

## CURRENT INVESTMENT AND LOAN FOR AGRICULTURE IN KOREA AND ITS IMPLICATIONS\*

JoonKee Park\*\*

### **Keywords**

investment and loan, direct payment, crop insurance, management risk control, agricultural policy

### **Abstract**

This report described investment and loan plans for the agricultural sector following the changing circumstances of Korea's agricultural policies, the direct payment programs, the agricultural crop insurance and the management risk control schemes, which are considered to be key support policies for stabilized farmers' management. The future agricultural policies should be oriented in the direction of creating future demand for advanced agri-food, controlling management risk of large-scale farmers, and improving old and small-scale farmers' welfare and the rural living environment.

Examination was made for the direct payment programs, the agricultural crop insurance, and the scheme for supporting management recovery by the farmland bank as detailed support policies. It is necessary to clarify the direction of direct payment programs, about whether it would be the single payment scheme as in the EU or the individual direct payment scheme. The agricultural crop insurance is necessary to prepare for conversion to price insurance and income insurance in terms of farmers' management risk control. The management recovery support system faces diversified management risks with the increasing number of large-scale farmers. It is necessary to develop support systems of diversified types that can effectively control farmers' management risk.

---

\* This article was originally prepared for presentation to the 8th Forum for Agriculture Policy Research in North East Asia held in China(2012.6).

\*\* Senior Fellow, Korea Rural Economic Institute

## 1. Introduction

In the era of open agricultural market since the UR Agreement on Agriculture in 1993, Korea's agricultural market is now open to the world. There is a growing sense of crisis, rather than a new potential, led by the relative low position and inevitable reduction of subsidies by the Korean government in the global agri-product market. The Korean government established and promoted a plan for investment and loan for the agricultural sector so as to minimize damages to the agricultural sector from the open market and the changed direction of policies, and to enhance competitiveness.

Recently, the Korean government has promoted FTAs through bilateral negotiations. The FTA between Korea and the EU has come into effect following the FTA between Korea and Chile in 2003, and the Korean government has signed 8 FTAs with 45 nations in total. While both the Korean and Chinese government officially announced the beginning of FTA negotiation, there is a high possibility that Korean agriculture will suffer damages from imported Chinese agri-products, and there is a strong need for actions to be taken to address the issue.

Meanwhile, sharp growth and increasing demand for bio-energy in new emerging economic countries including Brazil, Russia, India and China (BRIC) (with large population) are contributing to sharply increasing the demand for grains and unstable global grain prices. Climate change, such as global warming, also changes the condition of producing agri-products. People also have become more interested in food safety and they are laying emphasis on the importance of environment-friendly agriculture.

With respect to changing conditions of Korean agriculture, commercialization and scaleup by large-scale farmers is in progress, but the farming scale still remains small. The current challenges are aging agricultural labor and shortage of prospective farmers. Social polarization is increasing due to dropping income from farming due to strict farmers' terms of trade and widening income gap. As a result, it is impossible to fully address the issues of declining rural areas and worsening residential conditions in the market, which should be addressed by the government through policy actions.

Changing domestic and overseas conditions may be a risk factor, but can be converted to an opportunity factor for growth depending on how to overcome the risk and make an effort. That is, because agriculture and rural districts are re-

sponsible for playing the role in the economic, social and public profit aspect, the function of government policy is important together with the functions of the market.

The Korean government converted the paradigm for agricultural policy from the support policy focusing on price support in the past to enhancing competitiveness, improving conditions of living in rural districts and promoting welfare, and the paradigm is now oriented to sustainable agriculture focusing on environment-friendly agriculture, so as to effectively adapt to changing domestic and overseas circumstances in agriculture and rural districts. The Korean government converted the agricultural policy promotion scheme from the standardized top-down agricultural policy operation of the past to a bottom-up self-regulating agricultural policy. This report will describe the history of agricultural policy following the changing circumstances in agriculture and rural districts, current investment, loans and support policies in the Korean agricultural sector after opening the market, and present implications.

## 2. Changes of policy for agriculture and rural districts

### 2.1. Changes of circumstances for agricultural policy

Recent changes in Korean agricultural policy are as follows. First, the change is opening the market and intense competition led by quick spread of multilateralism and regionalism. The support system for farmers' income and management risk control is expanding to effectively adapt to such change. Second, it is necessary to recognize that unstable global demand and supply of grains is a structural thing rather than a temporary thing. It is necessary to construct a risk management system to ensure stable supply of grains, enhance global cooperation in the agricultural sector, and improve the self-supply of grains for food safety. Third, it is necessary to take positive actions, for example, constructing a government-wide food safety system while consumers increasingly want food safety. Fourth, it is necessary to positively develop schemes for effectively coping with climate change and the effect thereof. To this end, it is necessary to develop schemes for expanding investment in R&D to support development of new technology and growth of environment-friendly agriculture and organic farming.

Changing domestic and overseas circumstances in agriculture and rural districts are as follows. First, while small-scale farming continues in spite of the scaleup policy, commercialization and scaleup by large-scale farmers is underway. Second, the faster speed of increasing intermediate input than increasing agricultural yields contributes to dropping agricultural added values. Third, agricultural labor is fast aging, and it is hard to secure prospective farmers. Fourth, there is growing income instability due to agricultural growth stagnation and worsened trade conditions.

Meanwhile, the changing circumstances in agriculture and rural districts include some factors to be used as an opportunity in the future. First, consumers' request for safe agri-products results in increasing the demand for domestic agri-products. Second, consumers' high interest in safety, health and well-being results in increasing the demand for environment-friendly agri-products. Third, people's high interest in maintenance and conservation of the natural environment in rural districts results in increasing the demand for amenities and conventional culture in rural districts. Fourth, there is increasing interest in and demand for raw agri-products and food materials produced in Korea because of the growth and differentiation strategy of the food industry. Fifth, there is a need for expanding the food supply base in Korea because of the unstable global grain market caused by the changing global food demand and supply structure.

TABLE 1. Changes of the number of farm households, population, and area of cultivated land

	1990	2000	2005	2009	Annual average ratio of increase & decrease
Number of farm households (1000 households)	1,767	1,383	1,273	1,195	2.1
Area of cultivated land (1000 ha)	2,109	1,889	1,824	1,737	1.0
Area of cultivated land per household (ha)	1.19	1.36	1.43	1.45	1.0
Number of farmers (1000 farmers)	6,661	4,031	3,434	3,117	4.0
Employees in agriculture and forestry (1000 employees)	3,100	2,162	1,747	1,633	3.4

Source: Ministry for Food, Agriculture, Forestry and Fisheries (MFAFF), 'Statistics for agri-food, forest food and sea food' in each year.

