of Agriculture, Food and Rural Affairs (MAFRA), Statistical Yearbook 2013

As the share of agriculture in national economy had been reduced, the agricultural population in Korea fell drastically from 14.4 million or 44.7% of the total population in 1970 to 2.9 million or 5.8% in 2012. Considering that the agricultural population in developed countries is about 2~3 % of the total population, the share of the agricultural population in Korea is still relatively high.

Another important point to note is the increasing average age of the agricultural population in Korea. The share of agricultural population over 60s (elderly farmers) in Korea has increased from 7.9% in 1970 to 46.1% in 2012. Indeed, the aging issue of the agricultural population in Korea is very serious.

Such phenomenon is due to the fact that the older generation is generally difficult to find another job opportunity and tends to continue farming activity, while younger generation leaves rural villages for higher income and better social standard in the city. The trend has continued throughout the industrialization, and the average age of the agricultural population has increased rapidly.

2.2 FARMLAND STRUCTURE

As of 2012, the total cultivated area in Korea was 1.7 million hectares, or 17% of the total land area. Despite intensive efforts to increase the agricultural area through drainage, irrigation and reclamation, the cultivated area has tended to decline due to industrial and urban development. The share of cultivated land in total land area fell from 23% in 1970 to 17% in 2012. Of the 1.7 million hectares of cultivated land, 56% is paddy field and 44% is upland.

The Korean agriculture is characterized by small-sized family farming. Most farms are small farms with less than 1 hectare (ha) of agricultural land in Korea, which accounts for 85% of total farms in 2012. A combination of factors, including regulations governing the sale and transfer of land and the role of land as a family asset to be preserved, means that the average farm size is extremely small. Based on the principle, only farmers should be allowed to own farmland, the Korean government limited the maximum size of farmland that can be owned to 3ha per farm household until the early 1990s.

Total farmland size was 2.3 million ha in 1970 but it decreased to 1.7 million ha in 2012, since about 20,000 ha to 30,000 ha of farmland was converted into industrial or housing land annually. Meantime, the agricultural population declined faster than the farmland reduction. As a result, the average land size per farm is gradually increasing from 0.93 ha in 1970 to 1.5 ha in 2012. Although the average area farmed per household in 2012 was almost 60% higher than in 1970, it was still only 1.5 hectares. More than 80% of farms have less than 1 hectare and only 8.5% have more than 3 hectares.

<Table 2> Change in Farmland Structure

	1970	1980	1990	2000	2012
Total land (million ha)	9.84	9.89	9.92	9.94	10.02
Total planted land (million ha)	2.29	2.20	2.11	1.89	1.73
-Paddy field(mil. ha)	1.27	1.31	1.35	1.15	0.97
-upland(mil. ha)	1.02	0.89	0.76	0.64	0.76
Average farm size per farmhouse (ha)	0.93	1.02	1.19	1.36	1.50
Number of farm over 3ha (thousand)	37	31	44	85	98

Source: Ministry of Agriculture, Food and Rural Affairs (MAFRA), Statistical Yearbook 2013

Recently the Korean government has started easing the farmland possession ceiling

recognizing that the ceiling does not help to enhance international competitiveness. As a result, the number of farm owning farmland bigger than 3ha has gradually increased from 37 thousands in 1970 to 98 thousands in 2012.

2.3 AGRICULTURAL PRODUCTION

Agricultural production has increased about 7 times between 1980 and 2012. In 2012, agricultural production was valued at KRW 44 trillion (USD 43 billion). Over the period 1980-2012, the share of livestock and fruits in total production grew faster than that of rice and other crops. The share of rice in total agricultural production has decreased from 34.4% in 1980 to 18.3% in 2012. However, the share of livestock products in agricultural production has greatly increased from 20.0% in 1980 to 36.3% in 2012. The share of fruits has also increased from 3.9% to 8.6% during the same periods. The main cause of such a trend is that more and more farms are turning to capital-intensive and consumer-oriented agriculture.

<Table 3> Production Values and Share by Farming type

(Unit: KRW trillions, %)

	1980	1990	2000	2012
Agricultural Production	6.34 (100)	17.73 (100)	31.97 (100)	44.30 (100)
Rice	2.18 (34.4)	6.54 (36.8)	10.50 (32.8)	8.12 (18.3)
Livestock	1.27 (20.0)	3.95 (22.3)	8.08 (25.3)	16.10 (36.3)
Fruit	0.25 (3.9)	1.31 (7.4)	2.58 (8.1)	3.82 (8.6)
Vegetable	1.44 (22.7)	3.32 (18.7)	6.74 (21.1)	10.15 (22.9)
Others	1.2 (18.9)	2.61 (14.7)	4.07 (12.7)	6.11 (13.8)

Note: Value in parenthesis is the share of each category in total agricultural production

Source: Ministry of Agriculture, Food and Rural Affairs (AFRA), Statistical Yearbook 2013

However, rice is still the most important agricultural product and the dominant grain in Korea as shown by its contribution to land use and agricultural production. In 2012, it accounted for 56% of total arable land is allocated to rice farming and approximately 63% of total farm households are cultivating rice. Consequently, rice, as a single commodity, accounts for 18.3% of total agricultural production value in Korea as shown in <Table 4>.

The importance of rice in the Korean agriculture has gradually reduced since 1970s but still remains as a major source of agricultural income and farm employment. The reason for that rebound is that 1) rice was exempted from the tariffication in the UR, 2) government has maintained price support system for rice, so that farmers thought rice farming would remain profitable compared with other liberalized commodities. 3) Rice farming management is relatively easy and time saving due to mechanization, so older farmers could continue rice farming. In 2012, income from rice farming is a 74.8% of income from farming and 21.9% of total farm household income as shown in <Table 5>.

<Table 4> Importance of Rice Farming in Korea (2012)

Classification	Item	Value	Share(B/A, %)
Areas (thousand ha)	Total arable area (A)	1,730	55.8
	Paddy field (B)	966	
Farm Households (thousand)	Total farm households (A)	1,151	62.9
	Rice farm households (B)	724	
Production Value (KRW billion won)	Total agricultural production (A)	44,300	18.3
	Rice production (B)	8,118	

Source: Ministry of Agriculture, Food and Rural Affairs (MAFRA), Statistical Yearbook 2013

<Table 5> Rice farming as a major Income source

(Unit: KRW thousands)

Year	Farm Household Income (A)	Income from Farming (B)	Income from Rice Farming (C)	Ratio (%)	
				C/A	C/B
1970	256	194	109	42.5	56.1
1980	2,693	1,755	837	31.0	47.7
1990	11,026	6,264	3,631	32.9	57.9
2000	23,072	10,897	8,220	35.6	75.4
2005	30,503	11,815	5,917	19.4	50.0
2012	31,301	9,197	6,883	21.9	74.8

Source: Ministry of Agriculture, Food and Rural Affairs (MAFRA), Statistical Yearbook 2013

2.4 AGRICULTURAL TRADE AND FOOD SELF-SUFFICIENCY

Korea has been a large net food importing country in the world for the long time. This reflects largely rapid income growth and changes in dietary patterns and has been facilitated by expansion of agricultural trade liberalization. Thus, Korea is a significant net food importer. With a population of about 50 million and a rapidly growing standard of living, Korea is a very important market for exporters of cereals, including feed grains and livestock products, fruits and processed foods. The share of agro-food imports in total imports is around 4.5%, while that of exports is less than 1%. Imports of agricultural products grew 47 times from US\$ 0.5 billion in 1970 to US\$ 23.4 billion in 2012. During the same period, export of agricultural products increased from US\$ 0.1 billion to US\$ 5.2 billion. The agricultural trade deficit has also increased from US\$ 0.4 billion in 1970 to US\$ 18.2 billion

in 2012.

