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## CHANGES IN AGRICULTURAL PUBLIC FINANCE POLICIES IN KOREA SINCE URUGUAY ROUND

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**Key words:** Agricultural public investment, Fiscal budget, Structural change of Korean agriculture, Rural economic crisis, Agricultural policy failure, Performance of agricultural public investment programs

### ABSTRACT

Although many special farm programs have been implemented and substantial budgets were allocated to the agricultural sector, farm household income has continued to fall. As more attempts to liberalize the agricultural trade such as rice trade negotiations, FTA, and DDA continues, the fall of farm household incomes will increase at a greater rate. In order to design systematic and integrated plans to keep up with rapid structural changes of Korean agriculture, it is so important to objectively evaluate the achievements of old agricultural policies and investment plans, to draw up a policy agenda for the future of Korea's agricultural sector and to suggest future directions to solve agricultural policy problems.

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## I. Introduction

In Korea, agriculture has developed in line with the progress of the national economy. However, its importance in the national economy has decreased along the way. For instance, the contribution of agriculture to GDP (gross domestic product) fell from 14.8 percent in 1980 to 4.0 percent in 2002. The labor force employed by the agricultural sector also declined from 30.6 percent in 1980 to 8.0 percent in 2002.

Witnessing the shrinking farmland and the declining number of agricultural workers, the Korean government expanded the public funds allocated to the agricultural sector to sustain agricultural growth. Especially, as liberalization of the agricultural trade has begun, government budgets earmarked for the agricultural sector have increased to offset the losses in farm household incomes resulting from the open agricultural market to foreign competition.

Although many special farm programs have been implemented and substantial budgets were allocated to the agricultural sector, farm household income has continued to fall. The income disparity between rural and urban areas has widened from 95.9 percent in 1980 to 73 percent in 2002. The debt per farm household also increased from 3.4 million won in 1980 to 19.9 million won in 2002.

As more attempts to liberalize the agricultural trade (such as rice trade negotiations, FTA, and DDA) continues, the fall of farm household incomes will increase at a greater rate. A forecast presented by the KREI (Korea Rural Economic Institute) estimates that total losses of agricultural household incomes in 2010 will be 2 trillion won.

Although all interested parties in relation to the agricultural sector recognize current the crisis of the rural economy, they have a different view and interpretation on the overall performance of agricultural policies and allocation of public funds to the agricultural sector.

Many economists and bureaucrats responsible for national economic planning think that financial support to the agricultural sector has resulted in lower performance in comparison with other industrial sectors because of political principles applied to the agricultural sector. They exhibit skepticism about agricultural investment.

The Korean Ministry of Agriculture and Forestry thinks that there are no developed countries with fast-growing agricultural sectors a perception based on economies with agriculture as a primary industry.

Many farmers and farmer associations think agricultural policy failures have continued for the past 10 years because of improper implementation of agricultural policies. They strongly believe that agricultural policy has failed.

Recently, the National Assembly has ratified the Free Trade Agreement with Chile after three consecutive rejections. It raised questions as to whether agriculture could work as a bottleneck to continuous economic growth.

Many people wonder why farmers so strongly disagree with the liberalization of agricultural trade. A quick answer could be the rural economic crisis and agricultural policy failures. But we still need to resolve the income disparity between urban workers and rural farmers which has worsened despite continuous agricultural policy reforms and rapid expansion of public funds to the agriculture sector.

In spite of intensive agricultural policy interventions and allocation of massive public funds to agriculture, why is the rural economy still in trouble? This is the most urgent agricultural issue yet to be resolved.

The main causes of the current crisis of the rural economy should be studied. In a related move, appropriate policy alternatives and new ways to revitalize Korean agriculture in the 21st century need to be proposed.

Though the future of Korean agriculture and the rural economy looks challenging, it is necessary to take an optimistic stance in order to overcome current difficulties.

Improving Korea's agricultural and rural economy depends on an objective evaluation of past agricultural policies designed to overcome negative effects of trade liberalization on Korean agriculture.

The purposes of this paper are, therefore, to objectively evaluate the achievements of old agricultural policies and investment plans, to draw up a policy agenda for the future of Korea's agricultural sector and to suggest future directions to solve agricultural policy problems.