Table 2. Proportions of large scale farmers

Unit: %

Management scale	Ratio of farm households		Ratio of area of cultivated land (number of livestock head)	
	1995	2005	1995	2005
Rice paddy: 3ha or more	2.8	4.9	14.8	26.4
Field: 2ha or more	2.5	3.9	18.0	30.0
Orchard: 1ha or more	13.6	14.6	42.9	45.8
Facility: 2,000 pyeong or more	12.4	9.6	38.3	52.9
Beef cattle: 30 or more head	1.7	6.9	16.6	46.9
Milk cow: 50 or more head	5.6	49.9	17.8	71.6
Pig: 1,000 or more head	2.4	24.0	36.5	77.9
Chicken: 30,000 or more head	0.3	1.1	44.0	73.7

Source: Statistics Korea, 'Agricultural Census'; MFAFF, 'Livestock Statistics', in each year.

## 2.2. Changes of policies for agriculture and rural districts

### 2.2.1. Conversion of agricultural policy paradigm

Global changes of agricultural policies over time are as follows. Before the 1970s, emphasis was laid on increasing food production on the basis of green revolution and price support. However, while it was revealed that the issue involving farmers' income could not be fully addressed by means of increased food production alone, the production and price policy was converted to a structure policy while improving productivity and balancing the income between agriculture and the manufacturing industry by means of strengthening the agricultural structure after the 1970s.

During the period of 1980 to 1990, emphasis was laid on the support policy including price support and export support. As a result, the policy contributed to improving agricultural efficiency and productivity, but resulted in overproduction of agri-products. The agri-products then became the object for global negotiation in the UR negotiation. From early 1980, Europeans were the first to have interest in agriculture in Less Favored Areas, recognize the importance of national land resources and environmental conservation, and trigger regional policies.

Since 1995, people have recognized the value of multi-functional agri-

culture and rural districts, and the key issues of agricultural policies included environment-friendly agriculture, food safety, and scenery in rural districts. The direction of agricultural policy was converted from protecting agriculture to market-oriented agriculture. Attempts were made to address the issue of farmers' income by means of the direct payment system not linked to production.

The agricultural policy paradigm of Korea shows a similar pattern to the global agricultural policy paradigm although the period is not the same. The agricultural policies were centered on agriculture and rural districts in the past, but the new paradigm embraces food, the life industry, regions, scenery, the environment as well as agriculture and rural districts, and focuses on implementing sustainable agriculture.

While the role of the government in the past was to embody policies of designing agriculture as a market designer and market mediator, the role was limited to promotion and supplementation of the market function in the new paradigm. The support system was converted from subsidy support to supporting the ability of creating added values. The target of the support policy is converted to establishing and enforcing policies in consideration of consumers and future generations including producers. The promotion system is expanded from the central government to municipalities and is converted to the agricultural policy system for cooperation between the private sector and the public sector to implement cooperation with farmer groups.

TABLE 3. Conversion of agricultural policy paradigm

	Old paradigm	New paradigm
Scope of policy	Agriculture, fishing, rural districts, fishing villages	Agriculture & fishing + food + life industry (widened area)
	agriculture, fishing, rural districts and fishing villages	Region+scenery+environment (sustainability)
Role of government	Market designer, mediator	Promotes market functions
	market designer, mediator	Corrects market failure
Support system	Subsidy support	Supports the ability of creating added values (investment)
Target of support	Producer-centered	Producer + consumers + future generation
Technical innovation	Increasing productivity	Productivity, safety, green technology
		Life industry related technology
Promotion system	Led by central government	Expands the role of municipalities, governance

### *2.2.2. Expanding the area of policies for agriculture and rural districts*

The area of policies for agriculture and rural districts is expanding, following the conversion of paradigm to be adapted to changes in the circumstance of agricultural policies. The agricultural policies in the past were centered on agriculture and rural districts, but the area of policies has gradually expanded to agri-food and rural districts. In particular, the area of policies related to rural districts has been expanded since 1990 while consumers' demand for multi-functions of rural districts and amenity resources of rural districts increases.

In the 2000s, consumers' recognition of agri-food has been converted from simple consumption to high quality and safe agri-products. While stable supply of safe agri-products is needed because of increasing supply of imported agri-products in the aspect of supply, the area of policies has been expanded to embrace food.

In particular, while safety of agri-food against livestock diseases is emphasized since the outbreak of foot-and-mouth disease and big increase in people's interest in the environmental issue, the environment is emphasized as an object of agricultural policies. The agricultural sector uses 49% of water resources and is in charge of using and conserving natural resources such as land, and it is predicted that the environment will be an important object for agricultural policies. That is, it is highly probable that the area of agricultural policies will continue to be expanded, and prior preparation is thus needed, including overhaul of involved systems and the system for promoting agricultural policies.

### *2.2.3. Movement of power in governance of agricultural policies*

Expansion of the area of agricultural policies is closely related to the movement of power in governance from producers, that is, farmers, to consumers. The agricultural policies centered on producers use a relatively simple and obvious policy instrument called price support of agri-products. However, intense competition led by the open market for agri-products triggered the conversion of agriculture to a production activity in consideration of consumers. Accordingly, while environment-friendly agriculture has been needed, and consumer's demand for rural district space has increased, the policies for rural districts have expanded. Meanwhile, the recent outbreak of livestock diseases (foot-and-mouth disease, AI, etc.) has let us think of the importance of the natural environment

in agricultural policies.

There is a need for developing the direction for financial investment to handle the policy demand led by expanded area of policies by MFAFF. In addition, the power of governance has moved from producers to consumers, and the importance of the environment is emphasized more than ever before.

FIGURE 1. Expanded area of MFAFF policies

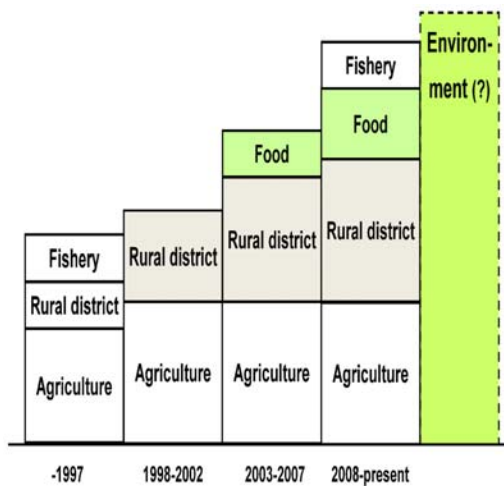
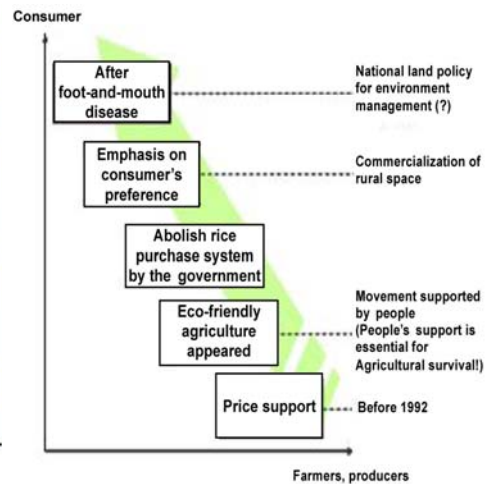


