



Chapter 7

The Prospects and Visions for Korean Agriculture

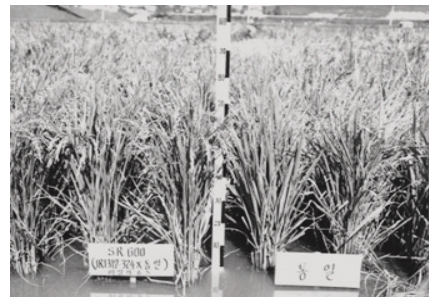
1. Korean Agriculture and Agricultural Policy in the World
2. Vision of Agriculture in Korea and a Paradigm Shift

Chapter 7. The Prospects and Visions for Korean Agriculture

Since the liberalization from the Japanese colonial period in 1945, Korea has achieved epoch-making development for the past 70 years, of which precedent can hardly be found in the world, rising to the ranks of developed countries as one of the OECD member states and becoming a donor nation from one of recipient countries of international aids. Korea underwent a tragic civil war shortly after the liberalization and recovered from its aftermath through the international aids. In the 1960s, it began to promote economic development plans and emerged from developing countries. Among several economic development models of developing countries, only Korea promoted “export-led industrialization first and then agricultural development next,” and became a unique model for compressed growth. Its rural community contributed not only to its economic development but also to conservation of land resources and the environment by providing land, labor and capital to the industrial sector, which is the secondary industry, and the service



Village Job-producing Project



Development of Tongil Rice in 1971 © Rural Development Administration

sector, which is the tertiary industry.

Korean agriculture had suffered an absolute shortage of food until the mid-1970s to an extent that required food aids from other countries. However, through the Green Revolution around the end of the 1970s when a new rice variety called *Tongil* rice was propagated, it achieved self-sufficiency in rice and significantly improved productivity through the agricultural infrastructure maintenance and technical innovation thereafter. In particular, the New Community Movement called 'Saemaeul Undong' in the 1970s and the government's implementation of the comprehensive agricultural and rural development measures (new agricultural policies), extensively supported through structural improvement projects (42 trillion budget) and special taxes projects for rural development (15 trillion budget) in response to the opening of agricultural market in the 1990s, were historical policies that changed both quantitative and qualitative aspects of Korean agriculture and rural community. Improvement of the agricultural infrastructure, rural development, dramatic modernization of the agricultural production and distribution facilities, and significant development of the production and distribution structures were achieved.

While the role and functions of agriculture have been enhanced, it is still small-farm scale and has not actively acted to compete with international agriculture in this age of globalization. Meanwhile, market opening that started from the late 1980s shocked and challenged Korean agriculture and rural community, and this change served as an opportunity to accelerate the agricultural reform and restructuring. The WTO (World Trade Organization) regime established in the mid-1990s promoted the liberalization

of markets and since the 2000s, multiple simultaneous FTAs (Free Trade Agreements) were made between Korea-USA, Korea-EU and recently between Korea-China, following the Korea-Chile FTA, which led Korean agriculture into an era of fully open market of infinite competition.

The agricultural situation is expected to change more rapidly. The following situations also require changes in the agricultural policies and measures that have been promoted: enhancement of food consumption, expansion of agriculture along with the life industry and upstream and downstream industries, changes in the marketing environment, advent of consumer-oriented society that pursues health, safety, security and environmental friendliness, rise of the low-carbon green industry, intensification of international competition, and establishment of local governments. In particular, the globalization and expansion of food markets in the world following the expansion of market liberalization would also require a new agricultural paradigm that presumes an era of infinite global competition of agricultural products and food.

Especially, in Korean agriculture, it is expected that the aging of the farm population and the influx of new agricultural workforce through the baby boomers' return to farming and rural villages will accelerate the generation change in the agricultural workforce. On the other hand, however, the intensified shortage and aging of the workforce responsible for agricultural production and harvesting is anticipated to cause a trouble in promoting high-tech agriculture. Therefore, it is important to seek a new paradigm and strategies for agricultural and rural development in order to continue the agricultural reform.

1. Korean Agriculture and Agricultural Policy in the World

Trends in World Agriculture and Policies

The trends of world agriculture and agricultural policies during the past half century can be classified into three phases in general.

