THE ABSTRACTS OF KREI REPORTS

2004

KREI
한국농촌경제연구원

FOREWORD

The aim of this book is to present abstracts or short summaries of the research reports which have been produced in the Korea Rural Economic Institute (KREI) by the end of 2004.

In total, 117 reports are summarized and classified into 10 categories of research, although the classification may be unavoidably arbitrary one way or another: agriculture and agribusiness, rural development, agricultural outlook, agricultural policy, forest policy, agricultural information, rice/DDA negotiation, free trade agreement (FTA), agricultural policy measures, and the others.

The abstracts only give you overviews of full texts and you may want to read the whole reports. Please kindly understand that for now most of the reports are written in Korean and English versions are not available. However, you may get a glimpse of research results through this book.

In performing the researches, so many persons have assisted the KREI researchers including farmers and officials all over the country. I would like to express my sincere gratitude to them as well as the KREI researchers.

Jung-Hwan Lee, Ph.D.
President
Korea Rural Economic Institute

CONTENTS

3. AGRICULTURAL OUTLOOK AND INFORMATION

4. AGRICULTURAL POLICY RESEARCH

AGRIBUSINESS RESEARCH 1

Implementation of the Advanced Food Safety System in Korea

In Korea, the rapid economic growth since 1980s has dramatically enhanced the living standards and eliminated most food security concerns. Now, Koreans are more interested in the safety and health value of foods. The recent outbreaks of mad cow diseases (BSE) and the High Pathogenic Avian Influenza (HPAI) have exacerbated the jitters about food safety control. In amidst of such threats, in order to achieve maximum consumer protection, developed countries have implemented the comprehensive and integrated "farm-to-table" approach and the risk analysis system.

The purpose of this study is to analyze current food safety management system, to review the developed countries' food safety systems, and to suggest efficient measures to improve food safety.

In developed countries, the food safety policy is based on new regulations, which address the risks in a scientific and transparent manner. They have also established an independent body dedicated to safeguarding food safety. The emergence of BSE has awakened many countries in the world, including EU, to the importance of food safety. Presently, food safety is regarded as the most significant consumer issue, so that in many countries, consumer-related departments are handling food safety matters. By its nature, food shall be controlled across the entire stages ranging from production to consumption in a consistent manner. That is why the majority European countries are building a comprehensive food safety control system.

The advancement of science and technology has brought about new hazardous materials. The ever-increasing food trade around the world has made the national borders meaningless when it comes to food safety concerns. In this context, individual countries shall strictly follow the international norms in food safety control, including the farm-to-table food safety control system, and the risk analysis.

In order to cope with the changing circumstances, the

Korean government should establish a new food safety paradigm. In Korea, the situation is more difficult because the history of food control is quite short compared with many other advanced countries, where the food control scheme has been developed over a century. As such, it will be beneficial for Korea to benchmark developed countries, which have already encountered and successfully overcome the same issues facing Korea, in modeling its own food safety control system.

Some effective policy measures to build the advanced food safety system into the current system are suggested as follows:

1) In order to eliminate inefficiency in food safety management system and to implement the better GAP, HACCP and traceability scheme, the food safety management system should be conducted in a consistent manner.

2) Government could strengthen the risk assessment function by establishing an independent risk assessment body and increasing the investment of R&D for the risk assessment. It is necessary to expand establishment of MRL to check pesticides, heavy metals and antibiotics, since food import has increased.

3) It is essential to develop the consumer's participation program for food safety monitoring because it is best way for consumers to trust food safety policy. It is recommended that "The Consumer Center" be established within the Ministry of Agriculture and Forestry to provide consumer services and take claims related to food safety.

4) Food safety management system should be converted into precautionary management system. Pre-inspection service is needed for the imported fresh products. Farmers education about appropriate chemicals and animal medicine use should be strengthened. The local government should play the role as an inspector, while the central government should play the role as an R&D center.

Researchers: Ji-Hyeon Choi et al.
Research period: 2004. 1. - 2004. 12.

Strategies for Establishing Environmentally-Friendly Agricultural System in Korea

Under the pressure of population growth and the shortage of cultivated land, more intense production has been pursued for higher productivity. This has led to environmental degradation in the agricultural sector. Environmental burden of agricultural sector is closely related to the types of farming technology and site-specific characteristics. Thus, in order to resolve agro-environmental problems, the carrying capacity of each region should be considered.

The purpose of this study is to analyze environmental loading in specific regions and to formulate strategies to establish the environmentally friendly agricultural system using the material balance model. In mapping out the strategies, a systematic perspective should be applied, which includes not only the individual farm but also the local and national ecosystems affected by this farming system. The systematic approach gives us the tools to explore the interactions between ecological and socioeconomic environments. The systematic approach also requires interdisciplinary efforts in research. Therefore, this study was conducted through the cooperation among Korea Rural Economic Institute, National Institute of Agricultural Science and Technology, and Korea Environment Institute. Hongseong, Chungcheongnam-do and Okcheon, Chungcheongbuk-do were selected for the study.

The major contents of this study are listed as follows:

In Section 1, the problem statement, study purpose, and previous literature review are briefly discussed. Section 2 outlines the integrated approach to analyze environmental burden of agricultural ecosystem and estimates regional entropy. Section 3 presents policies for transforming the conventional farming practices to environmentally friendly agriculture. This section suggests basic principles for policy development. In addition, economic incentive schemes, quantity regulation, and agri-

environmental programs are briefly discussed, and then major countries' agri-environmental programs are reviewed for benchmarking. Section 4 analyzes and diagnoses environmental burden and carrying capacity of specific watershed areas, using the region-based material balance model. In addition, farmers' responses on environmentally friendly agricultural system are surveyed. Section 5 maps out strategies to appropriately manage regional agri-environmental resources, such as good management practices, life-cycle assessment, and region-based natural cycling system. Finally, Section 6 presents brief summary and concludes the study.

The materials balance approach provides a method for assessing nutrient surpluses in specific regions, and their environmental loads. This approach is based on both the first law and the second law of thermodynamics in a closed system, which addresses the problem of environmental loading in the agro-ecosystem. It involves various factors influencing nutrients management at different levels. Further development of the approach requires the application of social disciplines and extrapolation of results.

In order to draw up the strategies, a stylized strategic approach, which consists of strategic analysis, strategic choice, and strategy implementation, should be employed. Strategy analysis can be conducted by the SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis and scenario analysis. Strategic choice can be made by selecting a priority on suggested agri-environmental policy programs using an analytic hierarchy process (AHP). Based on strategic analysis and choice, to implement the strategies, it is essential to establish infrastructure (human resource, education, database, and marketing), conduct policy mix with environmental regulations and economic incentives, and innovate institutional and legal framework for establishing an environmentally friendly agricultural system.

Major findings of the study include the regional nutrient balance situation in the two case study areas. Annual environmental loads of nitrogen and phosphorus in Hongseong in 2003 were approximately 2,676 ton and 1,242 ton, respectively. In addition, Okcheon was estimated to have 443 ton in nitrogen

and 258 ton in phosphorus in the same year. The results show that the amount of nutrients are over-supplied by 100.7 percent in Hongseong and by 30.9 percent in Okcheon. The oversupplied nutrients will negatively affect the agricultural ecosystem in both regions via discharge and leakage to the soil, ground and surface water.

Based on the results of the case study, several suggestions are offered regarding the management of material balance in specific areas. The most important thing is to establish best management practices and natural cycling agricultural system. To minimize the surplus in plant nutrients, the input of nutrients to the system needs to be reduced. Increase of nutrient recycling within the system can be an answer. In this study, examples are illustrated to show that it is possible to minimize the losses of nitrogen and other plant nutrients within the agro-ecosystem through recycling and the integration of crop and livestock sectors. However, to achieve high levels of production and recycling efficiency, there needs to be a good balance between the intensity of livestock production and crop production at regional levels. Considering the above findings, the size of livestock operations (specially swine) needs to be significantly reduced in Hongseong.

Researchers: Chang-Gil Kim et al.
Research period: 2004. 3. - 2004. 12.

8

A Case Study on Rural Agricultural Development Factors

The purpose of this study is to analyze the success factors for rural agricultural development depending on policy implementing entities and to suggest the directions for agricultural development by region and agricultural policies for local governments. To achieve the goal, the theories of Shumpeter's innovation behavior and cluster of regional innovation are introduced.

The analytical results of this study can be summarized as follows:

First of all, the natural environment for the agri-industry, communications among local government, producers, and sellers, and the leadership of the main authorities are the core conditions needed to achieve rural agricultural development.

Second, without consideration of the type of main authorities, communications among local government, producers and sellers are the most important for success. When the local government drives the implementation of development projects, the cooperation with the private sector, high skill level, and production facilities are the main factors necessary for success. And in the event that the private sector drives the implementation of development projects, the natural environment and the industry support are important factors for success.

Third, to ensure successful implementation of agricultural policies of local governments, the leadership of final decision-maker, the project implementation based on region-specific natural resources, and the development of software programs such as educational, marketing and information, are very much essential.

Researchers: Moon-Ho Park and Duk Huh
Research period: 2004. 1 - 2004. 12.

Food Balance Sheet

Food supply

The supply of meat, oils and fats is decreased due to consumption shrinkage, and fruit supply is also substantially decreased. Per capita daily food supply is shown below;

Cereals: 429.4g (0.9% increase compared to the last year, 425.6g)
Starchy roots: 34.4g (8.5% decrease compared to the last year, 37.6g)
Pulses: 28.2g (2.1% decrease compared to the last year, 28.8g)
Sweeteners: 57.4g (0.3% decrease compared to the last year, 57.2g)
Vegetables: 417.5g (5.4% increase compared to the last year, 396.2g)
Meat: 106.7g (0.7% decrease compared to the last year, 107.4g)
Milk: 138.2g (4.5% decrease compared to the last year, 144.7g)
Fishes and shellfishes: 105.0g (5.5% increase compared to the last year, 99.5g)
Oils and fats: 45.6g (4.6% decrease compared to the last year, 47.8g).

Nutrients supply

Energy: Total energy supply in 2003 is 2,984kcal per capita daily, which is 6kcal less than the last year, 2,990kcal.
Protein: Total protein supply in 2003 is 99.6g per capita daily, which is 1.1g greater than the last year, 98.5g. Animal protein is 45.9g occupying 46.1% of total.
Fat: Total fat supply in 2003 is 84.3g, showing 0.9g decrease compared with 85.2g in the last year. Animal fat is 25.4g, which is 1.1g less than the last year, and occupying 30.1% of total fat supply.

Researchers: Kye-Im Lee and Min-Jeong Kim
Research period: 2004. 1. - 2004. 12.

10

A Study on the Introduction of Regional Maximum Load System of Livestock Numbers

Livestock manure has long been used as a good fertilizer for growing crops. Recently, however, the environmental risks of livestock manure disposal have increased in some regions as livestock farms have grown larger and more specialized.

The aim of this study is to derive the feasible ways to introduce livestock production quota system to Korea in some regions where the total amount of manure produced exceeds the fertilizer needs for crops.

The major contents of this study are as follows:

First, this study analyzes the current situation of environmental risks associated with livestock manure and evaluates the policy tools restricting the scale of livestock farming. The total livestock number raised has already exceeded the environmental capacity but there is little possibility that this situation will be improved any time soon. The current policy tools, such as regulations for restricting the improper disposal of livestock manure and direct payments for environmentally friendly livestock farming, are not sufficient to prevent the heads of livestock raised from growing higher than environmental capacity. Thus, the target oriented measure is needed for environmental purpose.

Second, the study analyzes the similar systems, domestic and abroad, to draw some lessons from the existing systems in preparation for the introduction of quota system (Maximum loads of livestock numbers) to the Korean livestock industry. Domestically, Total Pollution Load System to preserve water quality has been implemented from this year for the Han river. Abroad, the Netherlands and Belgium have introduced livestock manure quota systems. Especially, this study has evaluated the pig production right in the Netherlands in detail.

Third, this study designs the outline for the new quota system reflecting the demand from the society and livestock farmers. It seems that it would be reasonable to introduce the

system in two stages. At the beginning, not only the amount of livestock manures produced but also the amount of chemical fertilizers used should be considered in determining the maximum load of nutrients needed for crop growing in the region. If current level of nutrient supply exceeds the maximum level of nutrient demand, then the nutrient surplus shall be reduced to the desired level. When the introduction of maximum nutrient load system fails and the nutrient surplus does not reach the desirable level, as a next stage, the livestock quota system should be implemented. Buy-out scheme can be considered as an economically efficient measure to reduce the numbers of livestock.

Lastly, this study has simulated the application of the system designed above to the region (Hongseong) that has a nutrient surplus problem. This region has too many pigs compared with its agricultural land, so that the phosphorus (P_2O_5) supply in the region records 234% of the phosphorus required. Therefore, the local government shall establish a plan to reduce the number of pigs in the region. The establishment of new livestock farm and the expansion of existing farms should be prohibited. Certain amount of pig manure shall be shifted to adjacent regions and 6～17% of current pig population should be reduced through the government buy-out program. Once the livestock production quota system takes a root, the introduction of livestock production right system need to be considered.

Researchers: Joo-Ho Song et al.
Research period: 2004. 2. - 2004. 12.

12

A Study on Beef Consumption Changes in Korea after the outbreak of BSE in the U.S.

After the BSE (Bovine Spongiform Encephalopathy) outbreak in the United States in December 2003, domestic beef consumption decreased dramatically for the first half of 2004 even though there has not been a single BSE case in Korean cattle to date. The purpose of this study is to analyze recent consumption patterns and consumer perception changes in the Korean beef market and thus to analyze whether there were any structural changes in beef consumption patterns in Korea.

In 2002, Korea imported 292 thousand tons of beef, of which 187 thousand tons (64%) were from the U.S.. Domestic beef production was 147 thousand tons. Thus, 43% of beef consumed in Korea originated in the U.S. Therefore, just a single outbreak of BSE in the U.S. provoked serious food safety concerns amongst Korean consumers. Frequent BSE outbreaks in Europe and Japan have had little impact on Korean consumers because Korea does not import beef from those countries.

Consumers reduced beef consumption drastically regardless of countries of origin. In January 2004, domestic beef consumption decreased by 37.2%. The HanWoo (Korean Traditional cattle) price dropped 28% during the first three months. Pork and Chicken consumption increased as substitutes for beef. The sluggish economic situation and recent healthy-lifestyle trend in Korea were also thought to contribute to the reduction in beef consumption

The impact of BSE and healthy-lifestyle-changes on beef consumption was not easy to estimate numerically because it is still ongoing. These impacts were called psychological impacts. The total effects on beef consumption consisted of economic impacts (which can be estimated using price and income elasticities) andpsychological impact. The psychological impact was calculated as remainder by subtracting economic impacts from the total impacts. The result shows that the drastic reduction in beef consumption in first half of 2004 was in large part due

to BSE outbreak in the U.S. while the BSE impact peaked in the first three months of 2004 and ebbed thereafter. A survey on consumers was conducted to complement the statistical data analysis. Many consumers answered that they bought pork or seafood instead of beef because of the BSE concern. For the question of "best government policy measure to increase beef consumption,"consumers chose in the order of food safety, traceability, lower price, labeling of country of origin in the restaurant.

The analysis concluded that there was not enough evidence for structural changes in the Korean domestic beef market. The domestic beef market will likely recover in the near future but will probably maintain a slightly lower level in the next year compared to average consumption levels.

Researcher: Joo-Ho Song, Seung-Youll Shin and Chul-Min Kim
Research period: 2004. 6. - 2004. 10.

14

Estimating the GDP of the Korean Agribusiness Sector

The Korean agribusiness sector is a source of jobs and earnings for millions of Korean workers. The Korean agribusiness sector involves a wide range of businesses from farm product supply to fast food chains. The activities of farmers, processors, manufacturers, wholesalers, retailers, restaurateurs, and transporters should be coordinated to satisfy the changing demands of consumers, businesses and government. Estimating the GDP and employment status of the Korean Agribusiness Sector is conducted using the Korean input-output model, which describes input use and payments for each sector of the national economy.

The Korean agribusiness sector's share of the gross domestic product (GDP) was 10.9 percent in 2000. Actual levels of employment and GDP has increased in almost every year since 1990, though the proportion has mostly dropped. In 1990, the Korean agribusiness sector accounted for 16.8 percent of GDP. Growing output (in won) and employment (in jobs) reflect the move of both domestic and foreign consumers away from low-value bulk commodities toward more high-value processed products.

The Korean agribusiness sector has added 6.5 trillion won to Korean GDP in 2000. Out of this, 4 trillion won came from manufacturing and distribution, while 2 trillion won came from inputs. In 2000, the farm sector alone was worth 3 trillion won, up 20 billion won compared to 1990.

Researcher: Chul-Min Kim
Research period: 2004. 7. - 2004. 8.

Research on the Expansion Measure for the Medium- and Long-term Direct Payment System

With the implementation of the rice/ Doha Development Agenda (DDA) agricultural negotiations and the Free Trade Agreement (FTA), the agricultural market will be more widely opened. Consequently, prices will go down and farmer income is expected to decrease further. As a result of the rice negotiations, prices may drop between 110,000 won and 150,000 won (for polished rice, 80 kg) in 2013 from 160,000 won in 2003, depending on the terms of market liberalization. The prices for peppers and garlic have been on the rise, but will start to drop in 2008 when the results of the DDA negotiations are applied and prices will continue to fall to the level of 2002 in 2013. Meanwhile, prices for onions will continue to rise consistently. The prices for grapes and peaches will go down after 2008, but prices for apples and peaches will be consistently on the rise.

Rice negotiations will conclude in 2004 and prices are expected to fall. Thus it is an urgent task to introduce policy to secure stable income for farmers. This policy should set goals for income stability and support the gap between the goal and prices each year with a fixed direct payment (green box) and AMS (amber box) according to the fluctuations.

As farm households for other agricultural products which will be hurt by the expansion of liberalization and those which will not be hurt co-exist, it is hard to adopt a unilateral approach. The registration system for farm households will be introduced and agricultural items to be adversely affected by the market opening will be intensively supported. If the number of affected items increases, incomes will be stabilized by the expansion of support for the fields they cultivate and income stability account methods.

Objectives for diverse functional maintenance will include environment conservation of national lands, maintenance of the community, and the nurturing of environmentally-friendly agriculture for improvement of food security. Support for diverse

functions including environmentally-friendly direct payment should be limited to cost increases and income reduction. Monitoring should be strengthened lest it become a superficial institution that tries to find an excuse for support. Strict sanctions will be imposed on violations in order to reach social consensus.

Support for agricultural restructuring is designed to enhance the flexibility of resources, help professional farm households form capital, and promote the stabilization of their livelihood. To secure professional farm households will be a major task in agricultural restructuring. Due to the under-development of human resources and the capital market, the barrier to new entry into the field is high; it is imperative that this be lowered down with the intervention of policy. Monitoring and the implementation of the direct payment program and evaluating its results are very important procedures that will enhance the effects of the policy project and prevent moral hazards. A systematic arrangement is needed for the selection of beneficiaries, confirmation of their conditions, and transparency in payment of support money. In preparation for the possibility of a variety of direct payment programs for each farm household, statistics data will be collected and a database established. When a per-household direct payment program is applied for a stable income account and stable management account, data is needed on management performance including the cultivation area of each crop, income, and expenditures per household. Preparation is needed to understand the management situation through the registration system of farm households.

A variety of direct payment systems will also be introduced in response to the expansion of market liberalization and re-assessment of the value of the agricultural environment. Since a large part of the expansion of the direct payment system needs to be thoroughly followed up, the use of the existing administrative agencies will be limited in terms of management. Along with establishment of the taskforce, thorough investigation into measures to actively utilize institutions such as municipal governments, counties, the National Agricultural Cooperative Federation and the Korea Agricultural & Rural Infrastructure Corporation will be conducted in order to effectively monitor the

diverse programs.

Researchers: Dong-Gyu Park et al.
Research period: 2003. 4. - 2004. 3.

18

Questionnaire Replies for OECD Agri-Environmental Indicators

Since the early 1990s, there has been some progress in developing analytical frameworks and related indicators aiming to monitor the environmental effects of agriculture, and evaluating agricultural and environmental policies. The OECD set of agri-environmental indicators is intended to provide information to policy makers and the public on the current state of the agricultural environment, and to contribute to monitoring and evaluating policy effectiveness to promote sustainable agriculture.

The shortage of water and land is the major environmental challenge in agriculture. Such shortage grows worse with the population and economic growth. It gets worse by the current farming structure that numerous small farm households conduct rice farming. This gives rise to environmental concerns about the impact of agriculture on water use, water retention, water pollution, soil quality, biodiversity and pollution gas emissions.

Agriculture accounts for nearly 50 percent of total water use and 20 percent of land use. In Korea, over 60 percents of the territory consist of forests and mountains. Korea shows continued population growth, and a highest population density among OECD member countries. In these situations, the pressure is growing to convert farmland to other uses, and convert land to farming land. The Korean soils are less fertile since they are mostly sandy and acidic. The monsoon season in summer causes high-level of erosion on steeper land, but there are no soil conservation efforts underway. The monsoon climate is suited to conduct rice farming, but on the other hand encourages growth of pests, diseases and weeds, making it inevitable to use large volume of pesticides and to facilitate decomposition of soil organic matters.

The ratio of agricultural land affected by soil erosion has increased slightly throughout the 1990s. With two thirds of farm land under little influence of erosion, erosion-driven soil degradation does not pose an immediate threat to agricultural production, but the long-term productivity of some steep marginal land will

be impaired. The share of agricultural land affected by low to moderate rates of erosion, however, increased over the period 1989-2002. But soil fertility, as measured by soil organic carbon content, has improved because of greater use of fertilizers, compost and soil supplements. There is an accumulation of phosphorus, heavy metals and other toxic elements in agricultural soils. The overuse of fertilizers has increased the residue of phosphorous in soil more than twice the optimal level required for growth in vegetable producing areas. Surpluses of both nitrogen and phosphate from agriculture have grown rapidly, mainly due to rising pig and poultry numbers over the 1990s. The small decline in pesticide use has reduced its potential impact as a water pollutant, although the intensity of pesticide use per hectare is still a concern in lowering the loadings of pesticides in water bodies.

Agriculture's water retaining capacity has weakened by over 12 percent over the past decade. Korea considers that water retaining capacity (WRC) is a key environmental benefit associated with agriculture, especially in view of the greater incidence, severity and cost of national flood damage. Paddy rice fields account for 70 percent of agricultural WRC and are considered to provide other benefits, such as reducing soil erosion and enhancing biodiversity. The key reason for the decline in WRC has been the 10 percent reduction in area farmed, which was partly offset by an increase in the volume of on-farm water retaining facilities (e.g. small dams, reservoirs) by more than 50 percent over the 1990s.

The net burden on the environment caused by agriculture is significant, but recent policy developments are beginning to address the issue. Policy initiatives are seeking to stimulate the adoption of sustainable farming practices, raise the efficiency of resource use, cut chemical inputs, encourage the adoption of soil conservation practices, and address biodiversity concerns. There are also indications that farmers are becoming more receptive to adopting sustainable agricultural practices.

Researchers: Chang-Gil Kim and Tae-Young Kim
Research period: 2003. 11. - 2004. 10.

20

Food Self-sufficiency rate based on Minimum Dietary Reference Intakes for Energy

The objective of this study is to define the food self-sufficiency rate based on minimum dietary reference intakes (MDRI) for energy.

The result showed that minimum dietary reference calories will be 1,250 to 1,500 kcal. For food self sufficiency based on MDRI, in 2020, rice production will be 4,345 to 5,105 thousand metric tons. 420 to 489 thousand ha of paddy area will be needed for rice and total agricultural land will be 960 to 1,050 thousand ha.

The self sufficiency rate for protein and calcium will be 70%, with an existing imbalance between nutrients.

Researcher: Ji-Hyeon Choi
Research period: 2004. 1. - 2004. 3.

A Research on Improving Food Labeling System in Korea: Focus on Fruits and Vegetables

Korean food labeling system has been developed since the introduction of the quality assurance system in 1992. Although GAP and traceability were introduced in 2003, systems and related acts are not consistent and even contradictory.

The purpose of this study is to evaluate the current food labeling system based on consumer survey and to suggest alternatives for the future demand. The paper consists of five chapters: Classification of current food labeling system, evaluation of food labeling by customers and marketing groups, food labeling system review of selected countries such as EU and Japan, and alternative system for the future. The major findings can be summarized as follows:

Food labeling can be classified into three categories: general labeling, certification scheme and labeling related to the intellectual property right. The labeling associated with product origin, GMO, standards and traceability belong to general labeling. Organic certification, quality assurance program and GAP belong to the certification schemes.

The food labeling system can be improved in the six aspects: consumer oriented scheme, harmonization with international standards, simple and clear concept, increasing demand for products with food label, certification system by private sector and consistency among food labeling schemes between fresh products and processed foods.

It is important to provide the legal evidence and guide lines for bulk products labeling. Food labeling rules should be integrated within "Agricultural Products Quality Assurance Acts" in the near future. It is also desirable to establish " Food Labeling and Standard Acts" in the future. The existing environmentally friendly agricultural products labeling system should be divided into two schemes such as organic labeling and other specific product labeling, including products with lower and no chemical use. The organic food labeling system for fresh products should

be integrated with the organic processed food labeling scheme.

GAP scheme is applicable to the export-bound products, medical crops, fruits and vegetables, which should comply with international standards. With regard to implementing GAP, the government should establish legal background and provide guidelines.

Four alternatives for the future food labeling are suggested along with organic food labeling scheme and GAP management scheme. Among the four alternatives, the third alternative, which integrates GAP, lower chemicals and no chemicals products certification scheme into the existing quality assurance scheme with a focus on independent organic labeling scheme, is the most desirable in the short term.

It is recommended that the government establish a committee related to food labeling to improve efficiency of food labeling schemes proposed by different Ministries. Consumer Center should be established to collect consumer opinions for diverse food labeling systems. The government should play the role of establishing the legal background, monitoring private certification procedure, and training specialists. Private certification is preferred to government certification.

Researchers: Kye-Im Lee, Ji-Hyeon Choi and Min-Jeong Kim
Research period: 2004. 5. - 2004. 11.

A Study on Rice Farm Income Stabilization

There have been endless disputes among WTO member countries throughout 2004 on whether rice should have special treatment. If a member country desires to continue to apply the special treatment, it shall confer additional and acceptable concessions to other member countries determined in the negotiations in return.

Rice farmers will face uncertainty of price and income as the quantity of rice import increases. And the way of managing imported rice will affect the rice price and farmer's income level. Therefore, new policy programs should be introduced to reduce the risk of future rice industry.

The paper suggests that the difference between target price and market price should be covered by the government. The payment should be composed of fixed payment (independent of market price) and variable payment(dependent on market price). The target price is the sum of market price and income effect of government procurement. The programs are suggested not to violate the WTO regulations.

The government's payment to farmers should be based on the fixed area and yield to prevent over-production.

Researcher: Dong-Gyu Park et al.
Research period: 2004. 6. 2004. 12.

24

Strategies for Agricultural Productivity Enhancement in North Korea by Mechanization

According to the FAO/WFP special report on North Korean crop and food supply assessment, the availability of tractors and haulage vehicles has remained low over the past couple of years. Most functioning machines are old and ineffective, about half of the agricultural land is still prepared using cattle and human labor. Farm machinery should be distributed to increase agricultural productivity in North Korea. This study takes a look to find strategies to increase farm productivity in North Korea.

Contents of this study are as follows:

First, the trend of farm machinery donation by South Korean NGOs to North Korea was studied. Second, the possibility and problems of farm machinery production through inter-Korean cooperation in Gaeseong, North Korea were analyzed. Third, strategies and action plans to increase North Korean farm's agricultural capability were worked out.

Researcher: Chang-Yong Kang and Tae-Jin Kwon
Research period: 2004. 6. - 2004. 12.

Policy Directions and Issues of Targeting Food Self-Sufficiency Rate in Korea

Objective of this study is to define directions and issues of targeting the food self-sufficiency rate(FSSR) in Korea before Korean government establishes the target FSSR in 2005. The FSSR decreased 73 percent to 27 percent between 1975 to 2003, implying Korean food consumed are mainly depending on foreign countries. It is important to secure certain amount of food in domestic production because there exists a unpredictable natural disasters on food production such as flood, drought and typhoon. The target FSSR will be affected by policy, production and consumption factors. policy factors include the level of trade liberalization, policy options and size of agricultural budget. Production factors implies availability of land, land utilization, yield and bleeding crop variety. Consumption factors are associated with eating pattern and food loss.

Government should set up the master plan of agriculture before targeting FSSR, and the target FSSR should be a feasible scheme rather than political campaign and can make a correct along the change in world and domestic agricultural circumstances.

Researchers: Ji-Hyeon CHoi
Research period: 2004. 8. - 2004. 11.

26

Impact of WTO/DDA Agreement on Korea's Ginseng Industry and Raising Its Competitiveness

A purpose of this study is to analyze the impact of the WTO/DDA agreement on Korea's ginseng industry, to suggest its developing direction, and to introduce alternatives for raising its competitiveness.

Korea's ginseng production is expected to decrease to 11,940 tons and imports to increase to 4,054 tons under the WTO/DDA agreement by 2013. In addition, Korea's self sufficiency rate for ginseng will decrease to 90.4% and the number of ginseng farming households will decrease to 15,729. The WTO/DDA agreement will cause severe damage to Korea's ginseng industry if no special program is implemented. Assuming a government carrying plan to reduce production costs and marketing margins will result in increasing new farming area and promoting consumer's demand, ginseng production is expected to increase to 14,202 tons and farming area to 11,089 ha, but imports will decrease to 3,213 tons. Ginseng farming households are expected to produce about 12,000 tons caused by decreased farming area due to aged farmer and increased scale of economy.