FIGURE 2. Movement of power in governance of agricultural policies



#### 2.2.4. Focus of agricultural policies

The focus of agricultural policies has continued to change to effectively adapt to changing circumstances in agriculture and rural districts. While the policy focus before the UR negotiation was to protect small-scale farmers by means of price support, financial investment for restructuring has been made by establishing a plan for structural improvement (42 trillion won) and by enhancing the competitiveness to adapt to the open market in step 1 after the UR negotiation. In step 2 in the investment and loan plan for agriculture (45 trillion won), the policy was modified to supporting small and medium-scale farmers, and the comprehensive scheme for agriculture and rural districts (119 trillion won) is an agricultural policy for second restructuring that focuses on supporting farmers by means of selection and concentration. The farmer registration program



and the scheme for supporting old farmers' retirement was devised in order to promote agricultural policies (customized agricultural policies) adjusted to the management reality of farmers. Quite a number of policies have been enforced including the farmer registration program. As described above, the focus of agricultural policies has continued to change due to internal and external factors, of which the center includes the objective of policy, that is, continued growth of agriculture and rural districts, and farmers' management stability.

It is considered that the direction of agricultural policies should be converted from restructuring for enhancing competitiveness to sustainable agriculture for food safety, environment-friendly agriculture and stable management of farmers in consideration of changing domestic and overseas circumstances surrounding agriculture and rural districts. That is, the power in governance for agricultural policies is being converted from producers (farmers) to consumers, and the objective of agricultural policies is changing from increasing yields and price support to safe agri-food and environment-friendly agriculture. The emphasis in the area of agricultural policies was laid on the primary industry in the past, but is laid on the importance of the food industry now. An important task is now to develop a scheme for linking the agricultural policies with the environmental issue.

### 3. Current investment and loan for agricultural sector

#### 3.1. Mid- and long-term investment and loan for agriculture and forestry

The UR negotiation agreed in December, 1993, had a great effect on Korea's agriculture. It was predicted that the global agriculture would be reorganized according to the principle of comparative advantage and competition in the market, together with the accelerating speed of opening the Korean market for agri-products. As a result, there was a growing sense of crisis that Korea's vulnerable agriculture of small scale would totally collapse. That is, the agricultural policies should greatly change at a time when the damage led by the open agri-product market was imminent. The scheme for promoting agricultural policies as well as special investment and loan for the agricultural sector was converted

from the standardized top-down manner to the bottom-up self-regulating manner for agricultural policies.

The government established the Special Tax for Rural Development to invest 15 trillion won in agriculture and rural districts for 10 years from 1995 to 2004 according to the national agreement of 1994. In addition, the Project for Improving Rural Districts and Fishing Villages with 42 trillion won was decided to be enforced 3 years earlier than planned until 1998. The project was the step 1 investment and loan project which was originally established in 1991 to be enforced until 2001. At that time, the basis for agricultural production was not strong, and agriculture was not fully mechanized. More and more farm work was carried out by old people and women.

The UR negotiation was underway for further opening of the agricultural market. In this context, there was a sense of crisis that the future of agriculture and fishing might collapse unless competitive agriculture and fishing of Korea was not ensured through restructuring. The Korean government then decided to invest 42 trillion won in agriculture and rural districts for 10 years from 1992 to 2001 for the purpose of training human resources for agriculture and fishing, expanding the scale of farming, overhauling the production basis, mechanizing, and modernizing facilities.

FIGURE 3. Plan for investment and loan for agriculture and forestry after UR negotiation

'92	'93	'94	...	'98	'99	...	'03	'04	'05	...	'13	'14	
<b>Step 1: 42 T plan</b> (National fund of 42 T won, municipality expenses and farmers' payment of 7 T won)				<b>Step 2: 45 T plan</b> (National fund of 38 T won, municipality expenditure and farmers' payment of 7 T won)				<b>Step 3: 119 T plan</b> (National fund 100%)					
							<b>Project of Special Tax for Rural Development of 15 T</b>		<b>Project of Special Tax for Rural Development</b> (Ending in June, 2014)				

\* T: trillion

TABLE 4. Investment and loan plan with 42 trillion won: criteria for investment and loan by the central government

Unit: 100 million won

	1992~1994	1995~1998	Total
Enhance competitiveness of agriculture and fishing.	94,614	224,333	318,947
Vitalize rural districts and fishing villages.	8,874	26,156	35,030
Total	103,488	250,489	353,977

TABLE 5. Investment and loan plan by Special Tax for Rural Development

Unit: 100 million won

	1994	1995~2004	Total
Enhance competitiveness of agriculture and fishing.	1,670	89,105	90,775
Improve living environment in rural districts and fishing villages	1,450	39,590	41,040
Improve welfare of farmers and fishermen	360	17,852	18,185
Total	3,480	146,520	150,000

The investment plan of the Special Tax for Rural Development, which was determined in July, 1994, was developed on the basic policy described below. That is, the basic policy includes considering the feature of the source of tax revenue by national sympathy, avoiding overlapping with the existing investment and loan plan with 42 trillion won, and investing in key projects cherished long by farmers, for example, the key projects for competitive agriculture and fishing, and expanding basic facilities for living in rural areas including roads, housing and the water service. Financial resources were distributed in the investment plan by the Special Tax for Rural Development to lay emphasis on further enhancing competitive agriculture and fishing, and on improving living conditions in rural districts and fishing villages and improving farmers and fishermen's welfare as well.

The investment and loan of 45 trillion won in step 2 (1999~2004) was a distribution scheme developed for initially promoting the 'agricultural policies for overcoming the crisis' led by the currency crisis, for promoting family-oriented farming due to bad management of large-scale farmers resulting from economic depression and for promoting consumption of agri-products. That is, the key was the management policy for farmers to stabilize their income and management.

The key details are as follows. First, overhaul farming bases to cope with disasters, overhaul and manage farmland, and support environment-friendly agriculture and forestry, so as to hold and develop the function of agriculture and forestry for public profits. Second, train farmers, support general funds for agricultural management, and enhance competitive agricultural management. Third, develop advanced agricultural and forestry technology, support informatization of agriculture and forestry, and support the industries related to agriculture. Fourth, create a distribution base for production sites and markets, improve consumer protection, and support creation of a basis for exporting agri-products and forestry products so as to improve distribution of agri-products and support agriculture and forestry for export. Fifth, develop diversified income sources, improve the living environment, and improve farmers' welfare, so as to develop rural districts and improve farmers' welfare. Sixth, support agricultural funds, reduce farmers' burden, and enforce various direct payment programs allowed in the WTO regulations, for example, the direct payment program for rice paddy farming, so as to support stable management of farmers.