The first phase from 1960 to 1980 was a period during which the focus of agricultural policy was changed from production and price to structural adjustment. Until the middle of the 20th century, most developed countries devoted themselves to increasing agricultural production through price supports such as setting minimum prices, as in agriculture-based countries. Although the price policies were effective for food production, they created other problems, such as inefficiencies in agricultural production and the distortion of production structure. Moreover, the price policy had numerous limitations in solving income problems.

In the 1970s, the European Community (EC) became aware that structural policies were fundamentally essential to solve agricultural problems. European countries began introducing agricultural structure policies for the self-reliant management of family farms. As a successful example, the former West Germany implemented a powerful structural policy and more than doubled its farm size during 10 years up to the early 1980s.

Despite such achievements, the structural policies of European countries were confronted with the following problems. Firstly, the number of large farms was not increased to the extent that was expected, and there appeared a certain range of limitations to increase farming scale through farmland mobilization. Secondly, a rapid decline in agricultural population due to the outmigration

policy caused farm village hollowing, deterioration of natural resources and landscape, and poor management of national territory. Therefore, criticisms and doubts about structural policies arose. Thirdly, as agricultural production was specialized in mono-cropping, and more intensive through large-scale farming, a series of shortcomings such as the destruction of eco-systems and environmental pollution gradually became serious problems. Fourthly, despite implementing structural policies, the income problems of small farmers could not be resolved.

The second phase was from 1980 until 1995. In this period, the limitations of the efficiency-based agriculture gave birth to regional policies that also supported small farmers. From the mid-1980s, European countries converted their efficiency-centered policies fostering large farms into regional policies supporting small farmers too. Such changes were the result of an awareness of public functions of agriculture in addition to the industrial benefits of producing agricultural commodities. They strongly reflected the conviction that both farmers, i.e. producers, and rural areas, i.e. space for production, must be maintained for the sustainable development of agriculture.

Although there are various policies for sustainable development of regional agriculture, the most widely accepted policy is the so-called “special consideration for less-favored areas.” The direct payment system, which began in the UK in the 1980s for less-favored areas, spread out to the entire European continent. It increased farmers’ income, and was utilized as a useful means for regional development.

Although price support and export assistance contributed

to agricultural productivity, over-supply of agricultural products triggered the commencement of the Uruguay Round (UR) negotiations. The UR negotiations on agriculture began in 1986 and reached consensus in December 1993 after long and controversial discussions. Based on this agreement, the World Trade Organization (WTO) was established in 1995, and agricultural globalization proceeded quickly from that point onward.

The third phase is from 1995 to the present. New attempts are being pursued for the sustainable development of agriculture. The major focuses of agricultural policies in the 1990s in many developed countries are environmental protection and national territory maintenance, rather than agricultural production itself. It is widely thought that agriculture's intrinsic function of preserving natural resources is no less important than producing food. Although traditional agriculture has been developed in the direction of intensifying efficiency, and contributed greatly to the overcoming of food shortages, there is much criticism that intensified agriculture has caused serious external diseconomies, such as the deterioration of ecosystems, soil erosion and contamination, water and air pollution, etc.

Under these circumstances, sustainable agriculture, in particular, has been emerging as an alternative way to cope with such agricultural problems. Firstly, it contributes to not only reducing production but also preserving the environment by adopting extensive and low-input farming. Secondly, it ensures food safety. The high-input technology which has been used in recent decades has increased yields, but threatens food safety by continuously increasing the use of agricultural chemicals. Nowadays, consumers

are more concerned about food quality than quantity, and therefore, food safety has become an important criterion in purchasing food. Thirdly, people are concerned about the exhaustion of resources and the destruction of the environment, such as the pollution of water and air, soil erosion, etc. The UN Framework Convention on Climate Change, which has aimed to prevent global warming, has had considerable effect on the agricultural sector, too.