<Table 6> Agricultural Trade and Food Self-sufficiency

(Unit: US\$ billions, %)

		1970	1980	1990	2000	2012
Import	Nationwide (A)	1.8	21.6	69.8	160.4	519.6
	Agriculture (B)	0.5	3.1	5.4	6.8	23.4
	B/A (%)	27.8	14.4	7.7	4.2	4.5
Export	Nationwide (A)	0.9	17.2	65.4	172.3	548.1
	Agriculture (B)	0.1	1.1	1.1	1.3	5.2
	B/A (%)	11.1%	6.4%	1.7%	0.8%	0.9%
Balance of payment	Nationwide (A)	-0.9	-4.4	-4.4	11.9	28.5
	Agriculture (B)	-0.4	-2	-4.3	-5.5	-18.2
Quantity-based Grain self-sufficiency (%)		80.5	56.0	43.1	29.6	23.6

Source: Ministry of Agriculture, Food and Rural Affairs (MAFRA), Statistical Yearbook 2013

Even though, import of agricultural products rose sizably in terms of absolute value, its share in the total national imports has dropped sharply. The share of agricultural products in the total national imports fell to 4.5% in 2012 from 27.8% in 1970. During the same period, the share of agricultural products in Korea's exports decreased also significantly from 11.1% to 0.9%. It is mainly because of development strategy of industrialization and non-agricultural export-orientation which has been adopted by Korean government since 1960s.

The self-sufficiency rate of grain has fallen from 80.5% in 1970 to 23.6 % in 2012. In 2012, self-sufficiency rate for barley was 17.3%, 0.7% for wheat, 0.9% for corn, and 10.3% for beans. Rice, the main staple food grain in Korea, is almost self-sufficient level. Average self-sufficiency rate for rice was 94% in the recent three years of 2009~2012. In other words, considerable amounts of most of food grains except rice are imported from oversea markets.

2.5 FARM HOUSEHOLD INCOMES

Average income per farm household has increased from KRW 256 thousand in 1970 KRW 31,301 thousand in 2012. Income sources for farm households have shown the changes since 1970s. Farm household incomes are broadly categorized into agricultural income and non-agricultural income. Major sources of non-agricultural income are divided into income from off-farming activities and transfer income from government and family. Over the last 40 years, the non-agricultural income of farm households grew much faster than agricultural income. The high increase in non-agricultural income has been facilitated since the 1970s by initiatives taken to improve rural industrialization and to create off-farm job opportunities in rural areas.

Agricultural income accounted for over 75% of total farm household income in the 1970s but fell to 29% in 2012 whereas the share of non-agricultural income sharply increased from 24% in 1970 to 71% in 2012. The proportion of non-agricultural income to total farm household income is continuously increasing, contributing to the stabilization of farm household income. Actually non-agricultural income has played a vital role in stabilizing the farm household income because agricultural income is inherently unstable.

Recently, the growth of agricultural income has been stagnated or dropped in Korea. It is mainly because increasing in agricultural imports since 1995 have led to falling prices of agricultural products. Also high fuel and material prices as well as rising interest burdens have increased the operational costs of farm. Thus, it has been suggested that non-farm income should be increased so as to increase farm household income. In this regard, Korean government has long tried to create new income sources for farm household. Various policy efforts are under way to provide non-farm income sources for Korean farmers through establishment of rural industrialization, promotion of agro-food industry, green tourism etc.

The percentage of transfer income has continuously increased, accounting for 28% of total household income in 2012. Some of the transfer income comes from government direct subsidy to farmer. For example the increased of public subsidies like rice income compensation program that began in 2005. According to governmental statistics, the proportion of public subsidies was about 10% of total farming household income. Smaller farms received more benefits from other types of public subsidies such as pensions, health insurance, and other social transfer payments, while larger farms received more public subsidies related to farming activity.

<Table 7> Farm Household Income and Composition of Income Sources

(Unit: KRW thousands)

Year	Farm Household Income (A)	Agricultural Income (B)	Income from Off-farming (C)	Transferred Income (D)	Ratio(%)		
					B/A	C/A	D/A
1970	256	194	62	0	76%	24%	0%
1980	2,693	1,755	938	0	65%	35%	0%
1990	11,026	6,264	2,841	1,921	57%	26%	17%
2000	23,072	10,897	7,432	4,743	47%	32%	21%
2005	30,503	11,815	9,884	8,803	39%	32%	29%
2012	31,301	9,197	13,585	8,519	29%	43%	28%

Source: Ministry of Agriculture, Food and Rural Affairs (MAFRA), Statistical Yearbook 2013

Until the mid-1990's, the proportion of farm household income to urban household income was over 95 percent. However, the income gap between urban and rural households has widened since 1995. In 2012, the average income of farm household was only 58% of that of the labor workers in city. In other word, the income gap between urban and rural households is increasing due to the market liberalization following the UR and FTAs with major trading countries as well as the difference in the productivity growths.

<Table 8> Farm Household Income relative to Urban Household Income

(Unit: KRW thousands)

Year	Farm Household (A)	Urban Household (B)	Ratio (A/B)
1990	11,026	11,319	0.97
1995	21,803	22,933	0.95
2000	23,072	28,643	0.81
2012	31,301	53,908	0.58

Source: Ministry of Agriculture, Food and Rural Affairs (MAFRA), Statistical Yearbook 2013

2.6 FOOD CONSUMPTION

Although rice consumption per capita has been annually declining and is likely to continue to do so, rice still dominates the Korean diet in annual food consumption at 70 kilograms per capita in 2012. Vegetable consumption has increased dramatically over the last forty years and now represents around 146 kilograms per person. The increase in fruit consumption over

the last 30 years is also remarkable. The highest consumption growth has been recorded in livestock products, which increased eight-fold over the period 1970-2012. Particularly milk consumption has greatly increased from almost zero in 1970 to 71 kilograms per person in 2012.

The consumption change from grains towards livestock products, fruits and vegetables reflects mainly income growth and change in dietary pattern. However, the Korean diet is still high in carbohydrates and low in fat as compared to most other OECD countries. An increase in Western-style and processed food consumption can also be observed as convenience and quick preparation have become more important. The demographic shift occurring in Korea will have a great impact on food consumption patterns in the future. The increasing trend in double income family and progress in aged society may increase the preferences to more healthy and nutritious food.