TABLE 6. Investment and loan plan of 45 trillion won for agriculture and rural districts (1999-2004)

	Total investment and loan	Central government	Local government's expenses
Total	450,526	378,384	72,142
1. Expand the function of agriculture and forestry for public profits.	149,663	130,593	19,070
2. Support agricultural management.	77,811	71,927	5,884
3. Improve the added value of agriculture and forestry.	18,063	15,842	2,221
4. Improve distribution and expand export.	87,142	67,959	19,183
5. Regional development and support of welfare	81,304	55,520	25,784
6. Support stable management of farmers.	36,543	36,543	-

The step 3 investment and loan plan with 119 trillion won (2004~present) describes the objective of agricultural policies in the 'Master Plan for Agriculture and Rural Districts' as the 'balanced and developed society in which rural districts and urban cities are harmonized'. The policies described to embody the society are as follows: agricultural policies (1. Restructuring fo-

cusing on farmers, 2. Environment-friendly agriculture of high quality, 3. Ensure a new growth engine), income policies (1. Improve the direct payment program, 2. Strengthen the stable management device, 3. Increase off-farm income), and policies for rural districts (1. Develop rural districts, 2. Strengthen the social safety network, 3. Improve welfare infrastructure).

The investment plan with 119 trillion won is different from the previous 42 and 45 trillion won investment plans in terms of contents (for example, investment priorities), and the method of calculating the scale of investment and loan as well. That is, the previous investment plans included local government's expenses and farmers' payment as well as the national funds (subsidy, loan), but 119 trillion won investment and loan plan is based on the national funds other than local government's expenses and farmer's payment. Since the budgets not related to profits, for example, short-term loans and debt repayment, are not included, only the support by the central government is included.

With respect to the field of investment and loan in detail, the 42 trillion won investment and loan plan and the 45 trillion won investment and loan plan focused on competitive agriculture and overhaul of production bases. However, in the 119 trillion won investment and loan plan, 36 trillion won, or 30.4%, was invested in enhancing the basic structure of agriculture and improving competitiveness, 32 trillion won in stabilizing farmers' income and management, 18 trillion won in improving welfare of rural districts and regional development, and 17 trillion won in management basis overhaul.

### 3.2. Recent operation of budgets for agriculture and forestry

The budget for agricultural food, forestry food and seafood is 18 trillion and 132.2 billion won, which accounts for 5.6% of the national budget. While the national budget has increased by 6.2% annually on average since 2006, the budget for agricultural food, forestry food and seafood has increased by 2.5% during the same period, and the proportion in the national budget has been lowered by 1.2% from 5.9% in 2006 to 4.7% in 2012. That is, although the scale of the budget for agricultural food, forestry food and seafood is increased, the rate of increase is slower than the increase rate of national budget.

TABLE 7. Budget for agriculture and rural districts

Unit: 100 million won

	2006	2007	2008	2009	2010
◆ Total expenditure (I+II)	118,740	121,208	139,549	146,363	146,738
▫ General budget expenditure	73,203	77,241	89,083	97,278	96,209
▫ General fund expenditure	45,537	43,967	50,466	49,085	50,529
I. Agriculture, forestry, fisheries	115,671	117,963	135,237	141,970	142,350
▫ Agriculture & rural districts	115,671	117,963	116,670	123,240	121,505
- Enhance agricultural constitution	20,149	16,224	22,628	24,950	23,489
- Stabilize farmers' income and management	32,775	34,638	31,306	26,811	24,952
- Develop rural districts and improve welfare	5,760	11,921	13,121	17,485	16,982
- Manage grains, distribute agri-products	34,362	34,860	30,124	32,354	32,479
- Agricultural production base	19,797	20,320	19,491	21,640	23,603
- Fund for agricultural and livestock management	2,828	-	-	-	-
▫ Fisheries, fishing villages	-	-	14,139	13,330	13,606
▫ Food business	-	-	3,757	4,718	5,764
▫ Cost for other projects	-	-	671	682	1,475
II. Basic expenses	3,069	3,245	4,312	4,393	4,388

Source: MFAFF

Characteristics of policies for agriculture and rural districts lay emphasis on development of rural districts. The budget for stabilized farmers' management increased sharply in early 1990s before and after the WTO launch, but stayed at 3 to 4 trillion won in late 1990s. It reached the highest point in 2006, and is kept currently at 2 trillion and 500 billion won. The budget of the second great proportion for improving the agricultural structure increased sharply in the mid 1990s and reached the greatest point in 1997, but decreased thereafter to stay at around 2 trillion won now. Meanwhile, the budget for developing the rural district society which did not show a high proportion until 2006 was greatly increased in 2007 to over one trillion won and it continued to increase until now.

With respect to changes of the budget for agriculture and forestry, the focus of the agricultural policies after 1990 moved from stabilized farmers' management (early 1990s) → improvement of agricultural structure (mid 1990s) → stabilized farmers' management (early and mid-2000s) → development of rural district society (late 2000s). In particular, this implies that the policy for developing the rural district society is emphasized more.

## 4. Details of key support projects

### 4.1. Direct payment program

#### *4.1.1. Current direct payment*

It is necessary to positively adapt to globalization promoted through the WTO or the FTA. The direct payment program is the most effective policy instrument to implement multi-functional agriculture and improve the self-supply of food while keeping agriculture and rural districts vitalized.

Agri-food importing countries like Korea show the deceasing trends of agri-product prices and farmers' income as the market is open under the WTO regime. While the FTA between Korea and the US is effectuated, followed by the FTA between Korea and the EU, such a trend will be further accelerated. The direct payment program aims to compensate for damages caused by the opening of the market and stabilize farmers' management.

A probability of global food crises shows that while the rate of food self-supply continues to drop, the direct payment program is needed to improve the food self-supply rate. This program is linked with production and can be an instrument for increasing or decreasing production of specific items. People are more interested in the multi-functional agriculture and rural districts. The direct payment program can be used for maintenance and conservation of agricultural resources, environmental conservation, and embodiment of the multi-functions thereof. Exemplary direct payment programs include direct payment programs for public profits, for example, the environment-friendly direct payment program, the direct payment program for scenery, and the direct payment program for resource conservation.

Korea's current exemplary direct payment programs include the direct payment program for supporting the income from rice farming, the environment-friendly direct payment program, the direct payment program for conserving scenery, the direct payment program for Less Favored Areas, the direct payment program for management right transfer, the direct payment program for compensating for damages by the FTA, and the direct payment program for paddy farming. Embodied direct payment programs are divided into the stabilized management type of the direct payment program for supporting or stabilizing income, and the public profit type of the direct payment program to be combined with agricultural production to achieve multi-functions.

Exemplary stabilized management type direct payment programs include the direct payment program for supporting income from rice farming, and the direct payment program for compensating for damages by the FTA. Exemplary public profit type direct payment programs include the direct payment program for supporting income from rice farming (fixed payment), the environment-friendly direct payment program, the direct payment program for conserving scenery, and the direct payment program for Less Favored Areas. The direct payment program for management right transfer is to promote management right transfer of old people to expand the scale of farmers' management to contribute to improving the structure.



