THE ABSTRACTS OF KREI REPORTS

2007

FOREWORD

The purpose of this book is to present abstracts or short summaries of research reports which have been produced by the Korea Rural Economic Institute (KREI) during 2007.

In total, 100 reports are summarized and classified into eight categories: agribusiness, rural development, agricultural outlook, agricultural structure & business administration, international agricultural trade, forest policy, agricultural policy, and special research.

Of the research assignments leading up to the reports, the number of basic research assignments we carried out enthusiastically in 2007 was 22 in total, and they were as follows: four assignments related with agricultural structure improvement and mid- and long-term visions; six on the supply system of safe agricultural food products and the food industry; four on countermeasures for WTO, DDA, and FTAs and the strengthening of international cooperation; five related with rural development and welfare for improving farmers' quality of life; and three related with the development of new growth engines for enhancing the competitiveness of agriculture.

The abstracts provide an overview of the full texts. Since most reports are available only in Korean, we hope you can get a glimpse of our research results through this book.

So many people including farmers and public officials all over the country kindly assisted KREI researchers in their research. I would like to express my sincere gratitude to all of them.

Jung-Sup Choi, Ph.D.
President
Korea Rural Economic Institute

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4. AGRICULTURAL STRUCTURE & BUSINESS MANAGEMENT RESEARCH

1 AGRICULTURAL INDUSTRY AND AGRIBUSINESS RESEARCH

Enhancement of the Alliance of Food Industry and Agriculture

In Korea, the portion of the food industry in GDP has increased, while the portion of agriculture keeps decreasing. It is important to strengthen the linkages between agriculture and the food industry, especially the food processing and service industry, which results in the synergy between both industries and the higher income of farmers.

The goal of this study is to analyze the current status of linkages between four food industries and agriculture, and then present ways for strengthening the linkages.

The contents of this study are as follows: first, an overview of the food industry and the structure of linkage between the food industry and agriculture in Korea; second, analysis linkages between four food industries(juice, Korean-style meal, tofu (soybean), and pork industries) and agriculture; and third, suggestions for strengthening the linkages between food industries and agriculture in Korea.

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Upgrading the Korea Agricultural Simulation Model, KREI-ASMO

KREI-ASMO(Korea Rural Economic Institute-Agricultural Simulation Model) was developed by the Korea Rural Economic Institute in 1995, and it has been used to forecast mid- and long-term outlook and analyze external shocks or various alternative policies for the Korean agricultural sector. The model is a partial equilibrium model that adopts a structural/recursive simulation method.

KREI-ASMO includes five sub-models: a sub-model for forecasting macro-economic variables; an input price sub-model; a grains, fruit, and vegetables sub-model; a livestock sub-model; and a closing sub-model for the Korean agricultural sector.

This two-year research project aims to "version up" the KREI-ASMO, and this report is the first-year midterm paper. The main features of this study are as follows: 1) updating the database, 2) replacing the supply and demand estimation for 18 large commodity groups with 53 specific commodities, 3) introducing an international trade sub-model for rice, and 4) finding equilibrium prices through the simultaneous equilibrium of supply and demand instead of a recursive method.

In the first year, the database was updated, the supply and demand equations for specified commodities were estimated, and some macro-agricultural equations, such as farm population, farm employment, farm vs. non-farm income, and input price indices, were re-estimated.

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A Study on the Stabilization of Livestock Farm Income

Amidst the fast enlargement of livestock farms, the recent outbreak of mad cow disease(BSE) in the United States has kept locally produced livestock prices high, enabling local livestock farms to earn relatively higher incomes than farms producing crops and vegetables. However, the net income ratio of livestock industry is low due to the high proportion of livestock purchase and animal feed prices in overall production costs. In this circumstance, even a slight change in the price of final products brings about a significant swing in income amount, thus resulting in an unstable income for livestock farms.

For livestock farms, price, production volume, and management costs are the factors influencing the farm income. The analysis of the factors that impact the beef price of the Korean traditional cattle (Hanwoo) shows that Hanwoo price is more sensitive to the slaughtering volume of Hanwoo than the imported beef volume. The beef production volume grew until the Asian financial crisis in 1998 but fell down at a fast speed until 2002. Beginning in 2003, the production volume has grown again, triggering a concern on the excess of the Korean traditional cattle population. Among the farm management costs of fed cattle, the cost for calf purchase has been reduced on a gradual basis. In the 2000s, it accounts for 58% of the total production cost on average. The animal feed cost has been on the increase as well, and it accounts for 34% of the total cost in the 2000s. For swine, locally produced pork price is more sensitive to the slaughtering volume of locally produced pigs. The pork production has increased until 2003, but because of the occurrence of the foot-and-mouth disease(FMD) and other diseases, the local pork production has been slightly reduced or remained same ever since. Among the management costs of swine farms, the proportion of livestock purchase price is being lowered, but still it amounts to 32% in the 2000s. The

proportion of feed cost in the total cost has slightly moved down, but it is still as high as 54%. It seems that animal feeds take up a large portion of the total cost mainly due to the recent feed price hike.

The Korea-US Free Trade Agreement was completed in early April 2007, and the resumption of US beef ribs import is under negotiation. Scenarios were drafted depending on expected beef rib importation volume, and the scenario-based analysis anticipates that it could push down the Hanwoo price by 4.6% at minimum and 18.3% at maximum in 2008. Meanwhile, the international corn price growth is projected to push up the local feeds price by 13.1% in 2007 compared to 2006.

Going forward, measures should be sought out to stabilize the income of livestock farms. To this end, a comprehensive approach that includes the stabilization of livestock price and production costs at producing regions, productivity enhancement, and added values increase should be taken. As the first step to livestock price stabilization at producing regions, price volatility risks should be diversified, and to this end, a price insurance program and a livestock futures market can be introduced on top of the current calf production stabilization program. Furthermore, the ability to forecast the livestock industry should be beefed up, and the self-regulated demand-supply control ability of the producer groups needs to be improved. In the face of the rapid increase of the Hanwoo population, keeping it at an appropriate level is necessary. As measures to stabilize the management cost of livestock farms, the production base of roughage should be expanded; the productivity of breeding stock should be enhanced; and the investment in the livestock industry should be expanded. The expanded investment and loan programs to the livestock sector will enhance productivity and improve the profitability of the Hanwoo and pork industries. The stable production of livestock products will be assisted by the broad adoption of livestock disease insurance and an efficient livestock veterinary consulting system. In addition, the quality and food safety

enhancement for higher added value of livestock products and the increase of full-time livestock farms through farm enlargement should be pursued consistently as policy measures for livestock farm income stabilization.

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A Study on Changing Structure and Functions of Periodic Markets in Korea

The purpose of this study is to find out the national status of periodic markets through a nationwide survey on the structure and functions of periodic markets and analyze the structural and functional changes of periodic markets since the 1970s, types of changes, and factors causing the changes. In order to understand the distribution and operating status of periodic markets, representatives of nationwide periodic markets or local government officials responsible for managing periodic markets were surveyed through one-on-one interviews or phone calls. One hundred twenty seven merchants of 18 markets across the country were interviewed to find out the market coverage and features of transactions. To find out market functions and user behaviors, 700 visitors in 19 markets across the country were interviewed.

The major findings of the study are as follows: As of the end of 2006, a total of 562 periodic markets were in operation across the country. This represents a 41% drop compared to 952 markets as of 1976. Periodic markets showed a trend of reduction nationwide and the trend was most significant in Chungcheong, South Gyeongsang and Jeju Provinces. By administrative area, the districts called Dong and Eup(small town) saw the number of periodic markets increasing, while the districts called Myeon(sub-division of county) saw the number dropping. This trend is attributable to the redrawing of administrative areas as well as the sizable reduction of periodic market size in Myeon.

The average number of visitors to a periodic market is 1,029, which is 7.4% lower than 1,111 people in 1976. The average number of stores in a periodic market is 173, up 5.4% compared with 30 years ago. The average revenue of a periodic market per opening is 16.70 million won, which is 52.8% lower than before. The average size of periodic markets currently in

operation is smaller than the 1970s. Meanwhile, the number of stores in Dong increased, but the number of stores in Eup and Myeon severely fell, indicating market size being differentiated between urban and rural areas.

The functions of the periodic market have changed a lot. In the past, farm households were the main periodic market users, and they were sellers and buyers as well. These days in periodic markets, their role as sellers has been weakened. In other words, the periodic market's function of selling, collecting and releasing produce has been significantly weakened, and their retail distribution function for consumers has been relatively strengthened. The rural credit financing is mainly served by the National Federation of Agricultural Cooperatives, and as a result, the private credit financing role of periodic market is significantly weak.

On top of economic functions, non-economic functions of periodic markets have changed to a large extent. Socialization, information exchange, and other social functions, as well as the cultural and entertainment function of periodic markets, are not active as much as before. Amidst the overall weakness of periodic market functions, some functions are maintained as before or rather strengthened. Today, periodic markets provide citizens with opportunities for quality of life amenities such as 'time away from routine life', 'vitality', and 'reminiscence,' and function as the place for spending leisure time for rural elderly people and the place for socialization for small-size store merchants.

Periodic markets are mainly used by full-time housewives(49%) and farmers(31%). Periodic markets are mostly used by the low-income class whose monthly household income is 1.87 million won. For urban users, their ages are evenly distributed, but rural users tend to get older. Tourist visitors have the monthly average income of 2.73 million won, up 46% of the regular periodic market users. Their average purchase amount is 67,740 won, up 54.1% compared with the regular market users. The regular market users go to periodic markets due to price, variety of items, freshness, and proximity(in that order). To the contrary, tourist visitors pointed

out confidence in quality, freshness, price, and local specialty(in that order) for the reasons of visiting periodic markets. For the areas of improvement, restroom and parking facilities were pointed out. In the meantime, most farmers who sell produce at periodic markets run small-size farms, and 79% of them are women aged 60 or above. They mainly sell vegetables(71%) and grains(11%) at the markets.

Due to the population reduction, the number of periodic markets per city and Gun(or county) dropped to 3.7 from 5.9 in 1976. The reduction in the number of periodic markets has caused merchants who are used to move around 3-4 periodic markets in turn to expand their travel miles. The travel distance of merchants was 8-12km in the 1970s, but it increased to 30-50km. A regression analysis was conducted against the factors determining market size, and it was found that the market size tends to grow when population and population density are high and that the market size tends to be smaller when the number of periodic markets is high within the same city and county. The markets opening on every seconds and sevenths of a month are larger than the markets held on other days, and the difference among Dong, Eup, and Myeon are found to be statistically significant. The analysis based on the market features above indicates that market size plays an important role, and periodic markets are divided into three types: market for broad area, market for city and county, and market for smaller areas such as Eup and Myeon. The market for broad area has 751 or above stores(merchants) and accounts for 3.3% of the total periodic markets. The market for city and county has 290 to 750 stores(merchants) and accounts for 12.7% of the total periodic markets. The market for smaller areas(Eup and Myeon) has less than 290 stores/merchants and accounts for 84% of the total periodic markets.

Going forward, periodic markets are predicted to dwindle away. While the speed of decline will slow down, some periodic markets will see more vitality facilitating the gap between periodic markets. To enhance the vitality of periodic markets,

restroom and parking facilities should be improved. Accessibility needs to be improved to attract more tourist visitors. Holding cultural activities and events or running experience programs based on local resources could trigger more interest among tourists. Providing space for local farmers for their active engagement would lead to making periodic markets more lively. The central and local government's support to vitalize periodic markets would breathe more life into local economy and create harmony among local communities.

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Analysis of Food Consumption Trends in Korea

The purpose of this study is to define features of changing food consumption trends and to propose food policies and directions for agriculture to respond accordingly.

In Korea, food consumption pattern has changed from quantitative growth to qualitative improvement since the late 1980s. Food consumption behavior has changed mainly due to reduced proportion of food expenses to overall household expenses, dramatic surge in eating out spending, and more consumption of healthy and favored foods. The total household income spent on food (Engel's coefficient) fell from 0.41 in 1982 to 0.26 in 2006, and the eating out expenses rapidly grew to 49% as of 2006. By food, the spending for grains, bread, meat, fish and shellfish has dropped, but the spending for foods regarded as favored foods or healthy foods including fruits, bread and snacks, tea, beverages, liquor, etc. has increased. Inequality and polarization are apparent as social issues since the Asian financial crisis, but food spending has not shown a significant increase since 1998 when a temporary surge was marked. Across food types, the Gini coefficient fell. In eating out, the Gini coefficient significantly dropped from 0.78 in 1982 to 0.43 in 2006, while the contribution of eating out to the inequality of overall spending on food rapidly grew from 11.5% in 1982 to 53.9% in 2006. The classification of reasons of changes in food expenses by applying the cohort method shows that age effect is the strongest driver among age effect, generation effect, and year effect, indicating social aging has a significant impact on food consumption. The preference for eating out is also relatively strong with the older age group over 65 years old. By food type, older people tend to favor grain processed foods, tea and beverages, and liquor.

The consumer's food purchase pattern is characterized by health orientation, pursuit for high quality, diversification, simplification,

and rationalization. For rice, the small volume package sells more and the consumption of high-end and low-end rice is significantly deepening the polarization of rice consumption. Meat products are differentiated amidst the pursuit for high quality. For pork and chicken, the trend to emphasize taste and health effect is found prominent. Vegetables show a trend of simplification, while fruits tend to be differentiated by taste. Processed foods show the trend of simplification and diversification, but the items perceived as unhealthy including cooking oil, sugar, and salt are replaced with higher-end products in the fast manner. In beverages, health orientation is also significant with the sales growth of low calory and functional products. The leading trends of eating out include specialization, diversification, and rationalization.

According to the food consumption trend, people tend to take in more animal foods, and the nutrient intake gap between social classes has become wider. The households with low income tend to mark a low nutrient intake level and consume low quality foods. In particular, the elderly class aged 65 years or above is found to consume animal protein and fats at a very low level.

The consumer's priority on quality is growing more significant. Accordingly, the production, distribution, and sales system should be improved to bolster competitiveness and facilitate proactive responses to changing consumption trends. To draw up food consumption policies and production and marketing strategies, it is necessary to segment classes and work out detailed measures. In addition, to ensure proper recognition of food labels and use them for rational purchase, food distributors and consumer groups need to get educated and receive labeling related information. These could be strengthened via education in the course of school lunch program and classes. Lastly, regular study of food consumption trends should be performed to provide feedbacks for food producers and policy-makers. To this end, organizational restructuring of the government and policy development might be considered.

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Measures to Comply with Kyoto Protocol in Agricultural Sector

The comprehensive consideration of the internal and external changes in conditions pertaining to the post-2012 Kyoto Protocol scheme indicates that Korea is highly likely to be mandated to reduce greenhouse gas emission from the second commitment period (2013~2017). In the agricultural sector, greenhouse gas emission has been on the decrease, and it also has carbon sinks. Therefore, the new emission cut mandate given to Korea under the Kyoto Protocol could serve as a good opportunity depending on how we are reacting. This study is a follow-up of the analysis of the impact of the Kyoto Protocol implementation on the agricultural sector and has the purpose of proposing systematic and step-by-step responding strategies in preparation for the implementation of the Kyoto Protocol.

In the introduction of the report, the need of the study, purpose and scope of the study, review of literature, and study methods are described. Chapter 2 explains the details of the Kyoto Protocol and the implementation mechanism, discussion trends and forecasts of the post-2012 scheme. Chapter 3 takes a look at the greenhouse gas generation in the agricultural sector and management means. Chapter 4 analyzes the impact of the mandatory greenhouse gas emission cut on the agricultural sector and the potential capability of greenhouse gas reduction by emission cut means. The impact on the agricultural sector is briefly summarized using the result of the first year analysis. Chapter 5 shows the examples of reactions by major countries related to the implementation of the Kyoto Protocol including Japan, Denmark, Germany, Britain, and the United States where the reduction mandate will apply from 2008. Chapter 6 sets forth the agricultural sector's basic direction of reactions to mandatory reduction, practical strategies, and core tasks. Lastly, Chapter 7 delivers summary and

conclusion.

The highlights of the study are summarized as follows:

First, the participation of the agricultural sector in the emission trading program is found to increase earnings and boost national economy. In the short term, however, and if carbon tax is imposed, the horticultural sectors including greenhouse vegetable gardening, which are highly dependent on fossil fuels, will be put under great pressure of growing management costs. For these, proper responding measures are needed.

Second, regarding the mandatory emission reduction under the Kyoto Protocol, major countries(Japan, the United States, Denmark, Germany, and Britain) have marked significant achievements with the agricultural sector's voluntary participation to meet the goal of greenhouse gas reduction. Except for Denmark among the concerned countries, the proportion of the agricultural sector in the greenhouse gas emission is less than 7%, but the agricultural sector takes up a large portion of methane and nitrogen dioxide emission. These countries do not require the agricultural sector to manage their greenhouse gas emission in the form of mandatory requirement. Instead, they encourage the agricultural sector to adjust and manage the greenhouse gas generated on a self-regulatory basis. The representative measures taken by the agricultural sector of these countries to cut greenhouse gas emission include facility support, fostering of organic farming, utilization of bio-energy, R&D, and adaptation that can be benchmarked by Korea in establishing its measures.

Third, the local study that has been conducted so far concludes that the agricultural sector's greenhouse gas emission cut technologies have the potential to achieve substantial amounts of emission cuts. The core technologies of emission cut are related to the methane reduction through intermittent irrigation, reduction of nitrogen dioxide in nitrogen fertilization, the use of organic carbon in soil, the cultivation of bioenergy crops, in-premise fermentation in the livestock sector, and improvement of livestock night soil treatment facilities; and they are found to

have the potential to make considerable contribution to greenhouse gas emission cut.

Fourth, systematic and step-by-step strategies for the agricultural sector are presented regarding the implementation of the Kyoto Protocol. In relation to this, five basic strategic directions are proposed including using the implementation mandate as an opportunity to build a sustainable agricultural system; proper combination between agricultural policy and greenhouse gas reduction policy; active and proactive response to internal and external negotiations; scientific analysis of greenhouse gas emission and absorption volume; and adaptation to global warming. Practical strategies will be in place under the 3-step approach by period. The first period of 2008 to 2012 period will lay down the foundation. The second period of 2013 to 2018 will make a leap forward, and the last period of 2019 to 2030 will cement and finalize the achievements obtained so far.

Fifth, the core tasks of practical strategies are presented. They include the active pursuit of the 4th comprehensive measures of responding to climate change, the program development for active use of the Kyoto mechanism, the fostering of sound organic farming, active participation in onshore and offshore negotiations regarding the climate change convention, continuous effort in the adaptation sector, systematic R&D efforts, and the establishment of an integrated greenhouse gas management system.

Lastly, with the global warming emerging as a hot issue at home and abroad, the agriculture should be recognized as an infrastructure industry for effective management of greenhouse gas emission. To this end, dedicated personnel and organization should be expanded, and proper role sharing and use of experts among related organizations should be sought for active participation in the discussions on national tasks setting for climate change management.

The study does not estimate marginal costs by greenhouse gas reduction means and does not determine the priority among policy measures. These areas should be covered by future studies. In

addition, an empirical study needs to be conducted to estimate actual reduction volume by applying the economics engineering method and the cost effective analysis by reduction means.

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Policy Issues and Strategies to Boost Biomass Utilization in Agricultural Sector: Problems and Issues in Korea

Biomass is the total mass of living organisms in an ecosystem as a source of energy and raw materials. It is closely related with agriculture and forestry since it is mostly composed of agricultural products, by-products, animal manure, by-products from forestry activities, industrial wood waste, and food waste. The development and utilization of biomass have been a very important task and will continuously be treated as an important subject in the future.

This study is a two-year project with the main purposes of developing efficient utilization systems and finding tasks and strategies to make and support policies. This study began with subjects such as grasping the current situation, excavating the problems, and finding tasks for domestic agricultural biomass utilization. Related institutions and policies of developed countries on biomass were also introduced. For the second period of the study, utilization trends and suggestions on biomass have been summarized, and policy directions and strategies of biomass utilization have been also presented based on economic analyses.

Many countries around the world are interested in developing bioenergy because it plays an important role in solving various problems caused by high crude oil price, intensive use of fossil fuel, and stagnancy of agriculture. Bioenergy may be gaseous, liquid or solid. The worldwide interest focuses on biofuel, a liquid type of bioenergy.

Bioethanol and biodiesel are representative biofuels which replace gasoline and diesel. The United States and Brazil are the main producers of bioethanol and their share of total production is 85%. Biodiesel, on the other hand, is mainly produced by member countries of the EU. The different trends of biofuel

production are strongly related to the resource reserves in the production regions.

The development of bioenergy in Korea is just at the beginning stage. Bioethanol is being tested for introduction after the actual proof of assessment. On the other hand, biodiesel has been in the early stages of commercialization since 2006. The market size of biodiesel is 90 thousand kilo-liters, and its share accounts for only 0.5% of all diesel consumption. However, Korea is not in the real development stage since soybean oil, the main feedstock, is still imported from abroad.

Rapeseed and soybeans are good candidates for the feedstock of biodiesel when we assess the feasibility of feedstock based on production level, cost, technology and breeds. For bioethanol, rice(stock) and sweet potatoes are relatively good feedstocks.

The development of bioenergy in developed countries is mainly based on the competitive resources of their own. Grain-based biofuel, however, has been accompanied by unexpected serious side effects, such as environmental problems and decrease of food and feed. Some developed countries are making every effort to make biofuel from fiber, which will solve the problems caused by side effects. Bioenergy development depends on the resource reserves, technology, etc. but ultimately relies on the will of a government to develop bioenergy.

We need to be very careful, consequently, in developing bioenergy. It is required to find the most proper way for development. It cannot be done simply by adopting the existing method that developed countries are applying, but by finding ways that do not cause serious side effects to our country. For this purpose, we need to carefully set up development strategies based on good choice and concentration. For biodiesel, the conditions of good feedstock are that it should be easy to be adopted and its production is positively related to the household incomes just like rapeseed. For bioethanol, it is difficult to secure feedstock based on large-scale domestic cultivation. Therefore, we need to push forward our bioenergy development focusing on

cellulosic ethanol, the second generation bioenergy which does not come into conflict with food for its feedstock. It is required not to be stingy with progressive investments and supports for the development of bioenergy which is fit for our circumstances.

Biomass from agricultural and forestry activities is usually scattered about in vast areas, and this makes it difficult to collect and be economically viable. The utilization of waste resources as feedstock, however, contributes to preventing global warming. And the production of bioenergy and biomaterials from biomass can expand into a new industry that leads to activate agriculture and rural society and form cyclic local areas.

Various forms of biomass, such as agricultural by-products, animal manure, and wood wastes of forest activities, are obtained in rural areas. Hence, it is required to prepare a comprehensive utilization system which will lead to the efficient use of biomass from various sources, rather than focusing on biomass from a single source.

The tentatively-named and locally-managed "Biomass Resource Center" is required to make biomass into energy or material resources. It is the prior task to obtain facilities and labor to produce compost, feed, and other biomaterials as well as gas and electricity from various biomass. The manure and feed should be reused for agricultural production, and the gas and electricity must be utilized for local households and agricultural activities. To operate these systems centering around the local biomass resource center, active participation of every stakeholder is a prerequisite to success, and the role of the central government is also very important.

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Directions for Improving the Certification System of Environmentally-Friendly Agricultural Products

This study is designed to draw up long-term improvement measures for the certification system of environmentally-friendly agricultural products. For the purpose, this study analyzed domestic and international certification systems and standards. Also, this study conducted a survey to collect opinions of producers and experts about the Korean certification system.

Chapter 2 summarizes the characteristics of the Korean certification system for environmentally-friendly agricultural products. A certification system is generally needed to solve the information asymmetry in the environmentally-friendly agricultural products. In fact, an open and above-board system increases consumer welfare. The certification system of environmentally-friendly agricultural products has been introduced since the enactment of the Environmentally-Friendly Agriculture Promotion Act in 1997 and has been revised twice since then. However, there are areas which still need to be improved in terms of system management and the system itself.

Chapter 3 shows the certification results of environmentally-friendly agricultural products and describes the survey results submitted by producers and experts. The chapter contains their opinions on the certification system of environmentally-friendly agricultural products. The certification of environmentally-friendly agricultural products has grown rapidly since the 1990s. The portion of low chemicals in the certification results, in particular, hit 63% in 2006. Also, the imports of fresh organic agricultural produce which are raw materials for organic processed products have been increased.

The survey results show that experts have relatively high satisfaction with the classification system of certified produce (organic, no chemicals, and chemicals), the scope expansion of certification, the term of validity for a certification, and the notification system of organic agricultural materials on the list;

however, they have relatively low satisfaction with disunited systems and the confusion with other quality indication systems. Second, the overall satisfaction of producers on the current system is lower than that of experts and it is also different among different production types - low chemicals, no chemicals, and organic. Organic producers have relatively low satisfaction on the revised certification system compared to low-chemical producers.

Chapter 4 introduces overseas organic standards and systems in terms of certification standards, labeling, and management. The overseas cases include the cases of IFOAM, CODEX, the U.S., the EU, Japan, and Australia. The study compares the Korean standards and system with overseas standards and systems and points out differences among them to give an example for improving the Korean certification system.