## **II. Changes in the Agricultural Policies Since UR**

### **1. Major Agricultural Policies since UR**

Agricultural policies since UR (Uruguay Round) can be explained by the main agricultural policies in two periods when major features of agricultural policy schemes were distinguished. While the agricultural policies in the first period were implemented under President Kim Yong-Sam, those in the second period were implemented under President Kim Dae-Jung. The detailed characteristics of agricultural policies in two stages are illustrated in Table 1.

### **2. Changes in the Agricultural Public Funds**

#### *2.1. Allocation of Agricultural Budget*

The proportion of the agricultural budget to the total national budget hit its highest level in 1995. Afterwards, it continuously declined and stood at 8.5% in 2003 (See Table 2). The growth rate of the agricultural budget was lower than that of the total national budget.

The agricultural budget was mostly channeled to agricultural production base improvement programs and farm equipment modernization programs and allocated to the rice and the livestock industries which are expectedly exposed to the most severe impact from agricultural trade liberalization.

## *2.2. Changes in Agricultural Public Investment*

For the past 10 years from 1992 to 2001, a total of 76.87 trillion won was financed by a 15 trillion won Agricultural Special Tax (1994~04) and a 42 trillion won Agricultural Structural Improvement Plan(1992~99), and invested in the agricultural sector.

The agricultural public funds were financed from three sources: the central government, local governments, and farm manager self-financed funds. The government funding is composed of subsidy and government supported loans.

As shown in Table 2, central government funds amounted to 58.5 trillion won (76.2%), while local government funds and farm owner self-financed funds were 9.2 trillion won (12.0%) and 9 trillion won (11.8%) respectively.

## *2.3. Changes in the Operating Systems*

As the scale of agricultural public funds is continuously growing, the public agrees that an efficient management system should be established to implement agricultural development projects. In this capacity, the operating system for the implementation of agricultural development projects has improved.

As an example, overly segmented programs were merged, and the government support loan system was revised for the better. Subsidies to support individual farmer's income were gradually reduced and were converted into long-term, low-interest loans. Furthermore, the management system for agricultural development programs was standardized and regular evaluation and monitoring systems were introduced. As criteria, the government support loans took into consideration farmer's management abilities.

**TABLE 1.** The Characteristics of Agricultural Policies since UR

	First Stage(1994-97)	Second Stage(1998-02)
Economic Background	<ul style="list-style-type: none"> <li>• OECD Membership</li> <li>• UR Agreement</li> <li>• Asian Financial Crisis</li> </ul>	<ul style="list-style-type: none"> <li>• IMF Administered System</li> </ul>
Objectives of Agricultural Policy	<ul style="list-style-type: none"> <li>• Agri. Competitiveness Improvement</li> <li>• Rural Living Condition Improvement</li> <li>• Farmer's Welfare Improvement</li> </ul>	<ul style="list-style-type: none"> <li>• Agri. Competitiveness Improvement</li> <li>• Introduction of Income Direct Payment</li> <li>• Introduction of Multi-functionality</li> <li>• Farm Management Stabilization</li> </ul>
Major Reforms of Agricultural Policies	<ul style="list-style-type: none"> <li>• Bottom-up Agri. Policy Scheme</li> <li>• Institutions Reform of Agri. Public Investment</li> </ul>	<ul style="list-style-type: none"> <li>• Agri. Marketing Reform</li> <li>• Agri. Cooperative Reform</li> </ul>
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Finance Sources	<ul style="list-style-type: none"> <li>• 42 Trillion Won Agri. Structure Improvement Fund</li> <li>• Agri. Special Tax</li> </ul>	<ul style="list-style-type: none"> <li>• 45 Trillion Won Agri. &amp; Rural Development Plan</li> <li>• Agri. Special Tax</li> </ul>
Agri. Public Investment Institution	<ul style="list-style-type: none"> <li>• Evaluation &amp; Monitoring Function Enforcement</li> <li>• Programs Readjustment</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated Farm Support Fund system</li> <li>• Investment Priority Adjustment</li> </ul>
Major Programs	<ul style="list-style-type: none"> <li>• Production Base Improvement</li> <li>• Farm Mechanization</li> <li>• Farm Equipment Modernization</li> <li>• Production Cost Reduction</li> </ul>	<ul style="list-style-type: none"> <li>• Farm Debt Reduction Program</li> <li>• Income Direct Payment Program</li> <li>• Environmental Agri.</li> <li>• Farm Insurance</li> </ul>
Rice Industry	<ul style="list-style-type: none"> <li>• Contracted Procurement</li> </ul>	<ul style="list-style-type: none"> <li>• Rice Direct Payment Program</li> </ul>
Support Measure	<ul style="list-style-type: none"> <li>• Subsidy</li> </ul>	<ul style="list-style-type: none"> <li>• Distinction of Subsidy and Loan</li> </ul>