TABLE 8. Current direct payment programs enforced in 2010

	Targeted farmers (1,000 farmers)	Area for the program (1,000 ha)	Unit cost (1,000/ha)	Paid amount (100 million won)	Remarks
Direct payment program for supporting income from rice farming	Fixed payment 837 Floating payment 781	Fixed payment 883 Floating payment 789	Fixed payment 1) 700 Floating payment 2) 85% of the difference from target price	Fixed payment 6,223 Floating payment 7,501 Total 13,724	◦ Lower limit area: 10a ◦ Upper limit area for payment: Individual 30 ha Corporate 50 ha
Environment-friendly direct payment program	116	Rice paddy 49 Field 44 Total 93	Rice paddy (organic) 392 Field (organic) 794	Total 376	◦ Limit for payment: 0.1-5.0 ha per household ◦ After 2011, suspended for low agricultural chemical application
Direct payment program for conserving scenery	18 (795 districts)	Rice paddy 15 Field 10 Others 2 Total 17	Landscape crops 1,700 Semi-landscape crops 1,000	National budget 156 Local government expenses 67 Total 222	◦ Targeted area Landscape crops: Areas of at least 2ha Semi-landscape crops: Areas of at least 10ha
Direct payment program for management right transfer	3.9	Total 3.4	Sale- lease: Monthly 250	Total 533	◦ Limit for payment 2ha
Rice paddy income-based diversification program 3)	98	Rice paddy 37 Total 37	Rice paddy 3,000	Total 1,110	◦ Temporary enforcement from 2011~13 ◦ Area of lower limit 10a
Direct payment program for Less Favored Areas	151	Rice paddy2 Field 81 Orchard 18 Grassland 3 Total 103	Rice paddy, field, orchard 500 Grassland 250	National budget 355 Local government budget 152 Total 507	◦ Lower limit area 10a
Direct payment program for supporting damages due to FTA	-	-	Point of reference 4) Drop, less than 90% Support ratio 90% of the difference	-	◦ Payment limit Individual 35 million won Corporate 50 million won

Note: 1) The unit cost of fixed payment for the direct payment program for supporting rice farming is 746,000 won per ha for the agriculture-promoted areas and 597,000 won per ha for the non-agriculture-promoted areas.

2) The unit cost for floating payment [target price (170,083 won/80kg - harvesting

season in that year (October to January next year on the average) rice price) × 85%]

- is calculated as fixed payment. The amount per ha is fixed to 61 bags.
- 3) The diversification project based on income from rice farming is for crop cultivation, for example, bean, corn for feed, silage rice, vegetables, chilly, potato and crops for special purpose, cultivated in paddies, so as to avoid excessive rice cultivation, and the outcome thereof is based on 2011.
- 4) The reference price for each item is the average price for 3 years other than the maximum and minimum prices for the last 5 years.
- 5) The direct payment program for field farming other than the above direct payment programs will be enforced from 2012 (681,000 targeted farmers, area of 143,000 ha, budget of 62.4 billion won)

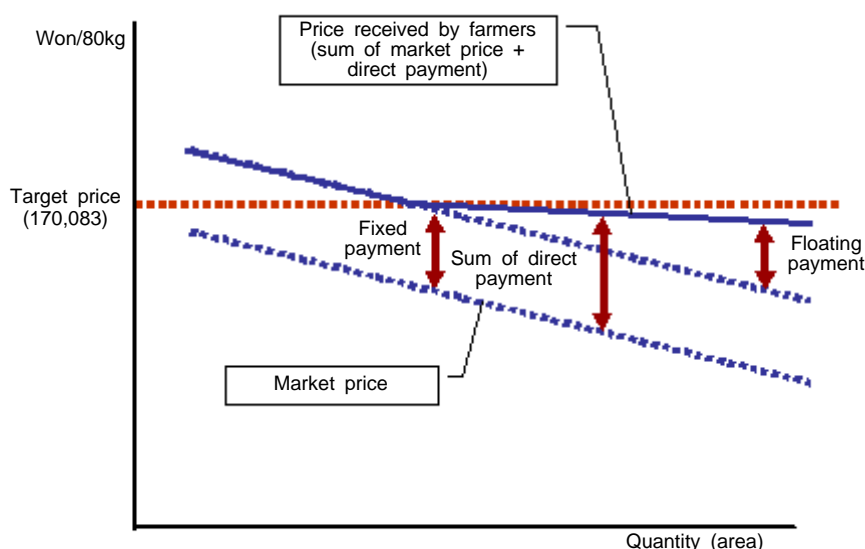
#### *4.1.2. Direct payment program for supporting income from rice farming*

The direct payment program for supporting rice farming aims to stabilize management by supporting and stabilizing farmers' income from rice farming on the basis of 'prices'. The fixed payment aims to support income, and the floating payment aims to stabilize income. The unit cost of fixed payment is set on the basis of the paddy area, and paid independently of the price, and the fixed payment supports income on a homeostasis basis. The floating payment aims to support a given ratio of the difference between the target price and the price in that year to mitigate the effect of fluctuating prices, so as to stabilize income. That is, the floating payment functions as a direct payment program for stabilizing income.

The price received by farmers according to the direct payment program for supporting income from rice farming is the sum of the market price, the fixed payment and the floating payment. In 2010, excessive rice production contributed to dropping the market price to 138,231 won per 80kg bag, the direct payment of 27,074 won (11,486 won for fixed payment, 15,588 won for floating payment) was added to the market price and farmers received 165,305 won which is 97.2% of the target price. In 2008 when the market price was relatively high, farmers received 173,782 won by adding the fixed payment of 11,475 won to the market price of 162,307 won per 80kg bag, which was 102.2% of the target price. If the sum of the fixed payment and the market price is above the target price (170,083 won/80kg bag), the floating payment is not paid.

Accordingly, the direct payment program for supporting the income from rice farming separates the market price from the price received by farmers to support their income by means of direct payment at a similar level to the target price while increasing consumers' benefits if the market price drops. This is the effect of the direct payment program different from the price support program similar to the government's rice purchase system.