<Table 9> Changes in Per Capita Food Consumption

(Unit: kg/year)

Year	1970	1980	1990	2000	2012
Grains	219.4	195.2	167.0	153.3	124.8
- (Rice)	(136.4)	(132.4)	(119.6)	(93.6)	(69.8)
- (Barley)	(37.3)	(13.9)	(1.6)	(1.6)	(1.3)
- (Wheat)	(26.1)	(29.4)	(29.8)	(35.9)	(33.9)
- (Com)	(1.1)	(3.1)	(2.7)	(5.9)	(3.7)
- (Soybean)	(5.3)	(8.0)	(8.3)	(8.5)	(8.8)
Vegetables	59.9	120.3	132.6	165.9	146.1
Fruits	13.1	22.3	41.8	58.4	61.8
Meat (Kg)	5.2	11.3	19.9	32.0	40.6
- (Beef)	(1.2)	(2.6)	(4.1)	(8.5)	(10.2)
- (Pork)	(2.6)	(6.3)	(11.8)	(16.5)	(19.0)
- (Chicken)	(1.4)	(2.4)	(4.0)	(7.0)	(11.4)
Milk (Kg)	N/A	47.8	42.8	59.7	70.7

Source: Ministry of Agriculture, Food and Rural Affairs(MAFRA), Statistical Yearbook 2013

3. OVERVIEW OF THE KOREAN AGRICULTURAL POLICY

3.1 HISTORICAL CHANGES OF THE KOREAN AGRICULTURAL POLICY

This section presents a brief outline of the time periods and characteristics of the Korean agricultural policy. The criteria used to distinguish the policy time periods are based on changes of economic conditions, policies, and agricultural structure. If the time periods are

classified by applying these criteria, the following five policy periods can be distinguished: first, system organization period from 1948 to 1967; second, production expansion period from 1968 to 1977; third, policy conflict period from 1978 to 1985; fourth, transition period from 1986 to 1994; and fifth, policy reform period from 1995 until now. The characteristics of the policy time periods are summarized as below.

The first period (1948~1967) was a system organization period for firmly building up the foundation of the country after the launch of Korea's first government. However, due to the outbreak of the Korean War in 1950, social confusion continued until the mid-1950s. Farmland reform was implemented from 1950 to 1957, thus it contributed to both the abolition of the landlord-tenant relationship and the establishment of self-employed farmers. The national economy, in short, was an agricultural economy prior to industrialization, and it required the supply and accumulation of capital for industrialization. Since agriculture had contributed to alleviating potential unemployment, the ratio of those employed in the industries of agriculture, forestry, and fisheries stood high at around 80%, and agriculture continued to wield an overwhelming influence in the national economy.

The role of agriculture was focused on solving food shortage. Some of the major policies were centered on government procurement of rice, the U.S. assistance of surplus grains according to the U.S. Public Law 480 (PL480, introduced in 1956), and the food production expansion plan. Although the U.S. assistance of surplus agricultural products had greatly contributed to solving the immediate problem of food shortage, it had the effect of lowering the prices of Korea's agricultural products, thus worsening the economy of farm households. Moreover, the government's plan to increase grain production did not bring tangible results because of lack of necessary means of support (i.e., technological development and farmland expansion).

Policy-wise, it was a period of establishing an institutional base to carry out modern agricultural policies. The Rural Development Administration, the Maritime Affairs Office, and the Korea Forest Service were inaugurated, and a comprehensive agricultural cooperative system was founded through the enactment of the Agricultural Cooperative Law (1961). At the industrial level, discussions were held to improve the agricultural structure, and 'The Basic Agricultural Law (1967)' was enacted to foster self-employed farmers.

The second period (1968~1977) can be characterized as the agricultural production expansion period. The number of farms and farmers that had been increasing ever since the establishment of the republic had reversed its course to a decline from 1968, and the total area of farmland began to decrease from 1969. With the rapid progress of industrialization, great amounts of land and labor started to be utilized for industrial purposes rather than for agriculture. The main focus of the agricultural policy in this period was how to maintain the self-employed farming system that had been created through farmland reform in the process of urbanization and industrialization. To this end, a proposal was made to enact a farmland

law, but it fell apart due to the public opinion against the bill.

Since the food problem resulting from industrialization remained serious, the goals of the government's agricultural policy were aimed at increasing food production and modernizing the production process. The means to achieve this were development and dissemination of agricultural technologies, provision of guidance to farming villages, creation and consolidation of farmland, development of agricultural water resources, seed improvement, and mechanization of agriculture. In addition to these, various policies were adopted: rural development through supply of electricity and expansion of roads, farm income assistance through a special project to increase farmers's and fishermen's income, and price support through a high-rice-price policy and a barley price forecasting procurement system to stabilize its price. A new, high-yield rice variety called Tongil Byeo was developed and supplied from 1971. As a result, rice yields increased greatly and made self-sufficiency of rice possible in 1977.

Also, a new village development movement called 'Saemaul Undong' began in 1970, resulted a boom in rural development. During this period, farm household income increased significantly, and the farm economy became more stable than any other period thanks to increased production of and the price support for rice. Because of Saemaul Undong, the daily living environment in rural villages and farmer's understanding of the economy started to change immensely. However, farmland leasing started to increase without improvement of the agricultural structure that is based on poor self-employed farming.

It can be said that the third period (1978~1985) was a period of conflicting interests for agricultural policy. This is because the Korean agriculture had experienced a lot of conflicting interests while making a transition to commercial farming after achieving food self-sufficiency. The direction of economic policy during this period shifted from high growth to stable growth and from government-led protectionist policy to private sector-led open market policy. The direction of agricultural policy, too, shifted from a policy of increasing agricultural income through increased production of staple grains and price support to a policy of increasing farm income through non-farm earnings, diversified agriculture, and cultivation of cash crops and products such as meat, fruits, and vegetables. As a result, rural industrial development began with the formation of agricultural industrial complexes, and cultivation of seasoning vegetables and animal husbandry were greatly expanded. And in 1978, the government liberalized the domestic market for agricultural imports.

Unfortunately, in 1980, rice production fell 36% from the previous due to damage from cold weather. In the following year, Korea had to import rice. Furthermore, the increase in beef imports caused a sharp price drop of beef in 1984. As the prices of seasoning vegetables and livestock products became extremely volatile, farm household economy worsened and debts increased significantly. Food self-sufficiency rate fell, and agricultural imports increased sharply. The so-called open market policy, which aimed to stabilize agricultural

commodity prices through imports and compensate reduced income through non-farm earnings and diversified agriculture, caused harm to the economy of farm households.

Under such a background, a comprehensive plan was put together in March, 1986 to revive the rural economy. The main contents of the plan were expansion of agricultural industry zones to increase non-farm income, provision of more tax benefits to factories in farming regions, supply expansion of agricultural assistance funds to increase farm income, and strengthening of the project to foster future farmers.