**TABLE 2.** Total Budget and Agricultural Budget Trends

Unit: Million won

	'93	'95	'97	'98	'00	'01	'02	'03
National Budget	421,835	594,011	742,225	837,071	981,198	1,104,603	1,155,118	1,162,156
Agricultural Budget(ratio)	43,860 (10.4)	76,151 (12.8)	81,541 (11.0)	78,939 (9.5)	83,649 (8.5)	88,100 (8.0)	92,852 (8.0)	98,286 (8.5)
Ratio of Agricultural GDP to GDP	6.7	6.2	5.4	4.9	4.6	4.4	-	-

**TABLE 3.** Changes in the Agricultural Public Funds

Unit: Billion Won

	1st Stage ( '92 ~ '98)	2nd Stage ( '99 ~ '01)	Total ( '92 ~ '01)	Share (%)
	52,327	24,447	76,775	100.0
Central Government Funding	39,487	18,991	58,477	76.2
(Subsidies)	(22,022)	(13,746)	(35,768)	(61.0)
(Loans)	(17,465)	(5,245)	(22,709)	(39.0)
Local Government Funding	5,769	3,481	9,251	12.0
Self-Financed Funding	7,072	1,975	9,047	11.8

### III. Changes in Korean Agriculture

#### 1. Structural Adjustments of Korean Agriculture

##### 1.1. Production and Employment Structures

The shares of agriculture to national production and employment have sharply decreased as the economic grew rapidly. First, the



share of agricultural production declined to 3.7% by 2002 from 45% in the beginning of the 1960s. In Korea, the contribution of agriculture to national production is plunging at a faster speed than any other developed country. For instance, the time taken for the agricultural production to drop from 40% to 7% was 117 years, 92 years, and 73 years in Britain, the United States, and Japan respectively- it took Korea only 26 years. Korea has experienced production structural changes 3 to 7 times faster than other developed countries in history.

Second, the agricultural sector's employment rate has declined from 16 percent in 1991 to 4 percent in 2002. It took Britain, Netherlands and Japan 113, 165, and 100 years respectively for the employment rate to drop from 40 percent to 16 percent. However, the time taken to Korea was only 26 years. In other words, the employment structure has changed 3 to 8 times faster in Korea than in other developed countries.

### *1.2. Agricultural GDP per Farm Population*

Changes in the agricultural structure can be evaluated in terms of the GDP (gross domestic product). Using this measure, countries with higher GDP tend to have a more stable agricultural structure than countries with a lower GDP. While many developed countries show characteristics of weak agricultural structures, Korea is the country with the weakest agricultural structure among the OECD members (See Table 4).

The average agricultural GDP per farm population of OECD countries was 10,710 dollars in 2000 Korea recorded only 5,552 dollars.

Compared to other industries in general, the agricultural structure is relatively weak in both developing and developed countries.

### *1.3. Farm Population*

The farm population in Korea is declining at the highest rate among OECD countries. While the average rate of farm depopulation in OECD countries for the past 40 years is 0.48, that of Korea is 1.21 - almost 2.5 times that of other OECD countries.

TABLE 4. Agricultural GDP per Farm Population, 2000

	Farm Population (thousand: A)	Agricultural GDP (Mil. \$: B)	B/A
Denmark	201	4,730	23,531
Germany	2,062	22,387	10,857
United States	6,290	1,500	25,676
United Kingdom	1,072	17,530	16,352
Japan	4,923	76,809	15,602
Czech	841	2,045	2,432
Canada	785	15,776	20,096
Poland	7,320	4,386	599
France	1,985	36,580	18,428
Korea	4,032	22,386	5,552
Hungary	1,199	1,120	934
Average	2,931	21,372	10,710

Source: Cited by the study of Lim Song-Soo and Kim S.H. (2003) Debates and Rationale for Developing Country Status in the WTO.