Analyzing customers expected purchasing preference for fresh ginseng, 63.1% plan to maintain current purchase levels; 23.4% plan to increase purchase levels, but only 3.3% plan to decrease purchase levels. Ginseng consumption is expected to increase. Korean ginseng has relatively low price competitiveness compared with Chinese ginseng and it is limited to reducing production cost with its current small scale of production. Ginseng farming households should plant a minimum 4 ha to make net profits- which are similar to average yearly incomes of urban workers. Production scales must increase to greater than 4 ha.

Korean ginseng has very low price competitiveness. Korean ginseng had been sold at ten times higher prices than Chinese ginseng and 3 to 8 times higher than American ginseng in the Hong Kong ginseng market in 2001. Korean ginseng

exports have been rapidly decreasing for this reason. Average production costs for 4-yeared Korea ginseng was Korean thousand won 10,375/10a, which was 4.7 times higher than Korean thousand won 2,213/10a Chinese ginseng. Farmer price and wholesale price of Korea undried ginseng were also 2.85 times and 4.72 times higher than those of Chinese ginseng in 2002. If the local market is expanded and tariffs lowered, there would be a potentiality to increase ginseng imports.

Therefore, reducing production costs, improving local marketing systems, expanding production infrastructure, and expanding export markets for Korean ginseng against imported ginseng are key resolutions to improve Korea's ginseng industry. We propose to make existing government plans —including producing high quality ginseng, promoting market flow through the improvement of marketing systems, maintaining the brand value of Korea ginseng in oversea markets, providing ground for growing the industry through constant research, and by consolidating related rules and laws— into total resolution to improve Korea's ginseng industry. We also propose to build a ginseng traceability system, support clean ginseng production, develop ginseng clusters, introduce a ginseng check-off systems, improve the ginseng product inspection system, establish a Korea ginseng research institute, and consolidate related rules and administration system.

Researcher: Myung-Hwan Sung et al.
Research period: 2003. 3. - 2004. 3.

28

Study on Mid and Long-term Strategies for Expanding Korean Ginseng Exports

The main purpose of this study is to review the status of the world ginseng market and to build mid and long-term strategies for expanding Korea ginseng exports.

World ginseng production was estimated at 70,000 tons worldwide in 2001. China produced 52,168 tons, 75% of the total production while Korea produced 13,215 tons, 19% of total production. The US and Canada produces 2,052 tons and 2,483 tons, respectively. Korean ginseng has very low price competitiveness. Korean ginseng had traditionally been sold at prices ten times higher than Chinese ginseng and 3 to8 times higher than American ginseng in Hong Kong ginseng markets (2001). Korean ginseng exports have rapidly been decreasing for this reason. Average production costs for 4-yeared Korean ginseng (Korean thousand won 10,375/10a) was 4.7 times higher than (Korean thousand won 2,213/10a) Chinese ginseng. Farmer prices and wholesale prices of Korean undried ginseng were also 2.85 times and 4.72 times higher than those of Chinese ginseng (2002). If local markets were expanded and tariffs lowered, there would be a potential for increased ginseng imports.

Korean ginseng is famous for its high quality in overseas markets but it tends to lose its market share due to weak price competitiveness. When we analyze Korean ginseng's competitiveness based on trade specialization index and revealed comparative advantage index, Korea's ginseng industry has a comparative advantage and is specialized in terms of trade. It is also revealed that net export of Korean ginseng is relatively large and prominent on the market, but needs to make a counter-plan to consistently maintain long run export comparativeness against imported ginseng. An export strategy of product differentiation is also needed to maintain competitiveness against Hong Kong, China and Canada. We propose differentiation strategies for Korean ginseng including export plans for each market, diversifying export through analysis of importation conditions for

major ginseng importing countries.

Researchers: Myung-Hwan Sung et al.
Research period: 2003. 3 - 2004. 3.

30

Investigation and Analysis of the Status of Domestic and Imported of Salted-Foods

Salted-food is a highly popular Korean food product. Recently, consumption of salted-foods has decreased as eating patterns have become westernized. It is very important to obtain insights into investigating the market situation for salted-foods, since it heavily affects demand for vegetables processed such as radish, onion, garlic and green pepper and garlic, which are major raw materials of salted-foods.

The objective of this study is to investigate and to analyze the state of domestic and international markets for salted-foods. The Japanese salted-foods market was reviewed in this case for the international market because Japan is the leading country in the world for salted-food products. Finally, demand for salted-foods was discussed and directions for product development were suggested.

Salted-foods are classified into two product groups: pickled radish (tan-mu-ji) and vegetables seasoned with soy sources (jang-a-jji). Tan-mu-ji accounts for 91 percent of salted foods.

Total amount of salted-foods in 2003 are estimated as 118.6 thousand metric tons: tan-mu-ji; 102,765 metric tons, pickled cucumber; 8,405 metric tons and jang-a-jji; 7,436 metric tons. Production of tan-mu-ji has increased 10.5 percent annually since 1995 because of increased demand for rice rolled in seaweed-paper, gimbap, of which tan-mu-ji is a major ingredient.

It is predicted that demand for tan-mu-ji at home will decrease while the demand away from home will increase. Demand for jang-a-jji away from home will also increase because homemade jang-a-jji production will likely decrease as homemakers increasingly join the workforce. It is also expected that demand for pickled cucumber and chi-ja tan-mu-ji will increase with demand for pizza and pasta. In Japan, it is predicted that demand for salted foods at home will decrease due to an increase in dining-out habits and a decrease in homemade salted-foods.

The survey results show that consumers prefer safer, less salted and higher qualities of salted-foods. Marketing strategies focused on younger consumers is required to increase demand for jang-a-jji. For example, less salted products seasoned in barbecue sauce, which tastes like soy paste mixed with hot red pepper. It is recommended that the government increases loans for operation and construction capital, which are in high demand by salted-foods processing companies.

Researcher: Kye-Im Lee, Ji-Hyeon Choi and Min-Jeong Kim
Research period: 2003. 7. - 2004. 7.

A Study on Farmers' Disposal Status and Effective Management System for Equipped Agricultural Input Wastes

The purpose of this study is to analyze the problems related to disposal and administration of equipped agricultural input wastes, and to suggest an effective management system.

The study takes a look at some kinds of equipped agricultural input wastes (except for vinyl, pesticides containers, agricultural machines), which are connected with environmental pollution in rural areas.

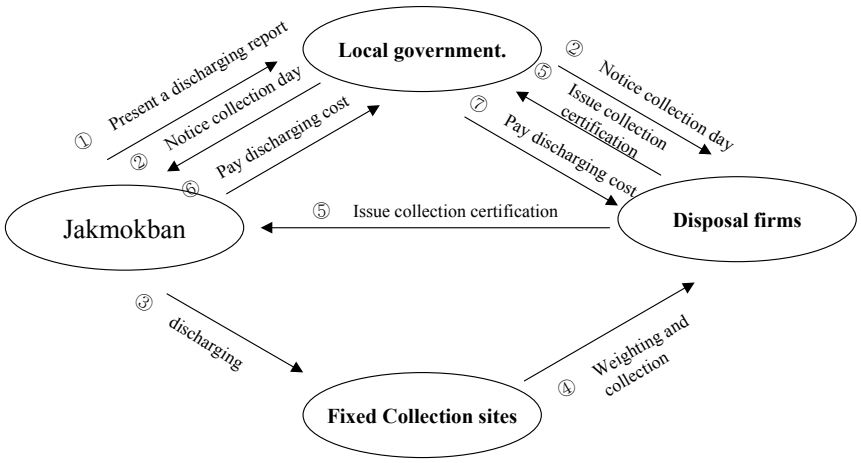
The major contents of this study are as follows:

1) Improved disposal methods of equipped agricultural input wastes are suggested:
   - ○ to develop and supply environment friendly equipped agricultural inputs and the technologies for optimal use of equipped agricultural inputs;
   - ○ to establish an efficient management system of disposing equipped agricultural input wastes; and
   - ○ to strengthen extension, instruction and promotion for farmers' positive discharging, legal incineration and landfill, reuse
2) The introduction of Based Waste See System by Village (BWSSV) is suggested:
   - ○ It's very difficult to develop a new administrative system to handle equipped agricultural input wastes due to differences in occurrence pattern of input waste by regions and farmers.
   - ○ It's important to adjust BWSSV for effective disposal of equipped agricultural inputs.
   - ○ Jakmokban (a group of same crop farmers) should be a body of adjusting administrative system for equipped agricultural input wastes.
3) Disposal by Korea Environment Corporation (KEC) needs to be pursued.
   - ○ It's not easy for KEC to manage an adjusted administrative

system of equipped agricultural input waste even though there are no problems in law and organizational institution.

4) An effective management system is in need.

○ An effective management system of equipped agricultural input wastes based on BWSSV is suggested in this research, as follows:



Researcher: Chang-Yong Kang, Hyun-Tae Park and Nan-Young Kim

Research period: 2003. 7. - 2004. 7.

34

An Analysis of Economic Values of Germ-free Minipig-based Bio Internal Organ Production

The main purpose of this research is to analyze the economic aspects of producing bio internal organs using germ-free Minipig for xeno-transplantation. The period of this research is 10 years, so that it will be conducted until 2013. The objective of the first year(2004) is to develop the methodology of economic analysis and investigate into related situations in the bio-internal organs market.

The results of this study are summarized as follows:

First, the domestic internal organ market has the demand-driven structure, because of limited supply from brain death patients. This implies that there is a need to develop the bio-internal organ production technology.

Second, the market size of internal organs is estimated to reach 1.5 trillion to 2.1 trillion won in 2020.

Third, the cost-benefit analysis was conducted. For economic evaluation, cost-utility analysis, cost-effectiveness analysis and cost-benefit analysis were carried out in order to make sure of obtaining appropriate results.

Forth, when conducting the cost-benefit analysis, it is necessary to conduct more clear conceptualization and to consider accounting cost, opportunity cost, current values and the social discount rate. In addition, it is also necessary to consider the direct and indirect profits of different kinds of internal organ development methods. When valuating indirect profits, the psychological factor should be considered as well.

Fifth, the size of benefits can be estimated directly or indirectly with the use of some analytical methods. For example, the CVM (current value method), the patient's WTP (willingness to pay) method, the reduced amount of treatment cost and the analysis of QALY(quality adjusted life year) index will be useful to make the estimation.

Sixth, the cost of developing bio internal organs using germ-free minipig for xeno-transplantation could be achieved

through understanding of research costs and investment amount in the field.

Seventh, the BEP (break-even point) analysis is selected to compare economic values of germ-free minipig production claimed by multiple institutes.

Eighth, three research institutes in Japan are compared. KT University R&D center could produce the germ-free minipigs at 8,238 thousands Yen on the breeding size of 77 heads. The OS research center could produce the minipigs at 7,723 thousands Yen on the breeding size of 167 heads. The JF farm center could produce the minipigs at the cost below the costs mentioned above on the breeding size of 167 heads.

Researchers: Duk Huh, Sung-Jin Lim and Hyun-Jung Kim
Research period: 2004. 4. - 2004. 12.

2004 Evaluation of Agricultural Training Organizations' Training Programs

These days knowledge and information play an important role across a society. So-called 'digital revolution' pushes a country to foster talented human resources to enhance international competitiveness. Under this trend, the need of providing specialized education and job training has increased rapidly. It is no exception in the agricultural field.

Against this backdrop, it is worthy of evaluating education programs of private agricultural training organizations

The evaluation was conducted in two layers. First, each agricultural organization was evaluated based on such criteria as subjects, educational facility, teachers, provision of public information for farmers, education plan, and program design. Second, the educational programs of training organizations were evaluated.

When the evaluations are done, the results were merged and integrated by organization.

Researcher: Moon-Ho Park
Research period: 2004. 10. - 2004. 12.

Agricultural and Rural Development Plans in Keochang County

The domestic agricultural market has opened rapidly because of the recent WTO/DDA and FTA changes. As a result, international competitiveness in agriculture (in every country involved) has become more important and these countries are establishing special plans to cope with the new international competition. In Korea, as regional self-administration systems are flourishing, agricultural product competition between regions has become fierce and each rural administration where agri-business is a principal industry has established or is establishing its own development plan and action.

The aim of this study is to derive an agricultural action plan and to promote the program catch-phrase, Prospect 21! -Selection of the Geochang region, and to draw up a competitiveness strengthening plan for Geochang's agriculture and rural development.

The contents of this study are as follows:

1) Presentation of vision and development plan for 21C Geochang's agriculture and rural district.
2) Create agricultural development plans by category (select and concentration of specific products, environmentally-oriented agricultural products, green-tourism, living environment and agricultural manpower.
3) Medium and long term financial plans (from 2004 to 2010) by agricultural category.

Researcher: Moon-Ho Park
Research period: 2003. 5. - 2004. 3.

38

Market Investigation for the Improvement of Jeju Citrus Marketing

Under the WTO system, the domestic fruit industry began to compete with foreign fruits. The Jeju citrus industry did not react to rapid changes in the market environment such as changes of circumstance in markets, the market structure and consumer preference. This has caused a continual decrease in competitiveness, has limited new market expansion and growth in consumption.

This study tries to suggest policy alternatives for the marketing structure in order to strengthen the competitive power of the Jeju citrus industry. We primarily worked on multilateral and detailed research with the goal of determining a strategy to effectively cope with changes in domestic and foreign agriculture, changes in the marketing environment with the goal of securing competitiveness in the long term. In conducting this research, we strove to draw up a road-map for policy making that includes permanent and stable development and competitiveness.

The contents of this research are as follows. To work on marketing structure and the Jeju citrus market- we analyzed the production, processing and marketing of other domestic fruits. Secondly, we investigated problems with and the state of marketing agents and market channels. Thirdly, we estimated citrus demand and surveyed consumer needs. Lastly, we proposed marketing strategies for Jeju citrus in consuming markets.

Researchers: Chang-Gon Jeon and Jae-Hong Park
Research period: 2003. 10. - 2004. 3.

Strategies for basic construction plans and management of the Ulsan Agricultural and Fishery Product Composite Marketing Center

The purpose of this study is to establish a basic plan for efficient construction, management and operation of the Ulsan Agricultural and Fishery Product Composite Marketing Center. Major issues are concept, function, business model, proper dealing volume, size and allocation of facilities and basic construction design. Plans to secure buyers of agricultural and fishery products, business in each phase, and distribution issues are included. To set up a basic plan for construction, surveys for producers, consumers, merchandisers are carried out. Finally, analyses on similar and foreign merchandisers are executed.

Researcher: Chang-Gon Jeon and Myung-Ki Cho
Research period: 2003. 11. - 2004. 6.

40

A study on the Reformation of the Gangseo Agricultural Products Wholesale Market

The purpose of this study is to propose strategies for the introduction of a successful market-wholesaler system in Gangseo agricultural products market and an examination of obstacles to applying effective legislative measures.

Major focuses in research consist of the characteristics in location, characteristics of the Gangseo agricultural products marketing system, the background of the market-wholesaler system, a definition of the market-wholesaler system, a comparison between both auction and market-wholesaler systems and the effects of and problems with the market-wholesaler system.

For an efficient market-wholesaler system, this study concludes and suggests as follows: an estimation of the minimum transaction volume, an induction of an efficient and accurate accounting system, the establishment and operation of a transaction reporting house, adequate loading and unloading systems, use of a credit evaluation system, and the participation of producers as market-wholesalers.

In reforming the Gangseo agricultural products market, this study also proposes a consolidation of existing markets (i.e. former dealers), administrative support for swift and effective reformation and programs to expand the breadth of products offered at the market and to secure additional sites.

Researcher: Myung-Ki Cho and Chang-Gon Jeon
Research period: 2003. 12. - 2004. 5.

A Design for Direct Payment Measures for Compensating Income Loss to Fruit Growers Caused by Agricultural Imports

The objective of this study is to design direct payment measures for compensating income loss to fruit growers caused by agricultural imports in Korea. Similar direct payment systems such as the direct payment system for rice in Korea and Japan, and the TAA (Trade Adjustment Assistance) for farmers in the U.S. have been reviewed. The direct payment system for green house grape growers and kiwi growers were examined. Details on the direct payment system are as follows:

Compensation will be provided to growers if it can be demonstrated that increased imports of competitive commodities have contributed significantly to a 20 percent or more price decline compared to the average price. Land owners will not be eligible for the payment. The amount of compensation for income loss will finally be determined along with the severance of the current price decrease compared to average price.

In order to launch the direct payment system smoothly, it is necessary to establish monitoring systems for world and domestic markets, a database on production, price and other market information for green house grapes and kiwi should be set up in the near future.

Researcher: Ji-Hyeon Choi and Min-Jeong Kim
Research period: 2003. 12. - 2004. 2.

A Study on the Improvement of Transactions in Agricultural and Fishery Products Categories

The purpose of this study is to improve efficiency of fishery wholesale transactions under the rapidly changing fishery market environment and to propose strategies for strengthening competitiveness and energizing the wholesale market.

The major contexts of this study are as follows. First, changes in the fishery marketing system will be examined while its current status and obstacles in each marketing phase will be investigated. Second, fishery marketing paths and margins of each fishery products' categories are analyzed. Third, problems with complicated fishery marketing systems in production and consumption areas are examined, with special attention to wholesale transactions. Fourth, the relevant laws regarding the current fishery marketing institute are analyzed. Lastly, based on previous contexts, strategies for improving fishery transactions and activation in wholesale markets are proposed.

Researcher: Chang-Gon Jeon
Research period: 2003. 12. - 2004. 6.

Rice Marketing Strategies of Agricultural Co-operatives In Response to Changes in the Grain Market Environment

The purpose of this study is to propose rice marketing strategies for agricultural co-operatives according to the changing environment in the grain markets, including rice market opening. The study should be also aimed to take measures to develop a new business model for the future in response to the increased competitiveness of the rice of the agricultural cooperatives and the changing environment of the grain market by strengthening the functions and roles of RPC.

The study mainly reviews the effect of the market expansion on the rice industry and how the grain policy and the grain distribution environment will change in the future. Along with this, problems in grain distribution of the agricultural cooperatives are highlighted by analyzing the performance, the features and the nationwide managerial performance of the rice sales business. In addition, it analyzes the features of the nation's rice consumption market in order to set a right direction for the rice distribution system, and develop the strategy for expanding the rice distribution system of agricultural cooperatives.

The study presents the integrated RPC model, regionally integrated RPC model, and the joint marketing model of the production site as the rice distribution system model for agricultural cooperatives. It is speculated that the rice oversupply structure will continue, generating the additional stock, even when the harvest level is similar to that of the average year, due to the effects such as the declining consumption, and the extent of the market opening, including the obligatory import quota. The function to absorb the harvest quantity through the rice purchase system and to support the price, will be weakened by measures such as the reduction of the WTO subsidies. The distribution function of the private sector turns out to be too insufficient to make up for that. The rice producing family is expected to bear the brunt if no proper measures are taken for the future rice

industry.

The government policy is expected to convert to a system that balances production, distribution and consumption in accordance with the market principles to ensure the long term stability of the rice industry amid the predicted challenges like the lowering domestic price and income of farm families due to the change in the domestic and the overseas environment surrounding the rice industry. The government will also play more roles to enhance the food security, the public benefit the agriculture brings about, consumers production and the policy to stabilize the income of the farm families. Thus, the grain policy of the government is expected to be fostered to entirely revamp the current purchase system, enlarging the scope of the management in farming area, fostering the superior variety of rice representing regions, for the sake of supplying high quality rice, inspecting the system requiring labels on the package, producing and distributing the high quality rice through restructuring the RPC of the production site, and the improvement of the profitability.

The rice collected by agricultural cooperatives at production sites accounted for 45 percent of the total distribution and 58 percent of the total consumption in 2003. But the agricultural cooperatives lag behind the private sector in terms of price competition, because they purchase key grains at high prices during the harvest, make excessive fixed investment despite the burden of the purchase cost. Furthermore, the number of large distributors has dramatically increased and they are leading the market in terms of price. The rice sales in 2003 reached around 2 trillion won with the help of the agricultural lineage organization, but most have small sales outlets, which results in the competition among precipitating shops. The low-priced rice is expected to be consumed by the companies supplying eating-out or food materials when parts of MMA rice are converted to SBS quantity or the customs agreement fully allows the distribution of the imported rice, but the effect on the domestic rice market will be insignificant. Nevertheless, the demand in the market might possibly skyrocket if import of the rice with the uniform quality is followed by the promotional event. The agricultural cooperatives are less flexible to respond to the companies selling

imported rice, as it doesn't negotiate.

At the moment the grain business headquarters earns 316.9 billion won but the current net loss amounts to 400 million won. An organization is required to sensibly respond to flaws in the grain distribution market, changing taste and patterns of consumers and the changes made by the distribution companies on the consumption site. In this light, we need a marketing strategy that can boost grain sales, while swiftly responding to the new distribution environment by using the grain business organization of the current agricultural cooperatives. We have to secure the competitiveness to compete with the distribution companies in the private sectors by developing the products fitting the taste of consumers and features of the business, and joint brand at the level of the city and the county, and carrying out the joint sales business.

The agricultural cooperative RPC at the rice production site of some major provinces, except for Gyeonggi, Gangwon, Gyeongnam, Gyeongbuk, turned out to record declining revenues. Large PRCs with more than 12 billion won in sales generated current net revenue, but by contrast small and medium-sized ones recorded losses, making us to conclude that the current agricultural RPC must be revamped to a proper scale. Presently, the losses are being accumulated because of the aggravating managerial condition of the agricultural cooperative RPC and the hemorrhaging competition. So normal managerial activities are expected to be tricky without the conversion to a new business method. The integrated RPC and the regionally integrated RPC model is what the agricultural cooperative must pursue over the long run in response to the changing environment of the distribution. The long term model for the production site's joint marketing based on the region's unique feature should be pursued.

The managerial type of each model is in principle separated from the association management to build the responsible managerial system. The role of an autonomous organization will be strengthened to perform actively the business to specialize the region's rice and craft the region's consensus body, and the local agricultural cooperative must serve as the decision-making body as a consensus organization while conduc-

ting the indirect management through the participation in the stakes. The agricultural center council must focus on the promotion of the sales and the development of the distribution system in a comprehensive way.

Researcher: Myung-Hwan Sung et al.
Research period: 2003. 12. - 2004. 10

Improvement of the Korean Food Industrial Policies

The main purpose of the study is to suggest the need of establishing the food industrial law and improve the policy in Korea. This paper is composed of four chapters. The first chapter present statistics on the international and domestic trends in the organization of the food product system. The middle chapters present information on the organization and functions of the Korean food system. The final chapter presents the overall conclusions about the establishment of food industry law and the improvement of the government food system policy.

The food industry in Korea is important to the economy, employing significant proportions of the labour force and contributing substantially to GDP. The international literature on developments in the food industry suggests that five major changes, which can impact on innovation, are taking place in the organization and focus of the product system. They include a major shift towards globalization; increasing importance of brand ownership which in some cases is replacing manufacturing as the central activity of major 'food' companies; a shift in power between retailers and processors occurring in many countries; the parallel growth of food distribution and retail systems; the creation of a much more organized logistics system, which ties distribution (transport, storage, packaging) much closely to supermarket sales;

The food industry produces a wide range of products and ingredients. The food industry is a vital component of the Korean economy. Food products, incorporating processed food including meat, dairy, processed sea food, beverages and ingredients, and fresh horticultural produce, account for 40 percent of total retail business in Korea. The industry directly employs over 180,000 people throughout Korea.

The success of the Korean food industry in the future, in this increasingly competitive and globalized market, depends on dynamic businesses actively pursuing growth and development

with the entire food system.

If the food industry desires to continue to be one of key industrial sectors in Korea, there needs to be a radical shift in thinking, changes in government policies and re-invigorated effort at the industrial.

Researcher: Chul-Min Kim
Research period: 2004. 6. - 2004. 10.

Study on Awareness and Needs of Consumers, Producers and Distributors Regarding Food Safety

Under free trade, consumer concerns about food safety have increased greatly. To satisfy consumer needs for safe agricultural products, improving food safety in the domestic agricultural products market is essential for farmers and distributors.

The main objective of this study is to analyze current awareness and needs of consumers, producers and distributors regarding food safety, and to propose policy measures for improving food safety in connection with good agricultural practices. For this study, surveys of 400 consumers in megalopolises, 37 various distributors in metropolitan areas and 91 farmers in four provinces are conducted respectively.

Production and purchasing criteria focus on quality (taste) and price of the product as a priority. However, when only food safety and quality (taste) are compared, consumers are concerned relatively more about food safety. The grade for domestic agricultural products measured by consumers, producers and distributors is mostly 80-89. It implies domestic products are more trusted.

Information on food safety comes from mass media for producers and consumers as well as distributors. Every survey indicates that the burden of responsibility for food safety is on producers. Many respondents are willing to pay more for production, distribution, consumption of safe agricultural products. Relatively fewer consumers are willing to pay more. This may be caused from uneasy feelings from additional expenditure with regular income. In addition, awareness for certification is generally low, but high only for distributors.

Many respondents, especially consumers, do not know about good agricultural practices. As mentioned before about the importance of accountability by producers for food safety, farmer demands for training and consulting good agricultural practices are high. This means that the importance of security in food safety at the production stage is paramount. Respondents indicated

that the result of pesticide and heavy metal residues inspection must be labeled and distributors indicated that they will deal more food safety certified agricultural products in future. Consumers indicated that they are highly concerned with food safety. At present, most do not know good agricultural practices, but they agree on the necessity of good agricultural practices and are willing to pay more. Thus, producers, distributors and associated government bodies must assure food safety and facilitate information exchange.

Some policy alternatives for food safety and good agricultural practices are suggested as follows:

1) Manuals for high quality and safe agricultural products are necessary.
2) Introduction of good agricultural practices to improve quality certification is required.
3) Above all things, active education for and consulting with producers is essential.
4) Far-reaching public information work.
5) Training manpower in connection with good agricultural practices.
6) Construction of infrastructure related to good agricultural practices
7) Continuous improvement of good agricultural practices

Researcher: Jae-Hong Park
Research period: 2004. 6. - 2004. 9.

A Study on the Improvement of Transactions in Agricultural and Fishery Products Categories

The purpose of this study is to improve efficiency of fishery wholesale transactions under the rapidly changing fishery market environment and to propose strategies for strengthening competitiveness and energizing the wholesale market.

The major contexts of this study are as follows. First, changes in the fishery marketing system will be examined while its current status and obstacles in each marketing phase will be investigated. Second, fishery marketing paths and margins of each fishery products' categories are analyzed. Third, problems with complicated fishery marketing systems in production and consumption areas are examined, with special attention to wholesale transactions. Fourth, the relevant laws regarding the current fishery marketing institute are analyzed. Lastly, based on previous contexts, strategies for improving fishery transactions and activation in wholesale markets are proposed.

Researcher: Myung-Ki Cho
Research period: 2004. 6. - 2004. 9.

A Study on Strategic Marketing Training Plan In Response to Market Change

In 1980s and 1990s, agricultural marketing policies have mainly focused on construction of public wholesale market and operation. As a result, the marketing training were provided to the wholesale market agents. However, since the mid-1990s, the scope and target of marketing training have been expanded due to rapid change of agricultural marketing system. The structure of the marketing training market switched from the monopoly of AFMC Marketing Training Institute(MTI) to competition after 2000.

This study attempts to propose strategic plans for providing marketing training to elevate the competitiveness of MTI in the highly competitive market. The main contents of study include the effect of market change on marketing training, perspective of future marketing training, analysis of outcomes and problems of current marketing training, establishment of the functions and roles of MTI, differentiation plan of MTI, and long-term vision and strategic plans.

Researcher: Chang-Gon Jeon
Research period: 2004. 6. - 2004. 9.

Remodelling of the Guri Agricultural and Marine Products Wholesale Market

The purpose of this study is to suggest remodelling strategies for increasing competitiveness of the Guri Agriculture & Marine Products wholesale market in the rapidly changing agricultural market environment. The major contents of this study are as follows: situation and problems of fresh products marketing, analysis of low efficiency and high cost distribution system, relocation of fresh products market building, and proper management plan.

The study concludes that to strengthen competitiveness of the Guri Agriculture & Marine Products wholesale market, it would be better to remove present inefficient and complicated vegetable trade facility and establish a new vegetable trade specialized facility. The basic direction of remodeling is to divide vegetable and fruit trade.

Researcher: Chang-Gon Jeon
Research period: 2004. 7. - 2004. 12.

54

Strategies for Facilitating Agricultural and Marine Products Wholesale Market Activities

The purpose of this study is to suggest strategies to enable the agricultural and marine product wholesale markets to efficiently play their roles by maintaining their functions and solving administrative problems in the rapidly changing marketing environment.

The major contents of this study are as follows: observing changes of wholesale market and marketing environment related to agricultural and marine products, analyzing situation and problems of 32 nationwide public wholesale markets, and proposing efficient management strategies for agricultural and marine products wholesale market.

As the strategies to efficiently manage agricultural and marine products wholesale markets, the followings are suggested: First, their management efficiency should be raised. Second, the capability to collect and distribute agricultural and marine products should be strengthened. Third, trade system should be improved. Fourth, the functions of wholesale market should be redefined, and facilities should be modernized. Fifth, the distribution efficiency should be enhanced. Sixth, marketing information should be advanced. Lastly, various kinds of wholesale market systems should be improved.