The fourth period (1986~1994) can be called policy transition period. The year 1986 saw the start of the Uruguay Round (UR) negotiations, which determined the course of global trade liberalization. South Korea graduated from the GATT-sanctioned balance of payments protection after the country posted trade surplus from 1986 to 1989. At the same time, the pressure to open the agricultural products market started to become more intense. With the conclusion of Uruguay Round negotiations at the end of 1993, Korean agriculture has to adopt inevitably an open market policy. As a result, it became an impending task to improve the industry structure of agriculture in step with the progress of market opening and increase the industry's international competitiveness.

Having examined measures to improve the agricultural structure in response to market opening, the government announced three comprehensive plans during the period from 1989 to 1994. The first plan was the Comprehensive Plan to Develop Farming and Fishing Villages, which was announced in April 1989. The plan called for the creation of a farmland management fund to help finance purchase of farmland and accelerate the structural improvement of agriculture. In addition, the plan introduced an agricultural corporation system. Other key policy goals included in the plan were development of non-farm income sources, development of residential zones, and development of the agricultural products processing industry and export businesses. As the second phase of the comprehensive plans, the Plan for Structural Improvement of Farming and Fishing Villages was announced in 1991. As a more specific version of the 1989 comprehensive plan, the second-phase plan has set the goal of investing 42 trillion won for structural improvement of farming and fishing villages during the 10-year period from 1992 to 2001. Succeeding the two comprehensive plans announced since 1989 was the Plan for Agricultural Policy Reform and Development of Farming and Fishing Villages of 1994. The plan set the goal of completing the 42-trillion-won structural improvement project for agriculture and fisheries by 1998, ahead of the original completion year of 2001, and expanded the investment fund by creating a 15-trillion-won special tax for rural development.

The fifth period (1995~present) can be called the period of agricultural policy reform. Korean agriculture, which had already entered a period of great transition with the inauguration of the World Trade Organization (WTO), experienced difficulties again at home and abroad. Due to the financial crisis of 1997, agricultural material prices had rapidly been

rising since the beginning of 1998. Consequently, the circumstances for agriculture greatly worsened, and farms went bankrupt. The government, therefore, put highest priority on stabilizing the economy of farm households and recovering the rural economy. To do so, the government enacted the Special Law on the Reduction of the Debts Owed by Farmers and Fishermen and postponed the reimbursement of debts owed by farm households and reduced or exempted the interest.

The basic direction of agricultural policy made a turn from the previous government's farm scale expansion to fostering of environment-friendly agriculture based on small and mid-sized farming and enhancement of quality. In particular, the government forcefully carried out measures to reform the distribution of agricultural products. This included expansion of direct transaction, diversification of transaction methods at public wholesale markets, and introduction of a distribution ordering system. In 1998, the government enacted the Agriculture and Rural Communities Basic Act and embarked on reforming agriculture related organizations. In 2000, the government merged the National Agricultural Cooperative Federation, the National Livestock Cooperatives Federation, the Korea Ginseng Cooperative Federation, the Rural Development Corporation, which manages water supply facilities, and the Farmland Improvement Association.

With the beginning of 2000, negotiations for Free Trade Agreement (FTA) started to make progress amid a global wave of trade liberalization. During the past 10 years since the signing of an FTA with Chile in 2002, Korea has signed 12 FTAs with 50 countries. These include USA, EU members (28), ASEAN countries (10), EFTA countries (4), India, Peru, Chile, Colombia, Australia and Canada. As of May, 2014, FTA negotiations are also underway with many countries such as China, Japan, and New Zealand.

<Table 10> Transition of the Korean Agriculture and Policy Direction

Year	Main Issues and Policy Direction
Before Industrialization (before 1960s)	<ul style="list-style-type: none"> ➤ Creation of owner farming through “Land Reform” ➤ Food shortage and food aid Efforts on enhancing agricultural production: land development
Industrialization Period (1960s~1980s)	<ul style="list-style-type: none"> ➤ Expansion of grain production ➤ Increased productivity through “Green revolution” ➤ 1980’s: entering the era of commercial agriculture

Restructuring Policies (1990s~2000s)	<ul style="list-style-type: none"> ➢ 1990's: React sensitively to the market demand after conclusion of the UR ➢ Structural Reform Measures in Agricultural Sector ➢ 2000's: Clear growth and declines by item(rice vs. livestock products), farm income problem, rural development and welfare ➢ Decreased rice consumption and increased consumption of fruits and meat ➢ Expanding market opening through FTAs
Paradigm shift since 2008	<ul style="list-style-type: none"> ➢ Policy coverage: primary industry à primary, secondary, service industry ➢ Policy customer: producer à producer, consumer, food processing enterprises ➢ Agricultural market: domestic market(defensive) à export market(offensive) ➢ Support method: average à selection and concentration

During the industrialization period, the main goal of agricultural policy was to increase food self-sufficiency through the expansion of agricultural production and “Green Revolution.” Specific plans included land reclamation projects, improvement of irrigation system, and research and training programs for increasing productivity. However, uneven development focusing on industrialization left deep gaps between agriculture and other industries, and rural and urban regions.

The period after the conclusion of the UR negotiation is characterized by globalization. A series of agricultural policies implemented after the launch of WTO in 1995 demonstrate the transition of the Korean agricultural policies toward more market-oriented system. The focus of agricultural policies has been enhancing competitiveness and the capacity of the Korean agriculture to react sensitively to the market demand while coping with emerging challenges, including, in particular, promotion of environmentally friendly farming for sustainable agriculture, maintaining rural vitality, and establishing social safety net in rural areas.

The emphasis among the objectives of agricultural policies in Korea has changed over the period. During the 1950s to the 1970s, policy efforts were concentrated primarily on increasing productivity of crops as well as achieving self-sufficiency in rice. Since the 1980s, the issue of income parity between farm and urban households has emerged following GDP growth and industrialization. In the late 1980s and through the 1990s, the focus shifted to structural adjustment and competitiveness in order to prepare for the opening of agricultural markets. In recent years, the emphasis has shifted to a broader set of objectives related to enhancing the quality of life in rural areas, agricultural competitiveness, environment, farm household income and food safety.

Particularly the Lee Myungbak government established in 2008 has been pursuing a more offensive approach in agricultural policy. It started to put emphasis not only on

production of primary agricultural products but also on processing of primary products and service industry in rural areas. It also expanded policy customers from producers to producers, consumers, and food processing enterprises. Escaping from a defensive approach focusing on protection of domestic agricultural market from imported products, it set an ambitious goal for expanding export of its agricultural products, and is working on selecting agricultural entities having greater chance of success and concentrating government support to them.

The new government under Park Gunhye which is established in 2013 follows the same directions and guidelines of agricultural policy conducted by the previous government. New government has emphasized that the below major policy directions will be conducted during its term of office: (1) adopting creative economy into Korea’s agricultural and food industry to increase value-added in agricultural and food industry (2) establishing solid social safety net for farm income and management (3) promoting welfare to make rural villages an attractive area to live (4) establishing a distribution structure satisfying both consumers and producers, (5) supplying safe agricultural and livestock products.