Meanwhile, the UR negotiation, the multilateral trade negotiation in the mid-1990s, had the WTO launched. Market liberalization was

Table 7-1 World Agriculture and Agricultural Policies

Period	Major Contents and Characteristics
1960-1980 Policy shift from production and pricing to structural issues	Increased food production based on Green Revolution and price support - Intrinsic limitations are exposed in solving the earnings problem through increased production. Simultaneous pursuit of balanced agricultural-industrial incomes and improved productivity through structural enhancement around the 1960s
1980-1995 Limitations of efficiency-centered agriculture and the emergence of regional policies	Contributions to productivity enhancement through price support, export assistance, etc. - The oversupply of agricultural produce acted as a catalyst to prompt the Uruguay Round (UR) negotiations. - The collapse of the cyclical ecosystem and the emergence of environmental contamination Interest in the sustainability of agriculture in less-favored areas from the early 1980s - The awareness of the importance of natural resources and environmental conservation
1995-Present Policy responses for sustainable development of agriculture and globalization	The value recognition of multiple functions of agriculture and farm villages - Increasing interest in environment-friendly agriculture, food safety, rural scenery, etc. - Seeking to invigorate regional economy through urban-rural exchanges The conversion from protective policy on agriculture to market-oriented one - Globalization of the agri-food market and export-oriented agricultural policies due to the conclusion of FTAs among many nations and the WTO regime - Approach to the income problem with the direct payment system

promoted by the reduction and abolition of global agricultural tariffs. In the 2000s, as the DDA negotiation, the two-step multilateral trade negotiation, was prolonged, the international interest was decreased. In response to it, countries around the world entered into FTAs, bilateral trade negotiations, to expand the market liberalization between countries and regional blocks. All these served to promote the globalization of the agri-food market and the export-oriented agricultural policies aiming at the world market.

Traditional agricultural exporters, which are such American countries as the United States, Canada and Brazil, and the Oceania countries like Australia and New Zealand as well as the European Union (EU), also drastically reduced the internal market protection and price support through the 2013 Common Agricultural Policy (CAP) reform and have implemented the global market oriented policies. Even Japan, the largest importer of agricultural products, established the measures to promote agricultural exports in 2005, pushing the globalization of Japanese agri-food and food culture. Such global market liberalization policies have helped the globalization of food culture. The rapid growth of agricultural and livestock products and food markets in the emerging countries with high populations and high economic growth rates, such as China, India and Southeast Asia, encourages nations around the world to promote policies to expand agri-food exports.

Prospects for the Domestic and International Changes

Prospects for the domestic and international changes around Korean agriculture can be summed up as global megatrends. It seems that the agricultural sector will develop within the sphere of

Table 7-2 Keywords and Megatrends of the 21st Century World Economy, Society, Science and Technology

Keywords		Megatrends
- Globalization	⇒	- Infinite competition without border, multipolarization
- Technology		- Demographic changes, aging, food shortage, mobility
- Human		- Climate change, environmental degradation, ecosystem destruction, prevalence of diseases
		- Technology development and fusion, digitalization, NT, ubiquitous, and convergence

influences of megatrends.

The megatrends presented by the futurist scientists can be summarized as follows: First of all, the economic and social trends are ① de-industrialized society: a breakaway from materialism and pursuit of new values, ② global economy: formation of the regional economic zones in response to infinite competition, ③ shortage of energy and food: advent of the de-oil era, water shortage, and food shortage, ④ climate change and environmental issues: global warming, prevalence of diseases due to environmental degradation, ⑤ demographic changes: population growth in the developing countries and aging of the world population, and ⑥ international political unrest: change to a multipolar system from the US-centered unipolar system. Technological trends are ① acceleration of technology development: rapid development of nanotechnology and others, ② green technology growth: materialization of energy and environment technologies, ③ development of fusion technology: convergence of IT, NT, BT, ET and CT.¹⁾ In short, keywords of the

1) Kim Jeongho et al., *Vision of Korean Agriculture*, p14, Jinsaem Media. October 2012.

megatrends of the 21st century can be summed up as globalization, technology and human. From the interactions of these elements, the following are expected: infinite competition and multipolarization without borders, population growth and aging, food shortage, increasing mobility, climate change, environmental degradation, ecosystem destruction, prevalence of diseases, digitalization, NT, ubiquitous, and development of fusion technology.