Researchers: Gill-Haeng Huh et al.
Research period: 2004. 8. - 2004. 12.

Evaluation of Soybean Procurement Program

The Korean government procured soybeans at the price higher than the market price in the 1980s. But in the 1990s, the government's procurement price got lower than the market price, so that it was unable to properly procure soybeans. In 2002, the government raised the procurement price for soybeans produced in paddy fields to encourage farmers to shift from rice to soybean cultivation, since the rice farming caused oversupply of rice. However, the price for soybeans produced in upland was stagnant. Such policy succeeded in increasing the paddy soybean production, but led to the complaints of upland soybean farmers about unfairness and market distortion. This study focuses on analyzing supply and demand structure of soybeans, assesses welfare effects of the procurement program, and suggests policy alternatives.

The study devised the acreage response functions for paddy and upland soybean, yield function, and demand function. Major findings of the study are as below:

1) It is found that price-demand elasticity is -0.35, while income elasticity is 0.21. There was a structural demand shift to non-genetically modified foods in 2004;
2) While the procurement price of soybean is relatively lower than rice, the coefficient of paddy field soybean price to rice price is 0.93. While the procurement price of soybean is relatively lower than red pepper, the coefficient of upland soybean price to dried red pepper price is 0.08;
3) Yield is predicted to increase to 174 kg per 10 acre by 2015 from 141 kg on average for the period of 2000-2004.

To predict the supply-demand change and welfare effects of the procurement program, three scenarios were presented:

1) Baseline scenario is to stop the government procurement;
2) Scenario 1 is to continue to procure only paddy soybean at the current procurement price of paddy soybean, which is similar to the current program; and
3) Scenario 2 is to expand the procurement program to

purchase upland soybean at the current procurement price of paddy soybean.

Due to the differences between market prices and procurement prices for paddy or upland soybean, total soybean farming acreage is predicted to decrease more under Scenario 1 than Scenario 2. The reduction of total soybean acreage under Scenario 1 is projected to be smaller than baseline scenario. Paddy soybean farming acreage would increase under Scenario 1 and Scenario 2. Acreage of upland soybean under Scenario 1 would decrease more than baseline scenario, while the acreage of upland soybean under baseline scenario would decrease more than Scenario 2.

Production surplus will be the highest under Scenario 2 and the smallest under Scenario. Consumers' surplus will be almost the same under the three scenarios. Government outlay and deadweight loss will be the biggest under Scenario 2, followed by Scenario 1 and baseline scenario. With respect to social welfare effects, baseline scenario is the best choice, followed by Scenario 1 and Scenario 2.

The market price of the domestically produced soybeans and the soybean income are predicted to rise. The government intervention to the market through the procurement program is recommended to be replaced with direct payment program to stabilize the soybean farm household income. The price for paddy soybean would be better to be fixed at the current procurement price for the next three years.

Researchers: Myung-Hwan Kim and Hye-Young Kim
Research period: 2004. 10. - 2004. 12.

RURAL DEVELOPMENT RESEARCH 2

A Study on Bridging Income Gap between Urban and Rural Areas through the Balanced Regional Development Strategies: Analyzing the Reasons of the Gap

This is the first year report of the three-year collaborative research entitled 'A study on bridging income gap between urban and rural areas through the balanced regional development strategies', which is led by the Korea Council of Economic and Social Research Institute. The ultimate purpose of the study is to seek an alternative policy to reduce the income gap between rural and urban regions. The main research methods applied include the review of previous policies aimed to improve farm household income and the analysis of successful case examples of regional economic development. By doing so, this first year study focuses on identifying the current situation of the income and development gaps between urban and rural regions and resulting problems. This is why the study comes to have the subtitle 'Analyzing the reasons of the gap'.

In order to find out the income gap between the regions, the income levels of the residents living in urban and rural areas were compared. Since no such statistics is available, this study just compares the size and structure of income and expenditure of urban workers with those of farm households. The ratio of farm household's income to urban worker's income was 113% in 1985. But it decreased from 97.4% in 1990 to 73% in 2002. During the same period, income per family member dropped from 112% to 100% and the national average of income per worker also went down from 38% to 24%. According to the characteristics of regions and the size of farm household, there were income gaps even within rural regions. In 2002, the income of the small farms with less than 0.5ha amounted to 51.3% of large farms with over 2ha. Moreover, looking at the changes in real farm income between 1995 and 2002, large farm households' income increased a little to 106.5%, but that of small farm households slumped to 79%. This study has also found that the income levels differ

between those who have the opportunities to get non-agricultural income and those who don't. The income level of farm households in mountainous areas was just 83.3% of the national average, but that of nearby urban areas was 169.5%. In addition, full-time farm households' income was 74.3% of that of part-time farm households. For the incomes by farming type, rice farming households earned 21,441 thousand won, only 80.8% of the average farm household income, while livestock, fruit and specialized crop farming households earned 142%, 125.8% and 111.0% of the national average, respectively. It implies that the choice of farming items is an important variable determining income level.

Because of such income gap, people usually decide to move to the regions where they can get a job easily. This has resulted in socio-economic problems such as overpopulation or depopulation, as well as social conflict between residents. In 2002, the income per farm household was 24,475 thousand won that is not enough to make re-investment, but the debt per farm household has increased to 19,898 thousand won. The Engel's coefficient of farm households increased from 21.9% in 1993 to 25.3% in 2003. This implies that farmers cannot afford to enjoy the same standard of living with their urban counterparts. Thus, people tend to leave rural regions, seriously affecting the sustainability of rural societies.

During the period between 1998 and 2002, the comparison of GRDP between regions reveals that the high growth regions have the higher ratio of the manufacturing industry, while the slow growth regions mainly depend on the agricultural industry. Even though the income gap between urban and rural regions originated from the difference in the type of industries they are engaged in, it has brought about underdevelopment and resulting depopulation in rural regions, and further widened the development gap between them. The depopulation of rural regions has caused manpower shortage and in turn the wage increase, which consequently decreased the competitiveness of the domestic agricultural sector. On the other hand, the overpopulation in urban areas caused problems such as housing, traffic jam and crimes, which fundamentally declined the national competitiveness in the

global market.

This study identifies factors, which influence the level of regional development. They include geographical location, regional resources, the quantity and quality of population, living circumstances, national policies and the will of the local government, employment opportunities and industrial structure, and the productivity of specialized industries. These factors are closely interacting with each other. The analysis of the current situation and the reasons of the disparities imply that (1) the development gaps differ by cases and regions. This is not likely to be solved by the general application of central government policies, but can be addressed by region-specific policies reflecting the development level of a region, locational conditions, local resources and the opinions of local residents. (2) The approach should be a comprehensive one that includes agricultural and non-agricultural sectors as well as traffic system, living environment, education, culture, and welfare system. (3) It needs to be based on local resources and unique characteristics rather than outside enterprises and central policies. It means that the indigenous development approaches should be put into practice. (4) The central government supports should be differentiated by the level of development of individual regions. Especially, the laggard regions should be taken into account for differentiated assistance.

These findings are used to propose the future directions of the rural development policies to reduce the income and development gaps between urban and rural regions. (1) The future development policy should improve the competitiveness of agricultural production by way of the specialization of regional agriculture and the reinforcement of the product quality. By doing so, it can establish the regional innovation system and develop human resources. (2) It is important to provide farmers with the opportunities to find jobs in the non-agricultural sector. Furthermore, it is essential not only to start up businesses and bring factories into the rural regions, but also to provide job-training. (3) The future policy should focus on promoting industrial cluster including the region-based major industries. (4) The previous agricultural policy should be expanded into the

'rural policy' encompassing agricultural and non-agricultural sectors and farmers and all residents in rural areas. Moreover, under the 「special regulation on the improvement of living quality of farmers and the rural development planning」, local governments should set up regional development plan and introduce the novel 'comprehensive rural development plans'. (5) The participation of local governments and residents is essential for the implementation of the policies. This study have identified some factors for successful implementation of policies. They include participation of agricultural institutes and residents, the assistance and will of local governments and the groups of expertises, and the flexible budgetary support system. (6) The data on local areas is crucial for setting up regional development plan and conducting various kinds of schemes. Currently, no GRDP data is available at the local level. (7) Finally, it is essential to establish a development strategy based on the lessons learned from various successful case examples of other regions and foreign countries, and try to get useful ideas for regional development from such cases.

Researchers: Dong-Phil Lee et al.
Research period: 2004. 1. - 2004. 12.

A Study on the Urban-Rural Differences in Settlement Environments in Korea and Policy Implications

This study aims to analyze the urban-rural and inter-rural differences in settlement environments, to analyze the correlation between regional differences and settlement environments, and then to derive policy implications to improve rural settlement environments. Eventually, the study intends to suggest the policy directions for the enhancement of settlement conditions in order to improve rural resident's welfare and to promote more settlements in rural areas.

The major findings of the study are as follows: Korea's territorial and regional development policies have been executed based on the top-down method so far, but it is changing toward the bottom-up approach. Nevertheless, the slow growth of rural regions and the industrialization-centric national economic growth, which was pursued based on top-down development policy, have created differences in living standards between urban and rural regions, the increasing rural exodus, and the underdevelopment of rural regions.

In this context, the differences in development degree between urban and rural regions as well as between rural regions have been more significant due to the population concentration in urban regions.

The widening gap between urban and rural regions are exacerbated by poor settlement conditions in rural areas as well. The basic settlement conditions include housing, transportation, telecommunication facilities, water supply and drainage, informatization level, medical service · welfare, education, cultur e · tourism, and accessibility · linkage to metropolitan areas. Among them, the school-education condition means the admission rate to middle · high school and universities. The practical education condition means whether there is a library. The welfare condition means the status of pension provision. The cultural condition means whether there are literary center and other cultural organizations, and finally the medical condition means whether there are hospitals and doctors in the region.

Among the rural regions, those whose development level is relatively high are found to have low admission rate to higher education institutions and have an insufficient number of library facilities and insufficient life-long education. The rural areas, whose development is somewhat stagnant due to the fucus on the agriculture, are found to have poor welfare condition, such as low pension receipt rate, and they have poor medical conditions as well. Lastly, the rural areas, which suffer from underpopulation, have comprehensive problems in various fields such as school/education, welfare, cultural and medical conditions.

Based on the findings above, the following suggestions can be made: First, the qualitative enhancement is more important than physical infrastructure expansion in order to improve rural settlement conditions. Second, the improvement of housing quality, water supply and drainage, and medical care · welfare should be conducted in the way that fulfills the basic needs of rural people. Third, it is urgent to expand the informatization and the provision of medical and welfare services for the elderly, because informatization and the aging of a society are progressing at a fast speed. Fourth, rural people strongly need the improvement of education environments and cultural and residential conditions. Thus, the central government should take it as a priority to implement the policy to improve educational, cultural and residential conditions for rural people. Fifth, in carrying out policies of improving rural settlement environments, the government should take into account the differences in settlement environments among rural villages, and especially the elderly in the stagnant rural villages. Lastly, it is important to inform the rural people of policy details when establishing rural development policies. And the policy direction should be reoriented to enhance the participation of regional governments and residents and to stress that they can take the leading roles. And it is necessary to establish policies by coordinating all factors involved in the consistent, well-organised and comprehensive manner, instead of taking a separate and disperse approach.

Researchers: Chang-Hyun Kim et al.
Research period: 2004. 1. - 2004. 12.

Regional Comparison of Industrial Activities and Industrial Revitalization in Rural Area

Throughout industrialization and urbanization, disparities between regional industries have deepened and widened. Therefore, the achievement of balanced regional development has become an important policy theme. To attain policy goals of balanced regional development, the development gap between urban and rural industries should be eliminated.

In Chapter 1 of this study, the gap of industrial development between urban and rural areas is surveyed, and the characteristics of the industries located in each region are analyzed. Then existing problems are described, and the direction for rural development is suggested. Hopefully, this study can contribute to reducing disparities between regional industries.

Chapter 2 analyzes the status of manufacturing and service industries in urban and rural areas, and classifies regions by development degree and industry, and then suggests policy tools. In this study, the KSIC 2-digit code of manufacturing data from the years 1995 to 2002 was used. The severe disparities between urban and rural areas, as well as between rural areas were analyzed. For example, the percentage of urban manufacturing industries was 80% in 1995, but in 2002 the figure rose to 87～88%.

In Chapter 3, an interview-based survey was conducted for residents in Haman-gun, Gyeongsangnam-do as a representative of developed area and Yungdong-gun, Chungcheongbuk-do as a representative of underdeveloped area. During the survey, the focus was put on comparing location, industrial development, supporting policies of local government, and regional problems between the developed and underdeveloped regions. Based on the results of this analysis, it is concluded that the most important thing for regional development is to foster strategic industries within the region. For example, Haman-gun has many machinery-related firms, which constitute a strategic industry of Gyeongsangnam-do, but Yungdong-gun doesn't have such

strategic industries. However, differential factors between the two regions, such as distribution of resources, policy measures of local governments and prices of industrial sites, are not that significantly different.

In Chapter 4, the trends of industrial location policies and rural industrial park policies are reviewed. Next, recent policies for balanced regional development are studied. In this study, it is found that the government supports strategic industries mainly in urban areas, and developed regions have heavy and knowledge-based industries due to many policy measures. But the government has been less supportive of rural industries to date and underdeveloped regions have only light and traditional industries. In the future, the central government needs to be more interested in fostering rural industries.

In Chapter 5, the fostering of rural industries through the use of agricultural products and resources and the raising of their competitiveness are stressed. It is very difficult to foster advanced industries in rural areas within a short time, because rural areas doesn't have universities, research institutes and companies. So the central and local governments have to identify and foster competent industries in such areas. According to the survey, the rural residents want to have agricultural and manufacturing industries together in their region.

The first section of Chapter 6 describes the causes of underdevelopment of rural industries. The discovered causes are as follows:

1) Based on the theoretical models, it seems that the disparities between urban and rural areas have deepened because knowledge spillover from urban to rural areas haven't properly occurred;
2) The differences in industrial structures have caused the disparities between urban and rural areas. Therefore, the rural areas have to restructure their industries to enable them to produce high added values;
3) Comparing the case study regions, it is found that location conditions and industrial structure connections to near-urban industries are important factors in producing regional disparities; and

4) The interview of the rural residents were conducted to explore the causes of underdevelopment of rural areas and how to resolve them.

In the second section of Chapter 6, the measures to resolve the causes of underdevelopment are proposed. This section puts a focus on the fact that the agricultural industry has its limit in developing rural areas in the future, so that by fostering other local industries based on agricultural products and resources, local governments have to increase rural incomes. Moreover, to develop rural industries, it is important to establish clusters and RIS's (regional innovation systems) centered on rural industries, such as high value-added agricultural processing industries and the revitalization of industrial parks in rural areas.

Researchers: Jeong-Hong Kim
Research period: 2004. 1. - 2004. 12.

Developing Social Capital Measuring Indicators

This is second year product of the research of social capital in rural community, which is designed to conduct for three years. The first year research focused to conceptualize the social capital by using action oriented four variable: social exchange and compensation, cooperation, competition and conflict. This research focused to develop social capital measuring indicator.

Social capital indicators were induced by the conceptual frame of this research. Hypothetical social capital indicators were set by each four variables. The hypothetical social capital indicator must be objective, which is adoptable to any social context.

The next step was to verify the hypothetical social capital indicators. For this, each hypothetical social capital indicator identified several indicator components, which could express the typical meaning of each indicator, and could be adoptable to any social context. Each indicator component has several questions, and social capital index could be measurable through these questions. All questions were designed with 5 grade measuring scale.

Hypothetically, six social capital measuring indicators for social exchange and compensation were set. They are the improvement of socio-economic status, enhancement of trust among group members, benefits from the mutual helping system of group, the improvement of access to the common resources and funds of group or capital loans from banks, the improvement of access to the opportunities for getting training and information, and pay observance of group rules and norms.

Six social capital measuring indicators for cooperation were set. they are the labor exchange among members for getting common goals, helping members mutually for social functions, money contribution for establishing the common fund of group, participating group events, supporting group decision.

Four social capital measuring indicators for competition were set. They are the competition for improvement of production

quality, and the improvement of productivity, the competition of leadership of the group, and the competition of improving individual socio-economic status among members.

Six social capital measuring indicators for conflict were set. they are the capability of economic political and ideological conflict solution within the group and between groups.

The social capital was measured from 5 groups producing strawberry in village communities in Kwangsuk Myun of Nonsan city area and one water melon production group in Puyeo Kun. The social capital measuring indicators were verified through factor analysis, and fixed social capital measuring indicators.

Social capital of each group were identified by index: social exchange and component index(ECI), cooperation index(COI), competition index(CPI), and conflict resolution index(CRI). The social capital index could explain the characteristics of each group very precisely. The groups with strong cooperation through cooperative marketing under strong leadership show that the ECI, COI and CPI were higher than other groups, and the groups had conflict with leadership and problems with group decision making show that CRI was higher than other groups.

In corelation analysis, the social capital could explain the income of production group members by 13.7 percent. However, the social capital could explain the every day activities of production group by 51.4 percent.

Considering the fact that income of individual members is determined by many factors such as physical capital, human capital, technology, market condition, and even by the weather condition, the explanation capability of 13.7 percent of social capital for income generation is not low. More over, the income could not be created by alone, but through cooperation among others within the given condition of social system. Therefore, the social capital has a great impact on the income generation and daily life activities of group members.

This study is a case study, and the social capital measuring indicator was made for crop production economic group in village community. Further research is necessary to generalize the result of this study and develop the social capital measuring indicators

for rural community, which is an integrated entity of various social groups.

Researchers: Ki-Hwan Chung and Jae-Man Shim
Research period: 2004. 1. - 2004. 12.

Forecasts on the Rural Population Size, Labor Forces in the Agricultural Sector, and Responding Policy Task

This study is aimed to analyze the dynamic mechanism of migration from the rural to urban area. Under the purpose, forecasting was conducted on the size of rural population and farm households by gender and age. Migration factors by region and sector were analyzed according to the characteristics of the regions.

In particular, the regional population elasticity, the farm household family elasticity, and the labor elasticity in the manufacturing sector and the marketing sector were analyzed at the regional level. Furthermore, it is empirically proven that the dynamic mechanism of migration at the regional level is asymmetric according to characteristics of the population.

For the policy task to maintain population and labor forces in the agricultural sector, it was suggested to integrate existing multiple regional development policies into one policy, which is more effective. Plus, it would be better to develop a regional hub and the regional network system.

Researcher: Kyeong-Duk Kim
Research period: 2004. 1. - 2004. 12.

A Study on Protection Systems of Agriculture-Related Indigenous Resources

The purpose of this study is to analyze the conservation and protection status of indigenous resources and to check the views of international organizations about such resources. It is also designed to suggest ways how to conserve and protect indigenous genetic resources and traditional knowledge for their sustainable use.

Indigenous resources are composed of indigenous genetic resources, community-based specialty products and traditional knowledge.

Presently, indigenous resources are poorly conserved and protected. The management systems of genetic resources are mainly designed for using resources, not for conserving them. The management agencies of indigenous resources do not share their information with each other, so that the information and data are not available for common use. In the case of community-based specialty products and traditional knowledge, although it is promoted that these resources are prospected, they are not systematically managed. In these circumstances, the protection of the rights to indigenous resources is hardly achieved.

For the systematic conservation and protection of indigenous resources, the following measures can be suggested:

1) A united management system should be introduced for the systematic conservation of genetic resources. If it occurs, common use of the information and data among management agencies can be realized, and the whole process such as investigation, prospecting, evaluation and conservation can be pursued under a plan by a coordinate agency.

2) Collection and conservation of indigenous genetic resources should be promoted. The purpose of collection is to prospect all species of indigenous genetic resources, which are described in the literature.

3) For biotechnical use of genetic resources, all important genetic characters of species should be turned into database. In

other words, not only the evaluation about characteristic form of genetic resources, but also the evaluation about practical use should be conducted.

4) Conservation technology for genetic resources, especially indigenous genetic resources, should be developed continuously.

5) Human and financial resources for preserving and managing genetic resources should be expanded. Investment in technological advances is the first and foremost priority to be considered.

6) In order to protect the rights to genetic resources, the access and benefit shares(ABS) agreement should be executed. The ABS agreement enables foreigners with the prior informed consent(PIC) of the holders of such resources to collect and use genetic resources. Also, it is necessary to sign the ABS agreement with foreigners to commercialize genetic resources.

For the systematic conservation and protection of community-based specialty products and traditional knowledge, the following measures can be suggested:

1) After the evaluation of prospected local resources, the selected community-based specialty products and traditional knowledge should be registered as "community resources". This registered traditional knowledge will be subject to the ABS agreement.

2) Registered traditional knowledge will be applied as a preceding technology for invention (i.e., patent).

3) Traditional knowledge should be protected as a trade secret.

4) Community-based specialty products can also be protected efficiently by geographical indications. However, to make practical use of these indications, improvement of the present system is required. First of all, the objects of geographical indication should be more extensively applied from agricultural products to all community-based special products. Second, the contents of geographical indications, which are now in the form of quality certification, should be replaced with intellectual property rights.

Researcher: Soo-Seok Kim
Research period: 2004. 1. 2004. 12.

A Study on the Development of Local-Based Industry

The purposes of this study are to explore the potential of development of local-based industry as a means of local economic development and to find the ways to assist it. The term local-based industry is conceptually defined as "a collaborative production and marketing system of local SME groups within a certain area that is based on local endowment and labour and on social division of labour among the enterprises." This study found that 33 local counties in Korea have the industries producing 22 commodities and that there are about 3,150 companies in total.

Four case studies have been done in order to identify their current situation and problems. From consecutive interviews with local government officials and the profession, it found that the local-based industries have potential for creating new demand and markets through the development and innovation of traditional technology. However, due to their small or micro size of business, it is important to survive that they themselves should have collaborative works and then form a close network among them. Moreover, it is also essential to provide them with financial assistance by a flexible policy support system specific to each local area and industry.

The term local-based industry has not been used by government policies but included in SMEs support policies. These have tried to help the SMEs by ways of providing monies for their investment and reducing texes. Since the monies must go for the SMEs through commercial banks, however, it is almost impossible for the small businesses that are not able to give enough securities for the loan to get access to the monies. The tex reduction is more favorable to those moved from cities than those in operation already in rural areas. Therefore, it is necessary to establish a support system that directly give benefits to all businesses of a specific sector in a certain area.

Finally, this study suggest six main tasks to develop the local-based industry in Korea: 1) promoting inter-firm

collaborative works; 2) improving competitiveness to cope with global competition; 3) modernizing the production and marketing methods; 4) diversifying the products to enlarge the market demand; 5) establishing combined industry for regional economic development as a whole; 6) forming industrial cluster with intra-region collaborative system. In order to achieve these, the central government should enforce various kinds of support systems and planning process in local regions with legislation. Moreover, local governments should not only set up research and development centers for industrial clusters but also conduct some schemes to promote various kinds of collaborative works between the enterprises. With a long-term development plan, it should have quality management systems for regional products and make a focus on training and development of human resources.

Researchers: Seok-Doo Park and Tae-Yeon Kim
Research period: 2004. 1. - 2004. 12.

A Study of the Impacts of Local Festivals on Revitalization of Rural Communities

This study ultimately aims at suggesting policies for developing local festivals. To this end, this analyses the effects of local festivals on local economies in terms of society, culture, economy, environment and regional images.

This study has adopted various quantitative and qualitative research methods including literature review, statistical analysis of local festival data, and field and questionnaire surveys. First of all, it figured out the history and concept of local festival by reviewing the previous literature. The statistics on local festivals published by MCT (Ministry of Culture & Tourism) was also analyzed in order to understand the overall situation of local festivals in Korea. The questionnaire survey was conducted for local government officials to find out the outcomes, problems and the future plans of local festivals. As a case study, a questionnaire survey was carried out for the residents in Bongpyeong. Based on the result, the study has analyzed the effect of Hyo-seok cultural festival on the Bongpyeong economy. This study carried out field surveys and in-depth interviews with officials and residents of the three case-study regions.

This study has found the followings. Firstly, from the literature review, it has found that the origin of rural festivals is the worship ceremony for the heaven and the celebration of harvesting. Secondly, the study has analysed the data on 555 local festivals and about 30 cultural tourism festivals. Thirdly, case studies were conducted regarding Butterfly Festival in Hampyeong; Hyo-seok Cultural Festival in Pyeongchang; and Corn Festival in Hongcheon. The case studies reveal that the Butterfly Festival in Hampyeong has encouraged the eco-tourism with the environmentally friendly management and created various income sources, but there are problems as well, such as government-led operation and the formality exhibitions that are not exactly related to the meaning of the festival. In the case of Hyo-seok Cultural Festival in Pyeongchang, it not only succeeded

in bringing in tourists by putting on the front the famous writer, Hyo-seok Lee, but also improved the region as a center of regional culture. However, due to the success, Pyeongchang is under the pressure to conduct development that might destroy local landscape and the buckwheat fields, the background of the Hyo-seok Lee's novels. The Corn Festival in Hongcheon has contributed to creating good images about Hongcheon's agricultural products and to increasing the corn sale. Because of the small scale of the festival, it has caused conflicts over space and failed to boost rural tourism.

In conclusion, the study presents the implications and suggests the future direction of policies, and recommends the policies to support local festivals in order to develop rural economies and agricultural production. The legislation called 「special regulation on the improvement of farmers and fishermen's living and on the promotion of development of mountainous and fishery regions」 in 2004 should be leveraged to provide support to local festivals.

Researchers: Seung-Woo Ryu and Kyong-Cheol Park
Research period: 2004. 1. - 2004. 12.

Evaluation of Rural Village Development Programs and Suggestions for a Participatory Village Development Model

The aim of this study is to delve into rural villagers' participation in rural village development programs and projects and evaluate their successes and failures, and barriers, and to suggest a better model for participatory rural village development programs. For this, interview and questionnaire surveys of a number of key actors and 134 villagers in 20 sample villages were carried out. In addition, observation studies and an opinion survey of experts in the field were also conducted.

First, after the year 2000, major emphasis on villagers' participation in the contents and campaign of rural village development programs and projects has been noted, and therefore, the rural village development programs and projects in this period are designated as 'participatory rural village development programs and projects'. Following the designation, the positive correlation between their successes and villagers' participation was construed, and in return, its analysis was judged to be in due order and carried out, using various indices in order to avoid the pitfalls of previous qualitative studies.

It was found that, at each stage of village development programs and projects, there were differences in the form and level of villagers' participation. At the early stage of initiation and planning, while only a limited number of villagers were actively participated in planning and preparation, the rest played a very passive role, at most attending the meeting and so on. However, at the implementation stage, the division of labor and roles was emerged and the forms and levels of participation were diversified, e.g., some offering knowledge and expertise and others, labor. Clearly, while villagers' participation bore anticipated successes, up to a certain degree, in various aspects economic, social and environmental, in many cases, conflicts among villagers were observed also. Statistical analysis clearly revealed the positive correlation, i.e., the correlation coefficient of 0.67.

From this analysis, it became clear that the participatory model requires the existence of a mobilizer, outside support and interests, and an appropriate incentive and compensation mechanism. With these requirements satisfied and conditions set in motion, a better participatory model implies that, as a rural village development program and project being implemented, a level of participation and a division of labor and roles will increase and progress toward villagers' self-empowerment.

Current rural village development programs and projects immediately need to reorient their focus so that, approaching more slowly to the selection process of a program village, villagers' will to self-empowerment and entrepreneurial spirit can be encouraged and nurtured. In addition, the contents of the village development programs and projects also need to shift their orientation from income-doubling programs and projects targeting outsiders toward the improvement of villagers' own welfare and toward long-term management and preservation of village resources from the macro perspective of national settlement planning and management. Also, in order to reduce wastes and costs, a separate entity must oversee budget and expenditures, and in turn village representatives can audit this entity for its effectiveness and any impropriety. For the further enhancement and improvement of rural village development programs and projects, not only a post-op support program of a pool of experts but also a continuous training and education program of villagers must be included. Finally, in order to extend beneficial results and effects of a rural development program and project beyond the concerned village into a surrounding region, a mechanism to link the development program and project to other related programs and projects in the region must be devised and built into the very program and project.

Researchers: Mi-Ryung Song and Joo-In Seong
Research period: 2004. 1. - 2004. 12.

A Study on Economic Activities and Income of the Rural Elderly in Korea

The main purposes of this study are as follows:

1) to investigate economic activities and income of the rural elderly in Korea;
2) to identify the current conditions and problems of the related policies; and
3) to suggest some policy implications.

The major research methods include the collection of existing related data, field survey, and so on. The field survey was conducted for the elderly residents of 8 villages, asking them about their economic activities and income level (aged 65 or older). Existing related data was collected by searching the data of related governmental organizations and research institutes. Descriptive statistics (such as frequencies, percentage, and means) and cross-classification tables were used to organize and summarize the data of the field survey.

According to the results of the field survey, 56.5% of the respondents answered that they are participating in farming. Most (78.8%) elderly farmers expressed their intention to continue to conduct farming. Only a small percentage (3.5%) of the respondents answered that they are participating in non-farm economic activities. About two thirds of the respondents had the annual household income less than 10,010,000 won. Average annual household income of the respondents was 11,730,000 won. About one half of the respondents were found to spend less than 500,000 won in monthly living expenses. The average monthly living expenses of the respondents were 710,000 won.