<Table 11> Five Major Missions and Strategies for Agricultural Development by New Government in 2013

Major Mission	Policy Direction and Strategy
Adopting creative economy into Korea’s agricultural and food industry	<ul style="list-style-type: none"> ➢ Developing IT convergence business models including those for remote greenhouse control, quality management and traceability, and interactive R&D road maps for farmers and the public ➢ Inducing Korea’s sixth industrialization by integrating agriculture with processing and tourism industry and advance the livestock industry into a sustainable, eco-friendly industry by promoting use of animal waste as resources.
Establish solid social safety net for farm income and management	<ul style="list-style-type: none"> ➢ (Full-time Farmers) Alleviating management instability by expanding agricultural disaster insurance and introducing revitalization programs, while innovating agricultural management to induce cost reduction. ➢ (Medium-scale Farmers) Fostering joint management bodies with village farming cooperatives, and develop professional management organizations by creating a range of non-agricultural income sources, such as processing and tourism. ➢ (Small and Elderly Farmers) Providing social welfare supports such as pension, health insurance and basic livelihood security system, and enable farmers to better prepare for retirement with direct payment for farming transfer and farmland pension.

<p>Promoting welfare to make rural villages an attractive area to live</p>	<ul style="list-style-type: none"> ➢ Expanding town and township based public services (rural child-care facilities) and village living infrastructure (communal homes, joint meal service facilities and establish rural traffic systems to connect such facilities. ➢ Ensuring customized welfare for rural villages by establishing the “Safety Management and Disaster Prevention Guarantee for Farmers Act”, expanding farmland pensions for the aged, and strengthening support for the settlement of multi-cultural families in rural areas. ➢ Invigorating local communities under the initiatives of local residents and supports of urban residents through nationwide expansion of the “Rural Village Campaign for All”
<p>Establishing a distribution structure satisfying both consumers and producers</p>	<ul style="list-style-type: none"> ➢ Making a distribution environment where farmers receive more and consumers pay less, by reducing distribution stages though expanding consumer-participatory direct dealings and systemization of distribution system to a more producers’ group centered one. ➢ Setting price stabilization bands for key items, while refraining from direct market intervention, at times of excess in price on the basis of the price band, hold consultations between consumers and producers under the Committee on Supply and Demand to adjust the supply and demand
<p>Supplying safe agricultural and livestock products</p>	<ul style="list-style-type: none"> ➢ Maintaining close cooperation structure between the Prime Minister’s Office and relevant ministries, such as a standing committee, to prepare joint response manuals for food safety accident. ➢ Implementing a general food information network through cooperation with related government agencies, such as the KFDA, and establish a network for real-time information on food traceability and harmful food

3.2 CHALLENGES IN THE KOREAN AGRICULTURE

Korean agriculture faces many challenges at both the domestic and international aspects. The implementation of the Uruguay Round agreement and FTAs with major trading partners has led to important changes in its agriculture. Greater exposure to international competition means that increasing competitiveness, together with appropriate adjustment policies, have become urgent goals.

However, increasing the competitiveness of agriculture is a major challenge given the prevalence of small farms and the high proportion of older farmers. About 85% of Korean farms are less than 1 hectare in size. In spite of policy reforms to facilitate structural adjustment, the average farm size has only increased from 1.19 hectare in 1990 to 1.50

hectare in 2012. At the same time, the average age of farmers has been increasing; currently, about 36% of farmers are more than 65 years old.

Another key challenge for policy makers is the gap in income between farm and urban households. The gap has recently enlarged. The average farm household income is only 58% of urban household incomes in 2012, which is lowest when compared to almost all other OECD countries. Increasing the possibilities for farm households to earn alternative sources of income in rural areas is a challenge that has been taken up by Korean policy makers.

Recent changes in consumer needs pose another important challenge for the Korean agriculture sector. Consumer interest in environmentally-friendly agricultural products has increased. Outbreaks of animal disease such as Avian influenza (AI) and Foot and mouth disease (FMD) have also drawn national attention to food safety.

Investments in the distribution system over the last decades have created a vastly improved infrastructure for distribution of agricultural products. However, the agro-food sector and its associated distribution system remain underdeveloped relative to other sectors of the economy.

Rapid industrialization and the consequent migration from rural to urban areas have led to rural areas being left behind. Policy makers are increasingly interested in rural development as a way to tackle problems in rural areas, such as the lack of good quality in education and medical services.

Hereafter is the more detailed explanation of recent Korean agricultural policies coping with the challenges in the agricultural sector.

3.2 RECENT MAJOR AGRICULTURAL POLICY IN KOREA

(1) POLICY FOR ENHANCING AGRICULTURAL COMPETITIVENESS

As an effort to strengthen the competitiveness of Korean agriculture, the government has implemented a number of agricultural programs that would reduce production cost through farm consolidation, foster competitive farm entities, and encourage farmers to specialize, as well as promote the development of agricultural technology.

<PROMOTING FARM CONSOLIDATION>

The Korean government has recognized that creating large scale commercial farming is essential to enhance the competitiveness of agricultural sector. In this regard, the Korean government has eased strict regulations on farmland ownership and transactions.

Korea maintained strict farmland ownership rules under the land-to-tiller principle, such that farmers could not own more than three hectares of farmland until 1992. In order to get

around the former 3 hectare ownership limit, some farm families used strategies such as assigning land holdings to different family members. In 1993, the farm size ownership limit was increased from 3 hectares to 10 hectares within the Agriculture Development Region (ADR). However, with permission from the county head, farmers could own up to 20 ha inside the ADR. The ADR is designated by municipalities and provinces according to the Farmland Act; within the ADR, conversion of farmland to non-agricultural uses is prohibited. In 1999, the ownership limit outside the ADR was increased from 3 ha to 5 ha and in 2002, the limit on farm size was abolished both inside and outside the ADR, and farmers may now own farmland without any size limitations. Only farm households could own farmland until 1990. However, this system was changed in 1990 as farmer's association corporations, of which all members must be farmers, were allowed to own farmland. In 2002, the Farmland Act was revised to allow farmland to be owned by agricultural corporations under the conditions that investment by farmers represented at least half of the total investment, the representative of the corporation is a farmer and more than half of the executive board members are farmers.

The Korea Rural Community and Agricultural Corporation (KRC), a non-profit public body, has played an important role in farm consolidation. One major KRC project involves enlarging farm size to improve productivity and rural income through economies of scale and the consolidation of farmland. Under this project, farmers are provided financial support for leasing and acquiring farmland through low interest loans, with a focus on young, full-time producers.

To facilitate farm enlargement and farmland mobility, a new farmland banking system, which is run by the Korean Rural Community and Agricultural Corporation (KRC), was introduced in 2005. It provides financial assistance and information to farmers who wish to own or rent farmland from the KRC or others through the acquisition, temporary holding, resale or lease of farmland. Its aim is to minimize the fragmentation of farmland and encourage young full-time farmers to increase the scale of their farms more easily through a farmland banking system.