Chapter 5 presents long-term measures to improve the Korean certification system for environmentally-friendly agricultural products to harmonize it with international systems and improve consumer confidence on the environmentally-friendly agriculture. First, the Environmentally-Friendly Agriculture Promotion Act and the Agricultural Products Processing Industry Promotion Act should be unified. Second, in terms of managing the system, 1) the operations of certification agencies should be clearly defined and separated, 2) the supervision system after the certification should be consolidated by ensuring the independence of inspectors and by refining their qualification requirements, 3) the product differentiation should be induced in the market by introducing self-imposed certification fees among certification bodies, and 4) the current voluntary certification system for distributers and handlers should be changed to a mandatory system so that a consistent certification system that covers the varying stages of industrial cycle from the production to the processing and marketing of environmentally-friendly agricultural products could be established.

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Current Status and Prospect of Insect Resource Utilization in Korean Agriculture

Now, it is estimated that there are about 5～10 million insect species on Earth, and approximately 15,000 insect species are directly or indirectly related with humankind. With this affluent diversity of insect species, insects are given attention in the utilization of bio-resources.

In Korea, insects have been used for bee and silkworm culture, and as materials for alternative medicine. Recently, insects are used for various purposes: provision of natural enemies; pollination; as pets, such as Allomyrina dichotoma, Lucanus maculifemoratus dyb, and firefly; education of children on natural ecology; extraction of medicinal materials from larvae or adult insects; livestock feeding; sanitary disposal of livestock excrements, and so on.

The aims of this study are to investigate the growth and restriction factors of the insect industry in Korean agriculture and to suggest complementary measures.

Under this aim, this study reviews the current status of insect utilization, the present state of export and import, and insect related policies and institutions in Korean agriculture. Several policy implications and items are suggested for a sustainable development and growth of insect industry in Korea.

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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 the government. Estimating the GDP and employment status of Korea's agribusiness sector is conducted using a 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 9.2 percent in 2005. Actual levels of employment and GDP have increased in almost every year since 1990, though the proportion has mostly dropped. In 1990, the Korean agribusiness sector accounted for 15.3 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 6.6 trillion won to Korean GDP in 2005. Out of this, 3.8 trillion won came from manufacturing and distribution, while 2.8 trillion won came from inputs. In 2005, the farm sector alone was worth 2.2 trillion won.

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A Study on the Assessment of Agricultural Product Brands

The number of agricultural product brands has been increasing almost every year. As of 2006, the number of agricultural product brands has increased by 39.4% from the comparable number in 2000. There were 6,552 agricultural product brands in 2006, and the number of registered agricultural product brands increased. However, the brand registration rate is still low despite improvement.

The registration rate of stock farm products is higher than that of other agricultural products. Even though the number of stock farm products with a brand is relatively large, stock farm products with a brand account for less than 50% of all stock farm products in most breeds. Among all stock farm products, the number of pork brands is larger than the number of any other breed.

Currently, many agricultural product brands including stock farm product brands are not achieving the main purposes of differentiating branded products and creating added value for producers.

This study analyzed brand assets of stock farm products; the main components of brand assets are brand awareness, brand image, brand loyalty, quality perception, and consumers' market behavior. The brands that were surveyed for this study are main brands which are sold at Nonghyup Hanaro Club in Yangjae Dong. The purposes of this study were to understand the actual conditions and problems of agricultural product brands, assess individual brand assets, and provide useful information for establishing improvement plans and marketing strategies.

The study found that there are correlations among the components of brand assets; a leading brand has not only a highest total assessment index but also highest assessment indexes

in classified brand asset components in general. The differences of brand asset assessment between a leading brand and other brands are relatively large in chicken and pork, but relatively small in beef. There were limitations in forming niche markets for some chicken brands due to low brand awareness.

Although most pork brands included in the study have pretty large market shares in the national pork market, their brand assets assessed by consumers were low. The study showed that, due to a successful marketing strategy of product differentiation, a brand could have a relatively high brand asset despite its low brand awareness compared to a leading brand.

Only two beef brands were surveyed for the study and these brands are the only brands currently sold at the Hanaro Club. The study showed that the differences of brand assets between the two brands are not so huge in comparison to chicken and pork brands. The study points out that an effective individual strategy for quality or image differentiation is needed for an individual stock farm product brand to achieve its original purposes of product differentiation and higher value.

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Improvement in the Management Institution of Agricultural Inputs

The purpose of product labeling is to provide information about products to enable consumers to select appropriate products, protect consumers from possible injuries or dangers from the misuse of products, and make the environment for fair competition among business enterprises.

For the theoretical benefits of labeling as described above, labels must have systemic standards. Thus, it is necessary to analyze the current labeling systems.

This study aims to propose a label management system for agricultural inputs and analyze the responses from farmers in order to organize labeling standards that can effectively provide needed information to consumers.

This research is focused on the labeling of primary agricultural inputs, such as agricultural chemicals, fertilizer, and seeds, with an emphasis on the current labeling institution and proposed solutions to the problems of the current labeling systems.

First of all, the legal standard and its enforcement of agricultural input labeling were researched closely. Secondly, the labeling problems and improvements from the farmers' perspective were approached. Thirdly, this study analyzed the results of a survey of farmers. Fourthly, this research attempted to evaluate the Japanese standards and suggested directions for the development of labeling systems. Finally, as described above, methods to improve the labeling systems for primary agricultural inputs are proposed. However, fodder and farming equipment were excluded from the scope of this research.

Accidents and damages arising from mislabelling of agricultural inputs, such as agricultural chemicals, fertilizer, and seeds, are not only limited to products but they are also extended

to farmers as well. Agricultural chemicals cause poisoning by ingestion, diseases from products, and other various accidents due to improper labeling. Fertilizers cause accidents due to the lack of needed information, and labels on imported fertilizers do not contain required information. Seeds can cause damages from false information and from the introduction of new species that were not inspected.

The most problematic aspect of the cases of such damages or accidents is that evaluating the cause and the amount of compensation is not easy. Therefore, the labeling of proper information is the most effective preventive measure for the accidents and damages caused by mislabeling of agricultural inputs.

According to the agricultural chemicals regulation law, the Rural Development Administration administers many tasks, including the registration and cancellation of manufacturers and marketers. Import and export of plants are regulated by the National Plant Quarantine Service. Fertilizers take center stage in the role of the fertilizer processing standards examination committee of the Rural Development Administration. The preservation, production, and the supply and distribution of seeds are the tasks performed by the National Seed Management Office.

The survey results were as follows: the contents of labels and advertisements were not easy to recognize(50%), the color of the font and the background color are not distinguishable(32%), and labels are attached on surfaces not easily noticeable(14%). In particular, the contents are not easy to understand because labels contain a lot of technical terms.

The components of "effectiveness" and "specific characteristics" need to be added to the labels of agricultural chemicals. For fertilizer, product type, amount of use, and usage period are required. Also, labeling of fertilizer has a problem that the "country of origin" for products is mostly absent. The labels for seeds have a too-small font to be easily read; and they usually didn't have country of origin, usage period, growing method for a given region and time period, and the price.

The institutions of labeling for agricultural chemicals and fertilizer in Korea and Japan are similar. However, the usage period of agricultural chemicals in the case of Japan is limited to 3 years; on the other hand, the usage period in Korea is extended to 10 years.

In the case of seed labels, Korea and Japan differ from each other as there are no "quality labels" and information of country of origin in Korean labels.

Therefore, it is imperative, for the improvement of labeling for major agricultural inputs, that the government policy reflects the demand of farmers and make up the weak points in terms of label accessibility, label contents, and final product sales price.

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Developing A Risk-Benefit Model for Food Safety Regulation

The purpose of this study is to develop a risk-benefit model for food safety regulation in Korea, and to present a strategy that would increase the efficiency of the Korean food safety management system. In this study, we briefly classified hazardous materials in food and analyzed the food safety management system in Korea. Then, we developed a risk-benefit model to evaluate the economic validity of food safety regulation in Korea. The willingness-to-pay(WTP) and cost-of-illness(COI) approaches were used as models to measure the social benefit from the Korean food safety management. Other approaches employed include the accounting approach as a model to measure the social cost arising from the Korean food safety management and B-C ratio(benefit-cost ratio) and NPV(net present value) approaches to evaluate the economic validity of government regulations or programs for food safety in Korea. We also empirically measured the benefit and cost of food safety regulation in two cases by introducing the HACCP (Hazard Analysis and Critical Control Point) approach to eliminate the risk of food-born disease in the catering industry and limit the usage of agricultural chemicals to eliminate the risk of cancer from the intake of apples. These case studies will be good examples to showcase a way to utilize the model developed in this study.

During this research project, we collected and reviewed previous research, and interviewed many experts in various areas such as food science, medical science, and engineering. We also conducted surveys and field research.

This study offers not only a methodology to evaluate the economic validity of government regulations or programs for food safety in Korea but also ideas for the Korean food safety management system. As for ways to improve food safety management in Korea,

we suggest the following: more research in risk analysis, more effort in collecting basic data, specialized food consumer panels, and more effort in educating Korean consumers and workers in related areas.

Korea is at a starting point to upgrade its food safety management system. The Korean government annually invests a huge budget and human resources to improve the food safety environment in Korea, and this study will be utilized as a useful reference to make the Korean government's effort more efficient.

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A Study on the Feasibility of Moving Dairy Cattle Improvement Center

The purpose of this study is to explore the feasibility and strategies of moving the Dairy Cattle Improvement Center(DCIC) to a new place. To this end, this study interviewed an expert group to derive necessary conditions for deciding alternative places and assign relative importance among the derived conditions. Under the derived conditions, this study examined a total of 13 places which were recommended by several local governments.

To investigate the feasibility of moving the DCIC, the study conducted field survey twice on 13 recommended places. The survey result showed that 7 places have better conditions among 13 places. A SWOT analysis was performed on the chosen 7 places, and the result suggested that 3 places are better than other places. The three places are Hongcheon(Gangwondo), Jeongeup(Jeonbook), and Yeongyang(Gyeongbook). An AHP analysis was conducted to prioritize the final 3 places and the result showed that Hongcheon is the most suitable alternative place. Andong was found to be the next appropriate place of relocation.

This study pointed out several things. First of all, the government and the DCIC have to organize a task force team to handle related legal issues. Secondly, the task force team has to find a new alternative place of relocation; and this operation has to go along with the effort to get a enough budget. Finally, this study suggested that the DCIC and the government make a mutual effort to have the full support of other related organizations to continue the dairy herd improvement program until the moving of DCIC.

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A Study on Strategics for Strengthening the Mushroom Industry in Korea

The per capita consumption as well as production of mushrooms has been increasing annually in recent years. Despite the increase in consumption, however, the price of mushrooms has continuously been falling as the mushroom production increased at a faster rate. Also, the seasonal imbalance between supply and demand has brought about an uncertainty on farm household income, creating a weak foundation for farm management and raising management risks.

This study aims to propose a practical way to secure farm income stability and working strategies to strengthen the field competitiveness in relation to the production, distribution, consumption, and export of mushrooms.

In general, mushroom spawn and seedbeds carry the largest weight in production cost, followed by lighting and heating expenses, and labor cost. Thus, there is a need for specialized seedbed suppliers who can supply high-quality seedbeds at low prices to secure the competitiveness of mushrooms. Also, it is imperative to build a management system for the production and distribution of high-quality mushroom spawn.

The biggest problem in the distribution of mushrooms is the instability of income due to price fluctuations and low prices.

According to a customer survey, the demand for mushrooms has steadily been increasing due to health and taste reasons. Thus, for the successful increment of domestic consumption, it is necessary to develop mushroom recipes, supply low-priced mushrooms, and reinforce the origin labeling regulation.

Even though the demand for environment-friendly mushrooms is expected to rise in the future, it is necessary to supply cheap and bio-functional mushrooms, accompanied by continuous PR efforts to promulgate recipes and health benefits.

For the successful export of Korean mushrooms into overseas markets, it is necessary to improve the quality and develop new varieties, and constantly create new demands in local markets. At the same time, it is essential to build export and information support systems.

Lastly, government policies should be selective, focusing on specialized leading farms with a growth potential. In particular, the numerous producer groups, such as specialized project management centers, marketing corporations and councils, and research institutes for the production and marketing of mushrooms, should be systemized and led by the tentatively named Mushroom Marketing Board. For the sustainable operation of the domestic mushroom market, the Board should take the initiative to supervise these organizations and keep the market demand and supply in balance.

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Strategies for Relocating the Gu-Wol Agricultural Products Wholesale Market

The purpose of this study is to examine the feasibility of relocating the Gu-Wol agricultural products wholesale market in Incheon and set up a sound basic plan for the construction and management of a new one in the city. The main contents of this study include a basic concept and a construction direction for a new wholesale market, its main functions and businesses, necessary facilities and an operation system, suitable transaction capacity, and the estimation of the size of the facilities. The study also outlines an economic analysis of relocation, mid- and long-term visions and strategies, measures for efficient management and operation, ways to improve the transaction system, and a basic plan for the reconstruction.

The main results from the study are summarized as follows:

Firstly, the basic concept for a new wholesale market comprises a wholesale market that is environmentally friendly, citizen-friendly, customer-centered, hygienic and safe, and pleasant and convenient. The main functions of the wholesale market are transaction, comprehensive and digitalized distribution, export and import logistics, information processing, and public good functions.

Secondly, the types of facilities classified by functions include transaction facilities, management and clerical facilities, distribution facilities, convenience facilities, and facilities for direct sales. The main buildings of the new wholesale market are comprised of two auction buildings for vegetables, two auction buildings for fruit, one management and convenience building, two buildings for products distribution, and three buildings for direct sales and related products.

Thirdly, the fruit and vegetables supply ratio of the wholesale market in a target year stands at 40% with an estimated

suitable transaction volume of 371,450 tons. The total floor space of the facilities at the new wholesale market stands at 253,577㎡ (76,707 pyong), and the total ground area measures 284,165㎡ (85,960 pyong).

Fourthly, an economic analysis of the wholesale market has found the internal rate of return(IRR) at 25.7% with a benefit-cost(B/C) ratio of 2.726. This shows a high economic feasibility for the relocation and reconstruction of the wholesale market.

Lastly, the study presented mid- and long-term visions and development strategies for a new wholesale market through an SWOT analysis. The study also made suggestions regarding measures for the efficient management of the wholesale market, specialization of operations, streamlining of wholesale firms and merchants, and strengthening of the competitiveness of merchants. Also, proposals were made on measures for improving the transaction system. They are "making transactions flexible", "diversifying ways to bid at auctions," "invigorating the transaction of environment-friendly agricultural products," and "adopting e-commerce through institutional means."

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Strategies for Improving the Daegu Agricultural and Marine Products Wholesale Market

The purposes of this research are to re-establish the roles and functions of Daegu-si Bukbu Agricultural and Marine Products Wholesale Market(henceforth Daegu Wholesale Market), prepare plans for improving the transaction system including the supervision and operation system, and provide a maintenance and improvement plan of the facilities to confront internal and external changes in the marketing environment of the Daegu wholesale market.

The Daegu wholesale market opened in 1998 on a land of 166,716㎡ with a floor space of 95,784㎡. The Daegu wholesale market is ranked third in the volume of transactions among 32 agricultural wholesale markets nationwide. It transacts about 385 thousand tons of agricultural products and 18 thousand tons of marine products.

In the Daegu wholesale market, five fruit and vegetable corporations and two marine products corporations operate as wholesale companies. There are 316 agro-products intermediary wholesalers and 65 marine products intermediary wholesalers in operation.

The transaction volume of the Daegu wholesale market has declined over the past five years like many other public wholesale markets. This is due to poor environment for logistics, the growth of superstores, increasing direct purchase by superstores in producing areas, poor management of wholesale companies and intermediary wholesalers, etc.

The strategies for the development of the Daegu wholesale market are as follows: enhancing the efficiency of logistics through facilities maintenance and improvement, aggressive marketing based on improved management abilities of various market participants, and expansion of marketing outlets(such as small and medium retailers, restaurants, catering enterprises) through the diversification of

transaction institutes.

In the short-term, it is necessary to improve the transaction system through such means as the expansion of non-auctioned commodities and the partial introduction of the market wholesalers system. The relocation of facilities should be promoted for efficient logistics. The management efficiency of wholesale companies and intermediary wholesalers should be improved and their reconstruction should be achieved by establishing strict assessment standards.

In the mid- and long-term, relocating the Daegu wholesale market is necessary to overcome the present problems. A sufficient land and an isolated transaction district are essential for introducing a market wholesalers system. However, it is difficult to arrange one in the current limited area. It is estimated that when the relocation and modernization of the Daegu wholesale market is completed, it can transact 313 thousand tons of vegetables, 59 thousand tons of fruit, and 22 thousand tons of fish in 2017. The relocation of the Daegu wholesale market requires a land of about 400,000㎡ and a floor space of about 105,000㎡ with a project cost of ₩199.5 billion. The economic analyses such as B/C analysis, IRR, and NPV show that the relocation of the Daegu wholesale market is appropriate.

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A Master Plan for the Promotion of Environment-Friendly Agriculture in Jinan-Gun

For the effective implementation of environment-friendly agriculture in Jinan-Gun, it is essential to establish a feasible development plan and continue promoting it by stages based on the local agricultural environment and opinions of farmers who practice environment-friendly agriculture, as well as opinions of local government officials and related authorities. Based on a systematic and strategic approach, this study aimed to establish a master plan to implement sound environment-friendly agriculture in Jinan-Gun. The scope of the study covered all areas in Jinan-Gun (1 town, 10 villages) and a project period of 5 years from 2007 to 2020 with 2005 as the reference year. The study has been carried out using related data from a government census, a survey on farmers, and interviews with local government officials. An analytical model was used to estimate the investment needed to check the farmland nutrient balance.

To establish a plan to promote environment-friendly agriculture in Jinan-Gun, we conducted a survey to collect opinions from conventional farmers who plan to practice environment-friendly agriculture in the future and those farmers who currently practice it. The survey results showed that most of the farmers who practice environment-friendly agriculture have a strong will to preserve the environment and lead a healthy life while providing safe agricultural products to consumers. The answers to the survey question on who should lead the environment-friendly agriculture showed that most farmers are of the opinion that farmers' organizations should take the initiative and the local government only needs to provide necessary support. Most impediments that hinder the conversion of conventional farming into environment-friendly agriculture were centered on technical matters. These include weeding and prevention of harmful insects, and the biggest

difficulty of environment-friendly farms was to secure stable sales channels for their environment-friendly products. The survey strongly suggested that the legislation of ‘acts to promote environment-friendly agriculture’ is essential to continuously and effectively promote environment-friendly agriculture in Jinan-Gun.

The vision of environment-friendly agriculture in Jinan-Gun was identified as the improvement of residents' quality of life through the harmonization of agriculture and the environment. That is, the environment-friendly agriculture has the aims of maintaining the environment clean and beautiful and promoting the bio-industries that provide safe food while managing and preserving the environment at a low cost. A systematic and stepwise plan to promote environment-friendly agriculture should be established to achieve this vision. To this end, an improvement plan was devised to be pursued in the following three stages: infrastructure construction stage(2007-2008), take-off stage(2009-2010), and sustainable development stage(2011-2015). The key projects for environment-friendly agriculture in Jinan-Gun include education and training of human resources for the construction of infrastructure and implementation of an information management system to manage agricultural resources. This study also suggested detailed programs to support the production of environment-friendly products and implement resource-recycling agriculture. In addition, it presented a plan to create environment-friendly product markets and activate logistics. A number of schemes were made on the following aspects: promotion of large businesses that are based on environment-friendly agriculture, legislative and systematic improvement, organization of environment-friendly agricultural producer bodies, responsibilities sharing and coordination among involved parties, and estimation of a necessary budget. Radical ideas and a significant budget investment are required to establish a sound environment-friendly agricultural system in Jinan-Gun. An appropriate sharing of responsibilities among farmers, politicians, consumers, and concerned parties including the National Agricultural Cooperative Foundation is essential to implement environment-friendly agriculture as the growth engine of future agriculture.

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Policy Application of Agricultural Environmental Resources Information

Agricultural environmental resources information refers to what is related to environmental factors such as soil, water and air which are absolutely essential for farming; and it is systematically and comprehensively incorporated into an agricultural environmental resources information system. It is necessary that the system be established for solving agriculture related problems and for promoting sound eco-friendly farming. This study is intended to address how to apply policies for agricultural resources information.

This report consists of as follows: the introduction presents necessity of study, purpose and scope of study, and review of prior studies; chapter 2, concept and system of agricultural environmental resources; chapter 3, survey results from the applications of the resources; chapter 4, cases of utilizing the resources at home and abroad; chapter 5, interrelations with polices and approaches to the resources, comparisons with environmental conditions, performance evaluation and policy development, and roles of concerned parties; and chapter 6, summary and conclusion.

The major findings of the study are briefly described as follows:

First, as for how land utilization information is being applied by users; it was shown that farmers mostly use the data on optimal cultivation of land while policy makers and specialists use the data on land use areas by land category and the optimal cultivation of land and cultivation areas, respectively.

Second, regarding which type of land related data is used by different users, it was found that farmers mostly use the data on soil fertility, nutrient contents, chemical residues, and heavy metal contents. Administrators used the data on heavy metal contents and chemical residues while specialists used the data on soil fertility, nutrient contents, and heavy metals. Soil data was

utilized at the following intervals: one year for nutrient contents, 2 to 3 years for heavy metal contents and soil fertility, and 4 to 5 years for the distribution of microorganisms in soil.

Third, regarding the nutrients, this study showed that farmers and administrators mostly use the data on chemical fertilizers and excess nutrients. The nutrient data was referred to at the following intervals; one year for consumption of chemicals and numbers of livestock, and about 2 to 3 years for others.

Fourth, it was examined how much farmers contributed to providing agricultural resources information: farming practices accounted for 35.6%, environmental perception 29.2%, local environmental evaluation 23.5%, and consumer promotions 10.2%. The agricultural environment resources information is provided to farmers through various means: farming techniques related institutions(50.5%), farmers and eco-friendly agricultural organizations(22.3%), agricultural journals and articles(16.8%), the Internet(5.0%), etc.

Fifth, for the efficient conservation and management of farmland, agricultural environmental information is applied locally through the soil information system(of physical and chemical properties of soils, optimal cultivation areas, and soil fitness) provided by the National Institute of Agricultural Science and Technology (NIAST) and the rural topography and integrated farmland information system by the Ministry of Agriculture and Forestry(MAF) and the Korea Agricultural and Rural Infrastructure Corporation(KARICO)

Sixth, foreign cases of using agricultural environmental information are as follows: geographical positioning system for farming and rural development by the Japanese Ministry of Agriculture, Forestry and Fisheries and the soil information system(including surveys of soils) by the Agriculture & Environment Technology Research Center in Japan; the STONE model of the Netherlands for the extensive management of nutrients; and the IRENA Project initiated by the European Environment Agency for the integrated management of agricultural environment concerns in 15 EC countries.

Seventh, approaches to agriculture and environment related policies include utilization of simulations and the DSR, the

drive-status-response program provided by the OECD. Policy models were evaluated using agricultural environmental information: directional non-circular graphics and standardized agriculture and environmental models discussed by the OECD Agriculture and Environment Agency.

Eighth, an agricultural environmental indicator was presented by comparing farming conditions among the OECD members, and pre- and post-evaluations of agricultural environmental policies were reviewed by using agricultural environmental information. A nutrients loading system was presented by using indicators of nutrient purchase and consumption.

Lastly, for an agricultural environmental policy to be effective, it is necessary to appropriately assign roles to administrators, experts, and farmers. It is needed for administrators to have interests and provide financial supports for R&D in order that reliable and highly practical agriculture and an environmental information system can be established.

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Strategies for Improving the Marketing Structure of Red Peppers in the Andong Region

The purpose of this study is to set up a basic plan on the construction, management, and operation of a comprehensive distribution center for red peppers produced in the Andong region and improve the marketing structure of the product.

The main contents of the study include the following: the present status and problems concerning the production and distribution of red peppers in the Andong region, the basic concept and direction for the construction of a comprehensive distribution center, functions and necessary facilities of the distribution center, appropriate capacity of the facilities, construction site planning, construction cost estimation, and the establishment of directions for the management and operation of the distribution center.

The main research results can be summarized as follows: Firstly, the main functions of the comprehensive distribution center are transaction, comprehensive distribution, digitalized distribution, export and import logistics, information processing, and public good functions. With respect to the main facilities of the distribution center, there are transaction facilities, management and clerical facilities, conveyance and convenience facilities, and facilities for related products.

Secondly, it has been found that the appropriate handling capacity of the distribution center in a target year is estimated at 29,121 tons. Of these, the amount to be processed through auctions stands at 14,600 tons. In addition, the total appropriate floor space of facilities at the distribution center is found to be somewhere between 19,536㎡ and 123,892㎡, which in turn can be divided into 9,141㎡～11,748㎡ for auction facilities, 6,930㎡～7,920㎡ for "Block A" sales shops, and 3,482㎡～4,224㎡ for "Block B" sales shops and sales outlets for other related products. The total ground size is estimated at 35,267㎡, and the

total construction cost at 23,487～28,944 million won.

Thirdly, this study made suggestions regarding the operation entity and establishment type of the distribution center, SWOT analysis and development strategies, and sales channel expansion and differentiation strategies in regard to the management and operation of the distribution center. As for business directions to be followed in different stages, this study also made suggestions regarding the following categories: "functions of the center," "products to be handled," "intake of products," "transaction methods," "points of sale," and "sales methods." As for the distribution functions in physical terms, the study presented stage-by-stage strategies in the three business stages of "initial stage," "expansion stage," and "maturity stage."