The quick exodus of farmers from rural areas has accelerated population aging in these rural areas. In 1970, 53.8 percent (7.8 million farm population) was under the age of 20. This proportion had decreased to 16.1 percent (5.8 million farm population) by 2002. The proportion of young farmers has decreased while that of older farmers has increased. It is predicted that in 10 to 20 years, Korea will have the same farm population aging structure as other developed countries.

It is estimated that 65 percent of total aging farm households (above 60 years old) will retire and large-scale farms will absorb their farmland by 2010. In 2000, the proportion of aging farmers with above 60 was 51 percent of total farmers, owning 658 thousand hectares.

#### *1.4. Farm Scale Structure*

As the number of small farms increases, the proportion of agricultural production by large scale farms has increased. In

other words, production factors such as farmland and livestock have gradually concentrated on the large scale farms.

Although the proportion of rice farmers who have more than 3 hectares was 3.8 percent, their rice production accounted for 20 percent of the total rice production in 2000. Likewise, farmers who have more than 20 heads of Korean beef cattle accounted for 8.1% of the total cattle breeders however their beef production covered 55 percent of the total beef production.

On the other hand, many farm households have become smaller with 0.5 hectares or less, accounting for 42 percent of total farm households. 94 percent of total farm managers are above 40 years old and are not able to switch to other industries.

## **2. Changes in Korean Agriculture**

### *2.1. Agricultural Growth Rate and Productivity*

Due to the rapid expansion of public investment funds in the 1990s, agricultural fixed capital has increased by 9% while agricultural production has increased by more than 2% annually. As a result, the agricultural sector's growth rate jumped from 1.3% in the late 1980s to 2.3% from 1994 to 2002. Agricultural productivity however, decreased from 2.7% (1987 to 1990) to 1.0% (1999 to 2001) because of lower agricultural capital productivity and stagnated innovation of agricultural technology.

### *2.2. Price of Agricultural Commodities*

While real prices of agricultural products have decreased by 1% annually (due to agricultural productivity improvement and rising import), the prices of agricultural inputs have gone up by 1% annually due to the appreciation of foreign exchange rates.

While the prices of agricultural commodities have decreased from 1.4% (1986 to 1990) to -1.0% (1994 to 2002), the prices of agricultural inputs have increased from -5.7% (1986 to 1990) to 1.0% (1994 to 2002). Therefore, the price decline of agricultural commodities has resulted in an increase in consumer welfare and a decrease in producer surplus.

Although agricultural growth has been maintained since 1994, farm household income has gone the opposite way. Consequently, this disparity has also been found between agricultural growth and farm household income.

### *2.3. Agricultural Household Income and Farm Debts*

The deterioration of farm household income has made the income difference between urban workers and rural farmers much wider. It has resulted in a rise in farm household debt. The income gap between urban workers and rural farmers expanded from 97% in 1990 to 73 % in 2002, while farm household debt rose from 5.1 million won in 1991 to 19.9 in 2002.

Due to widening income inequality by farm scale, the heterogeneity among farm households has grown more noticeable. While agricultural income of small sized farms has decreased, that of large sized farms has increased.

From 1994 to 2002, the agricultural income (nominal) of farm households smaller than 0.5 hectares has decreased by 5 percent. During the same period, that of farm households who own 3 to 5 hectares increased by 11 percent and that of farm households with more than 5 hectares surged by 44 percent.

From 1994 to 2002, the proportion of farm households whose agricultural income decreased by 5 percent annually was 33 percent and farm households whose agricultural income increased by 10 percent annually was 26 percent. Simply put, some farm households earned more while others earned less.

### *2.4. Level of Agricultural Competitive Power*

Although domestic agricultural products were more expensive than their overseas counterparts, operating costs were relatively lower. For example, the domestic price of rice is 4 times higher than imported (after imposing a 5% tariff), however operating costs are 41% lower than other countries.

The competition level of agricultural products depends on quality, safety, and marketing ability of agricultural products. Furthermore, differentiation expands since consumers prefer

higher quality agricultural products. While the price of regular rice is 2,300 won per kg, the price of the rice grown in an environmentally friendly fashion was 3,000 won per kg in 2003. The import and export of agricultural products is also determined by marketing ability rather than price competition.

### *2.5. Influence of the Agricultural Trade Liberalization*

The negative effects of the UR agreement on domestic agriculture have been relatively reduced by productivity improvement and border protection such as tariff imposition. Since 1994, the importation of agricultural products has increased by 205 percent annually, which accounted for 23% of the total increase in agricultural supply.