First, the liberalization will be accelerated due to the spread of global free trade. In accordance with the implementation plan for the last UR negotiations, Korea substantially opened its market for most of agricultural products except for rice and finally opened the rice market, its last stronghold, as it decided to implement the rice tariff in 2015. In the DDA multilateral trade negotiations which started in Doha, Qatar in 2001 and are still going on slowly over the past 15 years, it has been intensively discussed to lessen the protection systems by high tariffs and the protective barriers for state trading and there has been a clear tendency to standardize the non-tariff measures like quarantine to an international level. In addition, Korea concluded free trade agreements (FTAs) with Chile, Singapore, EFTA, ASEAN, the US, EU, Australia, and New Zealand, to expand market opening and, as it concluded the FTA in 2015 with China that has an enormous population, it is not an exaggeration to say that Korea is now entering an era of fully open market. As the global integration is accelerating, it is expected that various regulations and restrictions that act as barriers in the world economy and agriculture will disappear in the end.

Second, the improvement of the economic power of the Asian countries, through the growth of Japan, Korea, Taiwan and Hong

Kong followed by China, India and other ASEAN countries, is also an important variable in the rise of a new agricultural trade order. Emerging markets such as China and India have been constantly growing with high economic growth rates, which is a pivotal power to expand the global economy. On the other hand, OECD countries, which are the developed economies like the USA that hold the hegemony of the world economy, are expected to grow at a low average annual rate of around 2% by 2020.

Accordingly, the developed countries' demand for the developing countries to indiscriminately open their market is expected to increase, with the agricultural market as their main target. Among the Asian countries, the Korean market in particular has emerged as a major export target and thus is expected to be demanded by neighboring countries to be open according to its growth level. The Chinese market has an enormous potential demand for agri-food and is expected to be a major import market for agricultural and livestock products and foods as well as grains.

Third, the population is one of major factors that influence the future global economic environment. The world population is expected to show an average annual increase of 1.1%, amounting to 7.6 billion people in 2020 and 9 billion in 2050 (UN State of the Future, 2010).

Due to the population growth, the global food demand is projected to increase by 50% by 2030 and thus the food production needs to be doubled in 2050 (FAO, *Global Agriculture towards 2050*, 2009). Despite the prospects of the world population increase and of the food demand increase, the instability of food supply will continue expanding due to the frequent global weather events

and changes in optimum crop production areas caused by global warming and the increase of unprecedented livestock diseases, renewing the emphasis on the importance of food security.

In particular, developing countries including China are going through the transition from grain exporters to importers due to their industry-oriented growth strategies and increased consumption. The decline of agricultural protections under the WTO system may possibly serve as a factor for reducing the global food supply. In fact, the EU has reduced grain exports as a result of the agricultural reform and it is also difficult for such traditional exporters as the United States, Australia and Canada to increase their agricultural production. Because of the supply instability and the reduction in public inventory, it is expected for the perspective on food security to change from the ideological dimension of the past to the economic and practical dimension.

Fourth, due to the world population growth and the rapid economic growth and increasing demand for agri-food in emerging markets like China and India, the global agri-food demand is expanding significantly. The size of the agricultural and food market in the world is 5.8 trillion dollars in 2010, which is greater than the combined market size of IT and automobile industries (3.5 trillion dollars for IT and 1.6 trillion dollars for automobile), and is expected to grow rapidly as the population increases and the emerging market grows. The food market in China in particular has shown an annual average growth of 24% since 2005, being called a black hole of agri-food. The demand for health/functional food and organic food is also expected to significantly grow as the aging progresses.

The fifth issue is global warming and the limitation of resources.

Global warming and climate change have been accelerated as the world continues industrialization, urbanization and the use of fossil fuels, and the problem of resource depletion has been intensified due to the continued increase in demand for energy and resources. For the past 100 years, the global temperature has risen by 0.74°C. The oil reserve is estimated to be 136.3 billion tons, which can be consumed for 40 years.

Environmental pollution and resource shortage significantly threaten sustainable development of mankind. The temperature increase rate in the Korean peninsula is twice the world average and in the long term profound changes are expected. Korea has experienced the temperature rise of 1.5°C over the past 100 years and because of the temperature rise, the crop growing areas have moved northward.