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A Study on Livestock Policy and Productivity Change

The purpose of this study was to draw a policy subject analyzing productivity changes in the livestock industry. In particular, the study analyzes the trend of productivity changes and the ratio of output to input prices to observe the productivity change process. In addition, treasury loans and investments in the livestock industry were considered to analyze the impacts on the industry. Based on the results of the analysis, policy suggestions and recommendations are made for the entire livestock industry.

This paper is divided into three sections. The first section includes an analysis on 'policy and productivity in the Korean cattle and beef industry.' The second section provides an analysis on 'policy and productivity in the Korean pork industry.' And the third one analyzes 'policy and productivity in the milk cow industry.' The treasury loans and investments in livestock industries were especially considered for the input and output change, total productivity, capital productivity, labor productivity, feed productivity of each industry.

The Tornqvist and Malmquist indices of output and input quantity from the livestock production cost data of the National Agricultural Products Quality Management Service(NAPQMS) are used for the time period from 1980 to 2006. In this study, total productivity is estimated and the annual average increase rates of productivity by industry during the time period are as follows: 3.3 percent for the cattle and beef industry, 3.8 percent for the pork industry, and 5.7 for the milk industry.

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Study on Improvement Strategies for Soybean Storage and Marketing

In order to prevent a decrease in farm household income due to the fall of rice price and expansion of rice stock caused by further market opening of agricultural products, it is necessary to develop new profitable products other than rice. Among the substitutable products, soybean is no much different from imports in quality, and it is also evaluated as having competitiveness in its safety. Currently, the self-sufficiency rate of soybeans stands at about only 10% and, therefore, it is highly recommended that the domestic production of soybeans be increased in preparation for the future 'well-being' consumption trend.

The storage and marketing facilities for the soybeans after harvest are insufficient, causing inappropriate quality control that limits an increase in farm household income. The purpose of this study is to review the problems in the storage and marketing of soybeans after harvest and suggest improvement strategies.

The results of a producer survey on the production, harvest, threshing, drying and storage of soybeans in major producing areas showed that shortage of workers was a major problem. The survey also found that the ratio of soybeans sold right after harvest was the highest, followed by the ratio of soybeans that are sold within a month after storage. The survey also found that the standardization and packaging level is low due to insufficient equipment to market soybeans and that the shortage of sorting equipment leads to a decrease of trust from consumers.

It is necessary to establish a thorough quality control and supply system in accordance with the consumer demand. In order to do that, measures need to developed to improve seed selection, soil control, cultivation management, after-harvest marketing and commercialization, and the production system. It is also necessary to increase the size of the farming organization for the soybean

producers and facilitate their specialization in major production areas for securing stable supply and competitiveness.

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An Examination on the Construction of Yang-Ju Agricultural Products Marketing Complex

In Korea, there are diverse channels for distributing agricultural products from farms to consumers. In the viewpoint of efficient market distribution, agricultural wholesale markets have historically carried out a vastly important function for over twenty five years across the country. Since 1994, however, a new type of distribution center appeared for enhancing the efficiency in marketing agricultural products. And the Korean government, too, had proposed and supported the idea of building a new type of distribution channel to reflect the changes in consumers' buying pattern favoring fresh and safe and, at often times, packaged agricultural products. There are several advantages in having a new type of distribution center for both producers and consumers. The shrinking down of intermediaries in a distribution cycle generates higher farm price and lower consumer price. Furthermore, pre-processing and packaging products boost up the sales value in consumer markets.

For Yang-Ju City, which is located close to Seoul, we performed a special research project to establish a basic plan for the efficient construction, management and operation of a marketing and distribution center for agricultural products in the city.

The population of Yang-Ju City has grown so fast to the current size of about six hundred forty thousand; however, there is no agricultural wholesale market in the city. Thus, we assessed the expected scale of the proposed marketing and distribution center by focusing on whether it can contribute to the welfare of both producers and consumers. As there exists some risks in managing a new and huge facility on several fronts, we conducted an additional study on current problems and issues surrounding distribution centers around the country and proposed what Yang-Ju City should care about and what it should do to prepare for the

center from the beginning stage of the project.

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Measuring Consumer Recognition and Benefit-Cost for Food Safety Management: Focusing on 3-MCPD

The purpose of this study is to provide an overview on the current status of risk assessment of emerging hazardous materials, to measure consumer and expert recognition, and then to evaluate the economic validity of food safety regulation in Korea.

In this study, we reviewed the chemical characteristics of major emerging hazardous materials, the current status of monitoring, and risk assessment and management. Then, we conducted a survey of consumers and experts to analyze their recognitions of emerging hazardous materials. In order to focus on the case of 3-MCPD in soy sauce, we evaluated the economic validity of the policy controlling the level of 3-MCPD in Korean soy sauce. For measuring the social benefit of the policy, we estimated WTP(willingness-to-pay) for soy sauce with a lower level of 3-MCPD that offers better food safety to Korean consumers. We also calculated the social cost of the policy decreasing the level of 3-MCPD. Then, we evaluated the economic validity of the policy by measuring the B-C ratio(benefit-cost ratio) and NPV(net present value). The results of the economic evaluation presents that the efforts of the Korean government to decrease the level of 3-MCPD in soy sauce were economically successful and efficient.

During this research project, we collected and reviewed previous research and documents, and interviewed many experts in various areas, including the soy sauce industry. We also conducted a field research and a survey research.

This research showcases not only an economic implication of government regulations or programs for food safety in Korea but also strategies for the safety management of emerging hazardous materials, including 3-MCPD in soy sauce. The discussion in this study also presents the benefit of good risk communication.

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New Agro-Food Policy Strategies For Changing Environment

The income growth of consumers and the consumption pattern shift toward higher-end, simple-to-cook foods of various kinds have expanded the consumption and production of processed foods. Large-scale supermarkets have changed the distribution system and the enlarged and organized food production was made possible accordingly. In this regard, the path toward specialized food production is inevitable. The opening of an agro-food market and the development of a global network increase food imports and diversify food trading countries.

However, in Korea, the awareness of the importance of the food industry is still low so that the systematic support and policy for food industry development is lacking. The food industry is essential since it is related to the people's nourishment; but with the widespread perception that it is characterized by low growth and low efficiency, the food industry does not have the sufficient infrastructure for growth.

The agro-food policies have faced issues like narrow application scope, inconsistent policy implementation, and less efficient administrative structure to name a few. So far, the food industry scope has been limited to the food manufacturing industry, and in the agricultural sector, the policy has been implemented on only the regional agricultural food processing industry that uses domestic agricultural produce. Therefore, except for the food manufacturing industry, the major industrial policies did not consider the food service industry, the food materials industry, and fresh convenient foods.

Against this background, the Korean government needs to establish a new systematic implementation scheme of agro-food policies. First of all, "Food Industry Development Committee" should be established under the direct control of the president.

Second, considering the close relationship between agriculture and food industry, the two industries should be managed in an integrated manner for efficiency. It is more desirable that the Ministry of Agriculture and Forestry manage both agriculture and agro-food industry since it is in charge of production, processing, distribution, and safety of agricultural products and is knowledgeable of their biological features.

Third, the Ministry of Agriculture and Forestry is recommended to establish "Deliberate Council for Food Industry Development" to deliberate on food industry development issues and organize committees under its control such as "Food Industry Development Committee" as the entity of taking actions. The committee could draw up a master plan for consistent long-term based policy implementation to foster the food industry and seek advices from the academic and industrial sectors and consumers. The local autonomous governments could establish "Deliberate Council for Regional Food Industry Development".

Fourth, the agro-food safety management should be uniformly conducted by an agricultural agency. Food Safety Agency(tentatively named) could be launched under the Ministry of Agriculture and Forestry to consistently provide food safety-related administrative services across all processes from production to consumption to build consumer trust.

Fifth, the demand for animal and plant quarantine service is rapidly increasing due to expanded cross-border trades in animals and plants and growing import and export with the open-door policies under the WTO/DDA and FTA negotiations making progress. An interlinked system between the central and local governments should be constructed in terms of animal/plant quarantine, cross-border quarantine, and domestic quarantine to manage the currently dispersed epidemics control, quarantine, and hygiene functions in an integrated manner, and to this end, it is a desirable option to establish "Hygiene and Epidemic Control Agency for Animals and Plants".

In addition, in the 21st century, the authority in charge of

agricultural policies should become a comprehensive administrative organization that could take the leadership in setting quantitative food supply policies as well as qualitative food policies for nutrition. In order to facilitate the consumption of local agricultural products and improve the nutrient intake level of the most disadvantaged class, a food stamp system should be introduced for the basic livelihood program beneficiaries. Separate laws should be enacted for the fostering and development of the food industry. In order to systematically nurture the food industry, the roles and missions of the government and the industry should be defined, and the measures to foster the food industry should be hammered out. The food certification systems, such as traditional food certification and KS, should be promoted further, and the certificate acquisition should be supported by providing information and technical guidance. In addition, certification-related incentives such as the abolition of redundant inspections for similar certificates and preferred purchase of certified products could be offered.

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Management Diagnosis of Agricultural Cooperatives' Kimchi Factories

The purpose of this study is to suggest management strategies for improving the kimchi factories operated by agricultural cooperatives. There are nearly 500 kimchi companies in Korea, and only 25 of them produce over 70% of the total production amount. In Korea, eleven agricultural cooperatives have established and managed kimchi factories from the mid-1990s.

But these cooperatives hold only 5.4% of the Korean kimchi market. Moreover, the amount of kimchi imports has been increasing annually in recent years due to the opening of the Korean domestic market to foreign products. The cooperatives' kimchi business is facing a critical situation, and the National Agricultural Cooperatives Federation(henceforth NACF) made plans to revitalize the kimchi business by such means as supporting the cooperatives' factories and constructing a large kimchi factory. Against this background, this study will provide some useful suggestions on improving the cooperatives' kimchi business.

The cooperatives' kimchi business grew 46% in recent five years. The cooperatives' manufacturing cost of kimchi is about 90% of sales, exceeding the average cost of the kimchi industry by more than 5～10%. The factories tend to buy ingredients from cooperative members at higher prices. Although the net profits of cooperatives' kimchi factories are in the black, ordinary incomes show a loss. NACF subsidies for deficit covering allow cooperatives' factories to create incidental profits. Unless these factories can get subsidies, each of them is forced to operate at a loss. It seems that the management of the factories may get worse under subsidies in the long run; but without subsidies, most of them cannot be operated any more.

The NACF subsidies to cooperatives' kimchi factories will be required for several years. At the same time, cooperatives have

to make efforts to achieve economic independence. The combined marketing of the cooperatives through such means as co-branding and integration of physical distribution will be able to contribute to raising management efficiency. And to improve the financial condition, the factories have to purchase ingredients at reasonable prices, even from their cooperative members. Improvement in accommodation, such as HACCP equipment, factory automation, and replacements of old equipment, will be helpful to expand their marketing area. It is recommended that NACF affiliate with cooperatives to extend the cooperatives' share of the kimchi market and export kimchi to more foreign countries.

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Strategies for Developing Brand Promotion Projects for Upland Crops

The relatively high prices of domestic agricultural products are predicted to weaken their market competitiveness due to the extension of the agricultural market opening derived from such trade talks as DDA and FTA negotiations. The tariff rate may not be kept as high as its current rate if the DDA is concluded, and the tariff rate on agricultural products shall be largely reduced if FTAs are concluded one after another. The purpose of this study was to suggest strategies for developing brand promotion projects as a way to enhance the competitiveness of domestic upland crops faced with changes in their domestic market conditions.

Currently, the cultivation size of upland crops per farm household is smaller than 0.1ha in most cases, which is quite small. Therefore, it is necessary to increase the size of production area for their stable supply in terms of quantity and foster a representative brand per main producing region. These days, consumers prefer safe and good-quality agricultural products, and distributors are getting enlarged, specialized, and chained. As a result, the marketing situation of agricultural products is changing in a large scale. It is indispensable to systematically produce, supply and distribute various kinds of agricultural products. It is, therefore, needed to induce differentiation by producing upland crops as brands and secure competitiveness through enlargement and specialization.

An SWOT analysis on upland crops indicates that Korean consumers are highly trustful of domestic agricultural products. However, the efforts to make profits by developing various usages of upland crops have not been fully made in the past, and the marketing structure has been also weak, thus raising the possibility of unfair distribution in which the products imported at low prices can be mixed and distributed together with domestic

products. It is possible to convert to a new growing industry by increasing consumers' interest in safe foods and specializing in upland crops. On the other hand, more imported upland crops may penetrate the domestic market as the market is getting more opened through FTAs, DDA and others.

It is indispensable to enhance the quality through comprehensive management in every stage, including farming, harvesting and distribution stages, and develop good brands and foster management bodies of such brands. To foster brands of upland crops, it is basically needed to have the capability of producing and distributing the upland crops with equal quality. It is required to unify varieties and standardize farming methods to maintain quality and secure equal quality. A planned production system should be established concerning variety selection, soil management, farming management, harvest follow-up management, commercialization, etc. Contract farming should be obligated, own quality standards should be set, and an operating body for quality management should be organized.

To develop brands of upland crops, it is essential to organize and size up the execution body, extensively supporting everything needed for such brand making efforts. Producer bodies should be organized first in places where properly scaled production is possible. This project should be carried out by introducing an integrated system of production, processing, and distribution including varieties selection, farming, storage, processing, standardization, classification, distribution, sales, publicity and service.

For the successful branding of upland crops, it is indispensable to clearly set the roles of every participating body, including local governments, agricultural technology centers, producers, farmers' cooperative associations, distributors, etc. The government should play the role of a fair supervisor of the market. The government should establish production infrastructure for high-quality, safe agricultural products and an institutional system for safety management in the production stage, support the facilities that will play the distribution role, such as an agricultural marketing center in the management stage after harvest, and

manage and supervise to see whether standardized products are distributed in the market without any problems in the distribution stage.

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A Study on the Relocation and Development of Jecheon Medicinal Herb Market as an Industry Cluster

Jecheon City is the industry cluster area of traditional medicine according to the 5-Year National Balanced Development Plan. As an established distribution center of traditional medicinal herbs, Jecheon City collects and distributes vast quantities of high-quality medicinal herbs cultivated in provinces like Chungbuk, Gangwon and Gyeongbuk. Astragalus species, in particular, are produced most plentifully in the Jecheon area, accounting for about 80% of Astragalus herbs produced and distributed in the entire country. In the case of Solomon's seal, Jecheon holds sway of 96% of the market. Overall, the city markets approximately 40% of all types of traditional medicinal herbs distributed in the country.

This study aims to find ways to develop the existing herb market in Jecheon as it is faced with a stagnant situation due to congested space. As part of this goal, a plan to relocate the market to an exposition site is reviewed positively as Jecheon is scheduled to host an international exposition in 2010 on traditional oriental medicine. The relocation plan is sought as part of a strategy to make Jecheon a city renowned for specialized traditional oriental medicine.

We analyzed the feasibility of relocating the market in view of the important roles it is asked to play in the 2010 expo. We sought to set up a basic plan concerning the market's relocation with regard to appropriate size, proper placement, reasonable business expenses, marketing strategy, etc.

The main contents of this study are as follows: the 2nd chapter presents an SWOT analysis and deals with the problems faced by the medicinal herb industry in Jecheon. In the 3rd chapter, the actual conditions of production and distribution of medicinal herbs in the area were analyzed. In the 4th chapter, the

necessity and direction of relocating the herb market were reviewed. A basic construction plan for a comprehensive distribution complex was presented in the 5th chapter. The turnover, facility size, and estimated construction expenses of the complex were presented in the 6th chapter. In the 7th chapter, the economic feasibility of the distribution complex was analyzed. An operation and management plan of the distribution complex was presented in Chapter 8, and a placement plan of the facility was presented in the 9th chapter. Lastly, a marketing strategy and an activation plan were presented.

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A Study on the Organization and Management of Sunchang Agro-Industrial Cluster

Korea has joined in the negotiations of WTO and DDA and signed free trade agreements (FTAs) with Chile and the U.S. The country is also scheduled to engage in negotiations for FTAs with China, Russia, Japan, ASEAN, etc. In this kind of changing circumstances of the world economy surrounding Korea, it is important to construct and manage industrial clusters for the development of regional economy.

The sauce manufacturing industry in Korea's Sunchang region has a long history. However, the industry, which includes soy sauce, soybean paste, and hot pepper paste, has several problems, such as stiff competition among companies, lack of linkage effect between business projects, and lack of cooperation between sauce manufacturing companies and farm households producing agricultural raw materials for sauce.

The purpose of this study is to review and suggest programs for the construction and management of a network among farm households, sauce manufacturing companies, related research institutes, and the regional government.

This research paper consists of ten chapters. In the 2nd chapter, we reviewed regional and industrial environments and special features of the Sunchang region. In the same chapter, we also measured possible impacts of the Korea-U.S. FTA on the farm sector in the region. In the 3rd and 4th chapters, we reviewed the development process of the sauce manufacturing industry in Korea at both national and local levels and made several suggestions for sustainable development. In the 4th chapter, we also reviewed the policies promoting the sauce manufacturing industry in the Sunchang region. In the 5th chapter, we reviewed the current status and future prospects of Korean sauce products in terms of production, marketing, and

trade. In the 6th chapter, we analyzed consumers' preference of national and Sunchang sauce products through a survey. The consumers for the survey consisted of 1,000 housewives living in Korea. In the 7th chapter, we suggested a program on the constitution of crop fields in the Sunchang region for the production of environment-friendly agricultural raw products. Also, several programs are suggested to be linked with other sightseeing programs. In the 8th chapter, we suggested a program to construct and manage an agro-industrial cluster for the Korean sauce in the Sunchang region. Also, we introduced and reviewed other food clusters home and abroad. That is, Bosung green tee cluster, Gochang mountain strawberry cluster, Asan's environment-friendly agricultural cluster in tune with the nature's cycle, Food Valley in the Netherlands, Oresund food cluster in Sweden, and the Yorkshire Forward food cluster in the U.K. In the 9th chapter, we suggested several stage-by-stage strategies for the development of an agro-industrial cluster for Sunchang sauce. Also, we suggested programs for fostering regional leaders.

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An Analysis of FTAs' Impact on the Korean Food Processing and Service Industry

FTAs result in a huge change in the environment of the food processing and service industry in Korea. A lot of research and discussions have been conducted to measure the impact of FTAs on the Korean agriculture. However, little research was conducted to evaluate the effect of FTAs on the Korean food processing and service industry.

The main goal of this study is to review the current situation of the food processing and service industry in Korea and other major countries, and to evaluate the impact of the Korea-U.S. FTA on the Korean food processing and service industry.

The study starts our discussion with an analysis on the current status of food processing and service industries in Korea, the United States, China, Australia, and the European Union and an overview of the trade between Korea and these countries. Then, after the discussion on the Korea-U.S. FTA and the DDA for opening Korea's food processing market, we evaluate the impact of the Korea-U.S. FTA on Korea's food processing and service industry. For more specific discussions, we conducted a numerical simulation analysis to measure the effect of the Korea-U.S. FTA on the Korean cheese and butter industry. The results of the numerical analysis present that the Korea-U.S. FTA will cause a decrease in the sales of Korean cheese and butter. Due to the shortage of raw data for econometric estimation, the results of the simulation are limited. However, this study, which measures the impact of the Korea-U.S. FTA on Korea's food processing industry, may be the baseline for further research and discussion.

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A Study on Ways to Develop the Rice Industry Concerning DDA Negotiations

It is evaluated that the direct payment program for rice farmers has achieved its objective of stabilizing their income, but it has few problems. The rice price in year 2005 decreased by 13.4% compared to the previous year. But the perceived price (rice price including direct payment) was stabilized at the level of 97.3% of target price. But it was argued that the perceived price in few regions was far below the 97.3% of target price. This is because the rice market price differs region to region, and the amount of direct payment is calculated based on nationwide price. It is rational the local price is applied to calculate the amount of direct payment. But there can be a wide price variation within a region, and this problem is likely to be continued.

The direct payment program can be restricted because a reduction of Aggregate Measurement Support (AMS) has been discussed. If the target price decreases by the Enforcement Ordinance, then the direct payment program would be sustainable. Under this situation, the rice farm income will decline, and the direct payment scheme should be changed for the rice farm income to be stable. If the target price increases by reflecting inflation rate, then the real income from rice farms can be sustained. But this may cause over-production and a budgetary burden.

In the long run, the direct payment program for rice farmers should be changed into a direct payment program stabilizing the farm income. With the projected signing of FTAs, the prices of some agricultural products will decrease along with a reduction in farm income.

The policy program to stabilize rice farm income was introduced in 2005, and the disproportion of rice demand and supply must be solved by the market. Before the year 2005, the government intervened in the rice market to stabilize rice price

and income. To balance the demand and supply of rice, the condition to defray the variable payment should be changed from production-coupled to decoupled. In the case of over-production, the NACF is recommended to segregate the surplus.

The marketing efficiency must be improved to cope with DDA negotiation. The sales on consignment must be activated to reduce the price fluctuation and stabilize rice transactions, and an agency to find rice price by quality is required to be established.

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A Study on Increasing Roughage Production Using Set-Aside Land

Roughage is the essential feed for ruminants. The ideal feeding ratio of roughage should be sixty percent of the total ration. However, forty percent of the total ration was fed with roughage for Korean dairy and beef cattle in 2006. It is important to expand the production and utilization of roughage to enhance the competitiveness of livestock products. In order to cope with the current situation, the Korean government should establish a new roughage production plan.

The objective of this study is to estimate the supply and demand outlook of roughage and suggest a direction for policy options on improving roughage products. Also, this study looks into the economic effects of expanding roughage production at the farm and national levels.

The results are as follows.

Firstly, the demand for roughage is estimated to be at 5,790 thousand tons in 2015. The supply is expected to be made through both domestic production (3,263 thousand tons) and import (2,527 thousand tons). A new roughage production plan aims to increase domestic roughage production up to 5,224 thousand tons, which is about 90% of the total demand for roughage in 2015.

Secondly, as the cultivation area of roughage is planned to be increased up to 100 thousand ha, the import amount of roughage substitutes is estimated to be 470 billion won, and the changed ratio reduces the cost of animal feed by 441 billion won.

Finally, some policy directions to expand roughage production are suggested as follows: new variety and high quality roughage seeds should be supplied, expanding roughage cropping should be considered, and government support and subsidies to roughage-producing organizations and farmers should be developed.

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Strategies for the Introduction of a Veterinary Prescription System in Korea

In Korea, animal drugs can be purchased without the prescription of a veterinarian. Therefore, there exists a high probability of misuse and overuse of important drugs such as antibiotics in livestock farming. In fact, the average amount of antibiotics used for one kilogram of livestock products in Korea is three times higher than that of the U.S. On the other hand, animal hospitals can also sell the drugs freely.

The introduction of a new system is very difficult especially when there exist severe conflicts between participants. It is necessary to introduce a veterinary prescription system in Korea. In doing so, the benefits and costs of relevant groups should be balanced. One plausible scenario is that at the beginning, veterinary prescription should be required to a minimum level and then be expanded step by step. At the same time, the sales of animal drugs in animal hospitals could be restricted according to a predetermined list. Livestock farmers complain that there are not enough veterinarians who have skills and knowledge on specific types of livestock in rural areas. Veterinarians insist that a prescription system would stimulate more veterinarians to open animal hospitals in rural areas.

In order to introduce a veterinary prescription system, many problems need to be resolved. First, "Drugs Law" and "Veterinarian Law" should be amended at the same time. Scientific experiments should be used to determine the minimum level of drugs that should require a prescription to buy the drugs. The government should establish a task force with related experts to set up a road map and a detailed implementation scheme.

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Evaluation of Comprehensive Measures Concerning the United Nations Framework Convention on Climate Change in Agricultural Sector

The United Nations Framework Convention on Climate Change (UNFCCC) would be completed in 2007, and it is necessary to devise 4th comprehensive measures that are effective and practical for the agricultural sector in the period from 2008 to 2012; and this needs to be done by evaluating the policy performances of the 3rd comprehensive measures(2005～2007). The 4th comprehensive measures should include programs for encouraging voluntary GHG reductions and for developing carbon sinks rather than regulations and obligatory reductions as Korea is presently exempt from obligatory reduction.

The purpose of this study is to evaluate the projects in agricultural sectors for the 3rd comprehensive measures against the UNFCCC and to suggest 4th measures based on the results of evaluation and determine practical options accordingly.

For the 3rd measures, policies focused on the establishment of frameworks for reducing GHGs, and a total of 90 projects were carried out in the following three categories: (1) establishment of infrastructure for implementing the convention, (2) GHGs emission reductions by sector, and (3) adaptation to climate changes. Among those, agricultural sectors fulfilled a total of 16 projects, including 3 projects in the first category, 8 projects in the second, and 5 projects in the third. In the project for establishing the infrastructure for the convention's implementation, scientific studies developed an applied technology utilizing livestock manure and food wastes, which is yet to be used in rural regions due to lack of programs transferring the technology to farms. In the project of GHGs emission reduction, technologies for reducing methane emissions were developed, including those for GHGs emission reduction in cultivated land and improvements in

harvesting and planting systems. The technologies are considered to be potentially practical but limited in terms of their dissemination to farms, thus necessitating the development of programs that can transfer technologies.

The studies on the utilization of livestock manure and food wastes have been conducted over a long period since the implementation of the 1st measures. It is, therefore, necessary to develop programs for linking the evaluation results to projects that aim to utilize and commercialize resources based on policy evaluation. Regarding GHGs statistics, the major projects include the development of GHGs emission coefficients and the establishment of a national inventory system and patterns of GHGs emission distribution to be led by the Ministry of Commerce, Industry and Energy.