<RECRUITING YOUNG FARMERS AND PROMOTING SPECIALIZATION>

To encourage new farmers, the Korean government has selected new farmers and supported them with loans. Every year, about 1 000 new farmers under 35 years can receive a loan of a maximum KRW 300 million (USD 270, 000) to start farming and repay it over the next 15 years. To smooth the path for new entrants, a guardianship system for new entrants was introduced in 2005. Under this system, experienced farmers or specialists such as professors in agricultural studies can be designated as guardians for new farmers with the government financing consultation and educational expenses.

To promote specialized farmers, special loans were provided to rice, livestock, fruit and vegetable farmers to support expansion of farm size, the purchase of new machines, and the renovation of orchard facilities. Special loans has provided to these selected specialized farmers at a special interest rate of 2~3% since 1994. From 1998, subsidies have been provided to cover management consulting fees.

<THE PROMOTION OF AGRICULTURAL TECHNOLOGY DEVELOPMENT>

To promote R&D in the agricultural sector, the Agricultural Research and Development Promotion Center (ARPC) was established in 1995. This agricultural R&D agency was reorganized into Korea Institute of Planning and Evaluation for Technology in Food, Agriculture, Forestry and Fisheries (IPET) as a governmental R&D agency with extension of organization. Research and development investment in the agro-food industry amounts to 5.7% of the total national R&D investment, accounting for KRW 909 billion out of total R&D investment of KRW 16.0 trillion in 2012. Particularly the share of agricultural R&D expenditure in government budget of agricultural sector has been increased from 4.1% in 2008 to 8.7% in 2012.

(2) POLICY FOR STABILIZING FARM INCOME

Reducing the income disparity between urban and rural areas has been a very important policy mission in Korea. To improve farm household income, significant policy efforts have been made over the last ten years.

< DIRECT PAYMENT PROGRAMS >

After the launch of WTO system in 1995, a series of agricultural policy reforms have been conducted in Korea. Particularly coping with the agricultural market liberalization, Korean government has introduced the various kinds of direct payment programs after introducing the initial direct payment program for aged farmers' retirement in 1997. The Korean government has employed the eleven types of agricultural direct payment programs until now. Currently eight kinds of direct payment programs are put in operation in 2014 as shown in <Table 12>.

Budget on agricultural direct payment programs has increased from KRW 50 billion (USD 45 million) in 1997 to KRW 1,012 billion (USD 911 million) in 2012. The share of budget on direct payment in total agricultural budget accounting for KRW 10.4 trillion, has been increased from 0.8% in 1997 to 9.6% in 2012. However the share of budget on direct payment is still very low compared to that of developed countries such as USA, EU, Japan

and Switzerland. In addition direct payment programs employed in Korea have been concentrated on rice farming. The budget share of direct payments for rice farming accounted for 68% of total direct payments in agricultural sector.

Background of expanding the direct payment program, in Korean agricultural sector is mainly because of the necessity of policy change from price support into direct income support under the WTO rules. Reducing the income disparity between urban and rural areas has been a very important policy objective in Korea. In this regard, a number of different direct payments have been introduced since the late 1990s, with a variety of objectives. Even though seven kinds of direct payment programs are operated currently, these can be categorized into three types as follows: (1) direct payment for income support, (2) direct payment for environmentally friendly farming or multifunctional agriculture (3) direct payment for structural adjustment and creating large scale farm.

<Table 12> Outlines of Direct Payment Programs in Korea

Types of direct Payment	Introducing-ending Period	Major Objective	Eligible Producer/Product
Early retirement of aged farmers	1997-current	Structural adjustment	Aged farmer/rice
Environment-friendly farming practice	1999-current	Environmental friendly farming	Licensed farmer/all products except livestock
Environment-friendly livestock farming practice	2004-current	Environmental friendly farming	Livestock farmer/livestock
Less-favored area	2004-current	Multifunctional role of agriculture	Less-favored area
Landscape conservation	2005-current	Multifunctional role of agriculture	Landscape area
Rice income stabilization payment	2005-current	Income compensation	Rice farmer/rice
Direct payment for compensating FTA damage	2005-current	Compensation for severe price drop	Products in severe price drop with FTA.

Direct payments for upland farmers	2012-current	Income compensation	Farmers/26 commodities such as barley, wheat, corn, onion, red pepper etc.
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Source: Ministry of Agriculture, Food and Rural Affairs (MAFRA)

Major direct payment programs which are currently operated in Korea are as follows: First, direct payment for aged farmers' early retirement as initial direct payment program in Korea was introduced in 1997. Policy objective of this program is to ease the early retirement of aged rice farmers with direct income compensation and to create large scale farming for structural improvement of rice industry. Farmers over 65 years of age who are willing to sell or rent their land to full time farmers for a period of more than five years are eligible to receive a lump-sum payment. Old farmers who plan to retire could receive annual payments of KRW 3 million (USD 2.727) per hectare for ten years.

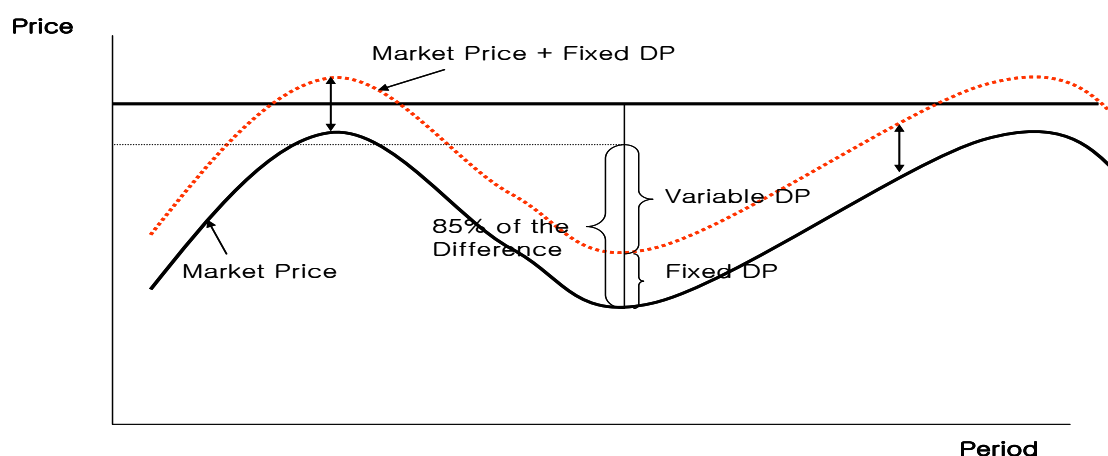
Second, direct payment for environment-friendly farming practices was introduced in 1999 according to the increasing social demand for sustainable and environmentally friendly farming. Policy objective of this program is to compensate the farm income that is reduced during the initial stage of introduction of environment-friendly farming practices. Payments are provided to farmers who conform to environmentally friendly farming practices until 3 years. It provides payments based on the acreage that is calculated by the income gap between conventional farming and environment-friendly farming practice. Direct payment rates for eligible producers are differentiated by degree of environment-friendly farming practices and by type of agricultural field. The payment per hectare is KWR 1.2 million (USD 1,091) for organic farming, KWR 1 million (USD 909) for chemical-free farming and KWR 524 thousand (USD 476) for low-chemical farming.