The policy implications of this study are that it is necessary

1) to have a right perspective about the rural elderly;
2) to prepare the legal and institutional measures for assisting the economic activities and securing the incomes of the rural elderly;
3) to develop the differential approach based on the social

group and class;
4) to develop the elderly friendly agricultural policies;
5) to provide farming education suitable for the rural elderly;
6) to arrange various non-farming works; and
7) to improve the welfare programs for the rural elderly.

Researcher: Dae-Shik Park
Research period: 2004. 1. - 2004. 12.

Conflicts in the Korean Agricultural Sector and Their Management: Focusing on Two Recent Cases

The purpose of this study is to take a look at conflicts among entities of the Korean agricultural sector from various perspectives, including structural, institutional, and cultural, and to reify their major interests and values. Based on the hermeneutic research, the study will derive policy implications from recent experiences and suggest specific policy alternatives regarding conflict management. To this end, this study has conducted the theoretical review and empirical research, where the current conflicts in the agricultural sector were mapped out and the two most prominent conflict cases, including the Korea-Chile Free Trade Agreement and the restructuring of Jangcheon agricultural cooperative, were analyzed in depth.

The empirical research is based on two theories: social conflict theory and conflict management theory. Firstly, based on the social conflict theory, the study has conceptualized the social conflict as 'an ongoing socio-political process in which various social entities are continuously exchanging their interests and values with one another.' Secondly, the conflict management theory contains two different practical expectations: the public administrative imperative (efficiency enhancement in policy process) and the socio-political reform imperative (participatory democracy or governance). The study has put relatively more emphasis on the latter, conceptualizing the conflict management as 'the act of governance of third-party public or private agencies as well as conflicting entities to prevent, regulate, or resolve discrepancies in their interests and values.' Following these conceptual approaches, the empirical research was conducted in the form of the general review of social conflicts in the current agricultural sector. The empirical research explored the institutional assets for conflict management, and the in-depth field research was conducted with a focus on the recent experience of conflict management.

The researches, as conducted above, have come to the conclusions as follows:

First of all, conflicts in the agricultural sector are existing or latent in connection with integration of the global economy, free trade-oriented national agricultural policy, diversification of farming and farmers' sense of relative deprivation of socio-economic welfare to non-agricultural sectors. In details, main conflicts occur in association with the opening of agricultural market, agricultural production restructuring, fluctuation of product prices, restructuring of agricultural and rural organizations, polluted natural resources, illegitimate use or management of natural resources, and unreliability in input materials supply. However, the institutional assets to appropriately manage the conflicts severely lack.

In the in-depth research, the shortage of the institutional assets available for conflict management, compared with increasing occurrence of social conflicts, was highlighted in both quantitative and qualitative terms: the various formal and informal mechanisms activated in the two conflict cases were not in tandem with the dynamism of the conflicting issues or entities. The research has derived two policy implications: need to build up intellectual approaches to take the dynamism into account, and need to set up development mechanisms for conflict management.

Relying on the findings above, the study suggests policy alternatives regarding conflict management in the current agricultural sector. They are divided into ex ante and ex post ones. Among the below policy alternatives, the first two are the ex ante alternatives:

1) The relevant government organizations need to be revamped in the way that they can empower potential participants and include all related parties in the process. The government organizations shall endow societal entities with the actual rights to agena-setting and decision-making, institutionalize the participation of all relevant governmental agencies, and include all related societal parties in the process.
2) Governmental bodies need to support the constellation of society-centered deliberative mechanisms for societal entities to deal with potential policy problems independently. The

government bodies shall support societal entities' efforts to improve their specialties in relative areas either on their own or in liaison with related academic groups.

3) Ex ante mechanisms need to be established as a complement to the above two. It is necessary to accumulate hermeneutic studies on individual cases of social conflicts, and to turn the philosophy and need of conflict management under current situations into related legislations.

Researchers: Hong-Sang Kim and Jae-Man Shim
Research period: 2004. 1. - 2004. 12.

Policy Directions for Farmland Systems from the Perspective of Viewing Land as Public Property

This paper takes a look at the discussions made in the conference held on 28 April 2004 with an aim to provide the future directions of farmland systems from the perspective of viewing land as public property. Four agendas were mainly discussed in the conference:

1) policy issues of farmland systems relating to 'the concept of viewing land as public property';
2) policy directions of farmland systems for the future;
3) Plan-based management of farmland; and
4) future directions of farmland systems from the NGO's point of view.

The controversial issues in the conference are as follows: abrogation of the law and notions that farmland must be owned by farmers(“Land to the Tillers” principle); the limit of farmland leasing (farmland lease as main means for farmland expansion of larger or younger farmers); how to establish the plan-based farmland management system and policy device for reasonable conservation of farmland; how to control the decline in farmland price; and the level of capital gains redemption as a counter-measure against land speculation.

Researchers: Seok-Doo Park et al.
Research period: 2004. 4. - 2004. 5.

86

New National Land Design and Innovation Systems in Rural Areas

The aim of this study is to solidify programs for the establishment of innovation systems in rural areas, which were presented as one of seven national agendas by the Presidential Committee on Balanced National Development. For this, firstly, current conditions in rural areas will be examined and from this review, problems confronting rural areas and future directions for the development of these areas will be deduced. In addition, national land planning (settlement and industry) and rural area policies will be critically examined and a number of strategies to introduce and accelerate innovations in rural areas. Especially, upon noting a need to bring in manpower from outside to overcome a lack of human resources in rural areas, various means to incubate and develop local industries and regional clusters, to vitalize the "five-days-in-city-and-two-days-in-rural areas" program and to give special attentions to straggling rural areas will be emphasized as a way to fully utilize existing resource endowments and potentials.

Researchers: Mi-Ryung Song et al.
Research period: 2004. 4. - 2004. 7.

A Study of Foreign Farmer Organizations on Their Participation in Agricultural Policy Making

The purpose of this study is to analyze how foreign farmer organizations participate in and influence the decision-making process for agricultural policies. To this end, case examples of Germany, France and New Zealand were studied.

In Germany, where corporatism is a dominant mode in the political structure, the German Farmer Association (der Deutsche Bauernverband, DBV) was established as an exclusive representative farmer organization. It cooperates with the government in making decisions regarding agricultural policies. This system is advantageous to farmers, since it institutionalized cooperative relationships between farmers and the government. However, the DBV reveals problematic aspects by excessively pursuing its own interest and by being relatively conservative when introducing new policies.

In France, where pluralism is a dominant mode in the political structure and farmer organizations are competing with each other, farmer organizations have progressive attitudes when suggesting directions of new agricultural policies.

In New Zealand, where the agricultural reform was achieved without subsidies, farmer organizations have practiced this reform by themselves.

Comparing the case examples of the three countries, the following observations have been obtained:

1) In view of participating types, the DBV of Germany exercises the influence as a typical pressure group. In France, the farmer organizations have active official participation through institution, while in New Zealand, farmer organizations make moderate participation in the politics by supporting agricultural policies of the government.
2) In terms of the organizing structure, the DBV of Germany is a unified voice of all farmer organizations. French farmer organizations compete each other, but show cooperative

relationships occasionally. New Zealand has various farmer organizations, but the Federated Farmers of New Zealand (FFNZ) represents all of them.

3) The degree of exercising influence on policies differs depending on participating types and organizational structure. In Germany, the farmer organization has the most immense influence, followed by France and New Zealand, where farmer organizations have relatively weak power.
4) In the aspect of taking actions as a pressure group, the DBV of Germany acts based on the logic of influence rather than the logic of membership. But French farmer organizations act based on the logic of membership because they have their own political standpoint.
5) In terms of degree of contribution to agricultural policies, the French farmer organizations are most progressive by suggesting the direction of agricultural development, followed by its New Zealand counterpart, which supports the government, and the German counterpart, which is most conservative and normally responds to government policies after they are made. Due to its self-centered attitude, the DBV is currently being criticized by the German society.
6) The DBV of Germany is believed to have the ability to suggest alternative policies, because it has as many as 21 professional committees.

Researcher: Soo-Suk Kim and Hyun-Tae Park
Research period: 2004. 7. - 2004. 12.

Measures to Monitor Comprehensive Rural Village Development Projects

This study is aimed to devise some measures to monitor comprehensive rural village development projects. The objectives, contents and the methodologies of the monitoring are described in detail. Also, preliminary monitoring of the programs launched in 2004 was carried out centered on the model villages. The study has found that the monitoring can produce some intended effects of the comprehensive rural village development projects, such as more active pursuit for development, encouragement of resident participation and enhanced regional autonomy. However, there still remain several problems to be resolved.

Researcher: Shi-Hyun Park and Ju-Young Park
Research period: 2004. 7. - 2004. 12

Consolidation and Streamlining of Rural Development Programs and Projects

The purpose of this study is to identify the progress of those rural development programs and projects that belong to the Balanced National Development special account, to systematically evaluate them against a number of carefully designed criteria, and finally, to suggest an alternative that will lead to the systematic reorganization and streamlining of various rural development programs and projects.

The raison d'etre of these programs is to enhance the quality of life in rural areas. This requires planners and policy-makers to work on a number of key factors in an effective manner. However, most of the programs in effect are principally targeted at the physical aspect, which is designed only for the improvement and provision of physical facilities and infrastructure, ignoring other aspects. Even worse, programs and projects of similar and overlapping, if not same, goals and contents are competitively pushed forward by various ministries, subsequently causing inefficiencies and waste. In addition, only for the reason of convenience, planners and policy-makers divide areas and regions, without paying sufficient attention to rural settlement networks and hierarchies, for the spatial designation of these programs and projects, thus causing irrelevance and insignificance. Topping all these problems, the newly created program of the, "New Dynamic Region" is not distinctive enough to differentiate itself from those programs and projects already existing, therefore revealing its dubious image of duplicating their goals and contents.

Rural development programs and projects can be consolidated and streamlined systematically under the principle that emphasizes, first, local autonomy and creative and entrepreneurial spirit, and secondly, proper role assignments among various, and sometimes competing, ministries, considering the relevance to rural conditions. For this, first, the separation of 'Myon" administrative units of isolated areas and settlement areas

must be nullified; second, programs and projects targeted at individual villages must be reevaluated, combined and consolidated; third, distinctive program contents must be secured for the, "New Dynamic Region" program so that it can be clearly differentiated in its goals and contents from other rural development programs and projects; and finally, all the programs and projects must be reconsidered and reevaluated carefully whether to include in, or exclude from, the Balanced National Development special account so that only those programs and projects relevant in their goals and contents to the account will remain.

Researchers: Mi-Ryung Song and Ju-Young Park
Research period: 2004. 8. - 2004. 9.

Strategies to Develop the Traditional Technology-Based Korean Liquor Industry

The liquor market in Korea is as big as more than 8 trillion won per year, and the entire liquor industry has paid 2.6 trillion won in tax in 2003. However, Korea seriously depends on foreign countries in terms of raw materials and finished goods to meet the domestic liquor demands. Korea imported more than 316 million US dollars worth of foreign liquors in 2003 alone.

Why should Korea import foreign liquors in such a large volume? This might be caused by the lack of appropriate promotion of the domestic liquor industry. Actually, the Korean government has focused only on taxing liquors rather than promoting the domestic liquor products. Therefore, the government has rigorously controlled the production and marketing of liquors under the liquor tax regulation.

A large scale deregulation in this sector was conducted in 1998, following global trends, such as liberalization, free trade, and tax reduction. This allows potential producers to easily participate in the liquor business, but the industry still faces difficulties because liquor is regarded as an high value added item compared with other products. The objective of this study is to identify current situations and problems facing the traditional Korean liquor (Urisul in Korean) industry to figure out ways to promote the industry. If the traditional Korean liquor industry is developed, foreign currency spent to import foreign liquors can be saved, and domestic farm-household income can be enhanced since Urisul is made of domestic agricultural products. Furthermore, the Korean liquor industry will help enhance people's health since it is made of various heathy materials such as rice, fruits, and medical herbs. It also provides an opportunity to develop the traditional culture along the process.

The number of Urisul producers, including farmer-run liquor businesses (121) and traditional folk liquor businesses (45), has sharply increased to 166 in 2003 thanks to the deregulation in this sector. However, the share of the traditional Korean liquor

business out of the total liquor industry is only 12.1% in terms of the number. Urisul accounts for only 0.13% of the entire liquor industry in terms of production quantity, and 0.47% in total tax payment respectively. Especially, production quantity per liquor producing farmer and traditional folk liquor producer is 38.5 kl and 24.2 kl each, while that of the general liquor industry is 2,390 kl. This implies that the size of the Urisul industry is very small compared to the entire liquor industry in Korea.

This Urisul industry remains small because of the limited consumption of the Urisul products. Based on the questionnaire regarding Urisul purchase, 55.9% of the respondents answered that they bought the liquor as a gift and 18.2% said that they bought it for ancestor honoring ceremony, indicating this type of liquor is known as a special and unusual liquor to consume. On the question why consumers do not prefer Urisul, the respondents gave the answers as follows: high price(49.7%), severe hangover(44.9%), unfavorable taste (31.7 %), difficulty in purchase(18.6%), and others.

For the question asking the difficulties facing the Urisul industry, the respondents provides such answers as excessive tax rate(80.0%), lack of capital(40.0%), poor sales(34.7%), rigorous regulation on manufacturing methods(15.8%), and lack of technology(11.9%). As suggestions, the respondents pointed out the following measures for improvement: 1) to provide capital for facility and management(50.3%); 2) to approve sales through telecommunication and internet(32.9%); 3) to run advertisements and sales promotion(27.1%). They also thought that institutional reform is necessary by saying that the followings should be eliminated: 1) different taxation based on the business size(72.3%); 2) repeal of the factory price indication system(45.7%); 3) encouragement of sales through call and internet (37.2%); 4) deregulation of the manufacturing methods and the types of raw materials(16.1%); and 5) improvement of laws and administrative system for the Urisul industry(12.9%).

Based on these findings, policy goals can be set up as follows: first of all, the traditional Korean liquor (Urisul) should be thought as an industry rather than a subject to taxation, and the liquor production and marketing should be pursued in a close

relation with the domestic agriculture and food culture considering its size and roles in the national economy. In addition, the tax and management system reform of the Urisul industry is important because the industry cannot be developed without rational and efficient institutions. Finally, introduction of the sound drinking culture and protection of consumer's health should be pursued as one of the most important policy objectives.

To meet the above goals, such policy directions can be recommended: (1) deregulation, standardization, and reform in manufacturing methods to revitalize the Urisul market, (2) development of the Urisul industry based on the Korean agriculture and traditional food products, (3) tax reform, such as, reduced tax rate for low-proof alcohol liquor and small-sized business for the purpose of promoting people's health and small Urisul businesses, and (4) law and administrative system designed to coordinate various issues and tasks of related institutions.

Based on the policy goals and directions, followings are recommended to pursue to revitalize the Urisul industry in Korea : (1) to clearly define the target group for the farmer's liquor and traditional folk liquor industry, and devise the supporting policy programs, (2) to reform taxation system and provide incentives for small farmer's liquor and traditional folk liquor businesses, which are using domestic raw materials (3) to diversify manufacturing methods and allow utilization of various raw materials, (4) to reform the quality control and indication system for Urisul industry, (5) to conduct sales promotion and advertisement, (6) to establish sustainable raw material supply system and facilitate utilization of the domestic materials, (7) to increase fund support for small Urisul businesses, and (8) to reform administrative system and strengthen the association of the businesses in this sector.

Researchers: Dong-Phil Lee et al.
Research period: 2004. 5. - 2004. 12.

Agricultural and Rural Development Plan of the City of Milyang

World changes in agricultural policies of various countries have impacted on domestic and local agriculture and agricultural policy. Among the changes are the completion of UR negotiations in 1993, agricultural and marketing openness by the WTO/DDA agricultural negotiation, the completion of the FTA between Korea and Chile, China's participation in the WTO, agricultural policy changes of many countries towards putting more emphasis on multifunctionality of agriculture, and more. Domestically, differentiations emerge in the quality of life, competitive capacity of each product, income levels among farm households based on interests in regional agriculture and investment by the local government. Consequently, it becomes more and more important that local governments establish regional agricultural plans.

In particular, differentiation strategies which utilize local characteristics in agriculture should be adopted by many local governments.

1) Differentiation strategies in Agricultural production
2) Effective implementation strategies in agricultural product marketing
3) Development Strategies in Green (Eco) Tourism
4) Improvement strategies in the Agricultural infrastructure and rural environment
5) Planning of Agricultural investment & financing

Researchers: Seung-Woo Ryu et al.
Research period: 2003. 2 - 2004. 1.

Agricultural and Rural Development Plans for Jangseong County

Many rapid changes are expected in the domestic and the export market, because of FTA conclusions between Korea and Chile, China's entry into the WTO and others. Agricultural policies of many countries are changing towards putting more emphasis on the multifunctionality of agriculture. Domestically, local agriculture which is insufficiently competitive with price and quality will decline owing to fierce regional competition. Many differences among the regions are caused by the development of local agriculture and the rural economy. Accordingly, local government and residents should search for agriculture and rural development strategies. Namely, local governments should establish agriculture and rural development plans based on the systematic investigation of regional resources and characteristics. In particular, differential strategies which utilize local characteristics in agriculture and rural areas are needed.

This plan establishes basic directions for agriculture and rural development in Jangseong County and devises detailed development plans for the achievement of these goals.

The contents of these detailed development plans are as follows:

- The promotion of friendly environmental agriculture
- The fostering of strategic agricultural items
- The continuation of effective basis in agricultural product marketing
- An increase in extra-agricultural income by means of Green (eco) Tourism and the processing of agricultural products
- The improvement of rurality and amenity in rural environment
- The fostering of human power in agriculture

Researchers: Kyeong-Hwan Choi et al.
Research period: 2003. 4. - 2004. 2.

A Study on the Assistance Scheme to Private Property Damage Caused by Natural Disasters

The Main Purposes of this study are as follows: 1) to identify the current conditions and problems of the assistance scheme to private property damage caused by natural disasters; 2) to suggest ways of improvement.

The major research methods of this study were the collection of existing related data, mail surveys, interviews, field observation, and others.

Descriptive statistics such as frequencies, percentages, and means were used to organize and summarize data.

Major problems in the current assistance scheme to private property damage caused by natural disasters are:

1) The current scheme has already gone beyond relief levels;
2) The equity problem between farmers and fishermen, among crops, and among the strata of management size was generated;
3) The assistance items and unit costs are unrealistic;
4) The possibility of moral hazard outbreak is high;
5) The assistance in advance has a lot of difficulties in implementation;
6) Standards in classification of size among items are ambiguous.

The basic direction to improve the current assistance scheme to private property damage caused by natural disasters are:

1) to clarify characteristics of assistance;
2) to improve the equity level between farmers and fishermen, among crops, and among the strata of management size;
3) to objectify and foster improved efficiency in the assistance standards; and
4) to prepare for the introduction of natural disaster insurance.

Major ways to improve the current assistance scheme to private property damage caused by natural disasters are:

1) to compensate for the weak points in the current assistance

scheme;
2) to assist according to the damage rank system;
3) to assist the fixed proportion of total damage costs;
4) to simplify the assistance scheme by grouping same kinds;
5) to develop an effective disaster relief system and a natural disaster insurance at the same time.

Researchers: Kyeong-Hwan Choi et al.
Research period: 2004. 1. - 2004. 6.

A Study on the Improvement of Farmland Reparation Scheme

The Farmland Reparation Scheme was introduced in 1973 in order to require those, who desire to convert farmland into non-agricultural land, to pay the expenses to secure the same-size farmland of the converted land to maintain the total size of agricultural land. Since then, it has played an important role in supplying large and well irrigated farmlands. However, the implementation of the system needs to be improved because the program expired in 2000. Currently, the revenue from the converted land exceeds the expenditure for the scheme, and there will be no reason and need to impose the expenses on the converted land after 2013 when the renewed current program expires. Moreover, there is a problem in cost calculation for certain areas where the land price is low. Since the scheme calculates the expenses on the basis of the actual cost to create farmland without any consideration on the land price of the area, the estimated cost is usually higher than the expenses needed to create new farmland. Therefore, this research aims at providing suggestions to improve the Farmland Reparation Scheme by identifying the current situation and problems in its implementation. To this end, this study has coped with the following details: the operating procedure of the Farmland Reparation Scheme; the operating system of other similar schemes; the problems with the Farmland Reparation Scheme; and the improvement of the Farmland Reparation Scheme.

This research proposes ways to improve the scheme as follows:

Firstly, it needs to change the name "Farmland Reparation Scheme" to "the payment for farmland conversion" or to "the payment for farmland conservation". his is to diversify the use of the money to other projects, such as farmland conservation.

Secondly, by law, under the Farmland Reparation Scheme, those who request he conversion shall pay for the price. However, it would be desirable to change the scheme to require those

benefiting from the conversion to pay for the price. This is because in addition to those asking for farmland conversion, there are other eneficiaries who can benefit from the conversion.

Thirdly, the system to charge the payment should be changed from the cost-based calculation to the official land price basis calculation. Then, the value of land to be converted can be determined by the market price.

Fourthly, it would not be desirable to reduce the payment amount and to expand the exempted amount, because now the amount of the reparation has been reduced to 62% of the converted farmland in total.

Fifthly, the purposes and uses of the payment should be diversified from the current alternative farmlands securing to farm enlargement, operation of farmland management organizations, the maintenance of agricultural infrastructure and facilities, the compensation for farmland conservation, development of marginal farmlands and re-development of farmlands. These are essential functions of the Farmland Reparation Scheme and the farmland conservation system as a whole.

Sixthly, the operation of farmland management fund, which is made up of the farmland conversion payment, should be improved either by integrating both 'farmland supply account' and 'farmland management account' or by allowing the money to be used for both causes. This is necessary considering that the farmland supply account has surplus, while the farmland management account has deficiency.

Researchers: Seok-Doo Park, Soo-Seok Kim and Eun-Jung Shin
Research period: 2004. 2. - 2004. 5.

Development of Sustainable Estuary Management Strategy in Korea (Agricultural Perspective)

This study is a part of the collaborative research that the Korea Environment Institute (KEI), the Korea Research Institute for Human Settlements (KRHIS), the Korea Maritime Institute (KMI) and the Korea Rural Economic Institute (KREI) are jointly conducting for three years with each of the participants carrying out the study in its specialized field. This paper is aimed to report the first year results. The first year study mainly focuses on the agricultural situation in the estuary area and the relation between agriculture and estuary.

Based on the examination of the agricultural situation in the estuary, the estuary management system, and the prospect of the estuary environment in relation to agriculture, the study presents the sustainable management strategy of the estuary. The sustainable management strategy is essential to ensure continuous agricultural activities in the estuary, while conserving the estuary environment at the same time.

The main problems in protecting the estuary environment are as follows: the habitats destruction due to the construction of banks at the estuary; the irrigation facilities for agriculture; water pollution caused by agriculture and livestock industry and so on. The construction of banks at the estuary has the positive and negative effects at the same time. The positive effects include the increase of water supply and land expansion. The negative effects include habitat and environment destruction.

The agricultural situation in the estuary has the impact on the estuary environment. The ratio of cultivated acreage to the entire land in the estuary is higher than that of other areas in Korea, and in case of paddy field, its ratio to the entire cultivated land in the estuary is also higher than that of other areas in the country. The estuary area is worthy of being preserved. It works to reduce the amount of land washed away. Moreover, the cultivated land in the estuary is a superior agricultural region, and now designated as the agricultural development region, so that it

is difficult to use the estuary for other purposes than agriculture. When the land is used for agricultural purpose, it can be preserved better, because the agricultural use of land causes less destruction on the environment. Although the level of damage is small, the agricultural production still causes negative impact on the estuary environment. The irrigation water for agriculture contains many nutrients such as nitrogen, phosphate, and organic materials, so that it is pointed out as a cause of eutrophication in the river. Besides, intensive farming prevails throughout the estuary area, and there are not many farmers using environment-friendly farming method. But the estuary area has many paddy fields in comparison with other regions throughout the country, and the number of farmers conducting intensive farming is relatively small. Therefore, it can be said that the environmental burden for natural purification in the estuary is relatively smaller than other areas. Compared with agriculture, livestock industry has a high possibility of damaging the environment. Although the number of livestock per ha in the estuary area is the highest compared with other parts of the country, the livestock excretion treatment facilities in the estuary lack in general.

The construction of artificial structures such as irrigation facilities and banks is pointed out as one of the most influential factors causing sudden change in the estuary environment. Recently it was decided that any new projects, which could affect the estuary environment, such as reclamation and large-scale agricultural development, will not be pursued, unless they have been already launched. This decision is believed to create positive effects in the future estuary management.

However, there are no laws or programs directly related to efficient estuary management from the agricultural perspective. There are only general laws and programs regarding the environment management. Considering that the estuary area has lots of cultivated land and the farming is conducted in a large scale, appropriate laws and programs related to agricultural management in the estuary should be enacted and drawn up.

Finally, it is essential to establish disposal facilities to handle livestock excretion and to implement the policy that

regulates location of livestock facilities, in order to preserve the estuary environment. The promotion of environment-friendly farming in the estuary is critical. Against this background, designating the environment-friendly farming region in the estuary can be considered. In conclusion, building the disposal facilities for animal manure is the most important priority in the short term. In the long run, more efforts should be made to turn all of the farming activities in the region into environment-friendly ones.

Researchers: Seok-Doo Park and Ju-Young Park
Research period: 2004. 3. - 2004. 12.

Policy Issues and Directions of Reorganizing the Agricultural Water Management Systems

The purpose of this research is to suggest the policy issues and directions of reorganizing the agricultural water management systems (AWMS). Especially, it focuses on the ways to unify two separated irrigation water management systems to reduce farmers' complaints about inequality in cost-payment and to resolve problems stemming from the separated management system. To achieve this purpose, this research takes a look at the current situations and problems of AWMS, new trends and changes in agricultural water management system.

Five significant problems of AWMS have been identified as follows:

1) Inequality in management cost payment;
2) Lack of farmers' participation in irrigation water management;
3) Increasing government subsidy and unstable financial resources;
4) Difficulties in integrated management owing to separated management systems; and
5) Overall deterioration of irrigation facilities.

The arrival of new agricultural issues have exacerbated the problems listed above. Most of all, rapid urbanization and industrialization have resulted in water demand increase for various purposes like municipal use, industrial use, intensive farming, and environment-friendly farming. More people argue that the value of irrigation water should be re-assessed from the point of environment, safety, and landscape.

Based on the above, the basic directions of improving AWMS can be summed up as follows:

1) An integrated management system based on watershed should be established to improve equality in water use. It is not attainable with separated management systems;
2) The management system should encourage the participation of farmers, local authorities and people; and

3) A social allocation system based on benefits receipt (user-pay) should be established in consideration of public values of agricultural water and irrigation facilities.

Under these directions, there are three possible ways to reform AWMS. First, two separated AWMS' can be unified. Second, a third organization can be established as a new local management system. Lastly, the current AWMS will be maintained while its problems are gradually addressed. The first option was analyzed using a survey where most of stakeholders, such as government, KARICO, local authorities and farmers, preferred to unifying AWMS into KARICO (Korea Agricultural and Rural Infrastructure Corporation).

In order to unify AWMS into KARICO and transform it into a more efficient and effective AWMS, these policy issues should be considered as follows:

1) Ensure bigger opportunities for farmers and local people to participate in agricultural water management;
2) Take some financial measures to cover additional management cost;
3) Prepare legal and institutional vehicles to compensate for private facilities, land, and so on;
4) Improve management expertise; and
5) Survey all the irrigation facilities around the country completely and to modernize outdated irrigation facilities.

Researchers: Hong-Sang Kim and Eun-Jung Shin
Research period: 2004. 5. - 2004. 12.

Master Plan for Building Tour Resort Towns in Rural and Mountainous Villages

Responding to changing consumer preferences and increasing demand for leisure activities and tourism, the Gangwon-do has designed a project to build tourist resort towns in rural and mountainous areas. The goal is to promote the positive images of the province and to offer income-doubling opportunities for rural and mountainous village residents by offering city residents a sound program of, and a space for, leisure activities.

The province has set aside 2.5 billion won for the project (for the period of 2004-2006), and selected three villages, including Eoheul-ri, Bogwang 1-ri and Bogwang 2-ri of the Seongsan-myon, through a tight selection process. The selected areas have a number of advantages, such as easy access, rich cultural assets in nearby Gangneung, and natural resources of Daegwalryong and coastal areas. However, they lack accommodation and other convenient facilities, and activity programs that can serve as attractions and cultural assets.

In this planning and consulting report, five strategies are devised for the project: (1) to help local residents as principal participants responsible for programs and development through continuous education and training; (2) to get ready a number of facilities for leisure and sports activities; (3) to erect a number of facilities that will allow visitors to go through and experience ways of life and culture in rural and mountainous villages; (4) to preserve and cultivate natural landscape; and finally (5) to develop a number of activity programs suitable for, and take a full advantage of, the aforementioned facilities. In addition, to fully realize the potentials of the area, ten major facilities, such as visitors' center, organic cultivation greenhouse, auto camping site, mountain bike path, climbing and hiking trail and para-gliding take-off zone, are proposed. Also, a number of activity programs for visitors, education and training programs for local residents, and place marketing programs are suggested.

Upon its competion, the project is expected to bring about

1,230 visitors per day, extra income of about 1.05 billion won, and 60 extra jobs on average. For the successful completion of the project, the city of Gangueung has earmarked 2.5 billion won to match the contribution of Gangwon-do.

Researchers: Mi-Ryung Song, Joo-In Seong and Seung-Shin Jeong
Research period: 2004. 6. - 2004. 12.