Regarding the 4th measures, the following projects will play a key role in the obligatory reduction of GHGs emissions: reduction in nitrogen fertilization, production of rape seed for biodiesel, and reduction of methane emissions in the livestock industry. Therefore, a systematic mechanism for monitoring and evaluating the projects should be well prepared so that they can effectively carried out within specified periods.

For the adaptation to climate changes, the task of evaluating the cultivation of crops and their productivity and the studies of carbon sequestration in farmlands would be basic operations in the sectors of adaptation and sinks, and a system for monitoring and evaluating these two at regular intervals should be operated.

For the 4th measures, additional projects should include a pilot project of the Clean Development Mechanism (CDM) in the agricultural sector, application of an emission trading system, promotion of organic farming, a regional-based, maximum-nutrients loading system, active participation in the negotiations of UNFCCC, continued efforts in the adaptation sector, systematic research and technology development, establishment of an integrated GHGs management system, and organization of task forces.

For the effective arrangement against UNFCCC, policies

should be integrated so that the programs in agricultural and environmental sectors can complement each other. Moreover, incentives such as direct payment should be considered for the agricultural sector to be a key contributor to an early reduction of GHGs emission.

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A Study on the OECD's Evaluation of Korean Agriculture and the Development of Policy Evaluation Matrix

The OECD Secretariat evaluates member countries' agricultural policy reform periodically. Korea's agricultural policies were evaluated in 1998 and this year another evaluation is scheduled to be made. The OECD has developed a policy evaluation matrix to analyze the effects of various policy scenarios on world price and production. This year the OECD Secretariat also plans to incorporate new EU member states and Korea into the PEM model.

This study is organized into three parts. The first part consists of an assessment of past OECD discussions in agriculture related committees and working groups(Agricultural Policy and Market Working Group, Agriculture and Trade Joint Working Party, Agriculture and Environment Joint Working Group). So far, there are seldom previous studies on the OECD's work in Korea.

Therefore, it is considered to be very useful to summarize the OECD's work and find implications for Korean academic experts and government workers. The second part of the study consists of a preliminary review of the OECD Secretariat's draft paper on agricultural policy reform in Korea for last 10 years. The Korea Rural Economic Institute provided many tables and figures and related information to the OECD Secretariat in advance to help them describe Korea's agricultural situation correctly based on facts. The third part is about the Korean PEM model, through which the structure and major results of various policy scenarios were described.

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2006 Food Balance Sheet

The 2006 Food Balance Sheet provides information on the food supply and demand situation in Korea. The main concepts of this study are food supply, nutrient supply, and international statistics. The per capita per day net supply was calculated for the food supply part and the supply of energy, protein, and fat was calculated for the nutrient supply part. Also, self-sufficiency rate of energy was included as an indicator of food self-sufficiency. FAO international statistics data was used and processed to make a comparison of food supply worldwide. Food Composition Table, which was published in 2006, was used this year for the calculation of 2005 Food Balance Sheet and 2006 Food Balance Sheet (preliminary).

While the net supply of cereals and fruit decreased compared with the previous year due to bad weather and a decrease in cultivation area, the net supply of vegetables increased due to an increase in cultivation area. There were major increases of supply in meat, fish, shellfish, and seaweeds but major decreases in the supply of starchy roots, pulses, oil crops, eggs, milk, oils, and fats. The total energy supply in 2006 was 2,927Kcal per capita per day. It decreased by 56Kcal from the previous year.

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RURAL DEVELOPMENT RESEARCH 2

A Study on the Strategies to Promote the Local Food Industry in Korea

Since local foods are made of regional materials and recipes, they can be a strong instrument for stimulating the regional economy through various means such as consumption of local materials, creation of employment, and promotion of regional tourism. They also provide opportunities having safety foods and environmentally sound-sustainable life on season local foods.

This study focused on the following questions: (1) what is the definition and implications of local food?; (2) how many varieties are there and how they are distributed?; (3) what is the current situation and what are difficulties the local food industry is faced with?; and (4) how local foods as an industry can be promoted to boost the regional economy? Special concerns lie on how to treat intellectual property rights of the brand names of local food which are well known as regional properties. The ultimate purpose of this study is to identify policy alternatives for the development of the local food industry in Korea.

The study proposed the following suggestions as policy alternatives for the development of the local food industry based on research: (1) find new local food items which are forgotten and commercialize them through research and development, (2) provide training opportunities to learn the recipes of local food, (3) develop local food clusters with an integrated incentive system, (4) supply raw materials having characteristics of local food, (5) promote local food processing and franchises in restaurants, (6) promote the local food industry in link with tourism through local food festivals and travel programs with associated themes, and (7) adopt a labeling system for managing intellectual property rights of well-known local food brands.

In addition, this study emphasizes the education of the public to have a better understanding of the importance of local

foods and a capability to differentiate local foods from other instant foods for promoting the local food industry as a whole.

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Farmers' Income Security for Retirement

As the economy has been industrializing and urbanizing, the traditional function of the family system in elderly care has been weakening. Everyone has to reserve sufficient income resources for his or her old age by oneself.

There are well-designed public income security systems in developed countries and the main income source of retired people is public transfer income. But in Korea, where the public income security system is not firmly established, the elders mainly depend on their labor income and/or private transfer income.

According to an analysis with the raw data of the 2006 Farm Household Economy Survey, the main source of household income of over 61-year-old farmers is farm income. About thirty five percent(34.8%) of them had a farm household income not sufficient to cover the household expenditure. The elderly farmers couldn't prepare for their old age enough and are very poor.

Considering the weakening function of the family system and the poor lives of elderly farmers, young farmers have to prepare their old ages thoroughly.

According to the results of an interview survey of farmers under 60 years of age, only 53.2% of them are subscribed to the national pension, which means that the others cannot be protected by the basic income safety net. Moreover, the subscribers are expected to receive only small pension benefits because they belong to a very low income category. Furthermore, the pension subscription rate of their wives is very low. It was also found that young farmers are most concerned with health(50.0%), followed by income earnings(26.6%) and medical costs(14.4%) after retirement. They thought that it is desirable for them to prepare for their retirement life on their own and receive family or government supports additionally.

According to the analysis with the raw data of the 2006

Farm Household Economy Survey, the subscription rate of national pension in the case of young farmers under 50 years old is very low. Also, the younger they are, the poorer their preparations for old age.

Young farmers may have several alternatives to prepare for their retirement depending on the returns from farm investment. But under the uncertainty of future investment circumstances, they need to choose more safe ways for old ages.

Here, we conclude that it is desirable that young farmers utilize the public income security system foremost and several alternatives additionally for their old ages.

We suggest several ideas to fulfill the aims as the following: First, the government needs to reinforce public relations activities for the National Pension System, that is, the public income security system. Second, the government should recommend farmers' wives to subscribe to the national pension. Third, the government should facilitate the subscription of young farmers at proper income levels so that they can receive sufficient pension benefits. Fourth, the government should increase the subsidy for farmers' pension premium. Fifth, it is necessary that the reverse mortgage implemented since July 2007 be modified and applied in rural areas. Sixth, the government should prepare several incentives for wealthy farmers to utilize other methods, including private pensions. Seventh, the government should provide opportunities so that elderly farmers with good health can take appropriate jobs to spend their leisure time and earn some income.

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Reorganization of Rural Policies for Making Livable Rural Areas

○ Objectives and Methods

The purpose of this study is to examine the status of rural areas, to forecast their future, and to establish strategies and a paradigm of rural policies on the view of making livable rural areas. This study is a two-year collaborative research. The first year topic is to examine the rural status and seek policy subjects. The second year topic is to forecast the future of rural areas and analyze a new paradigm of rural policies. Therefore, the first year report aims to give a definition of "making livable rural areas," analyze the rural status, figure out outcomes and problems of the previous and present rural policies, and develop new rural policies.

Methods are literature reviews, statistical data analysis, expert surveys, questionnaire surveys of rural and urban residents, interviews with central and local government officials, and an econometric analysis to evaluate rural policies. We developed especially the Regional Development Index (RDI) to evaluate livable rural areas.

○ The Definition of "a Livable Rural Area"

This study defines a rural area as a living place, a working place, a leisure place, and a community place. A livable rural area is 1) an area that has facilities and services enough to settle down there, 2) that has an active local economy enough to provide local residents with many job opportunities, 3) that has beautiful and clean environment and landscape, and is rich in attractive amenities, and 4) that has a good communality between inhabitants and various opportunities to participate in local activities.

○ The Examination of Rural Status

We used both objective and subjective indexes to evaluate the current rural situation from a new perspective on the livable rural area. The RDI was used as an objective diagnosis based on statistical data. Rural areas connected closely with metropolises, cities, and suburban towns have high scores on RDI. On the other hand, most rural areas(Guns) show lower scores in RDI. The RDI says that traditional rural areas are nice places for a leisure, but don't have good capacities as a living place, a working place, and a community place. There exists a big gap particularly in the working function among rural areas. The serious problem is that the bi-polarization of rural areas in four functions has been deepened as year has gone by.

On the subjective evaluation of urban and rural residents, most of them say that rural areas have been weakly developed in living and working functions, but have strengths as leisure and community places. Many people wish to settle down in regions that show high scores on RDI. Therefore, rural polices should focus on improving living and working conditions and on maximizing the amenity potential of rural areas as leisure places in order to make livable rural areas.

○ Outcomes and Problems of the Rural Policies

The government has introduced many rural policies to improve rural areas. According to our rural policy evaluation, they have contributed to a significant improvement of rural areas as living places, but have not put an emphasis on developing working and community powers. According to an econometric analysis of rural policy outcomes, even the rural development program that experts said had the most positive effects had beneficial effects only in limited sectors, without much impact on improving the overall circumstances of rural areas.

As for making livable rural areas, the present rural policies for the total rural areas should be turned into programs that can reflect local characteristics, strengths, and weaknesses, and that can respond to new local demands of rural areas.

○ Reorganization of Rural Policies for Making Livable Rural Areas

The objective of rural policy for making livable rural areas is to reorganize policies that can balance rural development toward a living place, a working place, a leisure place, and a community place. First, the policy purpose should be differentiated by region because rural areas have different situations and problems. Second, rural program should not focus on only the living sector but contain various items for all the living, working, leisure and community sectors. In addition, when a local government selects a rural program, the municipality should be endowed with stronger responsibility and authority. Third, on the operation system of rural policy, a coordination system between departments in the central government should be needed from the time of planning a program. The operation year of a policy should be longer than now, and the program should be executed according to a local plan. The most important thing is to institutionalize innovative assistance and residents' participation to improve the renovation capacity of municipal governments, and cultivate local partner groups that can participate in local activities and programs of the central government.

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How to Enhance Farmers' Learning and On-Farm Implementation

The purpose of this study was to develop strategies that can enhance farmers' learning and on-farm implementation. For this purpose, the study carried out literature reviews on farmers' learning and transfer theory, an analysis of farmers' learning related services and policies, a survey of 485 farmers on learning characteristics and needs, and a case analysis of best domestic and foreign practices of farmers' learning and human resource development approaches in other industries.

Based on the reviews and analyses, this study developed strategies aimed at enhancing farmers' learning and on-farm implementation, including a basic direction and fifteen specific steps.

The basic direction is that more farmers should be promoted to participate in education and training programs including expert consulting and informal learning such as discussion with peer farmers, reading agricultural books, newspapers or magazines, internet searching, etc.; participating farmers should be provided with more various forms of learning resources to have access to best contents anywhere at anytime; and more learning outcomes of farmers should be implemented on their farms.

The specific steps to foster the capability of farmers to learn and execute include the following: ① develop a trusting relationship between learning program providers and participants; ② strengthen the public relations of farmer learning programs; ③ promote the value of farmers' learning; ④ develop the competency of HRD practitioners and facilitators in farmers' learning institutes; ⑤ activate "Blended-Learning"; ⑥ develop national occupational standards for agriculture; ⑦ indicate various learning pathways after training courses; ⑧ consolidate small learning institutes; ⑨ stimulate learning programs on farm management; ⑩ encourage learning by on-farm implementing units; ⑪ equip farmers with a

learning map and a farm business plan; ⑫ encourage learning activities customized by farming levels and careers; ⑬ galvanize the learning network among farmers(organizations), learning institutes, and the government; ⑭ strengthen the participants' evaluation of farmers' learning institutes; and ⑮ set up an agricultural human resources development center.

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Revitalization Strategies for the Rural Economy of the Knowledge-Based Society

With the knowledge-based society coming, the rural socio-economy needs to adapt to a new environment for a sustainable development. The knowledge-based society is projected to provoke deep and broad impacts on the rural socio-economy. The communication structure and the distribution of information will be changed in the knowledge-based society. The structural changes in the generation, distribution and utilization of knowledge will have impact on the rural socio-economic structure and its conduct and performance.

It is important to search for sound answers for the sustainable development of the rural society with high prospects for the knowledge-based society. Therefore, this study explores and presents a policy direction and strategies for developing the rural economy by analyzing and forecasting the environments of the knowledge-based economy in rural areas. The major tasks for the development of the rural economy can be summarized as follows:

First, constructing a knowledge network for related activities in the rural society should be promoted to innovate economic activities based on learning through communication. Second, the infrastructure of information and telecommunication in rural areas should be complemented for the ubiquitous society. BcN(Broadband Convergence Network) and USN(Ubiquitous Sensor Network) should be provided, and RFID(Radio Frequency Identification) and USN should be standardized for the improvement of inter-area utilization. Third, economic activities utilizing u-IT should be promoted. Two-way communication and u-commerce with Web 2.0 will facilitate farmers' accessibility to u-IT and enhance their economic opportunities. Fourth, the social safety network should be provided to reduce the digital divide between the rural and

urban people. In particular, enhancing the ability of rural residents to utilize and apply information and knowledge is important. For the promotion of information technology in rural areas, a substantive education system and a convenient apparatus for aged residents should be contrived and provided.

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Technological Innovation of Korean Agriculture: Performance and Developmental Strategy

As seen in many developed countries, technological innovation has contributed to more than 50% of Korea's agricultural growth during the last 50 years. The development of high-yield seed technology, replacement of animal power through farm mechanization, and the year-round vegetable production system with the use of poly-vinyl materials are typical examples of innovative agricultural technologies in Korea.

There were several factors that have contributed to the rapid technological progress of the Korean agriculture. Among them, there were three major sources that have contributed to the successful innovation. The Korean government has led agricultural technology innovation by strengthening the nation's agricultural research and its dissemination. This was based on a "technology-push" or supplier-oriented model rather than a "technology-pull" or user-oriented model. The private sector of the agro-industry has contributed much to the importing of advanced farming technologies from developed countries. The technologies included modern farm technologies related with such inputs as fertilizer, pesticides, nutritional feed and farm machinery. Lastly, the farmers' high propensity to new technologies has contributed to the rapid diffusion of agricultural innovation at the farm level.

The technological development in the agricultural sector contributed more to the consumers than producers in Korea. During the last 40 years, the real prices of rice, eggs and greenhouse vegetables have not been increased due to the improvement of agricultural technologies.

The economic efficiency of R&D investment measured by IRR in the agricultural sector has been reported by many agricultural economists in Korea. It ranges from 30% to 50% per year. In spite of such high IRR ratios, there are always

under-investment for agricultural R&D due to high economic externalities in the agricultural sector.

To prepare for technology-oriented Korean agriculture, we have to seek new areas of technological development. Intellectual property rights in the areas of new seed varieties and materials and BT and IT are already being strengthened across countries, but technological gaps exist between Korea and advanced countries in the areas of bio-tech, food safety, and environmental farming as well as bio-fuel technologies. Therefore, the national agricultural innovation system has to change.

In order to focus and catch up with the advanced agricultural technologies, the private sector and the local agricultural innovation system should be strengthened. To this end, privatization of the nation's agricultural R&D system should be positively considered for the technological development of Korean agriculture. Moreover, the Korean government should allocate more R&D expenditure in the agricultural sector because the private sector is not willing to do so due to high risks under the agricultural trade liberalization situation.

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Planning for Establishing Green-Bio Research Complex of Seoul National University

1. Research Background

Since the College of Agriculture and Life Sciences (CALS) of Seoul National University(SNU) was relocated to the Gwanak campus(located in Seoul), the CALS experimental farm and ranch left in the Suwon campus(located in Gyeonggi Province) have become aged to the extent that they cannot be used for educational purpose. In particular, the urbanization of the adjacent area of the Suwon campus, where CALS facilities remain, has led to the residents' filing of complaints about the experimental farm, making the condition of the location less favorable. The CALS experimental farm in Suwon was opened in 1906. Since then, with the agricultural development of Korea, it has played an important role in the development and dissemination of modern agricultural technologies. In 2003, the CALS of Seoul National University was moved to the Gwanak campus, while the experimental farm and ranch were left in the Suwon campus. Currently, the deterioration of the facilities and space shortage have become key issues. In addition, as the sale of the Suwon campus land is in progress, Suwon City plans to purchase the experimental farm and ranch as well.

With the dawning of the knowledge-based era, which is rooted in state-of-the-art science and technology, paradigm shift is taking place in agriculture while the focus of agricultural production is moving toward agricultural and life sciences. With the advancement of the bio industry, it is inevitable for agriculture to seek new technological innovations. At this juncture, it is an urgent task to modernize the experimental farm and ranch in line with the initiative to build a comprehensive SNU campus. The bio industry, the key axis of life sciences, is emerging as a leading

industry in the global market and will become a core competence of the country in the future. That is why the advanced countries of the bio industry are making great efforts to commercialize bio technologies through country-level support and global network building.

SNU has endeavored for years to contribute to the development of the Korean bio industry and bring a dramatic turning point for the university's growth by modernizing the CALS farm and ranch and by building a world-class bio research complex (approx. 300ha). In a related move, the "Master Plan for Establishing Green-Bio Research Complex" was drafted in May 2006. The master plan has the purpose of responding to the society's demands for the bio industry, building an organic collaboration network between the industry, the university, and research institutes through the relocation of SNU CALS' experimental facilities to Pyeongchang, Gangwon Province and building a bio industrial cluster to enhance national competitiveness by fostering high-quality human resources and world-class bio R&D activities.

The expected benefits of the project include modernization of experimental facilities for agricultural and life sciences research, maximization of bio research performance through inter-university research, and academic contributions to agricultural, life, and environmental sciences through the training and fostering of world-class human resources necessary to build a hub in Northeast Asia. In addition, it could enable the bio industry to achieve global competitiveness and good researchers through realistic investment in basic facilities and creation of bio clusters. Lastly, the project will help commercialize bio technologies, contributing to agricultural competitiveness improvement, revitalization of local industries, and balanced regional economic development.

2. Research Objectives

The key objective of the research is to present an effective 'basic framework' for the construction of a green-bio research

complex of SNU in consideration of the project objectives and internal and external situations. To be more specific, the purpose of the study is to define the concept of 'green-bio research complex' and set a vision and objectives of the project. Also, the goals are to present a basic direction of the project, select key R&D areas, set up a plan for the facilitated commercialization of R&D results, estimate the size of necessary facilities, suggest an effective layout and an operation plan, and present a project implementation system and strategies.

3. Major Research Contents

- ○ Defining the concept of the green-bio research complex and setting up the project objectives
  - Analysis of the bio industry market and policy environments to analyze the project environment
  - Review and complement of the previous plan's objectives and goals
- ○ Setting the vision of the green-bio research complex
  - Building a bio-technology hub in Asia through a high-tech research complex
  - Direction of the green-bio research complex project
- ○ Internal and external analysis of conditions to select intensive R&D and business areas
  - Understanding of physical and human resources of universities and analysis of research demand
  - Trend and forecast of the research project funds in agriculture and life science sector
  - Review of SNU long-term development plan and strategies relating to the agriculture and life science environment, understanding of nearby high-tech research complex resources, and demand analysis
  - Analysis of external conditions to select intensive R&D and business areas
  - Latest trends of BT research at home and abroad and the

analysis of implementation performance

○ Plan for facilitating the commercialization of R&D results
- Plan for strengthening the research capability of commercializing bio industry R&D results
- Plan for expanding the researcher pool by attracting experts and research teams at home and abroad
- Plan for supporting the attraction of companies to the bio cluster to enhance direct effects
- Plan for building a network for effective commercialization of research results

○ Estimation of green-bio research complex size and space allocation program

○ Proposal for the green-bio research complex operating plan
- Proposal for the operating programs including the structure and organization of the high-tech research complex, training, and research performance
- Proposal for the research complex's self-reliance plan and the university-based enterprise fostering plan
- Review of laws and regulations and the legal application conditions relating to profit projects such as university-based enterprises
- Review of the plan to build a venture town having partnership with the university
- Proposal for the structure of a consultation body to foster university-based enterprises, the structure of the industry-university-government consultation body, and the role sharing by related subjects

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Agricultural and Rural Development Plan for Geoje City

Currently, the world' agricultural markets are opening up driven by WTO and DDA negotiations, conclusion of FTAs between countries, and changes of agricultural policies in a way that places the focus on the multi-functions of agriculture. These changes are making a huge impact on the domestic agriculture and agricultural administrations. And ripple effects are predicted in the local agricultural sectors. In particular, investment and interest of local autonomous entities in agriculture constitute the major factors determining the quality of life in rural communities, production competitiveness of each farm, and farm household income. In this regard, it is increasingly significant to lay down agricultural and rural development plans.

In this study, the local, environmental and socio-economic characteristics of Geoje City are examined in depth. Also, to come up with a comprehensive development plan for the agriculture and rural communities, an assessment of the strong and weak points is made.

Comprised of eight Myeons and one town, the region could be mentioned as a rural and urban mixed place. Three strategies are proposed.

Firstly, green tourism stands a better chance to be promoted. So many tourists visit this region, and this is an important strength. It is necessary to make some agro-touristic facilities and train farmers and other economic actors in the region to promote business in green tourism.

Secondly, the human resource should be developed in a systematic way. An academy for farmers in Geoje City is proposed. Its social learning programs should be developed based on real needs.

Thirdly, an improved local food supply system should be

organized. A forum that is comprised of farmers, catering companies, social workers, and the local government is proposed. In this forum, they can discuss ways that can contribute to food safety and efficient food supply in Geoje City.

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Amenity-Cultivating Strategy for Rural Areas

Recently, there have been a growing interest in rural amenities which are considered to be one of the most important parts of local assets. This study aims to explore the concept of rural amenities and suggest strategies and policy directions for developing and utilizing amenity resources in rural areas. The survey conducted in this study indicates that many people living in rural areas place high importance on amenity-oriented local development and they intend to participate in community activities which develop natural, traditional, and cultural resources in their locale.

In order to have a more detailed knowledge of amenity-cultivating practices in countryside areas, two case studies were carried out: one on lakeside villages located in Hwacheon County and the other on the rural district of Baekun-Myeon in Jinan County. From these surveys we could draw the following conclusions regarding rural amenities development: (1) institution building is important as it promotes amenity-cultivation activities of rural residents and various stakeholders of rural communities, (2) working out a program connecting various resources in a community is the key to a successful amenity-led community development, (3) ordinary resources may contribute to enhancing the attractiveness of a place by the cultural process of discovering and valuing the uniqueness of local assets.

In spite of the growing interest in rural amenities among residents and practitioners, there are only limited programs aimed at promoting activities of cultivating amenities in a rural community. Most local governments have no municipal planning system that can facilitate integrated development of community resources. And it is not usual for rural residents and stakeholders to actively participate in the process of developing rural amenities.

To foster livable rural communities, it is desirable that

local governments and inhabitants take an initiative in developing and creating rural amenities. And the central government needs to focus on sponsoring community-level activities aimed at developing valuable local assets and utilize them to revitalize the region. To support such activities, more flexible programs should be carried out and various policy tools need to be developed by the government. Also, a constant effort needs to be made nationwide to promote the value of rural amenities to the public and help people understand the need to implement policies of cultivating rural amenities.

Finally, local partner groups are expected to play a more important role in the amenity-led rural development process. Thus, municipal governments should build or strengthen partnerships for effective local governance participated by various stakeholders, voluntary groups, public organizations, etc.

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A Study on the Transference of Korean Experience of Rural Development to Developing Countries

This study aims to develop a model for transferring Korea's experience of rural development to developing countries, and to help the Korea International Cooperation Agency (KOICA) to utilize it for better implementation of international cooperation projects. This study analyzed current situations of rural areas of beneficiary countries and identified development needs, and investigated the possibility and strategies for the transference of Korean experiences of rural development to developing countries.

Since the UN declared the Millenium Development Goals (MDGs) in 2000, UN agencies, international organizations and OECD/DAC member countries have made efforts to achieve the MDGs. According to these efforts, the poverty ration shows to decline significantly. However, the number of people under poverty line remains increased.

Korea has been recognized as one of the most successful countries to overcome poverty and achieve rural development during the last four decades. In particular, Korea's rural Saemaul Undong is recognized one of the best practices overcoming rural poverty. Accordingly, there are many needs for the transference of the Korean experience of rural development to developing countries. Under these circumstances, the Korean government announced its plan to increase the amount of ODA from 0.06 percent of GNI in 2005 to 0.1 percent of GNI in 2009, and 0.25 percent of GNI in 2015.

It is obvious that agricultural and rural development is the most important and effective way to eradicate poverty. Therefore, KOICA will focus ODA on rural development areas to assist developing countries to achieve UN MDGs effectively. As for long-term strategy, it is advised that KOICA provides assistance focusing upon institutional reformation and the framework of

governance so as for the direct cooperative methods to attain sustainable growth and operate efficiently.