FIGURE 4. Price received by farmers in the direct payment program for supporting income from rice farming



Source: T. Kim (2012)

#### 4.1.3. Direct payment program for compensating for damages due to FTA

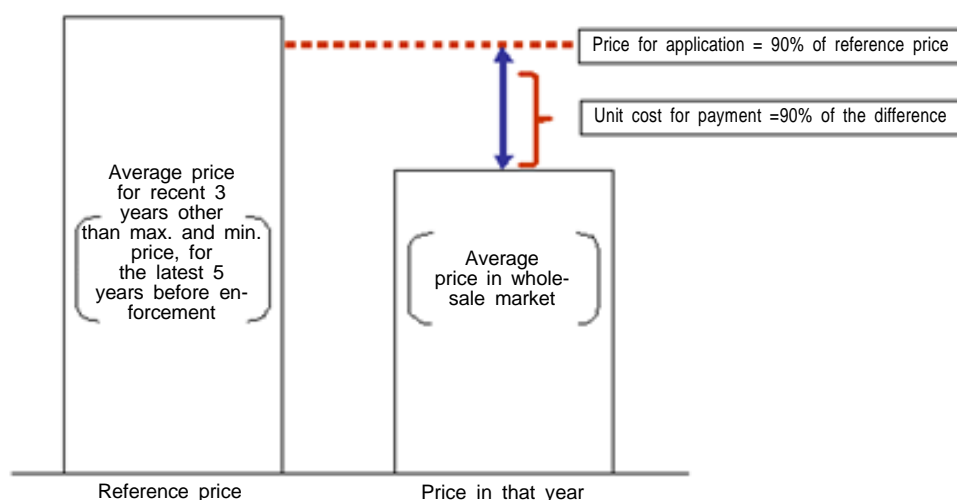
The direct payment program for compensating for damages due to the FTA aims to compensate for the damages by a given amount to ensure stabilized agricultural management and income if the open market derived from the FTA contributes to increasing imported products and result in damages. The direct payment program for compensating for damages due to the FTA was developed as the 'direct payment program for supporting income due to the FTA.' It follows the FTA Agricultural Scheme (2004~10) between Korea and Chile, which

was renamed to ‘the direct payment program for compensating for damages due to the FTA’ for the FTA Agricultural Scheme between Korea and the US, currently applied. The direct payment program for compensating for damages due to FTA has been enforced since October, 2011 as an FTA scheme between Korea and the EU, and is enforced in the same way while the FTA between Korea and the US is enforced.

The point of the program is that the targeted crops are not specified in advance unlike the FTA Scheme between Korea and Chile, but are specified after actual damages are discovered (fruits, livestock products, etc.) for each of FTA counterpart countries. The reference of compensation is based on price and 90% of the difference of prices between that year and the reference year if the price of each item in that year drops by less than 90% of the reference price (the average price for 3 years, other than the maximum and the minimum for the latest 5 years).

However, the program is not enforced if any of the following apply: the price drops by less than 90%, the dropped price is not proved for the reason of drop due to imported products from the FTA counterpart countries, and the price did not drop due to other factors in spite of increased imported products as in the case of FTA between Korea and Chile.

FIGURE 5. Direct payment program for compensating for damages due to FTA



Source: T.Kim (2012)

#### *4.1.4. Direct payment program for field farming*

The direct payment program for field farming aims to compensate for damages led by the open market under the WTO and the FTA to ensure stabilized management for field farming. That is, this program contributes to supporting production of field crops to improve self-supply of food while spreading the multi-functional field farming. Therefore, exemplary targeted crops include those of which the damages are predicted due to the open market, those contributing to improving self-supply of food or spreading the multi-function, and those accounting for an important proportion in the constitution of farmers' income. They are 19 items including barley (hulled barley, rice barley, beer barley, wheat, rye), grains (millet, durra, corn, buckwheat, other minor grains), beans (soy bean, Indian bean, mung bean, other beans), feed crops, sesame, peanut, chilli, and garlic. Those crops of relatively high income (fruits, vegetables cultivated in protected facilities) are not included.

The reference of payment is to set the unit cost per farmland area, and to sum the acreage under crops of targeted items of each farmer to calculate the amount to be paid. If the unit cost is set on the basis of the acreage under crops, it is necessary to establish the 'lower limit area for each item' and the 'lower limit for each farmer'. If it is based on 'crops', it is needed to examine whether the field crops are included for payment if they are cultivated in rice paddies. The direct payment program for field farming will be enforced from 2012, and target 681,000 farm households. The unit amount for payment is 400,000 won per ha, and the targeted area is 143,000ha, and the budget is 62.4 billion won.

#### *4.1.5. Direction of improving the direct payment program*

First, it is necessary to clarify the purpose of various types of the direct payment program. Since it is necessary to ensure budgets and support agreed by people, it is necessary to emphasize the public interest agreed by consumers, for example, ensuring food safety and achieving the multi-functions in addition to the direct purpose of compensating for damages led by the FTA.

Second, simplify the program. It is desirable to simplify the program on the principle of cost reduction required for improving the policy effect of the direct payment program and enforcing the program. Simpler programs contribute to easier evaluation of the policy. The EU simplifies programs to facili-

tate consumers' understanding while converting the program to simple direct payment programs.

Third, match to other direct payment programs. There may be conflicts between direct payment programs in the process of introducing and enforcing various direct payment programs. It is thus necessary to keep matching between direct payment programs to improve the effect of direct payment programs.

Fourth, further inspect the level and condition of enforcement. The condition of enforcement is the condition of demanding and supplying direct payment programs, and it is required to improve the effect of enforced direct payment programs. The enabling condition is needed to improve the effect of enforcement while the requirements of demanding and supplying the direct payment program are satisfied. The enabling condition should be established from the viewpoint of the effect of enforcing the direct payment program, feasibility of producers and cost for inspection.

## 4.2. Supporting management risk control

### 4.2.1. *Agricultural crop insurance*

The agricultural crop insurance is to indemnify farmers who suffer economic loss resulting from reduced agricultural yields due to natural disasters for loss with the principle of insurance (1. Law of large numbers, 2. Principle of equivalence, 3. Principle of balance of a benefit & a benefit in return). As farmers are specialized and their scale of farming grows, risks in the process of farming increase. Farmers are adapted to the risks in various ways, and the agricultural crop insurance is one of useful instruments.

In particular, under the circumstance where old price policies do not fully support farmers after the WTO Agreement, other countries use the crop insurance for agricultural disasters, which is classified as a policy allowed in the WTO Agreement as an instrument for supporting farmers.

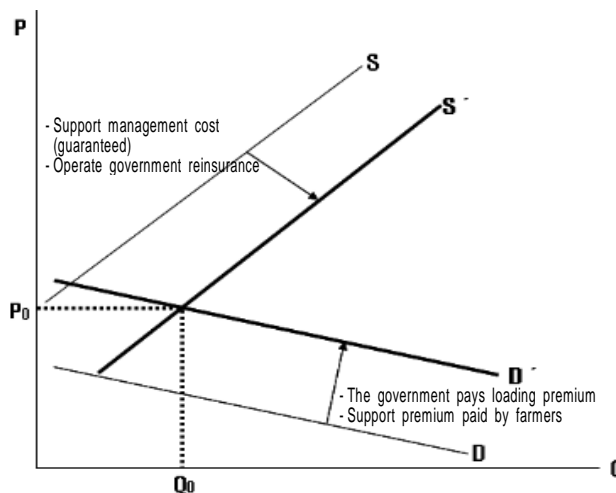
Characteristics of the agricultural crop insurance are as follows: First, it is a policy insurance in which the central government is positively involved. The insurance is divided into private insurance and policy insurance with respect to the subject of operation. The agricultural crop insurance is a policy insurance for which the central government is the subject of operation. In most countries, the agricultural crop insurance is operated as a policy insurance. The reason for oper-

ating the agricultural crop insurance as a policy insurance is that normal transaction of the agricultural crop insurance is not easy in the ordinary insurance market and the central government is thus involved. Second, it is a property damage insurance. The insurance indemnifies farmers for the reduced yields due to natural disasters. Third, it is a short-term transient insurance. The insurance liability period is one year and 6 months to the maximum, and the premium paid is not refunded on the maturity. Farmers insure agricultural crops against natural disasters that ordinary damage insurances do not cover.