A Feasibility Study of Bio-agricultural Complex Construction

The purpose of this study is to analyze feasibility on bio-agricultural complex construction and to present strategies to push ahead for the project. This study consists of five sections as follows: First, the concept of bio-agricultural industry complex[1] is clarified. Second, the examples of domestic bio-industrial complex are analyzed. Third, the feasibility of bio-agricultural industry complex construction is analyzed based on the study of the future bio-food industry, and the strength and weakness of locating the bio-agricultural industry complex in Chungcheongbuk-do. Forth, the purpose, scale, driving strategies, the related laws and so on related to bio-agricultural industry complex construction are reviewed. Finally, the site selection criteria are presented, and candidate sites for bio-agricultural industry complex are analyzed based on the criteria.

The main concept of bio-agricultural industry complex is to build a cluster of the primary, secondary and third industries. The bio policies were analyzed by reviewing the cases of domestic bio-industrial complex and the differences in bio-agricultural industry complex of which Chungcheongbuk-do intends to promote the construction. Moreover, based on the case example of bio-cluster policy in Hokkaido, Japan, suggestions to build a bio cluster were made.

Chungcheongbuk-do should designate bio-agricultural industry area by applying the image such as biotopia Chungcheongbuk-do. However, Chungcheongbuk-do has a weak basis to formulate a cluster for regional agriculture realistically. Therefore the province should drive the project actively in cooperation with the central government. Especially, it is

[1] It is believed that the term of bio-agricultural complex should be replaced with bio-agricultural industry complex. Because the term of bio-agricultural complex might be understood that the primary focus is agriculture.

important to reflect the agricultural industry cluster policy of the ministry of Agriculture and Forestry. The construction of Chungbuk bio-agricultural industry complex will rejuvenate domestic and Chungcheongbuk-do's bio-industry and strike a balance of development in the southern part of Chungcheongbuk-do. The bio-agricultural industry complex to be established will be 990,000 pyeong large. It is recommended to build all relevant facilities in one complex but decentralize them in consideration of the current weak formative basis. It is also important to build the complex step by step, considering the neighboring environment. In the complex, the bio-agricultural industry related facilities, public facilities such as support center for bio-agricultural industry, bio-agricultural facilities such as the concept of agricultural park, a residential area should be constructed. Developing related businesses between Chungcheongbuk-do and nearby Guns is also desirable. Lastly, the selection criteria of the project sites are presented, and the four candidate sites are proposed based on the criteria. The final complex site will be described at the master plan to avoid real estates price hike and opposition of residents.

Researchers: Shi-Hyun Park, Myoung-Chae Joung and Ju-Young Park
Research period: 2004. 8. - 2004. 12.

A Research study on Gradual Expansion of Crop Insurance

In expansion of agricultural disaster insurance items, it is desirable to start from crops which meet the necessary conditions for insurance, since the agricultural insurance is based upon usual insurance principle as is other types of insurance.

In consideration of indicators related to insurance conditions by crops and in review of farm survey results and characteristics by crops, this research investigated the possibility of expansion. Crops or objects which were selected as first consideration in expansion of insurance coverage are rice, greenhouse vegetables, and greenhouse flowers. Secondly considered items were fruits such as plum, jujube, kiwi, and chestnuts, and crops inside greenhouses. There are an existing number of technical difficulties in including open field vegetables, so further investigation is required.

In 2004, current insurance systems should be stabilized by expanding the current exemplar insurance project (which covers four fruits), as well as a plan should be designed to expand the coverage to rice. Furthermore, ways to accumulate statistical data for future coverage expansion should be found.

In 2006, rice and greenhouse facilities should be included within exemplar projects, and a detailed plan should be established for a long-term insurance management system.

In 2007, whether agricultural insurance formally covers the rice will be decided and greenhouse crops will be under consideration of the insurance system.

The government needs to offer diverse insurance items considering disaster characteristics for each crop, while farmers should purchase insurance suitable to themselves so as to stabilize their farm management.

In 2001 and 2002, domestic insurance companies and international reinsurance companies participated in the reinsurance market; however, in 2003, they retreated from the market, making the National Agricultural Cooperative Federation (NACF) take all

risks. "Maemi," the big typhoon in summer of 2003 resulted in another huge loss to the NACF, and the necessity for the introduction of reinsurance at the national level emerged.

After reviewing the strengths and weaknesses of several alternatives for the introduction of reinsurance, it is judged that the so-called, "stop loss reinsurance" is the most appropriate one. This type of reinsurance, as adopted by the U.S. FCIC, increases the proportion of responsibility by the state in case the loss rate exceeds a certain level. It has strength in that the insurer can secure economic benefits by flexibly applying the rates of basic loss and responsibility according to the annual insurance account accomplishment. Also, because the state is actively involved in the system by reinsurance, civilian insurers easily participate in agricultural insurance whereby stabilizing the insurance market. The state can counter in a timely manner, to abrupt hikes in insurance tariffs. Meanwhile, a weak point remains in that, at the moment that the loss exceeds a certain level, a moral hazard can emerge by the insurers.

Three kinds of financing are possible: general account, fund, and special account. Among them, fund and special account are judged to be appropriate for the national reinsurance of agricultural disaster insurance.

Researchers: Kyeong-Hwan Choi et al.
Research period: 2003. 4. - 2004. 1.

A Study on Basic Plan and Survey Methods of Rural Welfare & Education, and Regional Development

The main purposes of this study are as follows: 1) to prepare the major contents for a basic plan for rural welfare & education, and regional development; 2) to establish a periodical survey system to investigate the quality of life of rural residents.

Major research methods for this study were the collection of existing related data, interviews, field surveys and others. Descriptive statistics such as frequencies, percentages and means were used to organize and summarize the data.

In this study, basic directions of rural welfare & education and regional development policies, major tasks of the basic plan, the structure of and process for the basic plan, and power of execution for improvement measures were suggested.

A final proposal on the quality of life indicators for rural residents consists of 7 fields (financial security, health, safety, convenience, comfort level, stability, and "enjoyability" of life) as well as 93 other indicators.

The investigate methods for quality of life of rural residents were classified into 3 groups:

1) use of the existing statistical data,
2) interview survey on quality of lifeof urban and rural residents, 3) internet survey on regional characteristics and policies.

Researchers: Dae-Shik Park et al.
Research period: 2003. 12. - 2004. 6.

A study on the Introduction of a Farmland Banking System in Korea

The current situation of the DDA agricultural negotiations and the opening of the rice market negotiations under the WTO system strongly urges the Korean government to more actively open the agricultural products market, especially the rice market, which will result in a decrease in the profitability of the rice industry and a rapid decrease in demand and price of farmland. Rice fields are the majority of farmlands while farmland has been the most important asset of farmers in Korea. Farmland market and farmers' economy shall be thrown into confusion by the sharp decline in farmland demand and price. These changes in farmland prices have prompted the introduction of a new farmland management system that is very different from existing ones.

The main purpose of this research is to review the possibilities and prepare action programs for the introduction of a farmland banking system as a new farmland management system and a few policy issues surrounding it.

This research suggests reasons why the introduction of a farmland banking system is necessary as well as the main role of a farmland banking system- they can be summarized as follows:

1) The Korean government should take measures to stabilize the farmland market,
2) it should cope with the diverse and increasing demands for farmland to accord the changes in farmland systems (making a partial amendment to the Farmland Law) and to empower and enterprise rural communities,
3) it should make the rice industry more competitive by improving existing farm sizes through 'farm-size increasing projects' and a restructuring of the industry.

Japanese, French, and American experiences show severe problems of sudden decrease in price and confusion in the farmland market. However, it will not happen and the decrease of farmland price can play a positive role in restructuring the rice industry. This can be achieved if the Korean government takes

measures to: meet the situation of opening the rice market, introducing the farmland banking system to Korea and by mobilizing farmland more actively than before.

A farmland banking system can be introduced a little more easily by assigning the roles of such a system to KARICO (Korea Agricultural and Rural Infrastructure Corporation) who has experience in managing 'farm size increasing projects'.

There are several policy issues for introducing this kind of new system: types of farmland buying, priorities in target groups of farmland, time to buy farmland, fundraising, taking legal steps for realizing new programs, harmonizing with other programs, and reforming practicing systems of related policy programs.

Researchers: Hong-Sang Kim and Kyeong-Duk kim
Research period: 2004. 6. - 2004. 10.

AGRICULTURAL OUTLOOK AND INFORMATION 3

2005 Agricultural Outlook

'*2005 Agricultural Outlook*' provides short and long-run baseline projections for the agricultural sector through 2014. Projections cover agricultural commodities and aggregate indicators of the sector, such as farm income and food prices. The baseline projections identify major forces and uncertainties affecting future agricultural market, and forecast domestic and global long-term economic growth, consumption, trade, future price trends, and trade flows.

The projections are produced based on the assumption that there will be no economic shocks, and the specific assumptions regarding macro-economy, agricultural policy, and international developments, especially WTO and DDA agricultural negotiations.

This annual report is divided into five parts. Part 1 discusses the challenges facing the rice industry and the lessons learned in the new environment. Part 2 considers new vision of Korea's agriculture, including environment-friendly agriculture, regional agricultural cluster, green tourism, agricultural marketing, agricultural trade, and food safety system. Part 3 discusses agricultural and rural economy, such as farm income and farm price and costs, and expected events to happen under DDA agricultural negotiations and FTA. Part 3 through 5 cover agricultural commodities, including grain, forest products, livestock products, vegetables, and fruits.

Researcher: Se-Ik Oh et al.
Research period: 2004. 1. - 2004. 12.

118

Quarterly Report on Agricultural and Rural Economy

This report analyzes mid-and long-term agricultural trends using the forecasts of domestic and international economic variables with an aim to stabilize the rural economy. This quarterly report touches upon domestic and international micro-and macro-economic conditions, rural economic trends, international agriculture, agricultural commodities, and special issues.

Researchers: Byung-Yool Kim, Jong-Sun Kim
and Jae-Bong Chang
Research period: 2004. 1. - 2004. 12.

Monthly Outlook for Fruit-bearing Vegetables

The monthly outlook report for fruit-bearing vegetables is published to provide diverse information on fruit-bearing vegetables such as current situation and the forecast of demand, supply and prices. This study contains the 2004 outlooks for six commodities, including cucumber, pumpkin, watermelon, oriental melon, tomato, and strawberry.

The goal of producing the monthly outlook report is to enhance credibility of information on production amount and price trends of concerned commodities, and therefore to help farmers, consumers, and governments to make reasonable decisions. This study researched and analyzed the data on expected cropping acreage, actual cropping acreage, regional yields, production, export & import and price. It also presents the information on ownership & use of storage facilities, ratios of the varieties planted and the ways to obtain seedlings, consumer behavior, fixed consumption, and the influences of the high oil prices.

For the study, 2000 farmers were interviewed through telephone every month, and questions were asked regarding expected cropping acreage, actual cropping acreage, and yields. 160 monitoring personnels were also surveyed in depth regarding agricultural technology, and extension center officers and agricultural cooperatives' officers were asked to collect information on cropping acreage and expected yields. The information collected in the above ways are related to the wholesale market, in terms of price and shipping.

The collected information was analyzed in the way of aggregating the data and developing demand & supply model including quantity function, yield function, price elasticity function, etc. This research forecasted short-term demand-supply, considering seasonal demand changes. It held central adviser committee meetings to examine data and conduct researches again.

Some 13,000 copies of the outlook report on fruit-bearing vegetables are published and distributed to farmers, marketers,

extension workers, businessmen, and policy markers every ten months. They are also published on the Internet, and the homepages of the Korea Rural Economic Institute (KREI) and the Ministry of Agriculture and Forestry. The results are also published on the newspapers.

Researchers: Yong-Sun Lee et al.
Research period: 2004. 1. - 2004. 12.

Monthly Outlook for Fruits

This study is designed to forecast prices and production quantities of six fruit commodities including apple, pear, citrus, sweet persimmon, grape, and peach. The information can be used to improve farm planning and marketing strategies for the fruits. The outlook report also provides the supply and demand trends of the commodities, which are crucial to the central and regional governments when they set up plans to stabilize agricultural markets as well as farm household income.

This study describes annual acreage, production volume, price trends, quality level, and consumer behaviors, and makes short-term forecasts for the six fruits. Also, it provides information on the import/export quantities and prices.

The monthly outlook was made based on the survey of nationwide farmers selected as samples and monitoring personnels, and the analysis results. In 2004, the monthly outlook was published and distributed to farmers, marketers, extension workers, businessmen, and policy makers in the form of a pamphlet or a poster nine times in total.

Researchers: Kyung-Phil Kim et al.
Research period: 2004. 1. - 2004. 12.

Monthly Outlook for Vegetables

The purpose of the monthly vegetable outlook report is to help farmers improve farm planning and marketing strategies by timely providing information on demand and supply trends, prices and short-term forecasts for vegetables whose prices are usually unstable. This information is also crucial to the central and local governments when they set up plans to stabilize the vegetable market.

The monthly vegetable outlook mainly include intended and real planting acreage, growth status and yield, estimated production, inventory, import and export amount, price trend and forecast, and meteorological forecast. The commodities covered by the outlook include red pepper, garlic, onion, Chinese cabbage, radish, green onion, carrot, and cabbage.

The monthly vegetable outlook is published on the first day of each month and distributed to farmers and nationwide agricultural organizations such as agricultural cooperatives, wholesale markets, and agricultural technology centers.

Researchers: Seung-Jee Hong et al.
Research period: 2004. 1. - 2004. 12.

Livestock Outlook

The objective of the livestock outlook is to improve farm planning and marketing strategies for livestock products by informing farmers of the forecast. The outlook is also helpful to traders when making business planning and to policy makers when establishing market stabilization policy respectively.

The outlook was made regarding the number of livestock heads, the number of slaughters, feed production, export/import status, price trends, and the short-term forecasts for the number of livestock heads and price were made. The short term price outlook for livestock is primarily determined by two factors: supply and demand. The main factor of supply side is the number of slaughters, while that of demand side is economic conditions and consumer behavior.

The monthly and quarterly published livestock outlook contains price information, supply-demand situation and short-term forecast of livestock products. It makes forecasts on 5 commodities, such as Hanwoo (Korean traditional cattle), dairy cow, pig, egg-laying chicken and meat chicken. The outlook for chicken is published monthly and the outlook for other animals is published quarterly.

Researcher: Min-Kook Jeong et al.
Research period: 2004. 1. - 2004. 12.

A Public Survey on Multifunctionality of Agriculture

This study was conducted to survey public opinion on agriculture and agricultural multifunctionality, and to find appropriate measures, based on the survey, to increase nation-wide concern and support for agriculture. A 1,000 sample consisted of male and female aged between 20 years to 50 years old was selected from 6 large cities in Korea. The survey was carried out through internet and telephone interview in July, 2004.

The survey finds that most city dwellers appreciate commodity and non-commodity outputs of agriculture highly. Approximately 84% of people aware agriculture is important for national economy, and 75% answered domestic agricultural market has been opened too much. Most interviewees (95.3%) agree that the government should give more support to agriculture to secure agricultural non-commodity outputs.

Among various non-commodity outputs, the function taken to be the most important is 'protection of environment and ecology system', and the next are 'food security', 'balanced territorial development', 'social and cultural heritage', and 'rural landscape'.

Despite the high awareness of agricultural multifunctionality, however, only 37.5% of interviewees agree for their children to take agriculture as their job, and only 48.0% are willing to pay more tax to secure agricultural non-market services.

Based on comparison with previous studies, this study finds that people's intention of protecting domestic agriculture decreases over time. The rate of positive answers to the question 'no more additional open for domestic agricultural market' drops from 83.9% in 1999 to 70.9% in 2004, and the rate of people who are willing to pay more tax to protect agriculture decreases by 20.4% during the same period.

In order to increase people's concern and support for agriculture, it is suggested that the previous passive publicity actions of simply announcing agricultural policies intended for

farmers should be changed into an positive and realistic tactics of acquainting whole people with a value of non-commodity outputs of agriculture and its implication to national economy. To put into practice, this study recommends in detail;

1) educating young generation for multifunctionality of agriculture and its value,
2) promoting relationship and mutual understanding between city and rural people,
3) implementing campaign for nation-wide affection for agriculture and rurality,
4) promoting publicity actions through media, internet, cartoon, and social education programs.

Researchers: Se-Ik Oh, Dong-Weon Kim and Hye-Jin Park
Research period: 2004. 1. - 2004. 12.

The Situations and Prospects of Major Vegetables' Production and Marketing in Shandong, China

The purpose of this study is to collect and analyze the data regarding vegetable production situations, the allocation and shifts of main producing areas, production costs, status of wholesale marketing, and processing and exports of major vegetables in Shandong province, China, in order to provide the information to farmers, researchers and policy makers.

The main contents of this study are as follows: The cultivated area of vegetables is expanding in Shandong, while that of grain is getting smaller, mainly because of the high earnings generated by vegetable farming and the Chaeramja project, which was launched by the government for stable supply of subsidiary foods. The production costs of major vegetables are approximately 20～50% of those of Korea. The export-oriented vegetable processing firms in Shandong Province have increased in their number since the second half of 1990. As of 2004, their number exceeded 2,000, and they have been developed into collective, large and integrated companies. The main producing areas have shifted from traditional vegetable producing areas, such as Weifang and Linyi to western and southwestern parts of Shandong Province, such as Heze, Liaocheng, and Dezhou.

This study indicates that the cultivating areas and production of major vegetables in Shandong will expand to meet the increasing import and domestic demands.

Researchers: Byung-Yool Kim et al.
Research period: 2004. 1. - 2004. 12.

Sampling Design of Farm Households for an Agricultural Outlook

The Agricultural product prediction survey provides detailed annual, biannual and monthly statistics for production levels and production activities in agricultural sectors (vegetables, fruits, vegetable fruits and livestock). This data serves as a framework for agricultural economic planning of government, planning and analyzing markets of individual agricultural items, and forecasting for agricultural items.

Scope and Coverage of the survey

The survey covers approximately 5,200 agricultural households for vegetables (Chinese cabbage, radish, red pepper, garlic, onion, welsh onion, carrot, cabbage, potato); 2,000 households for fruits (apple, pear, grape, peach, citrus, sweet persimmon); 1,700 households for vegetable fruits (cucumber, cucurbita, tomato, strawberry, watermelon, melon); and 1,800 households for livestock (beef cattle, milk cow, pig, layer, broiler).

Population and Sample

The sample design is based on 2000 agricultural census data and other related government data. Two stage stratified random sampling is applied for the sample design, where the first stage stratum is a sixteen geographical area (province), and the second stage is a stratum within province.

Before computing sample size we cut off small farms from the sampling frame. The contribution from this part of the population is at least small in comparison to the remaining population. It may be tempting not to use resources on farms that contribute little to the overall result of the survey. Moreover, this reduces the response burden for these small farms. The sampling frames are determined from the target population after subtracting farms that represent the bottom 2% ~ 3% of the total cultivating area for each item. These farms were excluded from the frame so

that the sample size could be reduced without significantly affecting quality. And finally, the values of the sample sizes in the respective strata are chosen by Neyman allocation. They are selected to minimize for which the cost per household is the same in all strata.

A total of 10,818 sample agricultural households were selected. In each stratum the sample households are systematically selected. The sample is self-weighted in each stratum while sampling rates are different from stratum to stratum.

Estimation

1) Mean and total (a province total or mean of a special item)

Where = province weight for interesting item
= estimated province total for interesting item
= total number of households refers to stratum h.
= province weight for interesting item
= sample mean refer to stratum h.
= number of stratum (=1, 2, 3 .....,)
= stratum index

variance estimation coefficient of variation

2) Item total and mean

Where = province weight
= estimated item total
= number of households in each province
= province sample mean
= number of stratum (=1, 2, 3, . . .)
= stratum number

estimated variance coefficient of variation

Researchers: Yean-Jung Kim et al.
Research period: 2003. 12. - 2004. 4.

PDA-based Improvement of Production Area Data Collection System

There have been many attempts to make agricultural forecasts. To make the forecasts, the system to collect production area data, the analysis system and the distribution system are very important, so that the constant efforts have been made to improve them. However, despite many progresses, the data collection system still depends on the analog methods like telephone and fax. So, there is a need to improve work efficiency and reliability of collected data further.

Against this background, improving the current investigation method was desired, so that the agriculture outlook support information system was established in 2000. Still, the existing investigation system has many things to improve. For example, it has not been computerized yet.

Therefore, the PDA-based Production Area Data Collection System was launched in 2004 with an aim to rebuild the entire agricultural outlook information system.

The purpose of this project is to build a reliable data collection system within a short time, based on PDA (Personal Digital Assistant), not telephone or fax. This study explains how the PDA-based production area data collection system works.

This study is composed of the following contents:

1) it explains the composition and the roles of the PDA-based data collection system.
2) the process to choose PDAs and the criteria applied are displayed.
3) the investigation and analysis of PDA monitoring demands and the selection process are explained. Lastly, the total system management, PDA distribution management and the future use of the PDA-based data collection system are explained.

Researchers: Byung-Yool Kim et al.
Research period: 2004. 4. - 2004. 12.

A Study on Improvement of Agricultural Outlook Supporting Information System (Database)

The agricultural outlook supporting information system was constructed in 2001. However, the database was not in harmony with the system architecture.

Therefore, it is necessary to formulate consumer panels and to accumulate enough information from them to keep the database in harmony with the system. It is expected that from the panels, the information on urban household consumer's behaviors can be obtained.

The purpose of this study is to improve the agricultural outlook supporting information system, so that realtime forecast will be possible. To this end, it will be needed to manage the panels more efficiently and conduct surveys on them more appropriately.

A total of 1,313 consumer panels are selected. The following characteristics of panels are collected to make the database:

1) Panel's ID, address, name, age, occupation, ncome, telephone number, educational background;
2) e-mail address, if any;
3) the number of household members;
4) type of house; and
5) recruiting type.

In order to ensure efficient panel management and operation, this study suggests how to improve the response rate, how to fill up vacancy of the panel, how to hire the full-time panel manager are suggested.

There are also explanations on survey methods, including survey period, frequency of survey, main survey items, survey contents and supplementary comments.

The results of the survey are analyzed to serve the following three main objectives:

1) production of monthly outlook,
2) production of annual agricultural outlook, and

3) selection of right research tools, in case where the consumption trend changes rapidly.

Researchers: Byung-Yool Kim et al.
Research period: 2004. 4. - 2004. 12.

Fruit Vegetables Yield Function of Korea

This study aims to create fruit vegetable yield function suitable for Korea. Main results of the study are summarized as follows: First, the elasticity of fruit vegetable yield to the amount of solar radiation ranges from 0.2 to 0.7, meaning that if the amount of solar radiation changes by 10 percent, it will lead to causing 2 to 7 percent changes in fruit vegetable yield. Second, if the amount of radiation gets smaller for particular types of crops or in specific regions, the changes in yield will get larger than the change in radiation amount. Third, other climate factors such as precipitation and temperature are found to influence the yield of fruit vegetables in Korea as well.

Researchers: Yong-Sun Lee et al.
Research period: 2004. 8. - 2004. 10.

A Study on Designing and Constructing a Consumer Panel

We need to construct consumer panel and to accumulate enough information from the panel. From this panel we expect to draw an objective and rational information on urban household's consumer behaviors.

The purpose of this study is to design a consumer panel which are represent urban households' consumption behaviors on agricultural commodities. It is considered to run the panel's management more efficiently and to conduct survey more appropriately.

A total of 1,313 consumer panel's are selected. The following characteristics of panels are collected to make data base and are included:

1) panel's ID, address, name, age, occupation, income, telephone number, educational attainment
2) e-mail address if possible
3) number of household member
4) types of house
5) recruiting pattern

In the panel management and running part, the importance of the panel management, how to improve the response rate, how to fill up vacancy of panel, the hiring of full-time panel manager are suggested.

In the survey method process, survey period and interval, number of times of the survey, main survey items, survey contents and supplementary explanations are given.

The results of the survey can be analyzed and served the following three main objectives; 1) monthly outlook 2) annual agricultural outlook 3) research tool when the consumption trend is rapid change.

Researchers: Kyung-Phil Kim et al.
Research period: 2004. 9. - 2004. 11.

Improvement of the Vegetable Supply Stabilization Program in the Open Market

The objective of this study is to evaluate the Vegetable Supply Stabilization Program (VSSP), which includes the contract and lowest target price system, and to present the problems of the VSSP. Based on the analyses and the simulation results of various alternative programs, this study proposes a better scheme which can replace the existing program.

This paper is mainly composed of four parts. The first part describes the present status of the VSSP, which is composed of the contract and lowest target price program. The second part evaluates the VSSP with the econometrics method, the beneficiaries (farmers and local agricultural cooperatives) survey and the tabulation method. The third part proposes alternative programs and recommends the most efficient one. The fourth part describes the details on the improved scheme and desirable government policies.

This study identifies responsibilities that each stakeholder, including the government(Ministry of Agriculture and Forestry), farmers, and agricultural cooperatives, should take, based on the simulation results. This study also makes forecasts on harvest area, income, import amount, and the burden of each participant, which are key considerations in making decisions.

Researchers: Byung-Yool Kim et al.
Research period: 2003. 12 - 2004. 6.

Domestic Fruit Sector Development Scheme

Domestic fruit market has been opened to the outside world by FTA and WTO/DDA framework, putting a lot of pressure on domestic fruit producers. Therefore, it is now necessary to establish a special plan in order to maintain stable growth of the domestic fruit sector and prepare it for further opening in the future.

This paper aims at presenting a vision and goal for domestic fruit farming, and to derive the scheme to strengthen competitiveness.

The this study covers apple, pear, citrus, sweet persimmon, grape, and peach.

The scheme to develop the domestic fruit sector is as follows:

1) Produce high quality and safely preserved fruits;
2) Improve orchard circumstances, structure and productivity;
3) Nurture excellent fruit producers;
4) Stabilize supply-demand and the farm household income;
5) Improve marketing efficiency in high-quality fruit;
6) Promote fruit exporting and processing businesses; and
7) Devise strategies for fruit consumption increase.

Researchers: Kyung-Phil Kim et al.
Research period: 2004. 5. - 2004. 7.

AGRICULTURAL POLICY RESEARCH 4

Strategies for Agricultural Reform in North Korea and Inter-Korean Cooperation

The purpose of this study is to come up with strategies to help the North Korean agriculture to make a soft landing for reform and open-policy. North Korea, which has a closed economy with centralized administration, has started opening the market as part of the economic reform on July 1, 2002. North Korea has reduced the food distribution and readjusted the price of various supplies and services to a realistic level based on the cost-concept, so that they are not provided at extremely low price. Workers' wage had a sharp raise. Companies are introducing the cost-concept, therefore broadening the management's sense of responsibility and autonomy. As a follow-up measure, it granted privileges to some areas and reorganized the farmer's market into a general market. In 2004, it introduced individual farming system to some collective farms. Considering the recent developments, it seems that North Korea will widen the reform and opening in every field of the economy.

Based on such assumption, this study is designed to set up a basic direction for reform such as decentralization, decollectivization, marketization, and privatization, and to present the agricultural strategy. To begin with, the reform of the agriculture can take place in three sectors including agricultural system, investment and financing, haman power and technology development. The system reform can be also divided into land ownership and utilization, farm management system and methods, agricultural marketing and pricing mechanism. Agricultural investment and finance can be divided into agricultural finance, financing system, and investment. Finally haman power and technology development can be divided into human power and development of agricultural technologies. When presenting the reform strategies, two types of changes should be considered: change within the system and fundamental change. Change within the system does not accompany structural change in system. However, fundamental change accompanies change in the system.

The way to minimize the impact of reform is to use the case examples of the countries that have already experienced system transformation. Based on such examples, the agricultural productivity should be enhanced first through system reform, and then the reform should be completed by changing the distribution and price system.

For North Korea to carry forward the reform, there are several conditions in need, but the most important matter is to secure financial resources. Some 25 billion dollars need to be annually invested for North Korea to have a 7% of annual economic growth. It is impossible for the North to secure this amount of financial resources on its own, so that borrowing financial resources from the international monetary organizations is inevitable. To this end, North Korea should resolve the nuclear problem in advance and restore the trust of the international society. More than anything, the robust inter-Korean cooperation will help North Korea join the international monetary organizations, as well as develop its economy.

To speed up North Korea's reform and opening in the agricultural field, the type of assistance needs to be changed from humanitarian aid to development assistance. Moreover, trade of farm products and economic cooperation should be expanded. For this, getting rid of any institutional obstacles is the most important. It is essential to keep the agricultural policy of South Korea in harmony with its policy toward the North, while facilitating the trade and cooperation with North Korea.

Researchers: Tae-Jin Kwon et al.
Research period: 2003. 1. - 2004. 12.

Innovative Marketing Strategies in the Post-harvest Stage and the Adaptation of the Korean Agricultural Cooperatives

This study aims to establish strategies for marketing innovation in agricultural districts and to provide the right direction for cooperative's structural reform. This study is divided into six sections. Firstly, the current supply and demand situation of agricultural products is changing in accordance with a new paradigm. Secondly, the present condition and problems in agricultural product marketing are examined using related information and statistics. Thirdly, the direction of marketing innovation is presented for agricultural districts. Fourthly, the section deals with the reform process of marketing organizations in agricultural districts. Fifthly, the marketing innovation strategy of agricultural cooperatives is exhibited. Lastly, methods to construct the basis for marketing innovation in agricultural districts are planned.