It is expected that agricultural products which will be disadvantaged by these trade liberalizations, include rice, pepper, and garlic, since there are large price gaps between domestic and imported products assuming that quality is the same.

Under the trade liberalization, the prices of rice, pepper, and garlic will drop by 30~40% due to lower tariff. It is also estimated that the amount of income loss in rice, pepper, and garlic would mark 1.3~4.1 billion won, 320~450 million won, and 12~56 million won respectively by 2010.

### *2.6. Problems of Rural Areas*

Rapid migration of farm population from rural areas has limited the growth potential which rural societies naturally have. The proportion of population in small towns to total rural population dropped from 42.7% in 1980 to 20.3% in 2000. The number of small rural areas which had a population below 2,000 people increased from 9 in 1985 to 170 in 2000. The primary reason for rapid depopulation lies in a decline in regional agriculture. Due to rapid migration of the agricultural population, the ratio of farm households in rural area dropped from 57 percent in 1990 to 39 percent in 2000. Also, the disordered utilization of farm land damaged the multi-functionality inherent to rural society and agriculture.

#### **IV. Evaluation of Performance of Agricultural Policies and Agricultural Public Investment**

The expansion of agricultural public investment funds and continuous agricultural policy reforms since the UR agreement have led to attaining sustainable agricultural growth, price stabilization, and improved agricultural productivity. In the face of the deterioration of farm household income and fast growth of farm debt, doubts are raised as to whether agricultural policies designed to solve agricultural and rural problems are really working. In reality, farmers think the current rural economic crisis has resulted from agricultural policy failure. Therefore, a new agricultural policy should be urgently worked out to raise incomes of farm households.

The current crisis of the rural economy came from the fact that the increase in the fiscal budget for agricultural development has failed to reverse the trend of slipping farm household incomes, caused by liberalized agricultural trade. The agricultural policy reforms and expanded government support were not able to reap the expected results because of the following reasons:

First, amid the unprecedented fast development of structural changes, the Korean agricultural sector failed to adjust itself to such changes. It is a well-known fact that agriculture speedily declines as the national economy grows mainly because of the low elasticity of demands for agricultural commodities, the effect of fixed assets, lack of liquidity, and so forth.

Second, the agricultural policies have heavily concentrated on improving agricultural competitiveness, but disregarded incomes of individual farmers. Consequently, the disparity appeared between the level of agricultural growth and the level of farm household income growth.

Third, major policy measures to implement the 'Agricultural Development Plan' were designed to support prices of agricultural commodities such as rice and Korean beef and to provide farm input subsidies such as farm machinery, pesticide,

and fertilizer, which have low income transfer efficiency. Except for these, other policy measures to enhance farmer's income have not been taken.

Fourth, the priority of agricultural development programs has been put on direct subsidy for farmers rather than on agricultural technology innovation and diffusion. In other words, agricultural policies have put a more emphasis on “catching fish” rather than “teaching how to catch fish.”

The agricultural trade liberalization could bring about short-term direct damage to farm households, agriculture and the rural economy. Conversely, the agricultural policy scheme taken as a response to agricultural trade liberalization could lead to long-term indirect effects on agriculture.

Despite the fact that the agricultural structure has changed over the past decade, systematic and integrated plans to keep up with such structural changes were greatly lacking. For instance, there is no single integrated program to deal with population aging and small-farm issues together.

The performance of agricultural public investment programs depends heavily on the operating system of public investment funds. The poor performance has stemmed from the following problems in the operating system:

First, there were many cases to consider in determining the usage of fiscal budget, once the financial sources and the allocation of public funds were determined.

Second, local governments had implemented agricultural development projects without considering their regional characteristics, which has resulted in inefficiency in rural development projects.

Third, the political principle such as regional equality rather than the economic principle based on feasibility studies on projects was applied in allocating fiscal budgets and implementing agricultural development programs.

Fourth, the government agencies such as the Ministry of Agriculture and Forestry, as well as farmer associations have recognized that the absolute size of fiscal budgets is more

important than efficiency of the operating system. High quality services, which farmers or regional residents want to receive, have often been ignored.

Fifth, public organizations in relation to agriculture and rural society did not provide good services to farmers and local residents. No comprehensive systems for farmers in areas such as production technology development and management consulting have been established.

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