Third, direct payment for less favored areas was introduced in 2004. Agricultural area where the share of arable land was below 22% and the land gradient is over 14%, is eligible to receive KRW 500 thousand (USD 455) per hectare for dry fields and KRW 250 thousand (USD 227) per hectare for pasture. The objective of this program is to alleviate the farmers' sufferings and to promote the rural vitality in disadvantage area.

Fourth, direct payment mechanism for paddy field was introduced in 2005 as the most important direct payment in the Korean agricultural sector. Direct payment for paddy field includes both fixed and variable payment systems. To be eligible for the fixed payment, paddy fields had to be in production during the period 1998-2000. The fixed payment per hectare for registered paddy fields was KRW 600 thousand (USD 586) in 2005 and increased to KRW 700 thousand (USD 636) in 2012. The variable payment is given only to farmers who are currently producing rice on registered farmland. The amount of the variable payment

is determined according to the difference between a target price and each year's post-harvest price. If the post-harvest price is lower than the target price, farmers receive 85% of the difference, after deduction of the fixed payment, which is multiplied by a fixed national reference yield to calculate the payment per hectare. For the years 2005-12, the target price is KRW 170.083 (USD 155) per 80 kilograms of rice, determined by adding the income effect of past government purchasing and paddy-field environmental conservation payments to the three year average of the harvest price from 2001 to 2003.

<Figure 1> Rice Income Stabilization Direct Payment



Also, FTA direct payment (FTA DP) was introduced in 2005 with the first FTA with Chile. This program is for damage compensation in terms of severe price drop with import surge from FTA partners. The FTA direct payment is triggered when the price in a given year falls below the basis price, and when the total import volume and the import volume from the FTA partner in a given year exceed the basis volume, which is calculated as the Olympic average of the previous five years. If the market price of a product in a given year is less than 90% of the average price (basis price) of the past five years excluding the years with the highest and lowest price (i.e. 5 years Olympic average), then farmers are awarded 90% of the difference between the basis price and the market price.

<CROP INSURANCE PROGRAM>

As a result of climate change, rainfall patterns shift or natural disaster such as drought and floods become more frequent. Crop insurance is therefore a key program in Korea to stabilize the farm management against the production risks due to natural disasters such as typhoon, hail, drought and floods.

In Korea, the crop insurance was introduced in 2001. There are two general categories of crop insurance such as crop-yield insurance and crop-revenue insurance. Currently crop-yield insurance has only been conducted in Korea. The crop insurance program is handled by a

public private partnership and is heavily supported by the government.

In the initial stage, there were a few crops such as apple, pear, tangerine, persimmon, mainly fruits covered by the crop insurance. The number of insured crops has been increased gradually from 2 crops in 2001 to 40 crop in 2013. When the program was launched in 2001, only apples and pears were covered. As of 2013, 40 crops are now covered due to the expansion of insurable crops every year. The Korean government plans to increase product coverage to 50 crops by 2017 and to introduce crop-revenue insurance for several crops. Also, the product coverage of the livestock insurance scheme to protect farmers' income from outbreaks of animal disease and natural disaster increased from four livestock products (cattle, pigs, chicken and horses) in 2002 to sixteen livestock products, including deer, duck, pheasant, quail and turkey, in 2013.

The Korean crop insurance is a policy insurance subsidized by government. The government's share of total premiums is 50% with 100% of administrative expenses. Therefore government budget for crop insurance has greatly increased from KRW 9.4 billion to KRW 201.6 billion in 2013. The largest increase since the introduction of crop insurance program in 2001 reflects the Korean government's strong willingness to crop insurance program as the core agricultural policy for minimizing farm business risk resulting from recent climate changes.

<Table 13> Overview of Crop Insurance Program in Korea

	40 Crops (25 Main + 15 Pilots)	
	Main	Pilot
	Insured Crops	Apple, Pear, Sweet Persimmon, Tangerine, Astringent Persimmon, Kiwi, Prune, Soybean, Potato, Onion, Chestnut, Corn, Sweet Potato, Garlic, Japanese Apricot, Jujube, Nine Greenhouse growing crops (Watermelon, Strawberry, Tomato, Melon, Cucumber, Unripe Pepper, Pumpkin, Rose, Chrysanthemum)
Covered Perils	- Loss or damage to the insured crop (Yield Reduction) caused by following perils: - Basic Coverage : Typhoon and Hail - Extended Coverage (Optional): Spring Frost & Freezing, Fall Frost & Freezing, Excessive Rain (Torrential Rain), Fruits Tree Damage	
Government Subsidy	-50% of Risk Premium (by Government) -100% of Operating Expenses (by Government)	
Deductible	-15%, 20%, 30% , 40%	

Source: Ministry of Agriculture, Food and Rural Affairs(MAFRA)

NongHyup Property & Casualty Insurance (NHPCI) acts as primary insurer in Korea. In general, the insurance company indemnifies to the policyholder under the loss ratio of 150% and the government must compensate losses that exceed 150% of risk premium based on the contract between insurance company and the government.

Corp-yield insurance is offered through named-peril and multi-peril crop insurance policies. Apple, pear, peach, grape, sweet persimmon, tangerine, and astringent persimmon are covered through the named-peril policy. Basis risks covered under this policy are hail and typhoon. In addition, farmers have the option to purchase insurance for spring frost and freezing, fall frost and freezing, excessive rain (torrential rain), and fruit tree damage. Also, horticulture facility insurance has been widely provided to compensate the damage to facility houses, and ancillary facilities such as heating, warming, and watering facilities. Horticulture facility damage has occurred due to recent extreme weather conditions like high winds, heavy snows, or flooding. Horticulture facility insurance is now implemented in twelve horticulture crops such as watermelon, strawberry, cucumber, tomato, oriental melon, pumpkin,

chrysanthemum, rose, chive, lettuce, and spinach.

Crop-yield insurance, however, could not cover the market risk resulting from price fluctuation. In other words, it has a limitation to stabilize the farm income. Therefore, the Korean government is now considering the introduction of crop-revenue insurance based on farmer's average revenues for the commodities such as grape, soybean, onion, Korean cabbage, and cucumber. In the near future, crop revenue insurance program will be implemented to stabilize the farm income and management coping with the increased market risk due to the expansion of agricultural market liberalization in Korea.

Crop insurance program for protecting farm household income from natural disasters and pests has been reinforced. The eligible products of the insurance scheme for crops and fruits, which started in 2001, increased to 35 varieties in 2012, adding green chili, squash, roses, chrysanthemum and raspberry. The government plans to extend the product coverage to 50 commodities in 2014.

(3) POLICY FOR ENHANCING FOOD SAFETY

The successful development of the food industry is highly dependent on a quality assurance and food safety management system that enables consumers to choose agricultural products and foods with the provision of appropriate information. Korean government has introduced a wide variety of certification systems for food quality and safety management.

<FOOD CERTIFICATION AND SAFETY MANAGEMENT SYSTEMS>

The government has initiated various kinds of certification systems, such as the environmentally-friendly agricultural product certification system, as well as Traceability System, the Good Agricultural Practices (GAP), and the Hazard Analysis Critical Control Point (HACCP) to ensure food safety.