The change of agricultural marketing environment has led to changing the current supply and demand situation of agricultural products, and requires innovation in agricultural districts and new roles of agricultural cooperatives. If the attempt to innovate the agricultural district fails, because of various marketing problems, the agri-food market for agricultural district might disappear.

Innovation of agricultural districts cannot be accomplished only through establishing distribution channel for agricultural products. Along with the process of innovation in agricultural production, organization reform should follow. The role of agricultural cooperative, which is in charge of marketing for the concerned agricultural district, is very important. In this situation, the reform of agricultural cooperatives is required. Through such reform, agricultural cooperatives could get over the current structural problems. Agricultural cooperatives in Korea must have the market-oriented structure. In addition, their size should grow and they should guarantee more stable supply. Agricultural

cooperatives should systematize production.

To promote innovation of agricultural districts under the leadership of cooperatives, the related laws should be amended. The concept of co-business corporate should be included in the law, allowing for the establishment of an independent corporation.

Lastly, the role of the NACF (National Agricultural Cooperative Federation) is very important. Member cooperatives of the NACF normally emphasize loan business more and are not much interested in changing the supply and demand situation of agricultural products. The role of the NACF is very important, because the direction of marketing innovation by member cooperatives depends on the NACF's visions.

Researchers: Eui-Sik Hwang et al.
Research period: 2004. 1. - 2004. 12.

Establishment of Farm Income Compensation Programs and Farm Safety Net

With a focus on transformation of agricultural policies and stabilization of farm management and farm household income, this study attempts to explore ways to compensate for lower farm income and to establish the farm safety net under the growing agricultural trade liberalization.

The farm safety net means the integrated farm income support policy whose goals are to support farms with the farm household incomes lower than the minimum level and to help farms get out of the financial woes.

There are two policy alternatives to design the farm safety net. First alternative is to establish the system linking several agricultural policies to compensate lower income earning farm households. Second one is to establish the single farm support program, which is similar to the single farm program of the EU (European Union).

Developed countries have increased operational efficiency of the farm safety net through the target-oriented farm policies, and the farm income compensation programs for agricultural commodities have made the single farm program get mature.

The DDA agricultural negotiation implies that it is necessary to move from the agricultural subsidy, which distorts the agricultural trade, to the agricultural aid, which is allowed by the WTO system, and it is also necessary to introduce the blue-box-type agricultural policies, which compensate for lower farm incomes.

The basic directions to design the farm income compensation program and the farm safety net are as follows:

1) the rules suggested by the WTO system should be observed;
2) the goals of farm policies should be fulfilled consistently;
3) target groups for the farm safety net should be properly selected;
4) the limitation of public finance should be considered; and
5) the farm income compensation programs should be imple-

mented step by step.

In order to stabilize the farm safety net, it is necessary to set up the system composed of key elements, such as goals, supporting groups, supporting conditions and methods, substantial farm supports, time, and the monitoring & evaluation system.

Researchers: Yong-Taek Kim et al.
Research period: 2004. 1. - 2004. 12.

Current Situation of Rice Industry and Prospect for Structural Change

The purpose of this study is to explore new policy measures and alternatives through analyzing the Korean rice industry structure since 1990, and to analyze the cost vs. income, the industry size and the types of production technique. In addition, this study is designed to provide information regarding rice policy policies directions in response to diverse circumstances to enhance the Korean rice industry.

This study has used the data of the NSO (National Statistics Office) regarding rice production cost, farm household economy and Korean agricultural census. The analysis of cultivated land use displays that the size of the rice industry is decreasing. As a result, rice farming area decreased more than 1,016 thousand ha in 2003, and it is expected that the rice cultivating land will get smaller to approximately 767,000 ha by 2014. In the regional analysis, the to 30 rice cultivating areas accounted for 43% of the entire rice cultivating land nationwide and 36% of the total farm household income in 2000. Such regions are the centre of the rice industry.

In the analysis of the type of paddy farm, the married couple ratio was 47%, and one person household ratio 49% of the total farm where farm manager's age is over 60. Therefore, it displays that farm managers are getting older gradually. The number of paddy farm family members was smaller than that of total farm households with 2.86 persons per household in 2000. The analysis of the farm manager's age structure shows that paddy farm component ratio when the farm manager's age is 60 years old was 31.1% in 1990, but the ratio became 52% in 2000 due to the swift aging trend. In the medium-term prospect for the rice farm households, the total number of rice farm households is expected to decline swiftly in 2005 to 850 thousands persons on account of the reduction in cultivated land and to fall further to below 480 thousands persons by 2014.

The ratio of paddy farm households with 0.5ha to below

3ha had increased continuously and remarkably. In other words, there was a clear distinction between the two groups. The large farm households take a greater portion of the farm land. In the situation of paddy field lease, the large farms records higher ratio of leased land. It is found that small farms prefer land contract-based rice farming, and aged farmers prefer to lease the land.

Finally, this study suggests several significant policy implications and rice industry policy measures in Korea. First, rice industry policies should be differentiated according to the development types of paddy farm households. The full-time paddy farm households should accomplish economy of scale by converging farmland, and it is necessary to explore effective and efficient policy to protect rice industry under market liberalization. Therefore, the government should consider the ways to enlarge the size of rice farms to increase the total farm income and to support farm income growth with diverse ways.

Researchers: Jeong-Ho Kim and Byoung-Hoon Lee
Research period: 2004. 1. - 2004. 12.

Effects of the Chinese Economic Growth on Korean Agriculture and Strategies to Boost the Agricultural Export to China

This study aims to find the answers to the following questions: Will the Chinese economic growth boost the Korean agricultural export to China? Which strategies are needed to increase the Korean agricultural export to China? To this end, a market research was conducted by visiting some supermarkets in Shanghai, China, and the SWOT of the Korean agricultural export was analyzed. Based on the research results, strategies to expand the Korean agricultural export were suggested.

Chinese economy is forecast to grow continually at an annual rate of 7%. In 2013, per capita GDP of China, calculated based on purchasing power, is expected to reach US$ 13,000. Such economic expansion of China would be a chance for Korea to enhance its agricultural export including agricultural input materials, such as agricultural machines, and agricultural products. Futhermore, China might benchmark Korea's know-how in agricultural marketing. Among these effects of the Chinese economic growth on the Korean agriculture, boosted agricultural export to China will directly contribute to increasing farm household income.

The Korean agricultural export to China has a few characteristics: Firstly, processed agricultural products account for a major portion of the export. Secondly, the Korean agricultural export mainly targets ethnic Koreans living in China, not ethnic Chinese. Thirdly, some promising Korean agricultural products have been replaced with Chinese counterparts, and lastly, a variety of products are exported in a small volume, so that there are no major export items.

Chinese consumers with high income tend to consume high-quality agricultural products including vegetables and fruits. When buying foods, they put more emphasis on quality such as taste and food safety. As their income grows, demand for beef, milk, fresh vegetables and fruits are expected to rise. Korea is

making efforts to export such products to China.

The results of the market research show that Korean apples are sold for about 4,500 Korean won ($4.0) apiece in the Chinese market, which is more expensive than their price in the domestic market. Korean pears are found to be priced at 4,200 Korean won apiece in the Chinese market. This implies that Korean agricultural products with high quality can be exported to the Chinese market. In fact, price discrimination is very distinct in the Chinese imported agricultural market. The rule is: the higher quality, the more expensive. Plus, there are evidences proving that Korean agricultural products with high quality could perform well in the Chinese market.

To take advantage of this opportunity, Korean farmers need to produce high quality products. Appropriate and systematic export promotion programs should be implemented in the Chinese market as well. The Korean government should support export promotion activities including participation in international agricultural exhibitions.

Researchers: Oh-Bok Kwon and Chung-Gil Chung
Research period: 2004. 1. - 2004. 12.

World Agriculture Online Reports

The international agricultural policy and trade have a growing influence on domestic agriculture. In this context, having the information on foreign agriculture gets more important.

The Korea Rural Economic Institute (KREI) offers world agricultural reports via the Internet, providing farmers, entrepeneurs, researchers and organizations with information on agricultural situations and policies of other countries. This is aimed to help them make agricultural policies, identify global trends, set up strategies for WTO negotiations, increase agricultural export and improve farm management.

The international agricultural information is available in "World Agriculture Online Reports" on the KREI homepage, and it is also published as World Agricultural News each month. Throughout 2004, we conducted the following activities:

1) 174 international agricultural articles, including 9 overviews of world agriculture, 19 agricultural policies, and 146 world news, were posted on the KREI web site. The information was provided mainly by KREI researchers and managed jointly with other organizations (Regional Academy, MAF, RDA, NACF, and so on).
2) we published World Agricultural News every month. 700 copies were published each month, and a copy has about 120 pages.
3) "World Agriculture Online Reports" has been improved to enhance information sharing by reinforcing the search engine, establishing research networks and providing links to related web sites
4) the research network has been expanded and used as a space for information sharing. Thanks to the expansion effort, KREI staffs, Internet surfers, translators, authors, and foreign government officers were able to find valuable information from the research network.

Researcher: Tae-Gon Kim

Research period: 2004. 1. - 2004. 12.

KREI Quarterly Report on Agricultural Trends in North Korea

The purpose of this research is to provide policy makers and the people concerned about North Korea with the analysis on the agricultural trends in North Korea. "KREI Quarterly Report on Agricultural Trends in North Korea" is issued each quarter and comprises several sections including "Focus", "Analysis on the Agricultural Trends", "The Trends of Inter-Korean Agricultural Trades and Cooperations", and "Agricultural Data".

"Focus" contains four articles, "Outlook and current status of food supply", "Plan to improve the present inter-Korean trade status in agricultural, forest, marine products", "The inter-Korean cooperative plan to improve the livestock industry of North Korea," and "International aids to North Korea and our strategies".

In North Korea, strategies have been put into practice to increase food supply. They include seeds improvement, potato-planting revolution, and the two-crop farming. In the agricultural foundation sector, North Korea has put an emphasis on the land arrangement and the Baekma-Cholsan irrigation canal construction. In the agricultural production sector, it has increased the size of cultivating land for beans and expanded the production of oil plants, cocoons, and tobaccos, along with the production increase of foodstuffs. In the livestock sector, North Korea has concentrated its efforts on the improvement and efficient management of ranches centered on poultry and goat farms. In the agricultural management sector, North Korea has been devoted to improving farming tools availability and the agricultural accounting management, and they have exerted their best efforts to construct storages and processing factories for potato and sweet potato.

In agricultural trades and cooperations, last year, the volume of trades in agricultural, forestry, and marine products increased again. But the North-South dialogue has be stalled since June, because disputes arose regarding paying tribute to Kim

Il-Sung's tomb, and a large number of influx of North Korean defectors to South Korea. But the aids to North Korea and three major inter-Korean economic cooperations in the private sector were continuously.

The international aids to North Korea were reduced because the donors concluded that the aids weren't effective in solving the North Korea's food deficiency, and North Korea was suspected to have nuclear weapons. Because North Korea denies receiving the aids, which require the compliance with the certain process requested by UN, it is not likely that North Korea will be able to secure substantial international aids.

Researchers: Tae-Jin Kwon, Young-Hoon Kim and In-Bae Ji
Research period: 2004. 1. - 2004. 12.

A Road Ahead: Korean Agriculture and WTO

In the midst of rapid economic growth, Korean agriculture has undergone a rapid transformation. The production structure evolved three to seven times faster than many other developed countries, and the employment structure was also adjusted rapidly to the extent that no other country had ever experienced. As experienced by other countries, the drastic change in employment structure had resulted from a sharp reduction of new entrants to the agricultural industry, given low job mobility among sectors. Meanwhile, farmers are continuously aging, causing the agricultural employment structure more fragile since more than 50 percent of the agricultural labor force is over 60 years old. Current structure indicates that the fast shifts in generations will make the country have a demographic structure similar to that of developed countries. To ensure the change as a soft landing, it is extremely important for Korea to achieve policy flexibilities during the period to manage or control further market openness and reduce domestic support.

A number of structural adjustment policies taken in the 1990s have promoted capital accumulation and farm size growth, significantly contributing to productivity gains. Farm size expansion facilitated by the more popular farmland leases has transformed the employment structure in the farming industry from owner farmers to tenant farmers.

In the context, serious concerns are raised that farm income gains have not been realized in tandem with the agricultural growth and productivity gains in recent years. Farm household incomes account for no more than 75 percent of urban household incomes, and the income disparity among farm households has grown so rapidly that 33 percent of total farm households are suffering from persistent income decrease over the past five years, and the income disparity has increased from 5 to 7.1 percent in 2002. Such income disparity is largely attributable to many aged farmers with small-scale cultivation, who suffer from declining incomes in nominal terms and face low

opportunities for job shift and productivity boost.

The simulated results under the KREI-ASMO, a sector-wide forecasting model, suggest that direct payments required to compensate for farm income losses will reach 3,030 million US dollars in 2010, which exceeds the potential ceiling of domestic support proposed by the Doha Development Agenda negotiations. More than anything, such Blue Box-type direct payment is a short-term solution to accommodate emerging commodity-specific needs. As such, it can be said that the domestic agricultural sector will be on the brink of collapse, if the country has to face substantial market openness and strict control of domestic support under the WTO system.

As developed countries had enjoyed a privilege to alleviate their agricultural problems under border protection and market price support for a long period before the WTO system begins, Korea should be allowed to tackle the same problems to attain a smooth transformation for its agricultural structure. This would be a way to create a level playing field in the international trade.

Finally, to keep up with multi-functional roles of agriculture, the government should consider an integrated approach, handling agricultural commodities and public goods generated from farming as a package. At the same time, the study suggests the government should continue to perform structural adjustment by facilitating further farmland mobilization.

Researchers: Song-Soo Lim, Jeong-Ho Kim and Jin-Kyo Suh
Research period: 2004. 1. - 2004. 2.

A Study on Modelling and Management of the OECD World Agricultural Outlook Model, Aglink 2004

Aglink model is a dynamic ex-anti simulation model and demand-supply partial equilibrium model for the world agricultural sector. The model was developed by the OECD Secretariat in cooperation with member countries in 1993 and has been used to produce the OECD world agricultural outlook and simulation for various policy analysis.

This study will be continuously carried out each year to achieve the sufficient application capacity to analyze the world agriculture market. And the objective of this year study is to carry out various application analyses.

Main contents of this study are listed as follows: The research background, aims of this study, review of preceding researches and brief explanation of imported variables in Aglink 2004 model are introduced in the first chapter.

In the second chapter, the forecast values and main analytical points on the world agricultural market are listed. And the baseline results drawn out by Aglink 2004 are introduced.

Also, the current status and outlook of the world rice market and the Chinese rice demand-supply status and its implications are analyzed in the third and fourth chapter. Additionally, in the fifth chapter, the impact of BSE outbreak on the Korean beef and veal market is described.

Finally, in the sixth chapter, the Korean rice module and suggestions for more robust module are presented.

Researchers: Bae-Sung Kim, Sung-Yeol Jo and Byoung-Hoon Lee
Research period: 2004. 2. - 2004. 12.

A Study on Modelling and Management of the Korea Agricultural Outlook Model, KREI-ASMO 2004

KREI-ASMO (Korea Agricultural Simulation Model) was developed by the Korea Rural Economic Institute (KREI) in 1995 and has been used to produce mid- and long-term outlooks of the Korean agriculture and to come up with various alternative policies. The model is a partial equilibrium model as well as a dynamic ex-anti simulation model for the Korean agricultural sector.

Especially, the model has been applied as a useful quantitative analysis tool to forecast demand-supply situation by commodity, to make agricultural outlook, and to estimate and analyze various policies.

KREI renews the statistical data-sets and improves the structure of the model every year to facilitate the role of KREI-ASMO. In this context, this study is carried out annually.

KREI-ASMO can be divided into five sub-modules as follows:

1) the module for forecasting macro-economic variables;
2) the module for forecasting input-prices;
3) the module for cultivating sector outlook;
4) the module for livestock sector outlook; and
5) the module for forecasting agricultural total product value and total added value in agriculture. Also, the model includes the imported commodities, such as rice, pulses, miscellaneous grains, oilseeds, red peppers, Chinese cabbage, white radishes, barley, garlic, onions, other vegetables, apples, Asian pears, grapes, tangerines, peaches, persimmons, beef cattle, dairy products, pigs, and chickens.

The main points of this study are as follows. First of all, the reference year of the model changes according to the change of reference year in the national accounts system. And, according to renewed statistical data-set and change of reference year, each individual equation and module, such as acreage allocation

module, rice production cost module, agricultural GDP and income module, and each commodity module, is re-estimated.

Researchers: Sung-Yeol Cho, Bae-Sung Kim
and Byoung-Hoon Lee
Research period: 2004. 3. - 2004. 12.

Inter-Korean Agricultural Cooperation in the Mt. Geumgang Tour Area

Case Study of the Bukgaeseong Vegetable Greenhouse Project

The purpose of this study is to review the progress of inter-Korean agricultural cooperation within the Mt. Geumgang tour area, and evaluate the achievements. To this end, this study shows the states and results of the agricultural cooperation project which has been put in place in Goseong-gun, North Korea, and proposes a desirable model to promote inter-Korean agricultural cooperation.

The agricultural cooperation project in Goseong should be pursued together with the Mt. Geumgang tour project. This will be a good cooperation model to transform the North Korean agriculture.

Hyundai Asan, a South Korean company, which has initiated the Mt. Geumgang tourism project, believes that this area is a proper place to begin agricultural cooperation between the two countries. The area has good conditions to transfer goods and exchange human resources for inter-Korean agricultural cooperation. Another advantage of the place is that the increase in the number of tourists will boost demand of N. Korean agricultural products. And the results of cooperation will be visible.

Considering the above, three methods are proposed as proper ways to facilitate the development of agricultural cooperation in Goseong.

First, in a short term, the Goseong Vegetable Greenhouse Farm should be properly managed. Second, in a mid-term, agricultural cooperation with other areas should be pursued. Third, an agricultural special zone should be established in Goseong over the long run.

Researchers: Jung-Il Kang et al.
Research period: 2004. 4. - 2004. 12.

Possibilities and Conditions of Business Farm

Recently, business farm was proposed as an alternative to handle rapid changes in Korean agriculture under WTO/DDA and FTA. However, a business farm can enter agricultural industry with the investment of non-agricultural capital by purchasing agricultural land and employing agricultural workers. But, this is currently not permitted by law except for a few livestock businesses.

Under the recognition that Korean agriculture can coexist with various agribusinesses, this study analyzes the possibilities and conditions of establishing business farm using non-agricultural capital. The direction of related policy improvement is presented.

Contents of this study are as follows:

1) It summarizes previous studies about business farm in terms of definition and development history.
2) It describes current circumstances of agricultural companies, presents examples of business farm, and examines possibilities and conditions of business farm.
3) It explains trends and examples of business farm in foreign countries including Japan, U.S., and France.
4) It examines policies for entry into agricultural business, business farm support system, and tax system, and suggests alternatives to improve related policies and systems.

Researchers: Jeong-Ho Kim, Tae-Gon Kim and Sung-Yeol Cho
Research period: 2004. 4. - 2004. 7.

Formation and Development of Regional Agricultural Cluster

This study ultimately aims at finding directions for formation and development of agriculture-related cluster in order to reinforce agricultural sector in local areas. In doing so, this study tries to apply the concept of industrial cluster to agricultural sector and suggests strategies to improve agricultural policies based on the analysis of application feasibility and conditions.

The concept of industrial cluster has been introduced by the Porter's study on Silicon Valley. Beyond the role of simple industrial estate to reduce production and transaction costs, many people regard it as an origin for technological innovation and knowledge creation. It has been discussed in Korea since 2001 and the Ministry of Agriculture and Forestry (MAF) started to consider the application of this concept to the agricultural sector since 2004 based on the report on the development strategy for regional agricultural clusters.

This study points out that 'regional agricultural cluster' should be replaced with 'agri-industrial cluster', and defines it as 'the place, where all kinds of agriculture-related businesses engaged in production, processing and marketing of local specialities; universities; research institutes; and regional administrations; and agencies form a network and generate synergic effects of regional agricultural innovation through competition and cooperation." This study also argues that it would be a good signal for agricultural development, if the agri-industrial cluster closely connects farming with other activities and then establishes a leading group for the regional agriculture through the networking of participants.

Since the agri-industrial cluster is now in the initial stage, there exist various types of the clusters:

1) Production and marketing-led cluster: with a priority given to producers of certain commodities, it forms a horizontal network with exporting and marketing agencies and businesses.

2) Processing-led cluster: with a priority given to processors of certain commodities, it forms a vertical network with those who develop simplified processing and the high-tech life industry.
3) Theme-led cluster: without the priority given to commodities, it firstly sets up a common theme from diverse agricultural assets and commodities, and forms a horizontal network with those who are involved in production, marketing, tourism and other service activities and businesses.

This study has taken a look at three case studies including green tea in Boseong, black raspberry in Gochang and Anseong co-operative as the three types of agri-industrial cluster.

The essence of industrial cluster policy is to reinforce the networking between participating groups, and the purpose is to support creative growth of economic elements by way of eliminating unstable factors from the regional agricultural system. The agri-industrial cluster does not try to establish a new industry, but it tries to improve and reinforce the existing businesses specified to the concerned area.

From the point of view, the policy to foster the agri-industrial clusters should consider the followings:

1) The policy should start with defining the range of clusters and find out identity of the participants. Accordingly, it would be desirable that the agri-industrial clusters are found for those which have matured local products.
2) Since the formation and development of agri-industrial cluster entirely depends on the capability of local governments, the priority should be given to provide the local governments with the foundation to build such clusters.
3) The central government should set out a national framework so that agri-industrial clusters could easily take a root in local areas.
4) It is very important to clearly define the role of participating players within a cluster and the close networks between the individual players shall be further developed.

Researchers: Jeong-Ho Kim, Moon-Ho Park and Tae-Yeon Kim
Research period: 2004. 4. - 2004. 12.

2004 Annual Report of FANEA

FANEA, the Forum for Agricultural Policy Research in Northeast Asia, was established in October 2003, jointly by the Korea Rural Economic Institute (KREI), the Chinese Academy of Agricultural Sciences (CAAS) and the Japan's Policy Research Institute affiliated with the Ministry of Agriculture, Forestry and Fisheries (PPIMAFF). This forum is aimed to establish a collaborative relationship among Korea, China and Japan in the agricultural and related researches, including a joint pursuit for mutually beneficial R&D activities in Northeast Asia.

KREI organized a task force team, called Task Force Team for FANEA, in order to vitalize and expand activities of FANEA. The activities of FANEA mainly consist of international symposiums hosting, homepage management, joint studies and other related activities.

The 2nd FANEA International Symposium was held on October 7~10, 2004, in Weihai city, Shandong Province, China. It was organized by the IAE/CAAS under the theme of “Food Safety and Security in the Era of Globalization.” The KREI's TFT for FANEA has attempted to draw attention and boost cooperation from IAE/CAAS and PRIMAFF through joint operation of the FANEA homepage (www.fanea.org) by authorizing the right to manage the homepage to the web masters appointed by the three countries respectively. For main activities, the TFT for FANEA successfully performed a joint study with IAE/CAAS entitled “DB and Modeling of Agricultural Trade and Policy Analyses in Northeast Asian Agriculture” and made the intermediate results published in the 2nd international symposium. The TFT for FANEA also performed a joint study entitled "Drain of Chinese Rural Labor and Shortage of Manpower" along with the Research Center for Rural Economy Ministry of Agricultural P. R. China.

Besides, the TFT for FANEA attended the international symposium entitled “China's Rural Economy: Problems and Strategies” held on June 26~27, and the symposium entitled "Agricultural and Rural Development in Northeast Asia" held on

August 16~19. It also participated in a researcher exchange program organized by the PRIMAFF on November 22~27 as well as held the first seminar in Korea entitled "Comparison of Agricultural Competitiveness between China and Korea" on July 29.

The TFT for FANEA will continue to expand the research network in rural development and agriculture of Northeast Asia until 2005. To achieve the goal, it plans to contact a variety of institutes or agencies, along with individual experts, who are interested in agriculture and agricultural policy in Northeast Asia.

Researchers: Myong-keun Eor et al.
Research period: 2004. 6. - 2004. 12.

Measures to Promote the NACF's Feed Business

The purpose of this study is to search for the effective measures to promote the feed business of the NACF (National Agricultural Cooperative Federation). NACF has entered the feed industry through Nonghyup Feed Co, a subsidiary company, and through regional livestock member cooperatives, which have individual feed factory.

Nonghyup Feed has 8 feed factories, and regional livestock member cooperatives have 13 factories in total. In 2003, these 21 factories produced 23 percent of livestock feed in Korea. However, Nonghyup Feed and 13 regional livestock member cooperatives have conducted their business separately, and they have competed with each other in certain areas. These factories are located all over the country and conduct their marketing in proximity of each factory. Since the marketing territories overlap in several factories, and almost every factory has production facilities for the same kind of livestock feed, there exists a lot of inefficiency and redundancy in production and marketing.

According to the analytical results, the benefit of the economy of scale by combining the two sides can be achieved in marketing sector, rather than in production sector. This study suggests two feasible measures to promote the efficiency of feed business of NACF. First, just as Sunkist Inc., production and marketing can be commonly carried out. In this model, Nonghyup Feed could play a core role in marketing, and all member cooperatives may take charge of processing brought-in materials.

Second, under Nonghyup Feed, all livestock member cooperatives can be integrated, so that they invest in facilities and manpower, and are compensated in proportion for their investment in the form of dividends. Nonghyup Feed could manage the whole feed business under NACF and takes the responsibility for both production and marketing.

Researchers: Eui-Sik Hwang et al.
Research period: 2003. 10. - 2004. 3.

Evaluating the Performance of Integrated Agricultural Policy Loan System

Integrated Agricultural Policy Loan System was introduced in 1999 to solve many problems of the former agricultural policy loans, such as inconsistency of loan conditions, overlapping supports, loss of timely investment, oversupply of specific products, and so on.

This study is aimed to evaluate the performance of the integrated agricultural policy loan system from 1999.

It consists of five chapters. The first chapter reviews the characteristics of the integrated loan system, and the second chapter reviews the current situation of loan processing. In the third chapter, the performance of the integrated agricultural policy loan system is evaluated with the several measures, including the degree of credit limit, the efficiency of loan allocation, the property of integration and the convenience of use. The fourth and fifth chapters propose the direction of future development and the problems to be resolved for system improvement.

Regarding the performance of the integrated agricultural policy loan system, the study has found: First, the sum of integrated agricultural policy loan amounts to 579 billion won, and it takes 12.2 percent of gross agricultural policy loan in 2004. Many policy loans, which have rendered their role of resource allocation to the market, should be gradually unified into this integrated loan. Second, since 1999, the integrated loan has been provided for three purposes: farm management(61.1%), agricultural investment(25.1%) and implemental repair(13.8%). If the accumulative sum is divided by supported agricultural products, livestock products, vegetables and special crops take 49.3 percent, 13.7 percent and 13.3 percent respectively. Current demand of this loan comes from limited sectors, so that it is reasonable that the market plays a leading role in allocating resources. Third, various problems in processing this loan system have occurred for the past 6 years, such as credit limit, credit stringency, and insolvent ex-post facto management. Therefore,

the government should make efforts to increase efficiency of the loan system, build up synthetic farm information data set and develop a consulting system for farm management.

Researcher: Eui-Sik Hwang, Joon-Kee Park and Han-Pil Moon
Research period: 2004. 4. - 2004. 6.

Rice Import Handling In Preparation for WTO Rice Negotiations

The main objective of this study is to analyze the impacts of the expanded MMA rice imports and the distribution of imported rice as table rice. To this end, consumer preferences and the behaviors of market participants have been analyzed. Case studies for Taiwan and Japan were also conducted to learn further information and implications.

This study predicts the effects of imported rice on the domestic market, evaluates the level of mark-up, and conducts consumer preference tests. It also elaborates on the survey results on the willingness to pay and behaviors of market participants; introduces case studies of Taiwan and Japan; and considers the TRQ methods for WTO members and negotiations on TRQ issues in the WTO/DDA. Methodologies adopted in this study include quantitative analysis, such as econometrics models; field survey to ask about consumers' willingness to pay, marketing intentions and preparations of imported rices; review of references; and discussions with expert groups.

Blind and non-blind tests were conducted to test consumers' preferences and willingness to pay for rice products. 300 consumers were selected randomly on the first-come-first-served basis. 10 different brands of rices, including domestic and imported, were used as samples for the test. They include 7 Korean brands, 1 American brand, 1 Chinese brand and 1 mixed rice of Korean and Chinese rice. Consumers' reaction was not that different between Korean and American rices in blind tests. However, consumers' willingness to pay for Korean rice was 9% higher than their intention to pay for Chinese rice in blind tests. In non-blind tests, the premium consumers are willing to pay for Korean rice was 2%.

Estimated mark-ups for imported rice were 1,500 won/kg for American rice and 1,400 won/kg for Chinese rice.
Estimated mark-up levels were much lower than tariff equivalents or the gap between imported prices and domestic prices.

Therefore, the rice management system needs to change to cope with imported table rices in the domestic market. Marketing strategies for domestic rice should be worked out to promote their consumption and competitive edge against foreign brands. Various management tools should be implemented to prevent the violations of the rules of origin so that consumers and producers can be protected as well. Marketing promotion and advertizement programs for domestic rice are strongly recommended to boost domestic rice consumption.