It has been worried that the assistance infrastructure of Korea has not been well established. We performed a social survey on experts in agriculture and forestry. Although 69.8% of respondents (6,280) have intentions to work abroad for international rural cooperation projects, only a third of them, around 2,100, proved to be capable of free discussion in English. Many universities also have intentions to participate in international development projects in rural and agricultural sectors, as well as such public institutions as the Rural Development Administration, the Korea Rural Economic Institute, the National Agricultural Cooperative Federation, and other civilian research institutes.

The following points are picked up as lessons from Korea for developing countries. First, through land reform, small farms had been entitled to access land, making possible the high productivity and income increase, and supply of human power for high economic growth.

Second, Korea achieved rice self-sufficiency in 1975, which had been made possible through the arrangement of an agricultural technology extension system, development of agricultural infrastructure, and organizational and institutional improvement of agricultural policy.

Third, Korea achieved a top level of rice productivity already, which is a proof that Korean rural policy has been successful. The Korean experiences of food production will be a good lesson for the countries in need of food.

Fourth, Korea is also worldly known in that it successfully resolved the gap between agricultural and non-agricultural sectors through diverse policy programs such as improvement of efficiency in crop production, double pricing program for rice, state procurement program of rice, improvement of production infrastructure, mechanization, and supply of agricultural inputs.

Fifth, Saemaul Undong in the 1970s and the Rural Integrated Development in the 1980s have contributed substantially

to the eradication of rural poverty in Korea. Sixth, Korean agriculture has endured a painful structural adjustment process passing through the globalization like the Uruguay negotiation and entry into the WTO and the OECD.

For the successful transmission of Korean experiences, a systemic approach on the country level is required. After establishing a five-year cooperation plan, it needs to list up tasks to be pursued during the period and select projects based on a priority of development. The process should guarantee the heightening of consciousness of project ownership by the government officials and residents.

Korean rural development policy programs are mostly centralized and performed by community-level organizations. Approaches should be applicable at the farm household level, and such social capital as self-governance by community, local leadership, participation by village residents, and trust and cooperation need to be formed. Another point to be emphasized is that now is the time to consider a shift to a program-based cooperation from a project-based cooperation.

This study selects 10 programs applicable to recipient countries in the agricultural and rural development sector. Those are food production policy, rice production program, post-harvest management technology development program, artificial insemination program for improving the cattle, fruits and vegetable production program, Saemaul Undong program, rural infrastructure development program, integrated rural development program, non-farm income increase program, and agricultural restructuring program.

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A Study on the Effects and Improvement Measures of the Direct Payment Program for Rural Landscape Conservation

Recently, rural landscape management attracts great interest. The direct payment program for rural landscape conservation has been practiced by MAF (Ministry of Agriculture and Forestry) since 2005, and it is the only measure for rural landscape conservation.

This study, thus, evaluates the effects of the direct payment program for rural landscape conservation and proposes improvements to the program. To this end, we firstly examined the present condition of the direct payment program. Secondly, we specified performance factors of the direct payment program based on literature review and evaluated the effects. We surveyed and interviewed local government officers, residents of target village, and ordinary farmers. The survey, which became a basis for the evaluation of the effects, consists of two groups: one with 150 people who live in a target village and the other with 600 people who are ordinary farmers across the nation. Thirdly, we examined the following issues of the direct payment program: price, plant species, target size, application process and so on. Lastly, we made suggestions for improving the direct payment program and policy measures for rural landscape management.

The direct payment program for rural landscape conservation produces considerable results. Specifically, the target villages attract many visitors through the formation of good landscape. Moreover, the community consciousness level of target village residents becomes higher. But, it is a limitation that target village residents seldom act to manage the rural landscape except the cultivation of landscape plants.

Finally, it is necessary to induce local governments to participate in rural landscape conservation and to differentiate landscape management policies considering regional characteristics.

In the short term, the direct payment program for rural landscape conservation should be expanded by improving problems. And in the long term, it is important to provide target village residents with incentives to act voluntarily for rural landscape management.

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Consulting Service on Community Based Rural Development in Vietnam

The purpose of this consulting report is twofold. One is to assist and support the rural development experts and officials of the Ministry of Agriculture and Rural Development (MARD) and the National Institute of Agricultural Planning and Projection (NIAPP) of Vietnam in enhancing their capacity to make rural development plans and create a Vietnamese model of rural development so that it can be disseminated across the nation and contribute to rural income increase and poverty alleviation. The other purpose is to develop a model for rural development in developing countries to prepare for expanding international cooperation in agricultural sector.

For the mission, a project MOU was signed and the documents were exchanged between KREI and the NIAPP. In the MOU, it was designated that two organizations select two project communities, make an action plan for their development, and submit it to government authorities of each country for requesting the implementation budget.

A five-day training course was provided to Vietnamese officials from the central and local governments including NIAPP staff in December 2006. The major topics covered were the theoretical framework of Saemaul Undong, analysis of the area and development needs, participatory mapping, action plan formulation, and project management, and it also included group discussions and presentation of the discussions.

KREI consultants and NIAPP research team members visited the two selected project communities for survey and data collection. After examining six candidate sites, they selected Hoa An village in Bac Giang Province and Giua village in Phu Tho Province based upon the following criteria: economic affordability, leadership, social institution and organizations, possibility of a

comprehensive government plan, and spatial and geographical conditions. A comprehensive survey about the communities and households was administered on local government officials, village leaders, and heads of households to know about the current social, economic, and geographical situations, major development needs, living conditions and many others. Collected data were entered and sorted out to be utilized for the action plan formulation.

For this project, five Vietnamese officials visited Korea. They include such high-ranking officials as director of the MARD and deputy director-general of the NIAPP. The visit was made for the purpose of creating a favorable environment for this project in the Vietnamese governmental offices, experiencing the Korean rural development, and directly discussing with Korean government counterparts about bilateral cooperation. For five days in early February, 2007, the delegates met the president of KREI and the director of Department of International Cooperation of Ministry of Agriculture and Forestry, and visited Rural Development Administration, Hanaro Club of the National Agricultural Cooperative Federation, Gangwon Provincial Office, Icheon Culture Village, Hwacheon Togomi Village, Korea Folk Village, Victory Observatory, and many other places in Korea.

In April 4, 2007, a national workshop co-hosted by KREI and the NIAPP was held with more than fifty participants from the MAF, KREI, MARD, NIAPP, KOICA, and local governments such as Quang Tri Provincial Government, including the KREI president and vice-minister of MARD as well. At the workshop, KREI consultants and the NIAPP research team presented a draft of the action plan, as well as an investment plan, for the two pilot communities. The workshop was intended to disseminate the Vietnamese model of rural development across the nation.

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A Study on Developing Evaluation Indexes of Revitalization and Systemic Assistance Projects for Local Assets-Based Industry

The purpose of this study is to figure out the actual states and problems of the Revitalization Project and the Promotion Project for Local Assets Based Industry and suggest a new operation system and an evaluation system for the Promotion Project for Rural Vitalization. Its contents consist of (1) finding the state and problems of rural industry policy, (2) analyzing the state, problems and effects of the revitalization project, (3) figuring out the promotion project for local assets based industry, and (4) developing the evaluation and outcome index of related projects under the Promotion Project for Rural Vitalization as a new rural program. The methods of the study are literature reviews, secondary data analysis, and questionnaire surveys of experts and central and local government officials.

The results are that, first, the endogenous rural development strategy based on natural resources is an important alternative to promote secondary and tertiary industries in rural areas. The policy to increase secondary and tertiary industries in rural areas has been considered as a powerful instrument for a long time, but the effectiveness of the Agricultural Product Processing Promotion Program (APPP) and the Rural Industry Park has been reduced due to decreasing rural population, lack of labor, and increasing labor cost and land price. On this situation, the Revitalization Project and the Promotion Project for Local Assets Based Industry, which were introduced recently, are pertinent because they are based on local natural resources and they improve the local renovation system, have a good relationship with local universities and experts, and promote local specific industries.

Second, the revitalization project focuses on building a local renovation system and improving regional innovation power.

That is different from others. It is at a very early stage to evaluate the outcomes of this project, but it has contributed to local residents who try to find their capacities by themselves and develop the local industry. However, the project has had some problems that a leading business under this project is unsatisfactory and the outcome of inviting experts as "family doctors" or innovative local committee members is unclear.

Third, the Promotion Project for Local Assets Based Industry is a kind of a new policy from a new perspective of using local natural resources by local residents and finding new ways to improve their industry foundation. This project is very related to Special Production Park Program, Agricultural Product Processing Promotion Program, Local Special Production Park Program, and Regional Agricultural Cluster, but there have been no discussions on coordinating them. For the coordination among related projects and programs, it is necessary to have discussions on the coordination between administrative branches of the central government: Ministry of Agriculture and Forestry; Ministry of Government Administration and Home Affairs; Ministry of Commerce, Industry and Energy; and Small and Medium Business Administration.

Fourth, the Ministry of Agriculture and Forestry has a plan to launch "the Promotion Project for Rural Vitalization" that contains all projects related to the promotion of secondary and tertiary industries in rural areas. This plan is for local governments to make promotion plans for rural vitalization and improve the relationship between similar projects. The important thing is to make a legal base for the plan.

Finally, the "native locality" that is the source of the Revitalization Project and the Promotion Project for Local Assets Based Industry consists of native ingredients, unique production methods, and local intellectual property rights. The protection of the uniqueness is the key factor to sustain the local industry. Therefore, local native resources have to be items that are to be protected by the Protected Geographical Indications. Or, the local

government should make a rule to register the local uniqueness, like local products, native ingredients and unique production methods, and manage them through a certification system.

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AGRICULTURAL OUTLOOK AND INFORMATION 3

Agricultural Outlook for 2008

"Agricultural Outlook for 2008" provides short- and long-run baseline projections for the agricultural sector until 2018, and deals with major agricultural and rural development policy issues. Projections cover agricultural commodities and aggregate indicators of the sector, such as agricultural population, agricultural production, value added, and farm income.

The projection is based upon the assumptions regarding the macro-economy, domestic agricultural policies, and the Korea-US FTA(Free Trade Agreement). Among them, farm household income in 2008 is forecasted to be 34.5 million won.

The annual report has three parts. Part 1 discusses the outlook for the world and Korean economies, and the outlook for rural and farm earnings in 2008. Part 2 deals with various issues, including DDA(Doha Development Agenda) and FTAs(Free Trade Agreements), consumer-oriented agricultural production and marketing, momentum for agricultural growth, and rural development and welfare. Part 3 is a forecast for commodities such as grains, livestock, vegetables, fruits, and forestry foods in the Korean and international markets.

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Quarterly Report on the Agricultural and Rural Economy

This report addresses mid- and long-term agricultural trends using key domestic and international economic variables such as GDPs, oil prices, bond rates, exchange rates, and prices of major agricultural commodities. This quarterly report touches upon domestic and international micro- and macro-economic situations, rural economic trends, international agriculture, agricultural commodities, and special issues.

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Monthly Vegetables Outlook

The purpose of publishing the Monthly Vegetable Outlook is to help farmers improve farm planning and marketing strategies by providing timely information on the supply and demand trends of vegetables, their prices, and short-term forecasts. As vegetable prices are usually unstable, outlook information on vegetables is also crucial to the central and regional governments' planning for stabilizing the agricultural market.

The major contents of the monthly vegetable outlook are intended and actual planted acreage, growing situation and yield, estimated production, inventory, import and export amounts, price trend and forecasts, and meteorological forecasts. The commodities included in the outlook are red pepper, garlic, onion, Welsh onion, wakegi, Chinese cabbage, radish, carrot, cabbage, and white potato.

The monthly vegetable outlook is published on the first day of the month, and its copies are sent to farmers, agricultural organizations such as the National Agricultural Cooperative Federation, wholesale markets, agricultural technology centers, etc.

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Monthly Fruit Outlook

The fruits dealt with in this study are apples, asian pears, citruses, sweet persimmons, grapes, and peaches. This study provides information on the prices and qualities of six fruit commodities. The information is used to improve the farm planning and marketing strategies for the fruits. The information on the supply and demand trends of the commodities is crucial to the central and regional governments' planning for stabilizing agricultural markets as well as farm household income.

This research contains annual acreages, production volumes, price trends, quality levels, consumer behaviors, and short-term forecasts for the six fruits. Also, information on import and export quantities and prices is provided.

After surveying nationwide sample farmers and monitoring and analyzing the results of the survey, the monthly outlook was written. The results of the outlook were published and distributed to farmers, marketers, extension workers, businessmen, and policy makers in the form of a pamphlet and a poster eight times in 2007.

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Monthly Outlook for Fruit-Bearing Vegetables

In Korea, the agricultural market environment has changed dramatically as foreign agricultural products are imported. Korean farmers can no longer be supported by the price subsidizing of the government. Also, wholesale prices of fruit-bearing vegetables are getting volatile more than ever before. Therefore, farm producers should pay more attention to the market trends of prices and volumes.

The purpose of this study is to enhance the credibility of information on whether the production volume and price of each commodity is increasing or decreasing each month so that it may induce farmers, wholesalers, and governments to make reasonable decisions.

The Monthly Outlook Report provides information(market supply, prices, etc.) associated with fruit-bearing vegetables. The outlook report covered the following seven commodities in 2007: cucumber, pumpkin, watermelon, oriental melon, tomato, strawberry, and green pepper. The main contents of this report are research and analysis data on the expected cropping acreage, harvesting acreage, regional yields, production, export and import trends, prices, etc.

By aggregating data and developing a supply and demand model that includes flexibility, yields, price-elasticity functions, etc., this research endeavors to forecast the short-term market outlook(mainly one or two months ahead for harvest acreage, volumes, and prices) considering the wholesale market trends. It also goes through a pre-screening process via the Central Advisers Committee for the draft of the monthly outlook report to accommodate the committee's professional viewpoints.

In 2007, the monthly outlook reports were published 10 times, including a newsflash.

After the mid-1990s, the farm acreage of fruit-bearing

vegetables(seven crops) has been decreasing. In the case of tomato, the cultivation area has increased drastically from 2002 to 2007 due to expanded market demand and sustained market price. In 2007, the farm acreage of fruit-bearing vegetables(seven crops) has decreased by 2% from 2006. But, the pre-forecasted acreage of fruit-bearing vegetables(seven crops) in 2008 will be much the same as 2007.

About 15,000 copies of outlook reports on fruit-bearing vegetables were published and distributed to farmers, marketers, extension workers, businessmen, and policy makers in every month from March to December. They also were distributed via the Internet(aglook.krei.re.kr), and the websites of the Korea Rural Economic Institute and the Ministry of Agriculture and Forestry. The outlook results were also published in a number of newspapers dealing with agricultural issues.

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Livestock Outlook

In Korea, livestock prices are known to fluctuate greatly according to supply and demand conditions. Rapid price change is harmful to farmers in managing their farms because the output price is the most important factor in deciding the farm revenue.

The objective of 'Livestock Outlook' is to improve farm planning and marketing strategies for livestock products by reporting outlook information to farmers. It is also used to help traders make business plans and help policy makers establish policies for stabilizing the market.

The contents of the livestock outlook include number of livestock heads, number of slaughters, feed production, export and import, price trends, and short-term forecasts for number of heads and prices. The short-term price outlook for livestock is dominated by two factors: supply and demand. The main factor of the supply side is the number of slaughters, while those of the demand side are economic conditions and consumers' behavior.

The livestock outlook is published both monthly and quarterly. It includes information on prices, supply-demand conditions, and short-term forecasts for livestock products. It consists of five commodities. They are hanwoo(traditional Korean cattle), dairy cow, pig, and chicken. The chicken outlook is published monthly and the others quarterly.

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Quarterly Rice Outlook

The Korean government terminated the rice procurement program and introduced Public Storage System for Emergency by revising the Grain Management Act in 2005. Since the government buys and sells rice at market prices for the purpose of food security stocks under the public storage system for emergency, there is no reference price in the market of paddy rice at harvest. The possibility of price fluctuations in the rice market is also increased due to the government's reduction purchasing volumes. So, a research on rice outlook was started as a pilot project in 2006.

This study seeks to help stakeholders in the rice industry so that they can make better production decisions and set up marketing strategies. By taking advantage of the current situation and utilizing short-term forecasts on the rice industry, stakeholders like farmers, Rice Processing Complex(RPC) managers, and policy makers can make reasonable plans for rice production and marketing.

The Quarterly Rice Outlook provides current prices, consumption trend, trade and stock information of RPCs, supply and demand estimates in the private rice market, and short-term price forecasts. It also provides world rice market information using USDA Rice Outlook.

The Quarterly Rice Outlook is issued quarterly(January, May, August, November) and two times(September, October) during the harvest season. It is distributed to farmers, RPCs, grain brokers, and government agencies.

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The Way to Balance the Supply and Demand of Rice

The mid- and long-term situation of supply and demand for rice has been analyzed, and the way to solve the disequilibrium problem in the case of bumper crops has been studied.

It is believed that the supply and demand for rice will be balanced and the rice price without government intervention will go up to 158 thousand won per 80kg in 2017. The consumption per capita will go down to 66.5kg in 2017, and that does not deviate from the consumption trend.

Even if the international rice price is over $500 per ton and the rice market is changed into the tariff system, the rice market will be stable. The price of imported rice considering the DDA negotiation was forecast at 180 thousand won per 80kg in 2017, which is 14% higher than the domestic rice price.

The price of imported rice will be 138 thousand won per 80kg in 2012, and 91 thousand won in 2017 if Korea is classified into the developed country and the international rice price is $400 per ton. The policy program to enlarge rice supply and to shrink its demand can be recommended to reduce the shock from the tariff system. The direct payment system should be changed to a system coupled with rice production, and all the TRQ rice should be supplied to the market. Also, it is necessary to fix the target price of the direct program. And the program of supplying the rice for the processing purpose should be stopped.

If Korea is classified into the developing country, the price of imported rice will be 145 thousand won in 2017. In this case, the sales amount of TRQ rice in the market should be increased gradually and the target price of the direct program should be changed to reflect the market price. The direct program is not recommended to be coupled with production. There will be no rice import under the tariff system even if the target price is fixed and more TRQ rice is supplied to the market.

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Feasibility of Utilizing Satellite Images for Agricultural Outlook

This study investigates to determine whether satellite imagery(SI) would be beneficial in forecasting Korea's agricultural outlook by surveying SI's technological development trend and examples of SI utilization in the field of agriculture.

Many developed countries including the United States and the European Union(EU) have been using SI to produce agricultural statistics and outlook since the late 1970s. In Korea, some governmental institutes such as the Rural Development Administration(RDA), the National Agricultural Products Quality Management System(NAQS), and the Ministry of Agriculture and Forestry are utilizing SI for their operations. As SI technology is developed further, SI will be widely used in the field of agriculture at home and abroad.

It is expected that the information on agricultural production area obtained from SI will improve the accuracy of agricultural outlook and its credibility. It may also reduce the cost of forecasting agricultural outlook. SI could be a powerful instrument for checking any changes in agricultural production area resulting from a climate shock and a government policy. Furthermore, SI can be used for analyzing agricultural production situations of foreign countries including North Korea and China.

In light of the current status of SI technology development in Korea, cultivation areas and yields could be determined from SI for some products including rice. However, further studies are necessary to utilize SI for specific purposes, and many problems remain to be solved; that is, the burden of initial cost and the lack of appropriate manpower handling SI.

In order to introduce SI for producing agricultural outlook information, it is necessary to take a step-by-step approach through detailed information strategic planning(ISP) and launch

three-year pilot projects. Also, those institutes involved in the utilization of SI need to cooperate each other to maximize the projects' efficiency.

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A Basic Direction for Building Agricultural RFID Logistics Information System

This study tries to suggest a guideline on how to build an Agricultural Radio Frequency Identification Logistics Information System(ARFIDLIS) as part of a preliminary Information Strategic Planning(ISP). To do so, the meaning and effects of ARFIDLIS are reviewed and examples utilizing RFID technology are presented.

RFID technology has been commonly used to monitor crops and livestock production, trace production history, and check the logistics of agricultural products. In the past, studies on tracing production history and related topics have been barely conducted due to the lack of a business model and the limitation of technological development. In these days, however, many studies and projects on the logistics based on RFID are performed. Those projects may create valuable information on the logistic stream.

Various government departments including the Ministry of Information and Communication(MIC), the Ministry of Agriculture and Forestry(MAF), and local governments have been actively involved in introducing RFID technology to trace production history and to produce marketing and logistic information since 2007. Real time logistic information could be used for several purposes including market agents' decision making, agricultural outlook forecasting, and formulation of government price measurement such as a marketing order.

While the government's pilot programs are on track and related information is accumulated, an Agricultural Radio Frequency Identification Logistics Information System(ARFIDLIS) needs to be built for agricultural outlook forecasting through a specific ISP and a consecutive systematic approach.

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A Comparative Study of Korean Agriculture Based on International Agricultural Statistics

The purpose of this study was to expand and systemize statistical indexes to find the state of Korean agriculture in the world market. Although there were many studies or documents on international agricultural statistics, most of them focused on agricultural production data and simply presented them.

In order to systemize international agricultural statistics, we classified them into 5 categories, which are aggregate index, production index, trade index, and consumption and price indexes. Each group has detailed indexes. Several indexes like government support and expenditure for agriculture were introduced to meet new statistical demand. In particular, agricultural trade data were basically summarized using FAO(Food and Agriculture Organization) database, and Korean agricultural imports and exports were classified by major counterparts using Korea Agro-Fisheries Trade Corporation(aT) database. It helps to find the state of Korean agriculture in the world market and the route of its imports and exports.

This study is divided into five chapters. Chapter 1, the introduction part, gave the problem statement, objectives and the scope of the study. In chapter 2, the classification and definitions of agricultural statistic indexes were explained. Chapter 3 covered the summary of each index and its long-term change(10 years). Each classified index was visualized using a graph and compared Korea with the world and top three countries. Chapter 4 gave detailed agricultural statistical indexes classified in chapter 2. Finally, the sources and contents of international agricultural statistic database were presented for users requiring time-series data and other indexes.

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Developing the Pork Traceability System

This study aims to divide the cases of a pork traceability system into three types and analyze traceability features of a total of six firms comprised of two firms selected for each type. The study found that the main bottleneck of the trace and trace-back process lies in the processing stage.

Comparisons of the pork traceability system in developed countries such as Japan, the U.S., Canada, Denmark, and the Netherlands indicate implications as follows:

1) It is necessary to develop a new institutional system suited to the current traceability system because it is difficult to change traditional practices and structure for introducing a new traceability system.
2) An obligatory pork tracing system brings a large monetary and administrative burden, thus it is effective to make a long-term road map.
3) Understanding and agreement among concerned parties including the administration and industries are essential.
4) It is important to clarify the operational purpose of a pork traceability system.

The marketing patterns are embodied into five types through an investigation of the current pork marketing patterns. Excepting the unconformable type, four firms of different marketing types are selected for a field test. Those firms are Moguchon, Pukyong, Tamra, and Daesangfarmsco.

The strengths and weaknesses of three alternatives for structuring an ID system are compared. Alternative 1 constructs a separative ID system. Alternative 2 combines other livestock into an established cow ID system. Alternative 3 imposes computational extension codes, forming a separative ID system.

It is needed to classify and suggest necessary and/or optional information in each stage. The information related to pork movement are categorized as necessary whereas the information on feeding method, disease and inspections are optional.

Four models are chosen for a field test. Model 1 uses bar codes in an all-in all-out system, which has been tested in Daesangfarmsco. Model 2 uses RFID in all stages and identifies an individual pig as had been the case for Pukyong in the past. Model 3 uses RFID in both production and slaughter stages. It identified an individual farm and has been tested in I-pork. Model 4 uses RFID only in the processing stage, which has been tested in Moguchon. The results of practical tests of each model showed some problems as follows: Model 1 is difficult to apply in a complex processing stage and has a weakness in relaying information between stages. Model 2 requires a huge operational cost. Model 3 strongly depends on manpower for processing computational information. Model 4 is likely to produce a low productivity during processing operations.

Three scenarios can be created according to the extent the traceability system is introduced. Scenario 1 is the lowest level, adopting a bar code system in all stages. Scenario 3 is the highest level, adopting RFID in all stages. Scenario 2 is the intermediary level, adopting RFID in only the processing stage.

According to the results of a cost analysis, the cost under the scenario 1 is found at 722.9 won per head, while the cost under the scenario 3 is 1,160 won.

The extra cost found through a cost and benefit analysis reflecting consumer's extra willingness to pay is 765won/600g.

Based on all the analysis results, we finally draw up construction schemes and detailed operational strategies for the pork traceability system.

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The Impact of Rice Market Opening on Rice Industry and Farm Economy, and Policy Alternatives

The cultivated area of rice has decreased to 955 thousand hectares in 2006, and the cultivated area of farm crops other than rice in paddy fields has been kept at a certain level. It was analyzed that the cultivated area of farm crops other than rice depends on their prices, rice price, and taste change.

But it was also analyzed that the area of greenhouse is less sensitive to crop prices than in the case of non-greenhouse products. What this means is that there will be production substitutions to soybeans, peppers, onions and others from rice if the rice farming condition gets worse.

The rice cultivated area and the value of rice production could decrease by 20% in the next 10 years. And it was forecast that the rice economy might lose more than one trillion won.

It is necessary that the crops other than rice should be produced to prevent the idleness of paddy fields and increase farm income.