Introduction of the agricultural crop insurance was attempted in Korea from 1970, but suspended due to insufficient demand from farmers and difficulty in ensuring funds. The damages by the typhoon ‘Olga’ in July, 1999, contributed to establishing the Act of Agricultural Crop Insurance in January, 2001. The model insurance covering apples and pears was enforced from March to initiate the agricultural crop insurance. As of 2012, the agricultural crop insurance targets 35 items.

The indemnification level of the agricultural crop insurance is not uniformly specified, and the protection level is established in various manners in consideration of the contents of the insurance and the capability of farmers’ payment. The protection level varies with countries and items. Korea employs three types of 70%, 80% and 85%. The 70% type (80%) is to pay insurance money for the difference if the harvest is less than 70% (80%) of the average harvest, and 30% (20%) is the farmers’ proportion (ratio).

FIGURE 6. Agricultural crop insurance as policy insurance



Source: G. Choi (2012)

TABLE 9. Items covered by agricultural crop insurance (2012)

	Items covered by insurance (area for enforcement)		Total
	Main project (nationwide)	Model project	
Food	Rice, bean, potato, sweet potato, corn	-	5
Vegetable	Onion, garlic	Chilly, green chilli (PPF), water melon (PPF), Green chilli (PPF), courgette (PPF), Strawberry (PPF), tomato (PPF), cucumber (PPF), melon (PPF), paprika (PPF), ginseng (PPF) (PPF: produced in protected facilities)	13
Fruit	Apple, pear, sweet persimmon, mandarin, astringent persimmon, plum, kiwi fruit, Japanese apricot	Peach, grape	10
Horticulture	-	Chrysanthemum, rose	2
Forestry product	Chestnut	Date, raspberry, green tea, mulberry	5
Total	16	19	35

The principle is that the insured pay the whole amount of premium (net premium +loading premium). However, if all of the premium should be paid by the insured for policy insurances like the agricultural crop insurance, too much payment would hinder people's insuring to result in low achievement of the designed policy objective. Therefore, it is general that some of the loading premium and the pure premium is paid by the central government. For the agricultural crop insurance, the central government pays 100% of the insurance operation cost and 50% of the premium that should be paid by farmers.

TABLE 10. Budget for agricultural crop insurance project in each year

Unit: 100 million won

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Premium	26.1	41.4	56.5	94.5	165.1	364.5	361.8	381.2	385.5	432.0	610.2	2,918.8
Operation cost	20.3	47.5	73.9	69.5	69.5	198.4	192.6	207.8	226.0	237.3	354.0	1,696.8
Others	-	-	-	-	-	4.0	4.0	6.0	6.0	8.0	8.0	36.0
Total	46.4	88.9	130.4	164.0	234.6	566.9	558.4	595.6	617.5	677.3	972.2	4,651.6

Source: MFAFF



Characteristics of Korea's agricultural crop insurance are as follows: first, expansion to multiple items in short time. The items covered by the agricultural crop insurance were two items of apples and pears in 2001, but currently 35 items as of 2012. The government has a plan to add 5 items to cover 40 items in 2013. Second, nationwide expansion of covered insurance regions (benefited regions). At the beginning stage of the insurance, it focused on the main production region to cover fruit production. However, expanded items and regions covered by the insurance contribute to nationwide enforcement of the insurance. In particular, the rice insurance is introduced this year to encourage many farmers to insure. Third, the agricultural crop insurance contributed to stabilized management and farmers' recovery who suffered disasters. The insurance money of 520.2 billion won was paid to 93,839 farmers who suffered disasters during the period of 2001 to 2011 to implement 5.54 million won per disaster-stricken farmer to be paid. As a result, some fruit farmers received agricultural crop insurance money to recover from the crisis of giving up farming. Fourth, the stable burden sharing (government reinsurance) system was constituted. Since agricultural disasters cause large-scale loss across a wide range of areas simultaneously once they occur, there is a high risk for a private insurance company to handle them independently. The government introduced the government reinsurance system in 2005 to take the loss(responsibility) from huge disasters and have a stable risk sharing (responsibility sharing) system of the agricultural crop insurance.

#### *4.2.2. Supporting management recovery by means of farmland bank*

The farmland bank project was carried out first by means of the project for supporting the farmland purchase fund in 1988, and it was converted to the optimum farming scale project in 1990 and the project for supporting rice farmers in 1995. The farmland bank project was launched to stabilize the farmland market in 2005, and the farmland pension project was introduced in 2011.

In particular, the farmland purchase project for supporting management recovery has been enforced since 2006 so as to purchase the farmland of farmers under temporary management crises due to debts and to guide them to normal management. It is evaluated that the project is contributing to preventing management crises of farmers who need solutions to bad management and the chain bankruptcy of the rural society and to stabilizing the rural economy and

the farmland market.

While the outcome of farmland sale and lease business is reduced in the project of the farmland bank, the lease trust and the project for supporting management recovery continues to increase. This implies that the center of farmland bank project is converted from enhancing competitive agriculture to reasonable use and management of farmland.

The project for supporting management recovery is highly demanded, and is showing sharp increases in terms of business. The number of supported farmers increased 6.3 times from 183 in 2006 when the project was introduced to 1,148 in 2010. The amount of support increased 5.7 times in the same period from 42.2 billion won to 240 billion won. If the supported amount is compared with the debts to evaluate the outcome of the project, the supported amount for the farmers was more than the debts during the period of 2007 to 2009, implying that most of the debt issue of supported farmers was addressed.

TABLE 11. Outcome of farmland purchase project for supporting management recovery

	Farmers	Debts (100 million won)		Purchased farmland (ha)		Supported amount (100 million won)	
		Amount	Average	Area	Average	Amount	Average
2006	183	436	2.4	311	1.7	422	2.3
2007	444	902	2.0	629	1.4	953	2.1
2008	490	1,138	2.3	696	1.4	1,195	2.4
2009	635	1,680	2.6	878	1.4	1,700	2.7
2010	1,148	2,780	2.4	1,369	1.2	2,400	2.1
Total	2,900	6,936	2.4	3,883	1.3	6,670	2.3

Source: H.Kim, *et al.*, Schemes for Farmland Bank Adapted to Changing Circumstances in Agriculture and Rural Districts, April, 2011, p.50

#### 4.2.3. Improvement of management risk control schemes

The agricultural crop insurance plays a key role in addressing farmers' management risk. However, the current agricultural crop insurance functions to compensate for the yield loss led by disasters, but does not support the reduced income led by fluctuating prices (drop). Thus an instrument is needed to provide support in case of both yield loss and price fluctuation and stabilize farmers' agricultural income. The US government introduced the income (revenue) in-

insurance from mid 1990s, and it has become a major part of crop insurance in the US.