Urbanization has been made progress around the world and by 2030 the population is expected to increase by about 1.2 billion people, making it difficult to secure stable water resources, which is a serious issue. Especially, as the priority of agricultural water will become the highest, it is expected that the competition among the usages of water resources will be intensified. Experts analyze that currently 600 million people in 21 countries are suffering from shortage of arable land and water.

Global warming is already affecting the technical aspects of agriculture. Greenhouse gas reduction has occupied a high priority among the government policies of every country, and the regulations on the impact of agriculture on soil and water are also being strengthened.

Sixth, the development of science and technology such as IT,

BT, and NT, and the fusion among science, technology, industry and culture opened up a new horizon for industry and culture have been expanding the scope of the agricultural sector to the life industry, upstream and downstream industries, food and distribution, and are expected to increase the likelihood of new agricultural revolutions which are different from the past Green Revolution and White Revolution.

Changes in the domestic circumstances foreseen are the following: First, the control of agricultural markets is to be switched from the producer to the consumer. Diversification of consumption of agricultural products following the high-income era has accelerated product differentiation, and a significant growth is expected in the food service industry. As the size of the food market continues to increase, the role of storage and processing sectors will continue to grow and the complex industrialization through vertical integration will also progress. While the specialization and diversification of distribution channels progresses, the market power of large retail organizations such as discount stores and specialty stores will increase and along with the changes in retail distribution, rapid changes in the distributions from producers and wholesale marketing are also expected.

Second, the competition in the domestic agricultural market will be intensified. As almost all the items are placed in substantial competition in the open market, it is impossible to compete in the market if they are not good-quality agricultural products. Therefore, market erosion will be inevitable unless cost reduction and productivity improvement are materialized while the quality of domestic agricultural products is maintained higher than imported

ones. Ultimately, only the exportable items or the management bodies that produce exportable items will be able to continue production even in the domestic market.

Third, as the aging of the rural community and farmers is rapidly progressing, Korean agriculture is expected to suffer a fatal blow if it fails to secure successors who will be in charge of sustainable agricultural management. The average age of farm operators has rapidly aged from 62.3 in 2010 to 65.4 in 2013, with 53.5% of the total operators being 65 years or older. If this trend continues, the rural community is expected to become a super-aged society by 2050 with average age of farm operators being 77.5 in 2025 and the ratio of the operators aged 65 years or older being 67% (KREI, Agricultural Outlook 2015). Farm operators also need to double their efforts to secure their successors, and the government must come up with innovative measures to attract young people to find agriculture-related jobs. It is also needed to increase the population returning to farming and rural community and organize the alternative management workforce, in preparation against the aging problem. Of course, it is necessary to actively develop farm machinery that can be conveniently operated by aged farmers and female farmers, and foster joint organizations for agricultural works.

Fourth, along with the development of science and technology such as IT, BT, and NT, convergence of agricultural production and distribution has been intensified, which will bring forth an era of smart farming for the advanced agricultural production and innovate the marketing sector through expansion of online e-commerce. Eventually, agriculture is expected to expand to upstream and downstream industries, distribution, food and material industries

including seeds, agricultural machinery, and facility equipment, and secure a new place as an agri-food life industry. In addition, it is expected that production, processing, marketing and tourism are associated, to make a huge progress of the 6th industrialization.

Fifth, with Korea's advance into the developed world, the public interest function of agriculture is expected to be further increased. Environment-friendly agriculture, which supplies safe agricultural products and protects the environment while maintaining productivity, is a global trend. The roles of agriculture in the national dimension such as food security, land and environmental conservation and land reserves will continue to increase along with



Development of Plant Factory Production System
© Rural Development Administration, 2000



Minipig Xeno Cloned Through Transformation
© Rural Development Administration



Bee Venom Cosmetics Utilizing High Technologies (ICT, BT)
© Rural Development Administration



Orchid Cultivation under Structure Using a Smartphone
© Rural Development Administration, 2013

its social functions such as maintenance of rural communities, suppression of urban concentration, agricultural employment, and support for aging population. Therefore, improving various welfare and living conditions for farmers in addition to professional, self-supporting management bodies will be a major challenge for the restructuring of agriculture as well as for community activation.