In Japan, the government provides income support to farmers producing crops other than rice in paddy fields. So the income level of rice farmers is almost equal to that of farmers producing other crops. Under the guideline of the central government, local governments themselves devise an efficient way of using paddy fields and provide subsidies to farmers producing crops other than rice. The governments' subsidies are not given to the idle land. Moreover, the government subsidies are not provided to specified products. Farmers consult with the local government and decide on a crop they will produce. An important consideration in choosing a farm product is market demand.

The price supporting policy substituting rice results in overproduction and price decrease eventually. The price support for soybeans is a good example. And the market distorting policy

is not recommended because it is classified into the amber box in the WTO scheme.

It is desirable to induce the production of non-rice crops. Contract production is recommended if the production of certain products is required socially and the loan for the contract production is necessary.

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The Stabilization of Soybean Production and Improvement of TRQ System

The cultivated area of soybean has been declined over time. It has been argued that the relatively low price of TRQ soybean and quantity of TRQ soybean discouraged the domestic soybean production. Someone insists that the government should increase the price of TRQ soybean and reduce the quantity of TRQ soybean.

It was analyzed that there is no relation between the price of TRQ soybean and domestic soybean. It means two products are not substitute goods. For the same reason, the amount of TRQ soybean does not affect the price of domestic soybean. But the price of soybean procurement encourage the soybean production.

It was recommended that the contract production should be introduced to stabilize the soybean production. The reference price should be similar to rice income. The soybean procurement program can encourage the soybean production, but that has a side effect, over-production. And WTO recommend the decoupled program.

It was also recommended that the price of TRQ soybean should be adjusted to the market price. The price of TRQ soybean is only about 30% of the domestic soybean price. Overtime the TRQ system should change into the market oriented method.

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AGRICULTURAL STRUCTURE & BUSINESS MANAGEMENT RESEARCH 4

Prospects and Changes in the Socio-Economic Characteristics of Farm Households

This study aims to analyze the socio-economic characteristics and the management structure of farm households and project future changes. In particular, it theoretically reviews the dynamic changes of family farms, depicting the actual state and projecting future changes using statistical data and an actual case study on the basis of which we drew political implications to improve the size and quality of farm households and government policies on agricultural structure.

As a result of the industrial progress worldwide and social changes such as aging, the role and size of family farming are decreasing. Nevertheless, industrialized countries are recognizing the importance of family farming, setting up various policies more than ever.

The characteristics of a Korean farm household as an agricultural management unit are becoming weaker. First, family structure has become fragile by aging and atomized family. The average number of farm family members decreased to 2.7 persons per farm household in 2005 from 6 in 1960. As a result, one-generation households and one-person households became a main stream. The rate of households having a farming successor sharply declined to 3.5% in 2005 from 16.4% in 1990.

The farmland area per farming household has been increasing as the number of farming households decreased at a much more faster pace than the relatively slower decline in cultivated lands. Specifically, since the mid-1990s, agricultural resources such as land and livestock have been concentrated on large farming households. For that reason, the expansion in farming scale quickly spread while the rest small farms operated by old farmers remained stagnant. According to the 2005 Agriculture Census, the rate of farming households under 0.5ha

stood at 37.3% (470,000 farming households) and the rate of farming households run by farmers aged over 65 years was 48%. Problems related to small and old-age farming households are serious and policies to resolve these problems are urgent.

Specialization of agricultural management can be explained in terms of labor and farming types. By labor types, the rate of full-time farming has been increasing since 1996 while the part-time farming where agricultural income is more than non-farm income has been decreasing. By farming types, staple cultivation was at the center of Korean agriculture up to the late 1970s and cash-crop productions began from 1980 onward. At present, the growth trend of income from livestock, specialty crops, and floriculture is being reversed by the cultivation of income-stable rice, fruit, and vegetables.

As stated above, the characteristics of farming households as agricultural management entities have weakened and the succession of their sustainable management is not clear due to the lack of successors and farmers newly starting an agricultural management. Also, the vitality of rural society fell sharply because old and small farming households have become the center of rural region.

From now on, the focus of agricultural policy has to be changed from family farming households to various agricultural management entities. It is necessary to set up customized agricultural policies and foster sound family farming households. To accomplish customized agricultural policies, it is important to transform the `farming household registration system' into an `agricultural management registration system.' A retirement system for agricultural management and a social security system for old farmers will have to be set up. Also, it is important to foster local agricultural organizations to assist farming households and make full use of local agricultural resources and circumstances.

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An Approach to Advanced Agricultural Policy toward the Open Economy

We need to deeply think about how agricultural policy is supposed to be by the time when the market is fully opened and when Korea becomes a more mature, knowledge-based, advanced country with its per capita GNP surpassing 30 thousand dollars. Our agricultural policy is in the stage of moving from the policy of a developing country to the one that puts more emphasis on its effect and efficiency rather than adequacy.

Small size of farming, low income level, and aging farmers would represent the current problems in Korean agriculture. Whether Korean agriculture is ready or not for market openness, DDA and FTA negotiations will be continued for further opening. When the agricultural market is opened wider, it is obvious that the drop of price will deteriorate profitability in agriculture. However, Korean agriculture has relatively less alternatives in profit making when compared with other industries. To minimize the impact from market opening, the role of the government is getting bigger. But, we lack the time for preparation. And the interest contradiction among different groups in agriculture even makes the process slower. Like it or not, the Korean market will be fully opened after 2014. The current paradigm of agricultural policy can't derive advanced agriculture; hence, we are looking for an alternative and new ideas.

We define advanced agricultural policy as "one where the growth in agriculture and non-agricultural sectors is balanced and there is no radical exit of valuable resource from the agricultural sector. Technology and resource allocation efficiency is high enough to have productivity, which is equivalent to that of advanced countries. And social consent is high enough to easily solve conflicts among social classes or among different interest parties."

The tasks we derived from the study for having advanced agricultural policy are as follows: In the field of labor, it is summarized as acquiring successors, raising professional farmers who are capable of using advanced managing skills and technologies and an efficient support system. In the field of farmland, it is emphasized to acquire and preserve good farmland, use farmland more efficiently, and reinforce the planning and monitoring of usage. In the field of farm income, it is necessary to provide farmers with more opportunities to earn non-farm income and to build a DB where all the relevant information of farmers are kept. To secure the stability of farm income, a protection not only from natural disasters but also from the variation in price is required, and such a device can be income insurance or income stabilization account similar to the CAIS in Canada. In the field of R&D, it is most important to choose research topics based on farmers' demands that are most practical and easily applicable. Also by making the relation among users, developers, distributors of technology to be connected by incentives, we expect a more efficient R&D system in agriculture. For the marketing and consumption of food, it is urgent to build a concrete food safety control system that is achievable only when it is appropriately backed up by technologies and related rules. Regional development in rural areas is conditional on reinforcing decentralization to secure regional compatibility, being able to achieve practical goals by materializing policy goals and directions, and on segmenting regions such that each region can design a unique program that fits regional characteristics. Public and social insurance policies need to systemize the public's rights to basic life, elderly and public pensions, and the direct payment for transferring farm management and reorganize the public income safety system.

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A Comparative Study between Korea and Japan on Endogenous Rural Policy

This research is a comparative study between Korea and Japan on the policies for endogenous rural development. From 2005 to 2007, this research has been carried out in the form of a comparison study with Tokyo University of Agriculture. A literature survey, case investigations, and workshops were conducted throughout the proceeding. The final report is the culmination of three years of research.

Based on the concept of internal development which has the five components of 'leadership,' 'organization,' 'resource,' 'action,' and 'external assistance,' this study analyzed the conditions and chances for internal development through comparative case studies on rural village development, rural-urban exchanges, and local community organization.

Because of the high rate of rural-urban migration and the aging of rural communities, traditional social organizations in Korea have become weak and dissolved. In the case of Japan, it is very rare that traditional community organizations still remain. However, social organizations in Japanese rural communities are well organized according to the needs of modern community living in the spheres of autonomous village administration, economics, religion, and culture.

The community farming groups in Japan could save production cost and prevent the increase of idle farmland in rural communities. It is also possible to increase income and employment in the farm sector through the increase of vegetable cultivation after rice and the increase of farm processing and rural tourism.

The leaders of group farming in the case of Japan are mostly part-time farmers and new farmers who have chosen farming as their livelihood after retirement from a non-farm business. The experiences learned from non-farm sectors become

valuable for vitalizing group farming activities.

However, in the case of Korea, the leaders of cooperative farming companies are mostly full-time farmers. Therefore, the new farmers who have experience in non-farm business sectors are not utilized. The leadership of new farmers must be considered for the vitalization of cooperative farming companies in Korea.

The community building in Korea and Japan are very similar in objectives, contents, activities, resources, and outside supports. The endogenous rural community development could be classified into four steps according to the process of development and the roles played by community people and local government: mobilized, participatory, initiative and autonomous. The facilitators such as NPOs, experts, companies and civic organizations, in particular, play important roles in each step of endogenous development.

The activities of civic organizations in the form of NGOs are increasing in Korea, and the weaknesses of rural community activities caused by aging and depopulation are covered by civic organizations like NPOs of Japan. For the endogenous rural community development in Korea, it is desirable to foster facilitators like NPOs in Japan and develop various programs for the participation of community people in the course of endogenous community development.

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Investigation of Changes in Korean Women Farmers' Roles and Suggestion of Policy Agendas for the Women Farmers

This study is designed to understand changes in Korean women farmers' roles in various activity areas such as farm work, off-farm work, and local community work. It also evaluates the roles that women farmers have performed and proposes government policies for reinvigorating the women farmers' roles and activities which are anticipated to be a driving force for developing the future of our agriculture and rural areas.

The rate of women farmers in the agricultural working population was 28 percent in 1970, but since then it has increased rapidly, rising to 52 percent in 2006. The farming labor hours of women farmers made up 45 percent of the total family farming labor hours in 2005. The rate of women farmers taking charge of a half of total farm work and above made up approximately 44 percent, indicating that women farmers have become a major farming labor force in a farm household.

However, women farmers still do not occupy a central position in the agricultural management of a farm household. There is a traditional division of farming labor where men work in rice farming while women farmers are assigned with dry-field farming. The women farmers' participation rates in the decision making of input purchase and at producer organizations are relatively low. The rate of women farmers possessing their own farmland is markedly scare.

The women farmers 60 years of age and above made up 62 percent of the agricultural working women population in 2006, while the rate of women farmers 40 years of age and below was approximately 3 percent. This implies that the aging of women farmers and the low inflow of young women farmers into rural areas are significant problems of Korean agriculture and rural communities.

As economic and social conditions have changed, like the decline in farm income and changes in social atmosphere, the number of women farmers participating in economic activities through the commencement of an agricultural enterprise or by entering an off-farm work has been increasing. The activities of women farmers are prominent in making and selling traditional local foods. Such economic activities of women farmers are evaluated to have influence on the reinforcement of women's social and economic position and the realization of women's rights.

The local community activities performed by younger women farmers, such as caring for local elders and helping local festivals, are active. Active participation of women farmers is more required for rural tourism and the exchanges between urban and rural areas that have the salient traits of a service industry. Furthermore, some women farmers are recently branching out into playing local community leadership roles.

The shadow wages of unpaid "family women farmers" are estimated using the farm-level cross-sectional data from 2005. Such measurements are obtained from the duality theorem for cost function and input distance function. The empirical evidence suggests that the average shadow wage of "family women farmers" is significantly higher than the average wage of "hired women farmers" in rural areas. This indicates that it might be under-evaluated if the wage of "hired women farmers" would be applied to evaluate the wage of "family women farmers." In our survey, the elderly are asked how much they are willing to pay if they employ alternative labor force for the each role that they are currently performing. According to the survey results, relatively younger women farmers with higher education express that they are more willing to pay for alternative laborers; that is, they tend to evaluate highly their opportunity costs.

The constraints blocking vigorous activities of women farmers in various areas are surveyed. Those are the double burden of farming and housework, childcare and education, insufficient farming skills and management ability, deficient marketing and

information, lacking leadership, and so on. For active women farmers in their 40s and 50s, policy measures that consider how farming and housework can be well-balanced and how professional abilities required in various activity areas are improved are needed in the first place.

Policy directions should be reorganized to correspond with changes in women farmers' roles. Instead of a uniform policy direction which regards women farmers as welfare recipients, it is required to customize policies for women farmers so that they correspond to women's life cycle and activity development phases. Accordingly, this study suggests policy tasks for women farmers by considering the activity development phases reflected by women's life cycle.

For women farmers in the entry phase, policy measures to expand the base for fostering new women farmers should be systematically prepared. For women farmers in the developing phase, this study proposes several policy tasks to build a convenient environment for the active participation of women farmers in farming. These tasks include authorization of joint management of farms by women farmers, efficient operation of assistance programs, and establishment of childcare institutions in rural areas and a farm machinery rent system for women farmers. Also, strengthening of educational programs for improving farm skills and management abilities and supporting of women farmers starting an agricultural enterprise are required. For the women farmers in the retirement phase, policies expanding the farmers' pension system to women farmers and supporting the living of elderly women farmers should be prepared before others.

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An Analysis on the Circulation of Agricultural Land and Suggestions for Political Tasks

The purposes of this study are to analyze the current agricultural structure through the examination of agricultural land circulation and to suggest political tasks to invigorate farmland circulation.

The volume of farmland transactions has been gradually increasing in the 2000s and the size of transacted land accounted for 4 to 6 percent of the total agricultural land. This ratio of transacted land is not insignificant even compared to foreign countries like Germany. Thus, it can be said that farmland transactions took place without difficulty on the quantitative side.

The effects of farmland circulation were different according to the class of farm households. The circulation of land transactions has influenced the farm households with a land under 0.5ha to reduce their farmland whereas farm households with a land over 3ha were influenced to expand their enterprises by accumulating agricultural land.(The reduction of farmland in farm households with a land under 0.5ha was characterized by the decrease in the farmland under a farmer's ownership.) It is because the land transactions were made partly by the farm households with a land under 0.5ha each that want to farm on a small land with a farmer's ownership. On the other hand, land transactions also were made by the farm households with a land over 3ha each that want to expand their enterprise through land purchase and tenancy.

The land tenancy trend in the 2000s shows that the total amount of leased farmland was gradually increasing until 2004 when it started to decrease. This can be attributed to the fact that there are factors that restrict or at least not facilitate the circulation of farmland tenancy. However, altering and renewing land tenancy contracts for the leased farmland have contributed to the active circulation of land tenancy, which is estimated to account

for 10% of the total agricultural land and one-fifth of the total leased farmland. Through this process, farm households with a land over 3ha are expanding their enterprise.

The average size of farmland per household as a result of land circulation has not been increasing recently, but rather slightly decreased since 2004. It is mainly because the decrease rate of farm households is not high enough to exceed the decrease rate of agricultural land. In 2006, the average size of farmland per household is estimated to have been 1.45ha.

The desirable measures to facilitate the circulation of agricultural land are to restructure the farmland system institutionally and to politically promote a project for transferring the enterprises of elderly farmers.

The principle to restructure the farmland system is ultimately to abolish all restrictions on farmland ownership and tenancy. But this goal should be attained only when a planned diversion system of agricultural land can replace the current diversion of small and dispersed lands for use. When this is realized, it will boost the circulation of farmland without a speculative demand for agricultural land.

In order to improve the agricultural structure, two measures on transferring farmland should be phased in as follows:

First, the introduction of a handover project on farmers over 75 years of age as primary subjects.

Second, the extension of a handover project to farmers over 70 years of age and farmers over 65 years of age as next subjects.

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Enhancement of Marketing Performance of Small Agricultural Business Corporations in Korea

Our research has been carried out to identify key issues or problems associated with the marketing activities of agricultural business corporations in Korea and to contrive realistic suggestions for boosting their dormant marketing potentials.

In 2005, the total number of agricultural business corporations excluding tiny firms operated by a single investor and owner exceeded 3,500. Currently, there are mainly two types of agricultural business corporations in Korea. One is the corporation whose operation style has a similarity with the current Agricultural Corporative Associations. The other is the corporation whose operation style has a similarity with the general business corporations in non-agricultural sectors.

Our research is a kind of a case study selecting 24 agricultural business corporations as a sample group out of 3,500 agricultural business corporations. Our sample is selected with several criteria such as annual amount of total sales exceeding 1 billion won. Also, we performed interviews and a questionnaire survey on CEOs or prime managers of marketing and sales divisions.

The current rules and the system associated with supporting agricultural business corporations are mostly comprised of contents linked to taxation exemption or reduction rules for a limited time period. Furthermore, these rule have already expired in 2006. The National Assembly has been deliberating and debating whether or not the tax exemption or reduction should be extended for the current or new agricultural business corporations. On the matter of boosting the marketing performance of agricultural business corporations, there is no government support or consultation program at all for them.

The key findings of our research are the following: First, based on our corporation survey composed of 24 sample companies, the average 'sales margin ratio' and 'net profit ratio

before tax' are 14.3% and 7.0%, respectively. Also, according to a quantitative evaluation of relevancy of number of employees or quality of current employees' performance pertaining to the division of sales and marketing, they also exhibited that more talented employees are needed in the division even though their level of satisfaction is better than average.

Second, in the context of a factor analysis associated with the marketing 4Ps, we found that only 3Ps(Product, Place, and Promotion) are mixed together in the evaluation of individual firm's actual carrying-out of marketing. Price is assessed as if it is functioning independently.

Third, we analyzed the relationship between individual corporation's business performance and several marketing activities as outcome and causal factors, respectively. ① The corporations with better marketing activities linked to 'Product' exhibit higher total annual sales than the other. ② The corporation group with a higher expenditure ratio associated with all promotion activities exhibits a higher growth rate of annual total sales than the other. ③ As for net-profit ratio, the corporation group with better marketing activities linked to 'Product' or 'Price' has outperformed the other group.

There are three major factors that play a key role in limiting the marketing of agricultural business corporations: difficulty of hiring good quality workers for marketing and sales, low competency of publicity promotion of company and brand, five key deficiencies in capital stock, publicity, labor stock, competent (talented) brain, information.

Marketing is a kind of comprehensive art. To raise the marketing competency of current agricultural business corporations, the government's taxation reduction or exemption may play an important role. However, a more comprehensive and sophisticated support program needs to be prepared in view of development stages(3 stages: entry, growth, establishment) of agricultural business corporations. The newly suggested support system deals with all kinds of management issues even though it focuses on marketing.

Thus, to carry out the new support program successfully, we might establish a new institution or organization which plays the core role of incubating, too.

Currently, there exist two major government institutions for general small business corporations. They are Small and Medium Business Administration and Small Business Corporation. These two institutions may also take care of small business corporations in either agricultural or non-agricultural businesses. However, since most of their clients(over 98%) belong to non-agricultural sector, they may lack a proper understanding of the current state of Korean agriculture, and this is the general viewpoint of most CEOs interviewed in the survey. Thus, a newly suggested institution might be needed to enhance the marketing development of current or future agricultural business corporations in Korea.

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Development Strategies of Mutual Finance in Agricultural Cooperatives

The purpose of this study is to devise development strategies of mutual finance in agricultural cooperatives and propose guiding methods to NACF(National Agricultural Cooperative Federation). We expect our study will help the mutual finance adapt more quickly to the changing environment of the financial market, hence acquiring competitiveness in the long run.

The development strategies are made to meet financial needs in three regions. They are large cities, small cities, and rural areas. A single development strategy for all mutual finance is difficult to draw up because regional differences are getting bigger and tasks ahead are different among mutual finances of agricultural cooperatives. For example, in big city areas, the growth of agricultural cooperatives in terms of business size is slowing down as the competition with general banks is severe and the deposit-lending ratio is low due to the stagnant real estate market. And in rural areas, growth has slowed because of shrinking regional business and stagnation in agriculture. Hence, chronic deterioration of profitability is prevalent.

In order to accomplish the purpose of this study, we did the following:

Firstly, we analyzed the level of influence of the changing environment with respect to such factors as abolition of tax-free benefits, changes in agriculture, etc.

Secondly, we categorized mutual finances of agricultural cooperatives according to regions and characteristics and laid down development strategies not only by assessing different tasks but also by analyzing efficiency differences among different groups of mutual finance.

Lastly, we set up guiding methods for the mutual financing of each group by the NACF and performed a statistical analysis

on relevant size and efficiency level of mutual finance to devise a standard index for managing mutual finance.

The goals of proposed development strategies include "to make more unique and identifiable mutual finance", "to make the level of coordination among agricultural cooperatives higher," "to make the size bigger", "to make mutual finance more accessible to regional customers", and "to construct an efficient and rational decision-making mechanism in business".

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A Master Plan for the Development of Agriculture and Rural Areas in Kimhae

The world is currently experiencing further market liberalization given current trade agreements and negotiations such as DDA and FTAs. The changes of agricultural policies in the context of market opening focus on multiple functions of agriculture. The changes in agricultural policies to compete with imports are predicted to have a strong influence on local agricultural sectors. In particular, agricultural investment and its projects of local autonomous entities constitute a major factor in determining the quality of life of local farmers and the production competitiveness and income level of each farm household. Accordingly, the formulation and implementation of agricultural plans performed by local autonomous entities have a significant position in the entire agricultural plans.

This study examines regional, environmental and socio-economic features of agricultural sector and rural communities of the overall Kimhae in view of internal and external environments surrounding its agriculture and rural communities. Also, this study makes suggestions for Kimhae's master plan on agricultural sector and rural communities based on assessment results of strong and weak points.

Comprised of seven Myeons and two towns, Kimhae has the possibility of growing as an urban-rural mixed region because it sits near a metropolis.

In the agricultural sector, Kimhae has a potential to promote a specialized premium rice brand with its existing eco-friendly rice processing complex such as the unified Hanlim RPC. However, the development would require improvement of rice breeds, rice processing systems and soil pollutions.

Kimhae has specialized crops such as sweet persimmon, flowering plants, strawberry, wild berries, potato and melon. Recently, the production volume of wild berries has been increasing.

The livestock industry of such animals as Korean beef cattle and hog in Kimhae is also famous. For this reason, the region is trying to reestablish a 'Special Korean Beef Cattle Zone' in Jinyoung town. However, higher land prices and lower faith make it difficult to realize economics of scale and new entries into the livestock industry.

The distribution units such as the Agricultural Products Processing Centers are small-scaled and dispersed. Furthermore, the level of consumers' recognition of agricultural products produced in Kimhae is relatively low because its brand marketing strategies have focused on individual brands, not on integrated ones.

As for tourism, the tourism resources of Kimhae, which consists of rural communities, mountains, fishing villages and city districts, are not sufficient because many manufacturers are headquartered in the mountainside. However, it is good to make a day's trip to rural districts.

Given the situations, Kimhae needs to construct an Agricultural Theme Park for future development of agriculture and rural communities. The term 'Agricultural Theme' stands for establishing an agricultural industry producing specialized quality and eco-friendly products, while 'Park' refers to resting and living space offering safe foodstuffs with tourism attractions. In order to realize the vision of Agricultural Theme Park, it is necessary to pursue the following strategies: 1) selection and concentration of specialized farming, 2) construction of local distribution infrastructure and integrating brands with quality goods, 3) creating pleasant living environment, and 4) establishment of economic models spearheading changes and promoting growth mutually beneficial to rural and urban areas.

From the above mentioned strategies, the comprehensive development plans could be summarized as follows:

1) Establish rice production and distribution systems based on the integrated Rice Processing Complex in Hanlim Myeon.
2) Set up a production complex for the region's specialized

crops including strawberry, sweet persimmon, flowering plants, and other crops.

3) Develop a premium Korean beef cattle brand in link with the "Special Korean Beef Cattle Zone" in Jinyoung Myeon and Sanglim Myeon. Also, it is needed to promote eco-friendly livestock industry through natural stock breeding.
4) Introduce eco-friendly projects in all areas. Also, it will be possible to produce eco-friendly crops in areas adjacent to Nak-Dong river, such as Daedong Myeon, Sangdong Myeon, Seanglim Myeon, and Hanlim Myeon.
5) Enhance distribution and export systems through such means as the establishment of centralized and integrated RPC, APC, and LPC in Kimhae, which leads in large-scale farming of standardized and premium brands.
6) Build Green Life and promote its industrialization in Kimhae to increase farm visits and interactions between rural and urban areas. For example, it is recommended to create an agricultural theme park and various weekend farms, develop candidate sites of Green Farming Experience Town and enhance tourism resources in farming communities.
7) Develop the region as a pleasant and convenient place of settlement not only for existing residents but also for city dwellers. To do so, a comprehensive town development project is necessary, including improvement of living, production, and natural conditions.
8) Establish education systems and enhance education quality for elite farmers to prepare for the coming of a knowledge-based agricultural era.

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A Study on the Development of Regional Farming Organization Model and Support System

The goal of this study is to develop a model aimed at strengthening the competitive power of local agriculture and to suggest a way of constructing a support system by analyzing the actual state of agricultural organizations in charge of agricultural production and distribution in rural areas.

In the study, we suggested a development direction of organizing local agriculture based on farming organization trends, policy-driven processes and types, and a case study of farming organizations.

Second, to design a model for agricultural management in rural areas, we searched for ways to develop and structurally improve regional agriculture based on a mathematical programing model that could satisfy various management goals under a given condition of agricultural resources at the local level and based on "nature-circulating agriculture" related to seedling and livestock farming.

Third, on the relationship between a farming organization and a local agricultural cluster, we searched for a development possibility, a policy program, and a way of promoting a local agricultural cluster as a supporting system of local farming.