It is necessary that the Korean government examines the idea of introducing the income (revenue) insurance from a mid to long-term perspective. Enforcement of the income insurance requires statistics related to the real income of each farmer, but it is hard to present required data at the moment in Korea because its experience in agricultural crop insurance is not accumulated over time. However, it is desirable to approach the income insurance in the direction of ensuring farmers' income for stabilized management, and thus preparation is needed.

Success or failure of insurance depends on contents and the quantity of related statistics. It is necessary to systematically develop all sorts of insurance statistics collected through the currently enforced insurance to modify and supplement current programs. Insufficient statistics resulted in poor application of features of each region, farmer and item. It is therefore necessary to utilize the experience data collected through the enforced insurance to the maximum to enhance the accuracy of insurance.

It is desirable to have related statistics for at least 3 to 5 years for the future items covered by insurance to design and promote the relevant insurance. The items not covered by the current insurance do not have related statistics, have poor statistics or it is more difficult to cover them than the current items for insurance. More exhaustive preparation is required to accumulate related statistics. In the US, the government (USDA/RMA), RMA Regional Offices, and the National Crop Insurance Services (NCIS), which is an association of private insurance companies, continue to cooperate to accumulate insurance related statistics. Accumulation and systematic management of insurance statistics data will be an important work for preparing for future introduction of the income insurance.

Recently, climate change contributes to large-scale and more frequent natural disasters, and acts as a factor inhibiting farmers' stabilized management. In particular, livestock diseases spreading nationwide, such as foot-and-mouth disease that recently occurred, lowered farmers' income and collapsed the production base and adversely affected consumers' confidence in agriculture.

While Korea's agriculture goes through continuous intense competition in the market led by the open market, more and more large-scale farmers experience tough management. Large-scale natural disasters contribute to bad man-

agement regardless of farmer's management skill or will to result in the chain effect of worsening rural and local economy. There is a need to develop a risk management scheme to effectively support farmers under management risk led by natural disasters. However, more institutional devices are required to stabilize the livelihood of farmers under financial danger led by bad management and natural disasters. The only support scheme is the farmland purchase project for supporting management recovery under the farmland bank project introduced in 2006 to mitigate farmers' debts.

It is necessary to further develop pre- and post-schemes to support the management recovery of farmers. Australia operates FMDs to support farmers under management danger with financial funds including the deposit of a given amount of money in the period of good management for its withdrawal when income is not high due to tough business climate.

## 5. Abstract and implication

This report described investment and loan plans over time following the changing circumstances of Korea's agricultural policies, the direct payment programs, the agricultural crop insurance, and the management risk control scheme which are considered to be key agricultural policies in the future, and implications are presented.

Since the early 1990s when the domestic market was opened to foreign agricultural goods, the objective of Korea's policies was to emphasize the public good and multifunctionality of agriculture and rural districts together with food safety and the environment, and to contribute to creating the base for people's livelihood. Another objective of the policies from an industrial aspect was to make agriculture competitive to be a future growth engine under the market economy. In the three times of large-scale investment and loan plans, multifunctionality of agriculture and rural districts and the industrial aspect were emphasized together with the coexisting objectives of policies.

Korea's agricultural policies are classified into policies for stabilizing farmers' management, policies for improving the agricultural structure, and policies for developing the rural society. The policies for stabilizing farmers' management were enforced with three objectives: stabilizing farmers' income and

management, improving distribution, and managing grains centered on rice. The policies for improving the agricultural structure were enforced with the objectives of enhancing the agricultural structure and the agricultural production base. However, the policies for developing the rural society, especially the policies for improving the welfare of rural residents, were not relatively emphasized as compared to other policies.

The existing policies for agriculture and rural districts did not lay emphasis on creation of future demand for advanced agri-food, management risk of large-scale farmers, and improvement of old and small-scale farmers and the living environment of the rural society. Thus, it is necessary to apply the policy of stabilizing farmers' management to rely on the market and minimize management uncertainty on the basis of the industrial policy to increase large-scale farmers through diversified agricultural policies, and to apply the policy for developing the rural society for old and small-scale farmers.

Examination was made for the direct payment program, the agricultural crop insurance, and the scheme for supporting management recovery by the farmland bank as detailed support policies. The current direct payment program is diversified into various direct payment programs depending on the objective of individual policies, but the direct payment program for supporting income from rice farming accounts for higher than 80% in terms of particulars for support. In relation to reorganizing the direct payment program, some people say it is necessary to introduce the single direct payment program to support the income of each farmer as in the EU or introduce the public profit-type direct payment program. However, an obvious direction for operating the direct payment program is not established yet. So it is necessary to guide the objective of introducing the direct payment program to be achieved by observing and strengthening the enabling condition.

The direct payment program contributes to stabilized management by reducing the danger of disasters experienced by farmers through management risk control. However, the current direct payment programs provide support only in case of yield loss, but not the income loss resulting from fluctuating prices. Therefore, it is necessary to introduce the income insurance in the future, and it is also necessary to make systematic preparation including accumulation and management of statistic data. As for the scheme to support management recovery, more management risks of various types have emerged while more farmers are involved in large-scale farming. However, the current support

scheme targets only the farmers who own farmland. It is thus necessary to develop diversified support schemes to effectively manage farmers' management risks through expanded support schemes for management recovery.

## REFERENCE

- Yongteak Kim et al. 2003. *The Performance Analysis and Direction of Agricultural Loan and Investment*. Korea Rural Economic Institute.
- Taegon Kim. 2012. *Agricultural Outlook 2012*. Chapter 5. Korea Rural Economic Institute.
- Hongsang Kim et al. 2011. *The Counter-plan of Farmland Bank following the Change of Agricultural and Rural Environment*. Korea Rural Economic Institute.
- Ministry for Food, Agriculture, Forestry, and Fisheries. *Annual Statistics of Agriculture, Forestry, Fishery and Food*.
- Ministry for Food, Agriculture, Forestry, and Fisheries. *Livestock Statistics*.
- Seongjae Park et al. 2007. *The Performance Analysis and Direction of General Loan and Investment Plan on Agriculture and Rural Area*. Korea Rural Economic Institute.
- Joonkee Park et al. 2011. *A Study on Long-term Policy Direction in Agricultural Investment*. Korea Rural Economic Institute.
- Joonkee Park et al. 2011. *A Case Study on the Developed Agricultural Finance Systems*. Korea Rural Economic Institute.
- Kyeonghwan Choi et al. 2010. *The Performance and Tasks of Crop Insurance*. Korea Rural Economic Institute.
- Statistical Agency. *Agricultural Census*.