Subsidiary elimination for import and distribution are also major factors affecting the Korean rice industry in addition to the quantity of imported rice. Rice products or processed rice needs to be treated differently from unprocessed rice to determine the level of tariffs and mark-ups. Regular auctions and the simultaneous buy and sell(SBS) auctions can be considered as common ways of selling imported table rice in the domestic market. Auction will be a preferred way to achieve higher efficiency, while the SBS can be used as the stability weighted method.

Researchers: Sei-Kyun Choi et al.
Research period: 2004. 05. - 2004. 12.

Strategies to Develop Co-Marketing Firms for Innovative Marketing in Agriculture

This study aims to develop strategies for marketing innovation in agricultural regions in Korea and to consider the introduction of co-marketing firm as an option. The study consists of five sections. In the first section, the current situation and problems of marketing in agricultural regions are examined using related information and statistics. In the second section, the necessity of introducing co-marketing firms is discussed. In the third section, overseas case studies on changing marketing organization are described. The fourth section defines co-marketing firms and selection criteria. The fifth section proposes strategies to develop co-marketing firms.

Since the agricultural marketing environment changes, marketing innovation for agricultural regions is required. From 1992, marketing specialized organizations have increased in a large number. However, many problems have surfaced along the way. To resolve these problems, more sophisticated marketing organizations are needed. There seem to be two ways to innovate marketing in agricultural regions—value creating and marketing rationalization. The shipping routes of marketing organizations in agricultural regions are various like wholesale markets, large retailers, and processing firms. There are strengths and weaknesses of each route. So marketing organizations in agricultural regions have to apply a combination of strategies. Co-marketing firms can implement innovative strategies. They are independent firms that can carry out distribution and merchandising. Regarding the companies, the study suggests screening process, inspection items and future road-map.

Various strategies to establish co-marketing firms are discussed. To make co-marketing firms the most innovative organization, several supports are necessary: favorable funds, information gathering capacity, and marketing specialists. To secure a strong decision-making right, co-marketing firms need to construct system securing incorporation. Also self-reliance fund

should be expanded in order to confront risks in the market. Systematic producer management is the most important factor for the agricultural marketing body to raise its competitiveness and bargaining power. Substantial expenses might be needed to differentiate the organization from other organizations, so that investment securing is very important. More incentives should be provided to encourage large farms to join the co-marking firms.

Researchers: Eei-Sik Hwang, Jae-Hong Park and Kyung-Chool Joe
Research period: 2004. 7. - 2004. 12.

Evaluation of Korea-Japan FTA Negotiations on the Agricultural Sector

The objective of this study is to make strategy suggestions to the Korean government which is preparing for Korea-Japan FTA negotiations and to offer the list of relevant requests. This study compares structural changes in agriculture, trade structure, tariff system, and agricultural competitiveness between Korea and Japan. This study also classifies sensitive commodities for both Korea and Japan based on the analysis of the impacts of FTA and the competitiveness of the commodities. Finally, strategies for the Korea-Japan FTA negotiations will be suggested.

Korea is found to maintain competitive edges against Japan in agriculture thanks to favourable structural changes. Korea maintains solid price competitiveness for most of agricultural products, except for some items, such as apples, pears, green tea, and special parts of meat. The number of agricultural products exported to Japan reaches to 407, accounting for 27% of the total number of imported items to Japan. The market share of Korean agricultural products in the Japanese import market is 2% in a value term. The CAC(comparative advantage by country) indices of 156 out of 407 Korean products are evaluated to be over 1, indicating that they possess competitiveness in the Japanese market.

Average tariffs applied by Korea and Japan are 54% and 24% respectively. Korea imposes high tariffs on grains, dairy products, ginseng, garlic, red peppers and onions. Japan, on the other hand, imposes high tariffs on processed foods rather than fresh products. Potential Bilateral Trade (PBT) is estimated to be $650 million for Korea and $600 million for Japan with tariffs excluded. The sensitive commodities to Korea, when liberalizing the market, include tobaccos, green tea, some fruits, and special parts of meat. The commodities sensitive to Japan include fresh vegetables, rice and meats.

In this context, Korea should take the following strategies in the negotiations for the Korea-Japan FTA: to take compre-

hensive approach including all of the agricultural products; to request a wider market opening for the products applied with high tariffs; to seek bigger trade volume; to request elimination or harmonization of non-tariff barriers; to consider sensitive commodities to Korea; to eliminate price difference in duties; and to consider market opening of processed foods considering high tariffs and significant size of potential trade.

Researchers: Sei-Kyun Choi, Joo-Nyung Heo and Kwang Lee
Research period: 2003. 12. - 2004. 4.

Korea-Japan FTA and Policy Implications in the Forestry Sector

The objective of this study is to derive the policy implications of the Korea-Japan FTA and to provide information and guidelines for upcoming negotiations in the forestry sector. This study compares Japan and Korea in terms of production and consumption structural changes, trade structure, tariff system, and competitiveness of forestry products. This study selected some commodities for which Korea and Japan have comparative advantages respectively based on the analysis of the current status and potential bilateral trades of forestry products.

As a result, it has found that the Korean forestry export is structurally heterogeneous. Agricultural commodities, such as chest nut and pine mushroom, have maintained their market share and competitiveness in spite of relatively higher prices, while Korean timber remains as a niche market in the Japanese timber import market. The Korean tariff structure applied to forestry products is simpler than the Japan's. Japan has a more complicated schedule with various categories for forestry commodities.

Considering current production and consumption situations as well as tariff structure and competitive advantages, the Korea-Japan FTA will promote exports of Korean forestry products to Japan. At the same time, however, imports of some products from Japan may also increase. Overall, Japan will see higher export growth of forestry products than Korea.

Guidelines for Korea in the FTA negotiations with Japan are as follows: For C/S, tariff-exempted categories should be classified according to their current tariff rates. For example, most tropical log, to which zero percent of in-quota tariff rate is applied, may be classified as the category that "customs duties shall be eliminated from the date when the FTA agreement is effective.". Establishing new categories such as "renegotiation after the agreement of WTO/DDA" or "elimination of customs duties within 15 years" may be another strategy applicable to

most agricultural products in the forestry sector. Finally, "exemption of tariffs" should be re-considered for the commodities for which the benefits of tariff eliminations are uncertain to both countries. For both Korea and Japan, the rationale of "exception of tariff abolishment" should be clarified, especially in preparation of FTAs with China and ASEAN.

Researchers: Myong-Keun Eor, Cheoll-Su Chang and Kwang Lee
Research period: 2004. 3 - 2004. 6.

FOREST POLICY RESEARCH 5

An Analysis of Economic Value of Utilizing Pyroligneous Liquid in Oriental Medicine and the Support System for Further Development

This study attempts to analyze economic feasibility of producing pyroligneous liquid by using forest wastes and utilizing the liquid in oriental medicine. This study also tries to suggest future policy directions to eradicate obstacles in production and sales of the liquid and related products. The contents of this study are summarized as follows:

1) The forest wastes produced in the forest management are estimated to amount to about 4 million cubic meters per year. Therefore, institutional supports from the government are necessary to use such forest wastes to produce pyroligneous liquid. If it is possible, there is no need to import woods and logs to produce pyroligneous liquid.

2) The net present value and benefit-cost analysis were conducted to analyze the economic value of producing pyroligneous liquid. Sensitivity analysis with respect to price and interest rate change was made as well. Consequently, the price per liter is varied between 2,500 to 7,000 won in Korean won, and the interest rates ranges from 5 to 7 percent. The price of charcoal is approximately 6,000 won per bag (40 kilograms). This is very important issue to point out because pyroligneous liquid is a by-product of charcoal production.

3) If the price of pyroligneous liquid is 2,500 won (excluding VAT), the benefit-cost ratio is 1, implying that the economic feasibility is low. If the price ranges between 3,000 and 6,000 won, the ratio is greater than 1, indicating that the production is economically valid. The period to achieve a break-even point will be about 2 to 8 years from the beginning of the activity. Therefore, in order to be profitable, the price should be 7,000 won per liter.

4) The latest interest rate applied to raw materials purchase was 5.5 percent. Therefore, there is a need to lower the interest rate to 4 percent or below to encourage private enterprises to

produce pyroligneous liquid.

5) The Carbonyls content for smoke flavors ranges from2 to 25 percent according to the present food-additive code in Korea, but the range in other countries is only 1.4 to 18.1 percent. In this sense, there is a need to lower the permission limit of the present Carbonyls use. The articles in the regulation requiring the use of pyroligneous liquid for smoke flavors should be deleted and/or at least mitigated in order for pyroligneous liquid to be used in various kinds of related products.

6) The safety is not guaranteed if the pyroligneous liquid is produced using construction site wastes and unhealthy woods. Therefore, a regulation requiring heavy metal test should be enacted, even when the pyroligneous liquid is used for non-medical purpose. On the other hand, further support for research and development should be followed to create new demand for the pyroligneous liquid and product development.

Researchers: Cheol-Su Chang and Hyun-Duk Seok
Research period: 2002. 10. - 2004. 10

A Study of Development and Use of Korean-Type Carbonization Apparatus for Logging Residues Utilization

This study is designed to develop and find practical application of a mobile carbonization apparatus, which is able to make wood charcoals and pyroligneous liquid at the logging field using lumbering debris. This will increase the efficiency of wood resource utilization and the mountainous household income, and contribute to activating forestation. The results of this study are as follows:

1) The target residues should be 7 to 20cm big in diameter. Total volume of residues generated from thinning and natural forest tendering recorded about 2,064 thousand ㎥ in 1999 and increased to about 4,447 thousand ㎥ in 2003. Only 5 percent of the volume, however, has been utilized in the last year.

2) High cost in collecting the residues scattered in forests has been the major obstacle of using them. In addition, residues are not used for various purposes, and the product markets have not been developed. The residues have been mainly utilized in making wood charcoals and pyroligneous liquid, which are environment-friendly inputs for agricultural products.

3) As of June 2003, 60 companies produced 14 thousand tons of wood charcoal and pyroligneous liquid respectively, and the production of each product is increasing 124 percent and 102 percent respectively each year.

4) Cylindrical type is the most proper mobile carbonization apparatus, in terms of handling capacity, carbonization time, quality of products, and assembling ability. As a three-step fold-up gear, the portable equipment weighs 400kg. The 2.0m (diameter) by 2.4m(height) carbonization equipment needs 1,500kg wood debris per batch. A forty-eight to fifty-two hours of carbonization produce 300kg of wood charcoal and 45 liters of pyroligneous liquid. The average life span of the apparatus is 5 years.

5) The yield of the investment against the equipment cost

is 52.9 percent when two apparatuses are used for 300 days, and 57.3 percent when three apparatuses are used for 300 days. These figures indicate that it takes 2 years and 1.8 years to recover the equipment cost for two and three apparatus, respectively.

6) To make practical application, government aid is necessary regarding apparatus purchase and residue collection. Timber harvest system should be mechanized to enhance the efficiency of collection, and the operation should be collectivized.

7) For the practical use of the apparatus, it is also required to build regional residues storages at such places as upper streams, environmental agriculture areas, and ecological mountain villages.

8) For subsidiary work and self-utilization, the aid from government is required. Since the wood charcoal and pyroligneous liquid produced by mobile apparatus have no qualitative differences from those produced by fixed carbonization equipment, it is necessary to devise and improve the quality certification system for the products used as environmental inputs for agricultural production.

Researchers: Cheol-Su Chang et al.
Research period: 2001. 8. - 2004. 8.

Monthly Outlook for Chestnut

The purpose of the monthly outlook for chestnut is to help farmers improve farm planning and marketing strategies by timely providing information on demand and supply trends, prices and short-term forecasts for vegetables whose prices are usually unstable. This information is also crucial to the central and regional governments when they set up plans to stabilize the chestnut market.

The major contents of the monthly chestnut outlook include intended and real planting acreage, growth status and yield, estimated production, import and export amount, price trend and forecast, and meteorological forecast.

The chestnut outlook report is published on the fifteenth day of each month and distributed to farmers and nationwide organizations such as forestry cooperatives, agricultural cooperatives, agricultural technology centers, and local governments.

Researcher: Cheol-Su Chang et al.
Research period: 2004. 1. - 2004. 12.

Monthly Outlook for Oak-mushroom

The purpose of publishing the monthly outlook for oak-mushroom is to help farmers improve their farm planning and marketing strategies by timely providing information on demand and supply trends, prices and short-term forecasts for oak-mushroom, whose prices are usually unstable. This information is also crucial to the central and regional governments when they set up plans to stabilize the oak-mushroom market.

The monthly oak-mushroom outlook includes such details as intended and real planting acreage, growth status and yield, estimated production, import and export amount, price trend, price forecast, and meteorological forecast.

The monthly outlook is published on the fifteenth day of each month and distributed to farmers and nationwide organizations such as forestry cooperatives, agricultural cooperatives, agricultural technology centers and local governments.

Researchers: Hyun-Duk Seok et al.
Research period: 2004. 1. - 2004. 12.

A Study of Introducing Crop Insurance System for Chestnuts

Crop insurance, one measure to overcome natural disasters, is a critical system in term of preserving farmer's income from accidents. Insurance system has been currently introduced for six agricultural products so far, including apples and pears. Chestnuts, however, have not been seriously discussed as an object of crop insurance until a series of typhoons struck the main production areas, causing severely reduction in yields.

The purpose of this study is to estimate standard yield table, appraise damage from disasters, prepare incentives for inducing producers to purchase the insurance policy, and suggest a program for application.

As for the demand of such kind of insurance, about 6~20 percent of chestnut farmers desired to purchase the insurance.

Standard yield tables vary by areas, and the yield and the age of chestnut trees have no significant relationship. The reason is that methods of plantation and caring are not standardized, and are different from region to region. To apply the standard yield tables to insurance business, it is required to improve the tables.

The appraisal system currently used for crop insurance could be directly applied for chestnuts. It is reasonable to entrust the Forestry Cooperatives with field investigation making the most of their experienced personnel.

It will take probably three years to introduce main crop insurance plan for chestnut. Preparation seems to require a year, and the application may need at least two years.

Researchers: Hyun-Duk Seok, Sang-Min Lee and Kyung-Taek Min
Research period: 2004. 6. - 2004. 12.

Policy Directions and Strategies of Shiitake Mushroom Industry in Korea

The purpose of this study is to examine production, distribution, back and forward support systems of the Shiitake mushroom (oak mushroom) industry in Korea, and to suggest some policy directions and strategies to strengthen its competitiveness.

The size of the Shiitake mushroom industry in Korea has greatly expanded over the last decade due to the demand surge for Shiitake mushroom in the domestic market, and the trend is expected to continue. However, the Korea Shiitake industry faces some challenges. The major challenges include increasing Shiitake import from China, low vitalities of Shiitake spawn, deficiencies of logs for Shiitake cultivation and increase of rural area labor cost.

The followings should be conducted to enhance the competitiveness of the Shiitake industry:

1) Introduction and expansion of sawdust cultivation technology;
2) Development of high-quality spawn;
3) Low-cost supply of logs;
4) Mechanization of cultivation facilities;
5) Economy of scale by motivating cooperation and vertical integration; and
6) Reforming distribution structures of Shiitake mushrooms.

Researcher: Hyun-Duk Seok et al.
Research period: 2004. 6. - 2004. 12.

An Analysis of Impact of WTO/DDA Negotiations on Forest Products

The World Trade Organization (WTO) has become the center of discussing trade and commerce related issues among member countries since the Doha Round. Each member country's strategic plans for economic development heavily depend on the tendency and results of the negotiations.

The purpose of this study is to minimize the negative effects of the WTO negotiations. To achieve the goal, it is required to have a full understanding of the discussions, to expect the results, analyze the effects, and to prepare schemes to deal with negative implications.

For analysis, several scenarios were applied to calculate tariff rates of forest products. The formula applied in UR agreements was more thoughtfully designed than Swiss formula for each tier in Agriculture negotiations. This offers sensitive products, such as chestnuts, pine nuts, and jujube, a certain degree of flexibility. For the wood products associated with non-Agricultural product negotiations, the negotiation group chairman suggested the modified Swiss formula, which scarcely reduces tariff rates than the original Swiss formula proposed by Canada, EC and the U.S. Korea has some price advantages in chestnuts and pine nuts during agriculture negotiations. There are several issues to be tackled in discussions, and the government agency of forest products doesn't have much interaction with international negotiation groups, but plays a key role in dealing with sensitive products in the domestic market.

Researcher: Hyun-Duk Seok, Cheol-Su Chang and Sang-Min Lee
Research period: 2004. 6. - 2004. 12.

Mid-Long Term Strategy for Increasing Forest Resources Sustainability

The purpose of this study is to design a strategy to increase forest resources based on the sustainable forest management (SFM), decentralization of power and encouragement of "participatory government," and to suggest a scheme to improve law and institutions. The sustainable forest management means that the current needs of society, economy, ecology and culture are met in harmony. At the same time, it should be ensured that the opportunities of future generations are unharmed by the acts done in the present. After UNCED of 1992, there have been many efforts made to achieve successful SFM, such as international government meetings based on Agenda 21, regional processes of SFM like Montreal process, and the actual process of forest certification in non-governmental circles. Korea, however, does not make full efforts to achieve success in SFM, and has a weak foundation to expand the forest resources in accordance with SFM.

As strategies to make forest resources sustainable, the study makes suggestions as follows: 1) increase ecologically sound and socio-economically sustainable forest resources; 2) build sustainable forest management system; 3) strengthen the conservation and management of forest ecosystem; 4) ensure the stability of regional society; 5) improve the law and institutions; and 5) actively participate in international meetings on forest resources.

To achieve these goals, the 3-step approach is required: first, lay down the foundation for sustainable forest resources management; second, apply and monitor SFM scheme; and lastly use forest resources with SFM. It is also necessary for residents and the public to participate in the move, to offer incentives to promote SFM, and to inform relevant information on SFM. All methods require legal and institutional supports as well.

Researcher: Hyun-Duk Seok, Sang-Min Lee and Cheol-Ho Shon
Research period: 2004. 8. - 2004. 12.

INFORMATION SERVICE 6

A Survey to Improve Nongmin Shinmun (Farmers Newspaper)

This survey aims to understand public opinion about Nongmin Shinmun (Farmers Newspaper), and to provide suggestions on the improvement in the editorial manners. Questionnaires were mailed to 1,500 local correspondents entrusted by the KREI, and 730 of them responded.

Six out of ten respondents have read the paper for more than 10 years(59.5%), and 75.8% responded that it had been of help to their farming and/or everyday lives.

"Provision of on-time information" has been counted as the most important part on which the newspaper needs to put more emphases, followed by the request for "report about items that will help increase income". On the other hand, readers feel most uncomfortable at the information about current price of agricultural products.

Through the survey, it is revealed that the readers have high expectancy toward the Nongmin Shinmun as a speedy and precise information provider. The study argues that the paper needs to reflect such expectancy on its editorial manners and its agricultural information program.

Researchers: Dong-Weon Kim and Heye-jin Park
Research period: 2004. 1 - 2004. 1.

7 RICE/DDA NEGOTIATION RESEARCH

Taiwan's Rice Market Opening and Implications

In the face of rice negotiations, it is very important to establish negotiation strategies to minimize negative impacts on rice farmers, related industries, and the Korea's rural economy. To prepare to obtain optimal results in negotiations, taking a look at the Taiwan's experience could be a good approach—as Taiwan has faced similar situations before.

The purpose of this study is to analyze the process of rice tariffication and changes in the domestic rice industry after rice market opening, the impacts of such rice market opening, rice import management and the changes in policy after tariffication. Such analyses may provide valuable information when Korea establishes strategies and countermeasures for rice negotiations.

Taiwan's tariffication gives us an informative lesson that the opening of the rice market serves as tariffication or MMA expansion. This process, with additional terms demanded by rice importers, will be a key influential factor on the Korea's domestic rice market and rice industry. Terms of the rice market opening include particular restrictions on the rice import management.

These restrictions are obstacles in making the domestic rice industry effective. Therefore, it is important to let the imported rice distributed in the domestic market. Based on the Taiwanese experience, we should secure measures, which allow us to take flexible measures on imported rice in the domestic market.

It is necessary to prepare countermeasures such as a Rice Import Relief System, which has been successfully implemented since the start of tariffication in Taiwan. This system gives rice farmers a sense of price stability when a sharp price decline prices may occur. In addition, it is necessary to take diverse measures for price stabilization, production restructuring and rice import management, and long-term measures to secure food security.

Researcher: Chung-Gil Chung and Hyun-Ju Lee
Research period: 2004. 8. - 2004. 9.

New Direction for TRQ System Improvement in Korea

The TRQ system emerged from the URAA as a new policy mechanism on tariffication and market access. In Korea, most of sensitive products are subject to the TRQ administration, such as state trading and auction.

The purpose of this study is to assess the problems and issues related to administering the large number of TRQs, by analyzing economic aspect of the TRQ system, and to propose the new directions to improve the TRQ system in Korea.

In Chapter 1, to find out market access administrative methods, the study employes available data and background papers published by WTO Secretariat and member countries's notifications regarding market access. In addition, the literatures on tariff quotas, which are primarily provided by international symposium and international agencies such as USDA and OECD, are used to perform the economic analysis of the TRQ system. In particular, economic theories and empirical results related to auction were utilized for the study.

In Chapter 2, the previous literature review is dealt with. In Chapter 3, the basic concept of TRQs is examined and current international situation of TRQ system is analyzed and compared by administrative methods and fill-rates, as well as countries. Some discussions at the agricultural negotiations of DDA are also analyzed in terms of future direction of agreements. In Chapter 4, the current TRQ system in Korea is reviewed, and in Chapter 5, the basic economics of TRQs is discussed along with inefficiencies that can be generated from alternative quota administration methods. Chapter 6 provides a new direction for the efficient TRQ system in Korea.

When considering import and tariff quota adminstration, efficiency and equality are the basic criteria to meet. Market-oriented methods such as auction is better than discretionary methods, such as state trading, in terms of efficiency. When choosing administrative methods on TRQs, the

characteristics of commodities, such as domestic supply and demand conditions, homogeneity between local goods and imported goods, the number of importing and exporting agencies, and the possibility of trade debate with interesting parties, should be taken into account.

In case of rice, if private import and state-trading are not allowed, double auction system, which is similar to current Japanese TRQ system for rice, could be adopted as the best mechanism in Korea, since it could stabilize the rice market and complies with the WTO rules. When it comes to soy beans and corns, whose domestic demands are mostly met by imported goods, the current method is appropriate, but it should be properly adjusted to encourage fair competition in the domestic market.

Researchers: Jin Kyo Suh et al.
Research period: 2003. 7. - 2004. 7.

196

China's Production of Japonica Type Rice and the Export Potential

The purpose of this study is to find out the state of rice production and exports in China, especially Japonica type rice, which is expected to make a huge impact on the rice industry in Korea, if it is imported. The study is also aimed at providing fundamental materials and informative data in setting up the rice policies in preparation for future opening of the domestic rice market.

As a main grain production area, the northeast region of China has proper conditions to produce Japonica type rice. Japonica rice produced in that area is regarded as the most competitive in the international market in terms of price and quality. It has a stronger price competitiveness than the rice of the US and Australia, which are the main rice exporters. Furthermore, recently-introduced policies by the Chinese government, such as agricultural tax cut and further mechanization, have reduced production costs further. Besides, the Japonica type rice produced in the China's northeast, has strong competitiveness in quality through the application of enhanced production and processing technology.

Recently, the Chinese government has made efforts to strengthen the domestic rice supply by supporting grain transportation from the northeast to main cities in the central and southern area. Even though the northeast area has the great production potential of Japonica type rice, currently it is unable to satisfy the increasing domestic demands. In this regard, there is a little possibility that China will export the rice in the near future.

Researcher:
Research period:

Strategy Suggestion for Korea in the WTO Rice Negotiations

The main purpose of this study is to review issues related to the 2004 Rice Negotiation under the WTO and to propose efficient strategies for Korea in the upcoming negotiations.

This study examines the URAA and associated WTO rules, including Article 28 of GATT, and tries to understand its implications for the Korea's negotiation strategies. Furthermore, current situations and prospects of the rice industry in major rice exporting countries, for example, China, the U.S., Thailand, and Australia, are examined, and their potential responses in the upcoming negotiation are predicted. Finally, the expected quantity of imported rice is simulated, based on econo-metric and probability approaches.

Main results of the study are as follows: An expected quantity of imported rice in 2014 under the rice tariffication would be equivalent to 6.3~6.4% of MMA. However, the probability that actual imports exceed the expected amount is 50 percent. In order to reduce the probability of such import surge, the increase of MMA (to 7.1~7.5%) can be a proper solution to strike a balance between rice tariffication and the current quota system. However, the delay of rice tariffication can be a good choice in Korea, since it is considered to switch from the current quota system to tariffication during the grace period of 10 years. In that case, an expected import quantity is estimated to be equivalent to 6.5~6.6% of MMA. Therefore, if Korean government wants to reduce the probability of import surge, it needs to stick to the current quota system and then gradually switch to tariffication. Under this scenario, it has to pay additional cost equivalent to 0.1% of MMA (about 10,000 matric ton) each year. Meanwhile, the probability that a rice import exceeds 8% of MMA would never materialize.

Finally, the study emphasizes that Korea should utilize the option of tariffication properly in order to pay a minimum cost for maintaining the current quota system in the bilateral rice

negotiations, particularly with the U.S.

Researchers: Jin-Kyo Suh et al.
Research period: 2003. 12. - 2004. 12.

A Comprehensive Study on the Korea's Rice Negotiations under the WTO

The purpose of this study is to assess the problems and issues related to the 2004 Rice Negotiation of Korea in the WTO and to propose efficient strategies for future negotiations.

This makes the study differentiated from other previous studies of similar kind in the following respects: First, the study reflects implications of a micro-production cost analysis, which is based on the original cross-sectional data sets of rice production costs of 3,000 farm households. Second, the study also reflects analysis on demand for imported rice based on the rice taste test for Korean consumers. Third, an international rice demand-supply model is set up, and simulation results are included in reviewing final strategies for Korea. Finally, because of the uncertainty over future international rice price, exchange rates, reduction rate of the rice tariff, and the expansion rates of rice TRQ under tariffication scenario of Korean rice, a distributional approach is utilized based on the probability theories.

Major findings of the study are as follows: Expected import quantity in 2014 under the tariffication scenario amounts to MMA 6.3~6.4 percent. However, the probability that actual imports exceed the expected values is 50 percent. In order to reduce the probability of such import surge, MMA 7.1~7.5 percent is an equilibrium point between tariffication and current quota system. However, delay of rice tariffication will do good to Korea, since it can opt to switch from quota system to tariffication during the 10-year grace period. In this case, an expected import quantity is estimated to be MMA 6.5~6.6 percent. Therefore, if the Korean government wants to reduce the probability of import surge, it needs to select the current quota system to get the switch opportunity. In this case, Korea has to pay additional cost of MMA 0.1 percent (about 10,000 tons) each year. Instead, a probability that a rice import exceeds MMA 8 percent is very low.

Researchers: Jung-Hwan Lee et al.

Research period: 2003. 12. - 2004. 12.

200

Production and Export Potential of Japonica Rice in China

The purpose of this study is to find out the state of rice production and export in China, especially Japonica type rice, which is expected to make a huge impact on the rice industry in Korea. It is also aimed to provide fundamental materials and informative data to set up rice policies for future opening of rice market.

As a main grain production base, the northeastern part of China is a proper place to produce Japonica type rice. Japonica rice produced in that area is ranked first in terms of international competitiveness. It has the stronger price competitiveness than the rice produced by the U.S. and Australia, which are the main exporters of Japonica rice. Furthermore, recently made policies by Chinese government, such as cutting agricultural tax and pursuit for mechanization, have reduced production cost. Besides, Japonica type rice produced in the northeastern part of China has strong competitiveness in price and quality through enhancing technology of production and processing.

Recently, Chinese government made efforts to strengthen domestic rice supply and demand by supporting transportation of grain from the northeastern area to main cities in the central and southern areas. Even though the northeastern area has great production potential to produce Japonica type rice, the domestic demand increases at a fast speed. Therefore, China has a limited potential to export the rice.

Researcher: Chung-Gil Chung
Research period: 2003. 12. - 2004. 12.

FTA RESEARCH 8

Effects of Northeast Asian Economic Cooperation on Korean Agriculture

The FTA between China, Japan and Korea (CJK FTA) would be a great opportunity and a challenge to the Korean agriculture at the same time. When the FTA becomes effective, Korean farmers will face full competition without regulatory protection against imported products, such as tariff and non-tariff barriers. The possibility worries Korean farmers, since it has been known that Chinese agricultural products have comparative advantages.

China, Japan and Korea constitute the core of Northeast Asia and are sharing some common characteristics in terms of farming, such as small-scale farming and production of similar types of agricultural products, so that they have to compete each other. At the same time, however, factor endowment ratios differ among them, so that they are also in complementary relations. For example, land productivity is highest in Korea, while labor productivity is higher in Japan than other two countries. China commands highest capital productivity in agriculture. These facts imply that there is a possibility of intra-industry trade among the three countries through cooperative specializations in the agricultural sector.

The CJK FTA would reduce the total agricultural income in Korea. According to the scenario on rice tariffication and its exclusion from the FTA, the agricultural income would drop by 39% by 2014. It shows that the agricultural income of Korean farmers will get the smallest when rice tariffication is deferred and rice is excluded from FTA. To the contrary, the agricultural income may fall greatly if rice is tariffed and also included in the FTA. But, the simulation shows that the effects of FTA are almost same regardless of rice tariffication, as long as rice is excluded from the FTA. This result conveys an important policy indication that rice should be excluded from the CJK FTA in order to prevent agricultural income plunge.