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A Study on the Management of Agricultural Marketing and Price Stabilization Fund

The purpose of this study is to develop a managing plan of the agricultural marketing and price stabilization fund, which is relevant in the changing environment of market liberalization and agricultural marketing conditions.

The agricultural marketing and price stabilization fund took effect in 1968 and currently its total amount reaches 35,508 million won. Most of the financial resources are derived from the fund proceeds from agricultural buffer stock and trade. In 2006, 71% of the fund was used as loans for producing districts and wholesale and retail marketing (38.2%) and for supporting the production of high-quality agricultural produce (17.1%). And the governmental price stabilization was 14.1% and the management of seed demand and supply was 2.4%.

In order to forecast the fund proceeds, we performed a research on long-term prospects to propose a new project based on the modalities addressed in July 2007 by Crawford Falconer, president of the agricultural negotiations group of WTO. It is shown that the fund's total amount will start to decrease no sooner than 2013 and no later than 2017, depending on an applied scenario and characteristics.

To make the agricultural marketing and price stabilization fund more useful, it is necessary for the government to reduce direct market intervention systems that were created to manage the supply and demand of agricultural products. The utilization of the agricultural marketing and price stabilization fund needs to focus more on promoting consumers' welfare and on increasing producers' income by assisting new value creation in agriculture. In particular, the government has to retrieve the fund thrown at short-term stabilization of supply and demand and expand its use for structural reform in flower and food industries.

The government needs to restructure the current fund into an agricultural marketing development fund. When separating the fund from the farm safety laws, we need to rename the laws to the agricultural marketing fundamental law to be more specialized in marketing.

The agricultural buffer stock system has to be changed into a more market-oriented system. It is desirable to use both trade and import rights auction as the fund's resource. We need to gradually and carefully increase the auction of import rights by analyzing its effect on the domestic market on a product basis. By considering all related matters systematically, such as tariff rate and import status of each product and similar products as well, we need to effectively apply the TRQ system so that a TRQ control does not increase the import of similar goods or substitutes.

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Evaluating and Restructuring the Agricultural and Rural Aggregate Policies in Korea

The purpose of this study is to evaluate the "agricultural and rural aggregate policies" of the incumbent participatory government, the comprehensive measures which began in 2004, and make suggestions on how to restructure them.

The previous special plans for agriculture made substantial outcome in terms of stable production, enhancement of agricultural product quality and safety, and enhanced efficiency in distribution. However, the producer income growth became stagnant. Under the debts, the farm households' financial status was insecure, and the rural areas' aging and giving up of farming have accelerated. To resolve the problems mentioned above and effectively respond to the inevitable market opening, the comprehensive measures gave a heavy weight to income growth, welfare expansion, and regional development. Since the unstable income became an issue, the government expanded the income support measure by adopting a direct payment system. Furthermore, the market-oriented agricultural policy was introduced and the government's rice purchase program to support rice price was discontinued. On top of these, the government is reviewing the introduction of customized agricultural policies to enhance policy effectiveness by applying a differentiated policy program in consideration of farm household's resources, management capability, and choices.

From the beginning, the government is scheduled to monitor and evaluate in every three years since it is a long-term plan from 2004 to 2013. And in order to adapt to the rapidly changing environment surrounding agriculture, it is necessary to find problems and mistakes and revise policies during the implementation stage. In the study, we first checked whether the policies have been executed well according to the original long-term vision, objective, and strategy, which were announced in 2004. Then by examining

the appropriateness of the vision and objective in the changing policy environment, we made a suggestion on how to adjust the policies and the related financial plan.

In grouping the policies according to sectors and commodities, we analyzed how well the policies were implemented. There are the following six policy sectors: fostering agriculture into a competitive, environment-friendly, high-quality industry; securing farm household income and management; developing rural community and welfare; innovating distribution channel for agricultural products; fostering forestry; and maintaining agricultural production foundation. The sections in the commodities are rice, livestock, vegetables, and fruit.

The major suggestion made by the study is to keep food, agriculture, and rural area as most important subjects in deciding policies. Because of the weak rationale for combining agriculture, income, and rural area as main common subjects of an agricultural policy, the current comprehensive measure can't appropriately deliver the role of an agricultural policy. It is desirable to expand region-oriented rural policies. It is necessary to promote marketing innovation, upgrade agricultural labor force, and expand income stabilization and welfare policies. It is desirable to put more emphasis on food safety and expand rural development in terms of quality of life in rural areas and multi-dimensional functions of agriculture.

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A Study on the Development of Long-Term Agricultural Indicators for the National VISION 2030

This study aims to develop main indicators that could be used for measuring industry changes and future progress expected in the agricultural sector in the process of fulfilling the national strategy VISION 2030. The study also seeks to specify policy directions and formulate a proper strategy for the development of rural Korea under a long-term perspective.

In the midst of rapid changes sweeping Korean agriculture and rural areas, the specification of rational and feasible goals, in addition to sound policies, is very important and essential.

The comprehensive national VISION 2030 has already been proclaimed and its goals are specified to be carried out systematically at the national level.

The contents of the national vision include such goals as renovation of economic and social institutions, establishment of a social safety net, and formulation of policy directions for a continued economic growth that would enable Korea to become a progressive developed country. Specifically, the main indicators of the national VISION 2030 are as follows: The per capita gross domestic product(GDP) will be about US$ 49,000(the same level as that of Switzerland today). The quality of life will be ranked within the top tenth in the world(the same rank as that of the U.S. today). The technological level will be enhanced to stand in par with those of developed countries. The number of innovative small and mid-sized enterprises(SMEs) and social service jobs will be greatly increased. In terms of human resources, too, Korea will be placed on the tenth level, while the level of social welfare infrastructure will be equal to those of developed countries, and so on.

In line with such overall goals of VISION 2030, this study proposes industry goals and presents an industry forecast along

with major rural indicators such as agricultural total revenue, number of farm households, agricultural population, and farm household income. In addition, a set of policy options and implications for achieving the vision are suggested.

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Revitalization of Farmland Banking Enterprises and Management Measures for Abandoned Farmland

This study aims to investigate the problems of the current farmland banking system and come up with directions and practical ways to revitalize the farmland banking system. Furthermore, we examine the current management situation of abandoned or idle farmland and propose ways to improve management and use of this farmland.

Among the farmland banking enterprises, both 'farmland leasing enterprise' and 'farmland purchasing enterprise for management revival support' have received a good response from participants and gained high performance. The survey results from participants of the 'farmland leasing enterprise' revealed that tenants have shown higher satisfaction while landlords have had lower satisfaction and expectation, indicating that most landlords reluctantly participate in the enterprise. The 'farmland purchasing enterprise for management revival support' has received a good response; however, many participants have pointed out some problems regarding the contents of the enterprise.

A describable direction for improving the current farmland banking enterprises is to develop the farmland banking system as a new integrated farmland control organization. The roles of the new organization include control of farmland transactions and tenancy, promotion of increasing farmland in size, improvement of land use and conservation, and management of information related with farmland. It is better to develop the current farmland banking system as an integrated control organization rather than to set up a new organization for controlling the land. In the 'farmland purchasing enterprise for management revival support,' the scheme of purchase and reselling at current market price should be replaced with that of purchase and reselling at standard prices.

Concerning the construction of an integrated land control organization, it is necessary to maintain the farmland system and expand its operations as the following: introduction of a registration system for farmland transactions and tenancy, a supporting system for direct land transactions, and a management system for abandoned farmland; and construction of a complete farmland information system.

The institutional improvement for developing the farmland banking system and managing abandoned farmland can be accomplished through the following: Firstly, 'projects for increasing farmland in size' are necessary to be included in the farmland banking enterprises. Secondly, the enterprise for purchase and reservation of farmland should be introduced as a farmland banking enterprise. Thirdly, it is necessary to expand 'the project for arranging marginal farmland' by purchasing abandoned farmland through an enterprise for purchase and reservation of farmland.

The two methods for using and managing abandoned farmland are as follows: One is to take preventive measures against abandoned farmland. The specific measures are to expand the direct payment scheme to include dry fields and to make the best use of abandoned farmland by classifying them into agricultural use and non-agricultural use. The agricultural use of idle farmland includes improvement of farming conditions in less-favored areas and cultivation encouragement of alternative energy crops.

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A Study on the Introduction of Livelihood Stabilization Programs for Elderly Retired Farmers

The purpose of this study is to develop and introduce livelihood stabilization programs for elderly retired farmers in order to change the agricultural structure in a favorable way and stabilize their livelihood. In particular, this study aims to forecast problems that might be caused by the introduction of such programs and provide appropriate policy measures to resolve the problems.

Many elderly farmers are engaged in small scale-farming alone or together with their spouse. The insufficiency of social safety nets such as government welfare services makes them engage in farming for living after retirement. A sample survey shows that the national pension ratio of elderly farmers is no more than 2.6% and the percentage of farmers who benefit from the national basic livelihood security system is 5.9%. Eighty two percent of elderly farmers cannot prepare for their retirement properly.

To improve the agricultural structure, agricultural policies have to be transformed into cafeteria-style programs selected directly by policy demanders. That is, farmers themselves select suitable policy programs according to their development levels. For elderly farmers, the programs creating jobs suitable to them and strengthening welfare services for their retirement should be developed and provided. In particular, the government should make elderly farmers retire from farming without any anxiety about earning a living. The government support related to farming should be phased in so as to change the agricultural structure in a suitable way.

The examination of policy measures for stabilizing the livelihood of elderly farmers and helping them retire from farming is necessary. First, the welfare services increasing the

quality of life of elderly retired farmers should be strengthened. The creation of jobs suitable for the physical abilities of elderly retired farmers should be expanded along with the increase of national pension support, labor support for vulnerable farm households, and residential home care service. Second, like the livelihood stabilization fund for elderly retired farmers living in rural areas, a policy measure compensating the decrease in income caused by retirement from farming should examined. Third, a reverse mortgage loan for rural areas is necessary to transform assets such as land to income. Fourth, policy measures and systems to prevent voluntary retirement of elderly farmers have to be reappraised.

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Strategies to Develop Joint Marketing Firms of Primary Cooperatives

The objective of this study is to find ways to foster joint marketing firms, or "marketing firms in common," so that farmers can adequately respond to various requests of the consumer market. A joint marketing firm is a company jointly invested by primary cooperatives, playing the role of processing, marketing and selling agricultural products instead of cooperatives.

The new organizations in charge of produce shipping have shown to actively correspond to the requests of the consumer market. However, joint alliances or integrated cooperatives at the regional level have shown limitations in terms of specialization, enterprising, and business adjustment. Hence, a joint marketing firm was introduced to overcome the limitations and take charge of business activities that are difficult for an individual regional cooperative to fulfill.

By conducting interviews with entrepreneurs of various agricultural produce shippers including joint marketing firms, we figured out what have prevented the development of agricultural produce shippers. The interviews focused on the governing structure, capital raising, profit distribution, and related laws including tax.

In the study, we made the following suggestions to develop joint marketing firms: First, it is necessary to acquire and expand necessary business volume so that it can satisfy the needs of consumers. Second, it is necessary to secure stable profits and have growth so that it can be financially independent of the government and the NACF. Third, a joint marketing firm needs to expand business scope and create values. Fourth, it needs to efficiently acquire and manage capital. Fifth, it needs to be efficiently managed by a capable CEO. Sixth, it needs to have a good relationship and role sharing with the NACF and member cooperatives. Seventh and last, systematic organization of farmers

should be promoted to have good-quality raw products and timely shipping to joint marketing firms.

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Developing the Performance Evaluation Strategies for the Agricultural Policy With AHP analysis

The objective of this study is to develop the performance evaluation strategies for the agricultural policy with AHP analysis. This study include goals and management strategies to affect the major elements of financial factors, institutional factors, environmental factors.

The AHP is a structured technique for dealing with complex decisions and provides a comprehensive and rational framework for structuring a problem, for relating those elements to overall goals, and for evaluating alternative solutions. It is used throughout the world in a wide variety of decision making filed, in fields such as government, business, industry, healthcare, and education.

With 4 goals and 24 strategies questionnaire divided into categories, performance indicators of the factors have been measured. Research methods include visits for professionals directly and e-mail survey. In addition, the major developed countries analyzed by comparing the performance management system.

0.2 or less is absolute importance of performance indicators to evaluate indicators for reconsideration, it is necessary to improve the indicators. Performance indicators as a low priority relative to other indicators of performance indicators for the process as a replacement is needed.

The major developed countries through the performance management system can be obtained as follows. Performance management systems should be clearly within the responsibility, independence, and decision-making.

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A Study on Modelling and Management of the OECD World Agricultural Outlook Model, Aglink 2007

Aglink model is a dynamic recursive simulation model and a demand-supply partial equilibrium model of the world agricultural sector. The model was developed by the OECD Secretariat in cooperation with member countries in 1993 and has been used to make forecasts on the world agricultural outlook and use it as a simulation model for various policy analyses.

As this study will be carried out continuously year by year, the final aim is to build a sufficient application capacity of KREI (Korea Rural Economic Institute) to analyze the world agricultural market and indicate future directions of Korean agricultural policies. The major research contents of this year are as follows.

In the 1st chapter, the research background, aims of this study, a review of preceding researches and a brief explanation of imported variables and national industry structures in the Aglink 2007 model are introduced. In addition, commodity prices and the production and consumption of the world agricultural market are introduced based on OECD-FAO Agricultural Outlook 2007.

In the 2nd chapter, we reviewed the current status and outlook of world bioenergy and introduced an outlook for agricultural raw materials.

In the 3th chapter, we introduced a global supply and demand model for crops with the OECD-Aglink DB and outlook forecast and analyzed their effects on the world and Korean agricultural markets with a few possible scenarios reflecting possible changes in the consumption of bioenergy resource crops.

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World Agriculture Online Reports

The world agricultural policy and trade are wielding an increasing influence on domestic agriculture. Accordingly, it is important to have information on agriculture of other countries.

This study aims to provide farmers, entrepeneurs, researchers and organizations with information on agriculture and farm policies of other countries. It is expected to be used for agricultural policy making, identifying the world's agricultural trends and setting up trade negotiation strategies to increase agricultural export and improve farm management.

The collected information is provided through the 'World Agriculture Online Reports' section of the KREI website. In 2007, a total of 136 world agricultural news, including 6 overviews on world agriculture, together with reports on 10 agricultural policies and 120 global topics, were covered in the reports. The information was provided mainly by KREI researchers in cooperation with MAF and other related organizations such as RDA and SNU. The information was also accessible through World Agricultural News, a monthly publication (140 pages or so long) of which about 780 copies were printed every month last year.

The website section of 'World Agriculture Online Reports' was renovated last year with a new search engine and links to related websites for expanded sharing of information among policy makers, researchers, Internet searchers, translators, writers, and others at home and abroad.

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5 INTERNATIONAL AGRICULTURAL TRADE RESEARCH

A Research on an East Asian FTA for the Agricultural Sector

From the EU's experience, the East Asia needs to accomplish the social integration with respect to the cultural and historic discord to lead the nation to prosperity. Therefore, it is important to establish the economic cooperation and integration with a form of FTA as the first step to perform the full integration.

For the FTA, it is desirable to facilitate the existing regional free trade agreement such as APEC, ASEAN, and FTAs within the East Asia. In addition, ASEAN+3 is more applicable rather than EAS. In the case of Korea, it is necessary to derive NEAFTA and link it to AFTA for EAFTA. However, as a matter of fact, it is highly possible to establish EAFTA through ASEAN+1. In that case, ASEAN would play an important role as a majority.

The agriculture of the East Asia depicts several common characteristics which include a poor agricultural infrastructure system and a similar pattern of structural changes. Per capita arable land is 0.18ha for ASEAN, 0.12ha for China, 0.038ha for Korea, and 0.037ha for Japan. In addition, ASEAN and China are net exporters for agricultural commodities in recent years. However, ASEAN's volume of agricultural exports is much higher than that of China, and it is anticipated that the export potential of ASEAN would be greater than that of China as well.

The agriculture of the East Asia shows that the ratio of grain production to other commodities such as fruits and vegetables is changing dramatically in recent years, which means that it would concentrate on value-added production. Thus, the fruits and vegetables industry will face more competitive markets in the East Asia, and grain imports from other nations will increase due to a decrease in the East Asia production. In case of the livestock industry, the East Asia would focus on the small size or medium size livestock industries such as the pork and poultry industry

rather than the beef and cattle industry because of limited resources. Furthermore, these trends will be persist in the near future. Therefore, more competitive trade market will be happened in the East Asia.

According to the results of an analysis for competitiveness within the East Asian market, Chinese competitiveness for agricultural products except chicken is highly competitive in the Korean and Japanese markets. In addition, that of ASEAN for rice and corn products is increasing as well, thus a competitive relation between China and ASEAN will be more complicated in the two import markets. However, in Chinese and ASEAN import markets, Korean and Japanese agricultural exports are negligible. Meanwhile, Chinese corn and rice exports to ASEAN decrease, but ASEAN corn and rice exports to China increase, thus the complementary trade relation is developing.

There will be a few difficulties establishing the economic integration including agriculture. To avoid the worst possible role that agriculture might play in the negotiation, cooperative and positive role of agriculture is demanded, which includes reforming the domestic regulations based on the global level. Furthermore, various market openings that would impact on the East Asian agriculture will cause different economic and social problems. Therefore, it is necessary to prepare for the changes adopting the new trade environment. When it comes to trade, various non-tariff barriers should be eliminated, and the useful information has to be shared within the East Asia as well as technical standards for agricultural commodities should be developed. In addition, the existing quarantine procedure and customs, commodity standards, labeling, and other important things should be considered to increase the volume and value of agricultural trade within the East Asia.

As the East Asia FTA promotes the agricultural trade volume within the East Asia as well as with the other countries, food safety would become more important issues. Thus, persuasive quarantine standard must be proposed to prevent from unnecessary

social economic losses within the East Asian markets. Moreover, consistent economic cooperation and complementary trade relation should be maintained and developed as well.

For the means of compensation for the various market openings, it is necessary to launch various economic cooperation activities for rural areas and the agricultural industries within the East Asia. Furthermore, Technical cooperation, labor exchange, natural resource management, and investment in marketing and processing sections must be considered to accomplish the ultimate objective of being a "Single Market".

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A Study on Agricultural Development Cooperation between Two Koreas

This study aims to suggest strategies for carrying out the agricultural development cooperation between South and North Korea. To do so, we need to identify the prerequisites and lay down detailed measures in advance. Humanitarian assistance and development cooperation have different purposes and principles. Therefore, we need to reestablish the purposes and principles of cooperation to transform the humanitarian assistance into development cooperation. Also, we have to decide the type of programs, means of execution, and kind of institutional support that are needed to maximize the cooperation outcome. Another important element to consider is to secure funds and make a consensus among ourselves. Ownership and partnership are especially important for development cooperation. Both the South and the North are main entities for cooperation. Accordingly, this report reviewed necessary issues to execute agricultural development cooperation between the two Koreas.

The lessons learned from the experiences of developed countries are that the recipient country should precisely prepare a development plan with a sense of ownership and that results will be obtained only when mutual cooperation is formed through the partnership with the donor country. If the recipient country has not yet formed a foundation on which development cooperation can be carried out, the cooperation should be carried out after the recipient country is prepared to carry out the development cooperation.

Financial resources are needed to execute development cooperation in the agricultural field. However, North Korea has a limit in supplying the financial resources by itself; therefore it should concentrate on securing financial resources from outside the country. One way to secure financial resources is to borrow

money from international financial institutions(IFIs), and this would be the most desirable way. However, North Korea has not even joined the IFIs yet and, as a result, it cannot secure funds for immediate use. As an alternative, North Korea can obtain financial resources from South Korea or Japan, and actually this has the highest possibility. The financial resources needed for the agricultural development can be obtained by North Korea's securing of monetary compensation from Japan and by deepening the current cooperation with South Korea. Also, obtaining financial resources in the form of a consortium by the international society can be expected; however, a considerable amount of time will be needed before it can be realized.

Understanding the needs of North Korea is necessary to carry out the agricultural development cooperation with the North. The best way is for the concerned parties to directly meet and discuss. For an advanced preparation, the operations North Korea carried out with the international society should be evaluated and North Korea's agricultural administration should be analyzed through a comprehensive examination of information obtained from interviews with the concerned people. The position of South Korea can be adjusted. Considering the financial restraint among several possible operations, the preferential operations and operations that should be carried out at a later date should be classified and carried out in stages.

The important thing in development cooperation is to be equipped with necessary systems. For the development cooperation with North Korea, first of all, a consensus among the people is needed. This can be casually discussed while in the process of establishing or consolidating related laws. The law regarding the development of relationship between the two Koreas, which was announced on December 29, 2005, should be a basic law ready to carry out the agricultural development cooperation; however, it is not yet actualized and it is concluded to have a limit in including the details needed for the development cooperation. Therefore, establishing a broader law may be an alternative. This

can be achieved by establishing a separate law for the development cooperation or by revising the 'Law on Humanitarian Assistance for North Korea,' which is currently being discussed, so that it contains the humanitarian assistance and development cooperation. Reforming the systems to carry out the development cooperation is also urgent. Up to this point, all the work regarding the assistance toward North Korea was supervised by the Ministry of National Unification. From now on, however, professionalism should be strengthened when a specific cooperation project is carried out in various fields. On this matter, participation of related government ministries and offices is needed, and when this happens, the relationship with the Ministry of National Unification should be newly established. As outlined in the agreement made during the second round of the summit between the leaders of two Koreas, the 'North and South Korean Economic Association Committee' is expected to be established; therefore, the current 'North and South Agricultural Cooperation Committee' should be retitled as 'Agriculture and Fisheries Subdivision Committee,' a subdivision of 'North and South Korea Economic Association Committee,' and maintain the function as it is. Only by doing so can the agricultural cooperation maintain consistency in the general frame of economic cooperation. Also, a systematic relationship of assistance between the Ministry of National Unification and the Ministry of Agriculture and Forestry can be anticipated. In the financial side, there is a limit to securing a sufficient amount of fund needed for the development cooperation only with the current North and South cooperation fund; therefore, utilizing the budget of the Ministry of Agriculture and Forestry, which is a related ministry, will resolve the budget limitation.

The existing humanitarian assistance should not be interrupted just because of the development cooperation with North Korea. Humanitarian assistance and development cooperation should be carried out side by side for some time, while placing more emphasis on the development cooperation. Only when the humanitarian assistance and development cooperation are carried out side by

side can North Korea's food problem be lessened. By pursuing the humanitarian assistance in connection with development cooperation, the assistance towards North Korea can be more effective with increased benefits. Agricultural development cooperation cannot be carried out by the government independently. Roles should be assigned to local autonomous entities and private organizations; and through systematic cooperation among them, the cooperation can be carried out more effectively. Maintaining a cooperative relationship with the international society is very important as well.

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Development of Chinese Horticultural Industry and its Implications

China has been playing an important role in the world agricultural production; China feeds 22% of the world population with its territory covering 7% of the world's land area. The cultivation area and production of Chinese vegetables and fruit have rapidly grown since the late 1970s and vegetables overtook livestock products in export amount after the country's entry into the WTO. The increase in the production of vegetables and fruit was caused mainly by productivity growth with the development of new varieties and production technologies rather than by an increase in cultivation area. Low wages and rents accelerated the development of the vegetable and fruit industry.

The average quality level of vegetables and fruit produced in China, however, is still low. For example, some 90% of total fruit produced in China are mostly low quality and are consumed within China. The per capita consumption of fruit is also much lower than that of developed countries while the consumption per person has increased over time.

The Chinese flower industry has also grown rapidly. The growth of the cut flower industry of Yunnan Province is remarkable. Yunnan Province produces about 70% of total cut flowers in China even though 15 years have not passed since the cut flower industry was introduced in Yunnan Province. However, the cut flower industry faces some challenges not only because farm sizes are relatively small but also because farmers do not have the perception of intellectual property rights.

One of the features of the Chinese vegetable and fruit industry is that the industry is most affected by the government. For example, the "Green Basket Policy," which was initiated in 1988, well exemplifies the government-driven policies to solve the problems in the vegetable industry. The other example can be

found in the fruit industry. To improve the quality of fruit, the Chinese government initiated a reallocation program for apples and oranges in 2004. The program was designed to concentrate the production of apples and oranges on specific regions to enhance competitiveness.

Despite many advantages, the Chinese vegetable and fruit industry faces new challenges; wages and rents spiraled up, and some vegetables experienced low production because of consecutive cultivation. Furthermore, consumers, particularly the residents in coastal provinces, tend to purchase higher quality products and more diverse food, so it is not easy for the Chinese farmers to meet the needs of high income consumers.

To see the price competitiveness, the MCA indices are calculated. The indices indicate that 63 items of Chinese vegetables and fruit have competitiveness in the Korean market while only 3 items of Korean products have competitiveness in the Chinese market. This result shows that the Korean products are not price-competitive against the Chinese products, which implies that the Korean growers should not compete with the Chinese growers in terms of price but quality. It is generally recognized that the Korean products are still competitive in terms of quality against the Chinese products. However, it is also a fact that the Chinese products have caught up with the quality of the Korean products. As a result, the distinction in quality between the two products is not large.

To compete with the Chinese products in the Korea market, the Korean growers should produce safer and higher quality products than the Chinese products. Additionally, producers should reduce costs by enforcing efficiencies in marketing. If the Korean growers can produce safer and higher quality products and reduce marketing costs, the Chinese market may offer good opportunities for the Korean products because the demand for safe and high quality products in China is very promising.