Policies to cope with growing consumer concerns about food safety have been intensified in Korea. The agricultural product traceability system records and manages information on the production, distribution and sales of agricultural products to ensure that any quality or safety problem that may arise can be traced back to its source in the production chain, and take actions if necessary. The purpose of this system where information on agricultural products can be traced is to secure food safety and gain consumer confidence in agricultural products by promptly figuring out causes of problems and taking necessary measures. The traceability scheme for agricultural and livestock products, launched in 2004. The breeding and movement history of branded cattle and pig has begun to be computerized in an electronic database. After slaughtering, meat cuts carry an identification number all the way to the retail stage. Currently most agricultural and livestock products, and processed

foods for table use are applied in traceability system. As of 2013, about 103 thousand farm households participated in this program. The number of farm households in the traceability system increased from 31 thousand farms in 2007 to 103 thousand farms in 2013. The government provides the traceability information on agricultural products (www.farm2table.kr).

Also the government launched the Good Agricultural Practices (GAP) regulation and designated 21 institutions as GAP certification agencies in 2006. The GAP system ensures safety of agricultural food products by providing standards for the management of risk factors including pesticides residue, heavy metals or other harmful organisms that may reside in soil, water or products from the production to harvest and packaging stages. The GAP system was created to minimize harm to the environment and supply safe agricultural products to consumers by allowing them to know about the management of pesticides, heavy metals and micro-organisms that may occur from the cultivation to harvest, processing and storage phases. As of 2013, about 46 thousand farm households participated in this program. The number of agricultural products in the GAP certification rose from 45 items in 2006 to 127 items in 2013. The number of GAP certification agencies increased from 21 in 2006 to 48 in 2013. The Korean government plans to expand the share of agricultural products in the GAP certification from 3.4% in 2012 to 30% until 2017. The government provides the GAP information (www.gap.go.kr).

The HACCP (Hazard Analysis Critical Control Point) system was introduced in 1997 and applied to all slaughtering houses in 2003. It is now being applied widely in the livestock and milk industry. The HACCP certification targets livestock food products, designed to prevent bacterial contamination or antibiotic residue in meat and other livestock products. The food items to which HACCP is applied include beef, pork, and chicken as well as ham, sausages, dressed meat, milk, cheese, butter and ice cream, and egg products. As of 2013, 5,310 farms and slaughterhouses, 1,915 processing plants for livestock products, 534 marketing agencies and 119 compound feed factories are applying HACCP. The number of livestock farm and processing company in the HACCP certification increased from 771 in 2007 to 7,878 in 2013. The Korean government plans to expand the share of the livestock related agency in the HACCP certification from 28% in 2013 to 55% until 2017. The government provides the HACCP certification information (www.haccpkorea.or.kr).

Also, the Korea Standard (KS) certification has given to the processed foods that meet the quality requirements of the system through inspection of factory and item. 78 traditional food items have received the traditional food quality certification until 2013. The Geographical Indication (GI) system to protect the place of origin of agricultural produce launched in 2002. The number of products under GI system has been increased from 1 product in 2002 to 90 products including Bosung green tea, Sunchang red pepper paste, and Cheolwon rice in 2013.

<Table 14> Agro-Food Certification and Safety Management Systems

Certification System	Details	Certifying and Management Agency
Traceability System	Recording and information management system on the production, distribution and sales of agricultural products	National Agricultural Products Quality Management Service.
Good Agricultural Practices(GAP)	Certification on the safe production of agricultural and food products	National Agricultural Products Quality Management Service and Private certification agencies
Hazard Analysis and Critical Control Point(HACCP)	Certification on the operation of scientific safety management systems that prevent bacterial or antibiotic residue	Ministry of Food and Drugs Safety
Environmentally-friendly agricultural product certification	Certification on the production of agricultural products with no or minimal use of synthetic pesticides or chemical fertilizers	National Agricultural Products Quality Management Service and Private certifying agency
Traditional food quality certification	Certification on superior traditional foods that use domestic ingredients	Korea Food Research Institute
Processed food KS certification	Certification on agricultural and food products that fulfill quality standards	Korea Food Research Institute
Geographical Indication	Certification for protecting the place of origin of agricultural produce and agricultural processed products	National Agricultural Products Quality Management Service

Source: Ministry of Agriculture, Food and Rural Affairs(MAFRA)

(4) POLICY FOR PROMOTING ENVIRONMENTALLY FRIENDLY FARMING

Since 2001, the Korean government has carried out 5-year plan for the promotion of environment-friendly farming. It designated environmentally friendly farming zones and has provided support to farmers who produce environment-friendly agricultural products through a direct payment scheme. The beneficiaries of this scheme is required to take training on environment-friendly farming and record the amount of chemicals they use.

Stores that handle only the organic agricultural products are being operated in metropolitan areas to give consumers better access. Department stores are also encouraged to expand the corners allotted for these products. The growing prevalence of e-commerce also gave rise to the door-to-door delivery services and allowed producer to sell their products to

consumers directly. Although certified environment-friendly agricultural products accounts for 7% of the total agricultural products distributed in the market in 2012, the government intends to increase the rate up to 12% by 2017.

(5) POLICY FOR STRENGTHENING THE LINKAGE BETWEEN AGRICULTURE AND FOOD INDUSTRY

The Korean government has recognized that the linkage between traditional agriculture and food industry is very important for sustainable development in agro-food industry. In 2005, it established a “Comprehensive Plan for Promotion of the Agro-Food Industry,” the purpose of this plan is to promote the globalization of Korean traditional food, to improve human capital and skills in the agro-food sector, and to improve the connection between regional specialty agriculture and the food industry. Particularly the Korean government is trying to strengthen links between agriculture and the food industry after the establishment of “Food Industry Promotion Act” in 2007 and the Lee Myungbak government established in 2008.

Strengthening the linkage between the domestic agricultural sector and the food industry is necessary to expand the demand for Korean agro-foods and promote their consumption. Linking the two industries together also allows for re-recognition of role of agriculture in the nation and contributes to succeeding and developing cultural heritage of Korea. The overseas expansion of the Korean food service industry and increasing export of food industry, including export of traditional Korean foods abroad contribute to globalizing Korean food and culinary culture, enhancing national status around the world.

The food industry acts as the driving force for the growth of agriculture and is directly linked with food security. For these reasons, the food industry is considered to be a part of agricultural policy and must be managed accordingly. There is a demand that food policy shift away from the traditional focus on the production and supply of agricultural products towards a more consumer-oriented approach, requiring a more efficient linkage between the food industry and agriculture.

In order to strengthen the ties between the two industries, the government is pursuing policies that aim to develop local food processing industries, expand the food processing demand for domestic agricultural food products, revitalize the production and consumption of processed traditional foods, discover and commercialize traditional food items, and promote the globalization of Korean food. In addition, the government is pursuing the creation of a certification system for food service companies and a distribution network to ensure the stable supply of superior domestic food products to the food industry and service companies in order to expand the food processing demand for domestic agricultural products.

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