Measured potential bilateral trade(PBT) also suggests that the CJK FTA may expand agricultural trade among the three

countries. Korean agricultural import from Japan is expected to increase by 240 percent or 720 million dollars, while export will increase by 90 percent or 580 million dollars due to the CJK FTA. On the other hand, Korean agricultural import from China is expected to increase by 92 percent or 1.9 billion dollars, while the export to China is estimated to rise by 180 percent or 460 million dollars. As a result, in the agricultural trade with Japan, Korea is expected to lose its surplus by 140 million dollars while, in the trade with China, Korea is projected to expand its deficit by 1.4 billion dollars.

Effects of the CJK FTA on production and prices of other agricultural products appear to differ in accordance with their relations with rice. Pork has almost no impact from the FTA and rice tariffication. Production and prices of beef and chicken, however, are expected to fall due to the CJK FTA.

Qualitative analyses of agricultural competitiveness shows that most Chinese products have absolute advantages in price but not in quality. Considering various conditions of agricultural production in China, such as water supply, land systems, labor productivity and access to consumers in cities, the comparative advantage of Chinese agriculture might be faced with some limitations in the near future. With the growing interests in food safety and higher quality, Korean farmers should also diversify their production and develop niche markets for higher value-added products, such as clean and organic food and environmental friendly products.

Researchers: Myong-Keun Eor et al.
Research period: 2004. 1. - 2004. 12.

Preparation for Korea-Japan FTA Negotiations on Agriculture

The objective of this study is to provide information and make suggestions for the Korean government regarding strategies for Korea-Japan FTA negotiations and to list up requests. This study compares agricultural structural changes, trade structures, tariffs, and agricultural competitiveness of Korea and Japan. This study also classifies sensitive commodities of both Korea and Japan based on the analysis of impacts of FTA on agricultural competitiveness. Finally, it makes suggestions and proposes strategies for the Korea-Japan FTA negotiations.

According to the analysis, Korea maintains competitive edges in agriculture against Japan thanks to favourable structural changes in the agricultural sector. Korea has solid price competitiveness for most agricultural products except for some commodities such as apples, pears, green tea, and special parts of meat.

In negotiations, Korea should stress the following arguments: comprehensive approach including all agricultural products, request for wider market opening including the products imposed with high tariffs, trade volume increase, elimination or harmonization of non-tariff barriers, consideration of sensitive commodities to Korea, elimination of price difference duties and specific duties, and market opening for processed foods in consideration of high tariffs and significant size of potential trade.

Researcher: Sei-Kyun Choi and Joo-Nyung Heo
Research period: 2004. 8. - 2004. 12.

A Basic Study on ASEAN Agricultural Sector in Connection With the Upcoming FTA Negotiations between Korea and ASEAN

The purpose of this study is to take a look at the agricultural sector of the Association of Southeast Asian Nations or ASEAN before the negotiations regarding the Free Trade Agreement (FTA) will commence between Korea and ASEAN in early 2005. This study consists of nine Chapters: Introduction, Development of ASEAN, ASEAN's FTA negotiations with Non-ASEAN Countries, Economic Trends of ASEAN Countries, Agricultural Situations, Agricultural Trade, Tariff System applied to Agricultural Products, and Conclusion.

ASEAN is on track to create a free trade zone within ASEAN through the ASEAN Free Trade Area (AFTA) scheme. Under AFTA, the Common Effective Preferential Tariff (CEPT) will be applied to all member states. Most tariffs will be eliminated or reduced by 2010 in six ASEAN members (Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand). The tariff rates applied to recently joined ASEAN Member States will be eliminated by 2015. ASEAN members can opt to exclude some products from the CEPT in one of the three following cases: i) Temporary exclusions; ii) Sensitive agricultural products, and iii) General exceptions.

ASEAN has signed an FTA with China in November 2004. According to the FTA, most tariffs will be reduced or eliminated by 2010 in six ASEAN countries and by 2015 in the newer Member States. To accelerate the FTA negotiation, China offered the Early Harvest Programme under which tariffs for some agricultural products will be reduced to 0% before January 1, 2006 in six ASEAN countries and before January 1, 2010 in the newer ASEAN Member States. Currently, ASEAN is also in talks with India, Japan, and Korea respectively regarding the signing of an FTA.

Some Korean agricultural products will be affected by the FTA with ASEAN if it is entered into. Among grains, rice and

cassava will be negatively affected by the FTA due to cheap imports from ASEAN countries, including Thailand and Vietnam. Korean domestic fruits consumption would be decreased to some degree as the tropical fruits including banana, pineapple, and mango will be imported from ASEAN. In addition to this, peppers and onions, which are sensitive products, will be negatively affected by the FTA with ASEAN as well.

Further study will be needed to make more accurate assessment on the effects of the FTA between Korea and ASEAN, and draw up domestic strategies to deal with such negative consequences. Next time, it is necessary to put a more focus on sensitive agricultural products.

Researchers: Oh-Bok Kwon, Sei-Kyun Choi and Joo-Nyung Heo
Research period: 2004. 6. - 2004. 12.

White Paper on Korea-Chile Free Trade Agreement

The objective of this study is to provide a better understanding of the Korea-Chile Free Trade Agreement (FTA) executed in April 2004 and to offer a useful reference for future FTA talks with other countries. For this purpose, the negotiation processes, ratification procedures, and counter-plans of the Korea-Chile FTA will be described.

To facilitate the analysis, an advisory committee was organized to choose the detailed subjects that would be addressed in each main topic area. During the research, all official documents associated with the Korean-Chile FTA were collected, and statistics analysis was implemented.

A few agencies under the Ministry of Foreign Affairs and Trade and the Ministry of Agriculture and Forestry that took part in negotiations, also participated in the writing and editorial supervision for this study.

This White Paper consists of four sections. Section 1 presents the background, objectives and importances of the Korean-Chile FTA. Section 2 describes comprehensive processes and progresses of the Korean-Chile FTA. Section 3 provides a full detail of the Korean-Chile FTA. Finally, Section 4 outlines domestic counter-plans and perspectives from all spheres of social activities, and implications of the Korean-Chile FTA.

Researchers: Sei-Kyun Choi et al.
Research epriod: 2004. 6. - 2004. 10.

Effects of FTA between Korea and EFTA on Agricultural Sector

Korea will launch formal negotiations on FTA with European Free Trade Association(EFTA) in 2005. Simultaneously, it will carry out joint studies and working-level consultations with ASEAN, Mexico, Canada, India, and MERCOSUR throughout 2005.

EFTA, consisted of 4 non-EU member states, such as Switzerland, Norway, Iceland and Liechtenstein, emphasizes the importance of multi-functionality of agriculture. It also maintains the open market policy in spite of its low level of agricultural competitiveness.

The trade relations of EFTA are mainly based on the EFTA Convention, which stipulates internal trade relations among member states; EEA, which is related to trade with EU; and a variety of FTAs, which represent trade relations with the other countries. EFTA has signed the FTA agreements with 20 countries, but due to the EU expansion, the number has been reduced to 13.

Switzerland, one of EFTA member states, has high self-sufficiency ratios in staple commodities. The self-sufficiency ratios of milk and dairy products are almost 100 percent and that of meat is more than 80 percent. Switzerland has maintained balances and diversity in agriculture with high level of self-sufficiency ratios in various agricultural commodities. Norway also has achieved self-sufficiency in most agricultural products except fruits. Its self-sufficiency ratios of meat and milk are almost 100 percent and that of grain is over 50 percent. The stable demand and supply of agricultural products of EFTA member states is attributed to various policies for maintaining multi-functionality of agriculture based on the consensus on the role of agriculture.

In order to prospect mutual agricultural trade relations and production structure after an FTA is signed between Korea and EFTA, Revealed Comparative Advantage (RCA) and trade

specialization index(TSI) were used in this study. As a result, it has found that Korea has comparative advantage in pears, tomatoes, mushrooms, crackers and pastries, while EFTA has comparative advantage in cheese, chocolate products and sugar confectionery. If tariff is abolished thanks to FTA between Korea and EFTA, agricultural imports from Switzerland are estimated to increase by 10 percent and those from Norway by 17 percent. Agricultural exports to Norway are forecast to increase by 20 percent, while those to Switzerland remain almost constant. In general, the effects of FTA between Korea and EFTA on agricultural trade will not be expected to be enormous.

EFTA pursues an FTA through concession proposal for processed agricultural products, under HS code 25~97, in the main negotiation, while it prepares concession proposal for basic agricultural products, under HS code 1~24, in the bilateral agricultural agreements with individual partner countries. Switzerland has a low concession rate for meats, plant oil and animal fats, and excludes animal products, grain, grain powder and vegetable oil seed from concession items, while tariffs on such items still remain high. Because of the bilateral agreements with EU, these items have been excluded from tariff reduction. Norway also didn't agree that grain, grain powder, meat and dairy products are affected by the agreement with EEA. It is imposing high specific duties on feed and other materials for feed and its additives, plants and animal fat.

Despite small differences between member countries, EFTA tends to reduce concession rates or refrain from tariff elimination for necessary products, which play important roles on food security of each country and have multi-functionality. Korea should take a similar position for FTA as EFTA, since it has low agricultural competitiveness. Thus, Korea needs to review the concession strategies and experiences of EFTA when drawing up FTA policies.

Researchers: Myong-Keun Eor , Oh-Bok Kwon and Hyun-Ju Lee
Research period: 2004. 8. - 2004. 12.

AGRICULTURAL POLICY MEASURES RESEARCH 9

A Study on Integrated Agriculture & Rural Policy Measures

The main objective of this study is to explore effective and efficient agricultural policies to protect agriculture, rural areas, and farms, under the DDA market liberalization and the 2004 rice negotiations. Recently the Korean agricultural sector has been readjusted and transformed substantially to keep up with the pace of growth and changes in the international agricultural commodity markets.

Therefore, this study is designed to suggest the agricultural policy direction under the current Participatory government with an aim to better implement the 'Integrated Agriculture & Rural Policy (Feb. 23. 2004)'.

As a precondition for successful policy implementation, reasonable agricultural policy should be devised. When working out and implementing reasonable agricultural policy, the directions and the areas of trade agreement should be considered. The policy should be based on long-term perspective, and each issue should be taken into account in depth.

This study provides information regarding agricultural policies and activities of the Commission on Agriculture, Fishery and Rural Policies; introduces diverse opinions regarding agriculture; and describes ways to accelerate rural development and improve the environment. Based on these analytic results, several significant policy implications are identified, and the policies for structural readjustment of Korean agriculture are suggested. Considering all, the government should make endeavors to explore new policies, establish efficient agricultural systems and invest to achieve technological development in agriculture.

Researchers: Jeong-Ho Kim et al.
Research period: 2004. 5. - 2004. 12.

SPECIAL RESEARCH 10

Current Situation and Prospects of the New Zealand's Horticultural Industry

New Zealand has traditionally focused on livestock farming, since it has wide pastures. However, its production of horticultural products, such as fruits, vegetables and flowers, is rapidly increasing these days. New Zealand's horticultural industry is earning approximately NZ$4 billon in revenue each year. The revenue is mainly generated from exporting kiwifruits, pipfruits, wine and vegetables. The volume of horticultural export has grown from NZ$200 million to more than NZ$2.1 billion over the past 20 years. Likewise, the horticultural industry makes a significant contribution to the national economy both through export and attracting tourists who desire to taste exotic produces of the country.

In the agricultural sector, New Zealand has complementary and competitive relationships with Korea. Since the two countries have different climates, they can complement each other. For instance, Korea imports fruits, such as kiwifruits and grapes from New Zealand, when Korea is in the off-fruit season. However, in the Japanese market, New Zealand and Korea are competing each other in selling fresh vegetables and flowers.

Horticulture accounts for an increasing portion of the agricultural industry in Korea. In the context, Korea is working on the policy to boost horticultural export. In order to develop the Korean horticultural industry further, it is necessary to grasp the current situation of the New Zealand's horticultural industry. Plus, Korea and New Zealand need to build cooperative relationships, such as exchange of information, to jointly deal with the Japanese market.

This study aims to understand the current situation of the New Zealand's horticultural industry in terms of production, marketing and trade, and to explore potential areas of cooperation between the two countries in the horticultural industry.

Researcher: Hyun-Tae Park

Research period: 2004. 1. - 2004. 8.

The Status and Prospects of Orange/Grape Industries in the United States

Orange Imports have rapidly expanded in Korea since she joined WTO in 1995. As total volume of orange import goes above a hundred thousand ton, imported oranges make a significant impact on fruit market in Korea. Most of orange imports come from the United States. And the volume of grapes import from the United States stand next to that from the Chile, whose marketing season is similar to that of Korea. Therefore it is very important to investigate the situation of the fruit industry in the United States in order to prospect the future of imports of oranges and grapes from the States.

This study aims to grasp a long-term supply and demand trend of oranges and grapes in the United States, and investigate their change factors.

Researcher: Yong-Sun Lee
Research period: 2003. 4. - 2004. 1.

The Korean and Australian Beef Markets and Prospects for Trade

Korea and Australia play important roles in international markets, particularly in the Pacific Rim beef trade. Bilateral trade, with Korea as a major importer and Australia as a major exporter, has became increasingly important. A better understanding of each country's beef industry is likely to be useful to an appreciation of how the trade may develop in the future.

Beef supply and demand

Korean beef cattle production declined rapidly following the 1997 financial crisis. The financial crisis also affected consumer incomes, resulting in decreased Korean beef consumption. Uncertainty about the future market situation in Korea following full market liberalisation since 2001 contributed to some farmers abandoning beef cattle production.

As Korean supply declined, beef imports rose between 1998 and 2002. In 2002, with improving economic conditions, beef consumption recovered strongly. The volume of beef imported rose 76 per cent in 2002 to a record 292tonnes. The rapid reduction in the domestic beef cattle herd over the five years to 2002, combined with the strengthening of consumer demand for beef over the period, meant that domestic beef prices and, hence feeder calf prices rose sharply.

Beef production in 2004 is forecast to rise by 8.6 per cent and is projected to continue rising slowly over the next several years. Following the discovery of a single case of BSE in the United States and subsequent ban on imports of US beef, the volume of beef imports in 2004 is forecast to be 150,000 tonnes, half the volume of 2003.

The 2002-03 (July-June) drought resulted in a significant cut to the Australian cattle herd. As seasonal conditions improve and pasture availability increases, producer efforts to rebuild herds will limit beef production in the short term. It is likely take several years before cattle numbers recover to pre-drought levels.

The discovery of BSE in the United States is expected to have short-lived impacts in Australia's major export markets of Japan and the United States. With limited opportunities for further growth in Australian domestic demand and increasing production of beef and veal over the medium term, Australia's dependence on export markets will continue to increase.

Australian weighted average saleyard prices are estimated to average close to 290 cents per kilogram dressed weight in 2003-04 (July-June), up 13 per cent on the previous year. In 2004-05, saleyard prices are forecast to average 5 per cent lower at around 275 cents per kilogram (dressed weight equivalent) as restocker demand subsides.

Exports to Korea for 2003-04 are estimated to be 68 000 tonnes, down 17 per cent on the previous year due to lower Australian production and stronger demand from other export markets. These factors will again affect exports in 2004-05with exports to Korea forecast to recover only 6 per cent to 72 000 tonnes. Increases in exports to Korea as a result of the ban on US beef is likely to be more modest than the increases in shipments to Japan as exporters focus their attention on the Japanese market.

Beef cattle production and distribution

The contribution of livestock production to the total value of agricultural production in Korea increased from 23 per cent in 1995 to 25.6 per cent in 2001. In contrast to the broader picture, after the Asian financial crisis, the value of Korean native cattle (Hanwoo) production declined from 30.5 per cent of total livestock value in 1997 to only 20.5 per cent in 2001. The number of farms carrying Korean native cattle more than halved over the seven years to 2002 from 520 000 in 1995 to 212 000 in 2002 while the total number of cattle fell over the same period. After reaching a peak of 2.8 million in 1996, the number of cattle halved to 1.4 million in 2002.

The proportion of cattle auctioned declined from 1990, but rose in 2000 and 2001. The proportion of stock that went through wholesale markets in 2001 was 32.2 per cent of cattle. The reason that the number increased recently was that beef prices offered by bidders rose because of reduced supplies.

The number of beef retail shops increased from 16 296 in 1980 to 52 000 in 1997. But after the 1997-98 financial crisis, the number of beef retail shops decreased to 48 315 by 2000. The system of separating domestic and imported sales was abolished in 2001, as agreed under the Uruguay Round Agreement on Agriculture. Previously, imported beef shops handled only imported beef, including in beef corners of department stores and discount stores. After 2001 all retail stores were permitted to sell domestic and imported beef simultaneously.

The Australian livestock sector is one of the most important in the rural economy. The beef cattle and sheep industries contribute close to 40 per cent of the gross value of all agricultural production with the gross value of livestock turned off for slaughter (cattle, calves, sheep and lambs) or live export and the gross value of wool production together amounting to over $11.9 billion in 2002-03. As at June 2002, there were around 70 000 farming establishments running beef cattle in Australia. The number of cattle on these farms was 24.7 million.

Sale by auction remains the most method used to sell beef cattle. But the proportion of beef cattle sold per farm through the auction system has declined over the long term dropping from as high as 51 per cent in 1996-97 to as low as 42 per cent in 2001-02. Large producers are more likely to sell over the hooks. Smaller producers, often with limited quality control systems prefer liveweight and saleyard selling systems.

Fresh beef in Australia is sold through major supermarket chains and butcher shops. Of the beef marketed domestically, 68 per cent is marketed through the retail sector, 27 per cent is marketed through the food service sector. The remaining 5 per cent is marketed to the processing sector to be further transformed into other food products. Supermarkets account for 64 per cent of all retail sales of beef. Butcher shops account for 29 per cent of retail sales and 7 per cent of beef sales are retailed through other outlets.

Beef trade and prospect

Australia exports beef to over 100 countries with Japan and the United States being the dominant markets. Together, these two

countries accounted for 76 per cent of exports in 2003. South Korea is Australia's third most important market to which 62 000 tonnes of beef (shipped weight) were exported in calendar 2003. In recent years more and more of Australia's beef production has been exported. In 1999 64 per cent of Australia's beef production was exported and in 2001 exports increased further to around 68 per cent of Australian beef and veal production. In 2003 the export share fell to around 64 per cent.

The Australian live cattle export trade is the largest in the world. In 2003 Australia exported around 684,000 slaughter cattle. Indonesia was by far the major market, accounting for 55 per cent of total trade. As to the future potential for trade in Australian live cattle to Korea for fattening, with an exchange rate of 900 Won per Australian dollar, and an Australian live cattle price of over A$1.70 per kg live weight, Korean native cattle fattening would have been more profitable than the fattening of imported live cattle.

Economic factors important to the future development of the trade in both beef and live cattle from Australia to Korea will include developments in beef supply and demand in each country, exchange rate movements, and trade barriers.

In the case of live cattle, it seems that variability in exchange rates and live cattle prices in Australia have potential to greatly affect the profitability of Korean fatteners of imported live cattle. Nevertheless, there is probably scope for at least a small trade of this kind to develop. One possibility for live trade is the development of a trade in native Hanwoo cattle from Australia to Korea. This would necessitate the introduction of Hanwoo cattle into Australia to form a breeding base.

Trade in beef to Korea will be assisted by further reductions in the tariff on imports, and by Australian producers turning off more beef specifically aimed at meeting the needs of the Korean market. One perceived advantage for Australian beef in the Korean market may be its 'clean-green' image. Presumably, part of any marketing strategy in the Korean market will involve the highlighting of this particular attribute of Australian beef.

In terms of future development, it seems likely that mutual dependence of Australia and Korea in the area of beef supply,

demand and trade will grow over time. Although there may be some scope for development of trade in live animals from Australia to Korea, it seems likely that the backbone of the trading relationship will remain in meat. Further reductions in trade barriers in Korea and increased Australian production of beef aligned to Korean specifications will be important to the further development of that trade.

Researchers: Min-Kook Jung
Research period: 2003. 9. - 2004. 7.

U.S. Food Aid Programs

This study takes a look at the food aid program of the United States with an aim to offer the relevant information that Korean policy makers in charge of North Korean aid can refer to.

The South Korean government has provided food aids to North Korea since 1995. There is no doubt that the food aid to the North by South Korea has helped the North a lot in alleviating the food crisis. Therefore, it can be thought that the humanitarian goal of the assistance has been achieved.

However, it did not achieve a strategic goal of promoting North Korean agricultural development or mutual agricultural cooperation between the two countries mainly due to the lack of fundamental strategy and consistent implementation of the programs regarding food donation.

The South Korean government has to establish firm principles related to the food aid to the North in order to attain the strategic goal. To lay down the groundwork, the government needs to study food aid programs of advanced countries. In a related move, this paper thoroughly studied U.S. food aid programs, and presents a summary of the programs. The United States has donated a large amount of food aids, and has implemented appropriate strategies and institutions necessary to conduct the food donation. Moreover, the United States has many technical measures, which are linked to economic development of developing countries. This study will also furnish useful information related to these.

Main contents of this study are as follows: first, it introduces the U.S. Public Law 480, which defines food aid programs. Second, it compares the structures and goals of the various food aid programs of the United States. Lastly, it makes suggestions on desirable food aid programs to Korean policy makers.

Researcher: Young-Hoon Kim
Research period: 2004. 7. - 2004. 12.

LIST OF RESEARCHERS 11

Agribusiness Research Center (ARC)
Rural Development Research Center (RDRC)
Agricultural Outlook and Information Center (AOIC)
Agricultural Policy Research Center (APRC)
Division of Forest Policy Research (DFPR)
Division for Supporting Research Center (DSRC)

Chang, Cheoll-Su (DFPR), cschang@krei.re.kr
Chang, Jae-Bong (AOIC), jbchang@krei.re.kr
Cho, Myung-Ki (ARC), chomk@krei.re.kr
Cho, Tae-Hee (DSRC), chotaehe@krei.re.kr
Choi, Ji-Hyeon (ARC), jihchoi@krei.re.kr
Choi, Jung-Sup (APRC), jsupchoi@krei.re.kr
Choi, Kyeong-Hwan (RDRC), kyeong@krei.re.kr
Choi, Sei-Kyun (APRC), skchoi@krei.re.kr
Chong, Ho-Gun (RDRC), hogunc@krei.re.kr
Chung, Chung-Gil (APRC), cgchung@krei.re.kr
Chung, Ki-Hwan (RDRC), kwchung@krei.re.kr

Eor, Myong-keun (APRC), myongeor@krei.re.kr

Han, Keun-Soo (DSRC), rainmker@krei.re.kr
Han, Suk-Ho (AOIC), shohan@krei.re.kr
Heo, Jang (DSRC), heojang@krei.re.kr
Heo, Joo-Nyung (APRC), knuhjn@krei.re.kr
Hong, Seung-Jee (AOIC), hseungj@krei.re.kr
Huh, Duk (ARC), huhduk@krei.re.kr
Huh, Gill-Haeng (Vice-President), ghhuh@krei.re.kr
Hwang, Eui-Sik (APRC), eshwang@krei.re.kr

Jeon, Chang-Gon (ARC), cgjeon@krei.re.kr
Jeong, Hak-Kyun (AOIC), hak8247@krei.re.kr
Jeong, Min-Kook (AOIC), mkjeong@krei.re.kr
Ji, In-Bae (APRC), jiinbae@krei.re.kr
Jo, Sung-Yeol (APRC), itschosy@krei.re.kr
Joe, Kyung-Chool (APRC), starbirth@krei.re.kr
Joung, Myoung-Chae (RDRC), joungmc@krei.re.kr
Jung, In-Geol (DSRC), igjung@krei.re.kr

Kang, Chang-Yong (ARC), cykang@krei.re.kr
Kang, Hye-Jung (APRC), kang@krei.re.kr
Kim, Bae-Sung (APRC), bbskim@krei.re.kr
Kim, Byung-Yool (ARC), brkim@krei.re.kr
Kim, Chang-Gil (ARC), changgil@krei.re.kr
Kim, Chul-Min (ARC), cmkim@krei.re.kr
Kim, Dong-Weon (DSRC), dongwon@krei.re.kr
Kim, Hong-Sang (RDRC), hskim@krei.re.kr
Kim, Hong-Won (DSRC), andrew@krei.re.kr
Kim, Hye-Young (ARC), hykim@krei.re.kr
Kim, Jae-Hwan (AOIC), jhkim74@krei.re.kr
Kim, Jeong-Ho (APRC), jhkim@krei.re.kr
Kim, Kyeong-Duk (RDRC), kdkim@krei.re.kr
Kim, Kyung-Phil (AOIC), kkphil@krei.re.kr
Kim, Min-Jeong (ARC), glory21@krei.re.kr
Kim, Myung-Hwan (ARC), kimkim@krei.re.kr
Kim, Sang-Hyun (APRC), ksh3615@krei.re.kr
Kim, Seong-Woo (AOIC), swookim@krei.re.kr
Kim, Soo-Seok (RDRC), soosuk@krei.re.kr
Kim, Tae-Gon (APRC), taegon@krei.re.kr
Kim, Tae-Young (ARC), tykim@krei.re.kr
Kim, Yean-Jung (ARC), yjkim@krei.re.kr
Kim, Yong-Taek (APRC), yongkim@krei.re.kr
Kim, Young-Hoon (APRC), kyhoon@krei.re.kr
Kim, Young-Saing (RDRC), yk281@krei.re.kr
Ko, Wook (RDRC), wko@krei.re.kr
Kwon, Oh-Bok (APRC), obkwon@krei.re.kr
Kwon, Tae-Jin (APRC), kwontj@krei.re.kr

Lee, Byoung-Hoon (APRC), shopper@krei.re.kr
Lee, Dong-Phil (RDRC), idphil@krei.re.kr
Lee, Gyu-Cheon (DSRC), gclee@krei.re.kr
Lee, Hyun-Joo (APRC), hjlee@krei.re.kr
Lee, Hyung-Woo (AOIC), lhw0906@krei.re.kr
Lee, Jae-Ok (APRC), jaeoklee@krei.re.kr
Lee, Jung-Hwan (President) belmont@krei.re.kr
Lee, Kye-Im (ARC), lkilki@krei.re.kr
Lee, Sang-Min (DFPR), smlee@krei.re.kr

Lee, Won-Jin (AOIC), wjlee@krei.re.kr
Lee, Yong-Sun (AOIC), yslee@krei.re.kr
Lim, So-Yeong (APRC), lsyjr@krei.re.kr
Lim, Song-Soo (APRC), songsoo@krei.re.kr
Lim, Sung-Jin (ARC), eigenjin@krei.re.kr

Ma, Sang-Jin (RDRC), msj@krei.re.kr
Min, Kyung-Taek (DFPR), minkt@krei.re.kr
Moon, Han-Pil (APRC), hanpil@krei.re.kr

Oh, Nae-Won (RDRC), naewonoh@krei.re.kr
Oh, Se-Ik (AOIC), seikoh@krei.re.kr

Park, Dae-Shik (RDRC), pds8382@krei.re.kr
Park, Dong-Gyu (ARC), dgpark@krei.re.kr
Park, Hyun-Tae (ARC), htpark@krei.re.kr
Park, Jae-Hong (AOIC), jhpark@krei.re.kr
Park, Joon-Kee (APRC), jkpark@krei.re.kr
Park, Ju-Young (RDRC), jypark@krei.re.kr
Park, Kyong-Cheol (RDRC), kcpark@krei.re.kr
Park, Mi-Sung (AOIC), mspark@krei.re.kr
Park, Moon-Ho (ARC), mhpark@krei.re.kr
Park, Seok-Doo (RDRC), sdpark@krei.re.kr
Park, Seong-Jae (DSRC), seongjae@krei.re.kr
Park, Shi-Hyun (RDRC), shpark@krei.re.kr

Ryu, Seung-Woo (RDRC), sewryu@krei.re.kr

Seo, Seong-Cheon (ARC), sseo@krei.re.kr
Seok, Hyun-Duk (DFPR), hdseok@krei.re.kr
Seong, Joo-In (RDRC), jiseong@krei.re.kr
Shim, Jae-Man (RDRC), jmshim@krei.re.kr
Shin, Eun-Jung (RDRC), ejshin@krei.re.kr
Shin, Yong-Kwang (ARC), ykshin22@krei.re.kr
Shon, Cheol-Ho (DFPR), shon9@krei.re.kr
Sim, Song-Bo (AOIC), simsb@krei.re.kr
Song, Joo-Ho (ARC), jhsong@krei.re.kr
Song, Mi-Ryung (RDRC), mrsong@krei.re.kr

Song, Seong-Hwan (AOIC), song9370@krei.re.kr
Song, Woo-Jin (AOIC), gnos@krei.re.kr
Suh, Jin-Kyo (APRC), jksuh@krei.re.kr
Suh, Chong-Hyuk (DSRC) chysuh@krei.re.kr
Sung, Myung-Hwan (ARC), mhsung@krei.re.kr

THE ABSTRACTS OF KREI REPORTS

등 록 제6-0007호(1979. 5. 25)
인 쇄 2005. 4.
발 행 2005. 4.
발행인 이정환
발행처 한국농촌경제연구원
130-710 서울특별시 동대문구 회기동 4-102
전화 02-3299-4000 팩시밀리 02-959-6110 http://www.krei.re.kr
인쇄처 동양문화인쇄포럼
전화 02-2242-7120 팩시밀리 02-2213-2247 E-mail: dongyp@chol.com