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Changes in Agricultural Structure and Policy Reforms in the European Union

The European Union (EU) has experienced a steady change in farm structure and policies. The structural change is highlighted by enlargement of member countries in addition to production intensification and specialization in competitive areas, extensive farming in disadvantageous areas, and polarization in farm sizes. The driving forces behind this change include substitution of capital for labor, a rising demand for large-scale operations and extra income creation, the farm support system's bias toward large farms, and trade liberalization.

A series of Common Agricultural Policy (CAP) reforms have geared means to enhance market orientation and efficiency while addressing multi-functional roles of agricultural activities embedded in the concept of the European Model of Agriculture. The introduction of the Single Payment Scheme (SPS) as a decoupled income support and reinforced rural development measures including modulation shed light on the policy direction.

The 2003 CAP reform is forecast to bring about minor effects on production. Cereal and beef production is expected to fall by 0.6 percent and 2 percent by 2010, respectively. Decoupled payments are likely to continue to press for the restructuring of unprofitable farms but such structural adjustment would be limited by the favorable provision of agricultural tax systems. The regressive distribution of direct payments could be persistent because the SPS is based on previous payments linked to production.

The lessons and implications from the EU's experience can be summarized as follows: First, structural changes are a demanding and on-going process even in a stabilized farm sector, responding to rapidly changing environments. Second, necessary conditions for a successful policy reform may include expansion of policy community consisting of consumers, environment, food safety and

sustainable rural development, extension of policy areas and well-defined accountability, and inevitable crisis. Third, a Korean model of agriculture must be established with a policy vision recognizing agricultural multifunctionality. Fourth, the objectives and paths of policy reform must be explicitly provided in advance. Fifth, policy reforms must be accompanied by objective and transparent compensation mechanisms. Finally, to improve the efficiency and effectiveness, policy measures must be time-limited and extension of the same measures must be based on a proper evaluation and assessment.

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KREI Quarterly Report on Agricultural Trends in North Korea

The purpose of this research is to provide analyses on agricultural trends in North Korea and help policy makers and experts concerned with North Korean issues. "KREI Quarterly Report on Agricultural Trends in North Korea" is issued quarterly and is comprised of four sections: "Focus," "Analysis on Agricultural Trends," "Trends of Trade and Cooperation in Agriculture," and "Agricultural Data."

"Focus" has four articles: "outlook of 2007 agriculture in North Korea and inter-Korean cooperation," "direction of inter-Korean agricultural technology cooperation," "the trend of agricultural products trade between North Korea and China and its implications," "changes in international environment surrounding North Korea and the direction of inter-Korean agricultural cooperation."

The agricultural trends in North Korea in 2007 were similar as previous year. The basic goal was to increase food production through the production of qualified seeds, increase of potato production, expansion of double cropping area, and small animal raising. In agricultural infrastructure, North Korea put emphasis on the construction of "gravity irrigation canals." The Mirubul irrigation canal construction continued in 2007. In agricultural production sector, it allocated more farmland for potatoes and soybeans. The cultivated land of grains was stable. In livestock sector, the North concentrated efforts to increase the production of small animals such as rabbit, goat, and poultry. In agricultural management sector, it devoted to improve the supply of agricultural labor power, machinery, and manuals.

Agricultural trade and cooperation between the two Koreas were quite active in 2007. The government assistance by the South to the North resumed. South Korea provided 400,000 tons of rice under a concession basis, which was halted in 2006. And

300,000 tons of fertilizer were delivered to the North although the amount was reduced by 50,000 tons less than the previous year. The trade volume in agriculture, forestry, and fisheries increased.

International assistance to the North were increased because North Korea appealed for humanitarian aid to the international community after two severe floods caused a reduction in grain production by over 400,000 tons.

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2007 FANEA Annual Report

The Forum for Agricultural Policy Research in Northeast Asia (FANEA) was established jointly by the Korea Rural Economic Institute (KREI), the Institute of Agricultural Economics at the Chinese Academy of Agricultural Sciences (IAED/CAAS) and the Policy Research Institute under the Ministry of Agriculture, Forestry and Fisheries of Japan (PRIMAFF) in October 2003. This forum was launched to establish a collaborative relationship in agricultural research and related fields among Korea, China and Japan as part of their joint commitment to foster mutually beneficial research and development in the Northeast Asian countries.

As a major activity of FANEA in 2007, the Korea Rural Economic Institute has participated in the 5th FANEA International Symposium in Beijing, China. The 5th FANEA International Symposium was held under the themes of "Rural Finance and Insurance," "Aging and Rural Development in Northeast Asia," and "Bio-Energy Development and its Impact on Northeast Agriculture." In this symposium, hosted by the Institute of Agricultural Economics and Development at CAAS, nine papers dealing with the three themes were presented and discussed by participants from the three member countries.

The Korea Rural Economic Institute also participated in the World Bank's "End-of-Project Conference" in Beijing. This conference was hosted by the IAED/CAAS for the discussion of the final report of the project on Chinese agricultural policy sponsored by the World Bank.

The Korea Rural Economic Institute has established its Beijing Office in China. to initiate research on Chinese agriculture and agricultural policies.

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An Impact Analysis of an FTA with the U.S. and Policy Measures for the Korean Agriculture

The objective of this study is to analyze the impacts of an FTA between Korea and the United States on the Korean agricultural industry. This study mainly focuses on the impact analysis and a possible structural reform of the industry considering the dynamic nature of the Korean agricultural industry.

Before initiating the FTA talks in June 2006, the Korean representatives established a proposal for the FTA negotiation and started discussing the issues put on the table based on the proposal. Before reaching a final agreement, both parties met in eight official negotiation meetings until April 2007.

Based on the final agreement, KREI (Korea Rural Economic Institute) used an econometric dynamic simulation model called KREI-ASMO 2006 to analyze the implications of the FTA for the entire Korean agriculture. The model represents the entire Korean agriculture including rice and grains, vegetables, fruits, livestock products, and other commodities for the analysis. In particular, import demand functions were reformulated for the imports from the U.S. and other countries separately so that the impacts from an FTA with the U.S. can be analyzed directly. Basically, the analysis focuses only on the tariff reduction and TRQs resulted in the FTA. However, the analysis includes indirect impacts with linkages with supply and demand functions such as price, area planted, yield, imports, per capita consumption, other consumption, ending stocks, and other necessary functions. In addition, the model analyzes a baseline that represents the current Korean agricultural situation without the FTA and then analyzes an FTA scenario with the final tariff reduction agreed in the FTA negotiation by both countries. The comparison between the baseline and the scenario would show the actual impacts of the FTA.

Since most of the tariff will be zero percent in 2023, the analysis made projections for the 15-year period from 2009 to 2023. Moreover, the final tariff schedule is exogenized such as TRQs, safe guards on specific commodities, and tariff rates.

Based upon an assumption that the FTA starts effective in 2009, the analysis shows that the Korean agricultural production value would decrease dramatically by 447 billion Korean won in five years, 896 billion won in ten years, and 1,036 billion won in fifteen years in 2023. A fifteen years production value reduction in average would be approximately 670 billion Korean won. However, the results of the analysis are lower than what KREI announced before the final agreement was reached, which was 870 billion won in the case of ten-year tariff reduction schedule.

What Korean agriculture needs to minimize negative impacts from the FTA would include strong structural reform, improvement of competitiveness, and safety net for the agricultural income.

In structural reform, inefficient operations should be reduced and efficient operations should be maintained and improved. Similar to those measures that were taken to lessen negative effects from the FTA between Chile and Korea, closing-down farms as well as commodity-replacing farms should be subsidized considering the efficiency and competitiveness of imports from the United States.

Because Korea's price competitiveness of agricultural products has been much lower than that of the U.S., Korean agriculture should focus on a dramatic improvement of competitiveness in quality against commodities imported from the United States and other countries. Moreover, strategies for future agriculture should be based on domestic consumers' trust and needs so that the agricultural industry can put a lot of effort in providing domestically grown fresh and safe products to consumers. In that case, the consumer market for domestic products can be distinguished from imported products and price competitiveness would no longer be taken into account as a great advantage in the market.

Policies for the income safety net should be carried out to minimize any negative impacts from the FTA since the prices of domestic agricultural products would fall and, as a result, the entire agricultural income would reduce dramatically as well. Therefore, policies for income safety net should be based on objective analyses to provide reasonable compensation for a certain time period until farmers can adjust their production structure and plans into a new agricultural situation caused by the Korea-U.S. FTA.

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Agricultural Trends in China

The purpose of this study is to present a detailed plan of the chapters which will make up the forthcoming quarterly report titled 「Agricultural Trends in China」. To achieve the objective, Chinese agricultural trends in 2007 have been analyzed and presented in this study.

「Agricultural Trends in China」 will be composed of five chapters: agricultural policy brief, agricultural and rural economic trends, issues of agricultural policy research, policy data, and statistics of Chinese agriculture. Firstly, the agricultural policy brief will analyze pending issues of Chinese agricultural policy. Secondly, the agricultural and rural economic trends will analyze the trends of Chinese agricultural and rural economy on the basis of statistical data from the Chinese National Bureau of Statistics on such matters as production, distribution, price, consumption, and trade. Thirdly, the issues of agricultural policy research will introduce research trends of agricultural policy research institutes in China. Fourthly, the policy data will furnish translated versions of Chinese agricultural laws, administrative regulations, and rules of the central and provincial governments. Lastly, the chapter on statistics of Chinese agriculture will introduce national and local government's statistical data related to Chinese agricultural and rural statistics.

「Agricultural Trends in China」 is planned to be published quarterly and put on the KREI website as well. Among the chapters of the book, the agricultural policy brief will be provided regularly in the form of a webzine, summarizing important information on Chinese agriculture periodically.

The 「Agricultural Trends in China 2007」 presented as a sample in this study is comprised of four chapters: agricultural policy brief, agricultural and rural economic trends, policy data, and statistics of Chinese agriculture. Six pending issues of

Chinese agricultural policy have been analyzed in the first chapter. The second chapter summarized Chinese agricultural and rural economic trends in 2006 and provided trends in farm product prices, agricultural trade, and farmer's income in the first three quarters of 2007. The translated data regarding Chinese agriculture was presented in the third part. In the last chapter, the book provided gross values of Chinese agriculture, farmer's cash income, and the expenses in the same period.

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An Analysis of the Chinese Fruit Industry and the Possibility to Export to Korea

The purpose of this study was to examine the Chinese fruit industry to prepare for a Korea-China FTA. Korea and China initiated a preliminary study analyzing the potential effects of a Korea-China FTA. Though it is not expected that a Korea-China FTA would begin immediately, it is certain that the FTA will be signed in the near future. Because the Chinese fruit industry has a strong price competitiveness in the international market, it would be a big challenge to Korea's fruit industry if Chinese fruit are imported to Korea. So far, it has been known that the quality of Chinese fruit is lower than that of Korean fruit. However, the quality of Chinese fruit has improved greatly from the past through investments of the Chinese government and introduction of new varieties and technologies. With the price competitiveness and quality improvement, Chinese fruit came to have a even stronger competitiveness. This means that Chinese fruit are posing even bigger challenges to Korean fruit.

Recently, the Chinese government introduced a reallocation program for apple and citrus. The purpose of the program was to concentrate resources on specific commodities and regions to take advantage of climate and geological characteristics. Through the program, the Chinese government has put efforts to convert old varieties and practices into high-yield varieties and modern practices. The program is expected to be introduced for pears and grapes.

To promote the export of Chinese agricultural products, the Chinese government held talks to conclude FTAs with several countries: ASEAN, Chile, Macao, Pakistan, and Hong Kong. In particular, China implemented the Early Harvest Program for agricultural trade with ASEAN. The program ended in 2006 and the agricultural trade between China and ASEAN boomed.

So far, the importation of Chinese fruit is banned because

of quarantine concerns on plants except cherry. The Chinese government has requested the Pest Risk Analysis of apples and peas, and the ban on Chinese fruit is expected to be lifted some time in the future. Therefore, the Korean fruit industry should be prepared for the time when Korea imports Chinese fruit.

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Agricultural Exchange and Cooperation with North Korea for the Last 10 Years: Evaluation and Assignments

The purpose of this research is stated as below.

The first purpose is to categorize North and South Korea's agricultural cooperations that have been promoted since the mid-1990s, and to show the present circumstances. The second purpose is to summarize the achievements and problems of the cooperation that has unfolded for the last 10 years. The last purpose is to suggest a new direction and tasks to correspond to the recent environment of expanding economic cooperation between South and North Korea.

This research is consisted of four parts. In the first part, the food and agricultural crisis of North Korea in the mid-1990s is stated. Also, South Korea's cooperation policy toward North Korea is mentioned to clarify the background of the agricultural cooperation.

The second part is concerned with the conditions of the agricultural cooperation. The main contents of this part are non-governmental support, agricultural trade and commerce, governmental aid from South Korea, and agricultural cooperation activities under the agreement of both governments.

In the third part, each kind of cooperations was evaluated with its accomplishments and problems. In addition, the current situation of North Korean agriculture, such as food supply, agricultural structure, resource supply and the basis of agriculture, is compared with that of the mid-1990s

In the conclusion, a new direction and assignments for agricultural cooperation between North and South Korea are suggested to meet a new environment.

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Ways to Expand Duty-Free, Quota-Free Market Access for Least-Developed Countries

This study aims to provide ways for Korea to expand the provision of preferential market access to the Least-Developed Countries (LDCs). Two criteria have been adopted to minimize potential adverse effects on domestic farm sectors. Primary criteria include identifying tariff lines with very low applied tariff rates and sorting out commodities subject to either low bounded or being eliminated as agreed upon in bilateral trade agreements between Korea and other trading partners. To refine the results from applying primary criteria, the following supplementary criteria have been explored: imports with low market shares, commodities which are not or minimally produced in the country, farm products or processed goods which are not regarded as sensitive or priority, and commodities which are not exported by the LDCs to a large extent. Analytical results show Korea may designate up to 78 percent of its tariff lines as duty-free market access for the LDCs.

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DIVISION OF FOREST POLICY RESEARCH 6

The Establishment of a Forest Operation Plan for Unified Forest Management Areas

The aim of this study is to establish a forest operation plan for the mountainous inland areas of Kangwon Province and Jiri Mountain as example models of 17 unified forest management areas. In addition, this study develops and suggests advanced ideas for the 5th National Forest Plan.

Through a questionnaire survey, case studies, and the examination and critical review of current conditions, a number of problems confronting forest areas and a future direction for the development of these areas are drawn.

The forest operation plan for the mountainous inland areas of Kangwon Province is focused on the improvement of the cooperation system between the government and private forest owners to produce not only timber but also non-timber products. However, the operation plan for the Jiri Mountain inland areasis focused on the improvement of the cooperation system between Jiri-san National Park and private forest owners. The plan also includes some advanced ideas for revivifying the Jiri mountainous areas for forest recreation and tourism. Finally, the results of this study propose an operation system by constructing a regional cooperation committee and utilizing budget.

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Monitoring Financial Performances of Major Forest Projects

We have recognized the importance of the various functions of forest such as purifying air, reserving water, and providing recretional opportunities. The Korean Forest Service recognizes these demands and responds by way of launching major forest projects. In order to efficiently respond the demands, The Korean Forest Service is launching the projects of monitoring financial performances of major forest projects.

The purpose of this study is ultimately driving a sustainable forest management by way of verifying problems of the forest projects and providing desirable solutions for the major forest projects.

The monitoring project is consist of nine sectors such as Forest Management Plan, Private Forest Management, the Forestry Association Upgrading, Forest Product Marketing and Manufacturing Structure Improving, Forest Production Support, Mountainous Village Building, Support of Wood Utilization and Manufacturing, Supporting Forest Recreation Facilities, and Building Forestry Recreation Facilities.

Though several problems in each project are revealed, the monitoring results show that each project is generally performed well. Most of revealed problems are being fixed by way of feedbacking. Policy implications and future proposals for enhancing performance of projects are also proposed.

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Payment for Environmental Services on Watershed Conservation Forest

This study is conducted for indicating tasks and implement directions of initiatives based on explaining reasons to adopt Payment for environmental services in watershed conservation forest area.

It examines conditions and necessity for support of watershed conservation forest privately owned. It draws implications related to PES by analysing domestic and foreign case studies. This study indicates general directions and detailed implemental methods based on survey of forest land owners. The summarized conclusion of the study is shown below.

Private owners of watershed conservation forests are constrained exercising their right to manage, and there are neither compensating systems nor supporting systems. For this reason, they don't manage the forest carefully and degrade its function. Foreign countries adopted various payment policies to improve watershed developing function. In Japan, there is watershed conservation forest formation project. In America, there are public charge systems such as New York City's forest formation system and USDA's soil conservation program. In Costa Rica, hydroelectric power producer compensates forest land owners to regulate water flow for stabilization of power production.

Adoption of PES on watershed conservation forest can be possible when beneficiaries are willing to pay and service producers are willing to supply qualified water constantly. It is not desirable to adopt all around PES system in present condition that beneficiaries and producers do not fully concern and recognize. It is necessary to expand the public consensus of PES firstly. In the short terms adoption of public adoption of public charge are required, and PES systems on benefit principle in the long term are needed.

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A Study of Devising Schemes for the Bilateral FTA Negotiations on Forestry Products: Korea-EU and Korea-China

This study is mainly designed to suggest the negotiation directions and strategies for the forest products negotiations of the Korea-EU and the Korea-China Free Trade negotiations. The purpose is minimizing negative impacts expected by the results of the agreements. The suggestions are based on the appraisals of the impacts when tariff barriers are removed or reduced, and the impacts are measured through the analysis of the supply and demand as well as the analysis of competitiveness.

The contents include recent trade trends of forest products between countries, current industry and market conditions of main products, structural comparison of the tariff systems, appraisals of FTA impacts.

For the accurate appraisal of competitiveness on the import market various indices are measured. The import market shares, relative unit price and market comparative advantage index are calculated to find main products to be taken care of seriously. Production values and coefficients of import price in supply functions are estimated to measure the decrease of production value of important items.

It is expected that imports of wood products such as plywood(non-coniferous), shaped wood(coniferous), and high density fiberboard would increase if the tariffs are removed. For China the increments would mainly come from most forestry products since its share of Korean import market is about 23% of total import value.

To minimize the impacts of FTA with the European Union and China it is required that wood products should be delayed their markets opening as long as possible. In addition to these products other important non-timber products should also be

conservative opening. The main wood products such as plywoods, sawnwoods, particle boards and fibers utilize the domestic resource and wood wastes. Consequently they play important roles for the sustainable forest management plan, and protection of their market is very critical.

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Monitoring Financial Performances of Major Forest Projects

We have recognized the importance of the various functions of forest such as purifying air, reserving water, and providing recretional opportunities. The Korean Forest Service recognizes these demands and responds by way of launching major forest projects. In order to efficiently respond the demands, The Korean Forest Service is launching the projects of monitoring financial performances of major forest projects.

The purpose of this study is ultimately driving a sustainable forest management by way of verifying problems of the forest projects and providing desirable solutions for the major forest projects.

The monitoring project is consist of eight sectors such as Forest Resource Conservation and Management, Public Aboretum and Museum Management, Korean National Aboretum Management, Forest Fire Control, Forest Fire Aviation Control, Erosion Control, Forest Roads, and Pest and Disease Control.

Though several problems in each project are revealed, the monitoring results show that each project is generally performed well. Most of revealed problems are being fixed by way of feedbacking. Policy implications and future proposals for enhancing performance of projects are also proposed.

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Monthly Outlook for Chestnut

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

The monthly outlook for chestnut is based on a survey of farmers selected as samples and of monitoring personnel in the main production districts. The major contents include the intended and actual planted acreage, the growth status and the yield, the estimated production, the price trend and forecast, the import and export amounts, and a meteorological forecast.

The monthly outlook for chestnut is published on the fifteenth day of the month, seven times a year in total, and distributed to farmers and nationwide organizations, such as forestry cooperatives, agricultural cooperatives, agricultural technology centers, and local governments. The monthly outlook is also found on the Internet, in the homepages of the Korea Rural Economic Institute (KREI) and the Korea Forest Service (KFS), and newspapers.

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Monthly Outlook for Oak-Mushroom

The purpose of the monthly outlook for oak-mushroom is to help farmers improve their farm planning and marketing strategies through the timely provision of information on demand and supply and prices. This information is also crucial to the central and local governments when they establish plans for fostering the industry.

The monthly outlook for oak-mushroom is based on a survey of farmers selected as samples and of monitoring personnel in the main production districts. The major contents include the intended and actual planted acreage, the growth status and the yield, the estimated production, the price trend and forecast, the import and export amounts, and a meteorological forecast.

The monthly outlook is published on the fifteenth day of each the month, eight times a year in total, and distributed to farmers and nationwide organizations such as forestry cooperatives, agricultural cooperatives, agricultural technology centers, and local governments. The monthly outlook is also found on the Internet, in the homepages of the Korea Rural Economic Institute (KREI) and the Korea Forest Service (KFS), and newpapers.

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Monthly Outlook for Jujubes and Astringent Persimmons

The purpose of the monthly outlook for Jujubes and Astringent Persimmons is to help farmers improve their farm planning and marketing strategies through the timely provision of information on demand and supply and prices. This information is also crucial to the central and local governments when they establish plans for fostering the industry.

The monthly outlook is based on a survey of farmers selected as samples and of monitoring personnel in the main production districts. The major contents include the intended and actual planted acreage, the growth status and the yield, the estimated production, the price trend and forecast, the import and export amounts, and a meteorological forecast.

The monthly outlook is published on the fifteenth day of each the month, four times a year in total, and distributed to farmers and nationwide organizations such as forestry cooperatives, agricultural cooperatives, agricultural technology centers, and local governments. The monthly outlook is also found on the Internet, in the homepages of the Korea Rural Economic Institute (KREI) and the Korea Forest Service (KFS), and newpapers.

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DIVISION OF AGRICULTURAL POLICY RESEARCH 7

Research on Agriculture and Rural Community Development Plan for Jecheon City

We performed a research project for the development plan of agriculture and rural community of Jecheon City located in Chungcheongbuk-Do. In particular, to cope with our opened domestic market of agricultural products along with the globalization trend and forthcoming several FTAs, we tried to establish comprehensive preplans of agricultural policies on the stand of rural government in Jecheon City. Also, one of our goals is to boost up the rural government's execution potential of its agricultural policies utilizing the current or incoming natural and financial resources.

As the first step, we investigated the current natural resources within the whole region of Jecheon City accounting for the diverse demands of rural development such as the agriculture or non-agricultural arenas.

In our research, we proposed the future direction and vision for the agricultural & rural community development. As in-depth research, we exhibited several specialized items out of numerous agricultural products which could be the most appropriate for eight individual rural county under different natural environment and pre-endowed condition. Further, we performed several in-depth interviews with the wholesale distribution specialists in Garak Agricultural & Marine Products Wholesale Market to extract their opinions and evaluations of key agricultural products from Jecheon City: apple, peach, cauliflower, broccoli, western radish leaves, cucumber, and dried red pepper.

Among several agricultural products, we found several items had the comparative specialization potential in Jecheon such as apple, peach, cucumber, red bean. These items might have a dormant market potential as long as their product quality and marketing competence are well equipped.

According to our research findings, we proposed several farm policies for the development of agriculture in Jecheon. First,

the city needs to expand its retail and wholesale market outside of Jecheon for the key products. Second, a fortified marketing endeavor for environment-friendly agricultural products might be an alternative survival strategy. Third, the organization of key farmers must be cultivated under an open market environment. Fourth, the income source of agriculture must be retained and expanded for the current and future farmers. Fifth, the quality of settlement environment for the silver generation should be enhanced and rural amenities should be preserved for a long time.

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SPECIAL RESEARCH 8

Welfare Reform and Rural Welfare of the U.S.

The main purposes of this study are as follows: 1) to identify the welfare reform trend of the U.S.; 2) to analyze the rural impact of the welfare reform; and 3) to suggest some policy implications to improve the rural welfare in Korea.

The major research methods include the collection and analysis of existing data, interviews, and so on. Existing related data were collected by searching the data of related research institutes and governmental organizations.

The Personal Responsibility and Work Opportunity Act of 1996(PRWORA) dramatically transformed the federal safety net and the food assistance landscape for low-income households in the United States. PRWORA changed the program from an entitlement to a block grant, stiffened work and child support requirements, limited families to five years of aid, denied coverage to many non-citizens, and gave states more control over welfare.

PRWORA replaced the entitlement program "Aid to Families with Dependent Children(AFDC)" with the "Temporary Assistance to Needy Families(TANF)" program, which is funded through block grants to states. Although various research has focused on understanding how these reforms are affecting the lives of low-income families, most research has focused on urban areas.

TANF emphasizes moving from welfare to work by imposing a five-year lifetime limit on receiving federal welfare benefits, requiring recipients to participate in work activities within two years of receiving benefits, and penalizing states that have too few recipients in work activities by reducing the federal contribution to their TANF funds.

Results from recent national and state-level studies of rural welfare reform are mixed. At the national level, welfare reform outcomes did not differ greatly between rural and urban areas, and were successful. Assessment of the effects of welfare reform

in rural areas, however, is complicated by the increased variation among state programs. State programs differ, for example, on sanctions imposed for noncompliance, the amounts and types of assets that are used in determining eligibility and benefits, the time period for work requirements, and the design of child care and transportation assistance programs. When national level findings are disaggregated by state and by rural and urban areas within states, a less positive picture emerges for some rural places, particularly the poorest and most remote rural areas.

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