Sixth, agricultural policies in preparation for the improvement of the inter-Korean relations and the reunification will be important. In particular, realistic preparations for reunification with the North, which is in structurally and constantly food-deficit condition, are required including short-term measures such as farming technologies and material support as well as approaches to solve fundamental issues such as the restructuring of agriculture.

2. Vision of Agriculture in Korea and a Paradigm Shift

Vision of Korean Agriculture and Rural Areas

In the future, Korean agriculture and rural areas will be exposed to the era of the fully open market for agro-food (globalization). The generations who have been engaged in agriculture since the independence of Korea and the Korean War will retire from the industry, while a new generation will take over agricultural production and management. It is also expected that as agricultural production and marketing will be influenced by integration and convergence thanks to a rapid growth of science and technology including IT and BT and undergo advancement, mechanization and digitization, there can be an opportunity for the industry to bring about a new agricultural revolution. At the same time, the significance of global warming, the environment and ecosystem will increase, raising the need to place an emphasis on sustainable agriculture, rural areas and farmers in the future vision.

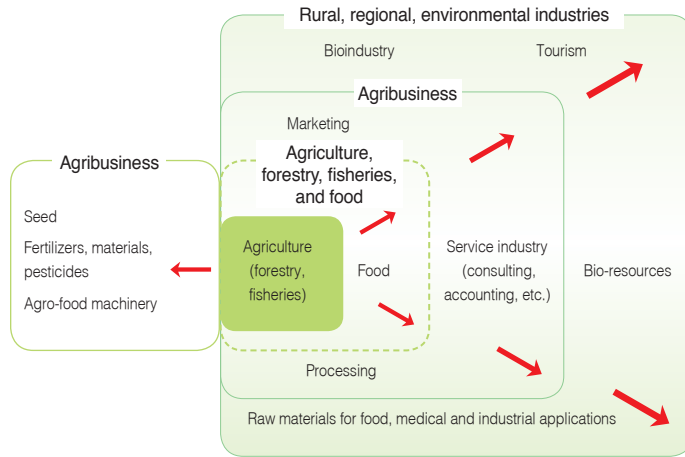
More specifically, sustainability should be achieved from multiple aspects in the future: sustainability for producers to increase their income on a stable basis through agricultural production in the era of the fully open market; sustainability for rural areas to create a place for Korean people to live, where both urban residents and those engaged in agriculture can reside together in harmony with the natural environment, culture, welfare and a pleasant residential environment; and sustainability for farmers to achieve a shift in generations smoothly while new farmers take charge of part of agricultural production.

To accomplish these goals, first of all, the agricultural and food industries should be stabilized as a major source of income through sustainable production for farmers and upstream and downstream industries related to agro-food in the upcoming era of the fully open market for agro-food. In addition, it is crucial to foster the agricultural and food sectors as the industries that can compete with imported agro-food while exporting safe, high-quality products to the overseas markets in the era of globalization, thereby making up for the proportion taken by imported products and expanding their proportion in the global market.

Agriculture will grow into a promising future industry for the national economy as a life industry. To this end, it is urgent to industrialize the current agro-food sector with a new growth engine so that the sector can expand its horizon to create added value beneficial to humans (as a life industry) by producing, managing and utilizing life resources. The life industry refers to the one that creates high value-added products and services that are beneficial to humans by managing and using life resources such as animals, plants and microorganisms. In order to foster Korean agriculture as a competitive industry with high quality and added value, it is worth industrializing the agricultural sector and expanding it to new areas, such as biotechnology, seeds, industrial microorganism, insects, pets and ornamental plants, natural substances and aroma.

The management expense in Korean agriculture is high due to the low competitiveness of downstream industries, which also affects farm income. Therefore, it is desirable to nurture downstream industries related to agricultural, forest and fishery products, including the industries of seeds (breeding), agricultural

Figure 7-1 Agro-Food Industry's Expansion to Other Industries



materials (fertilizers and pesticides) and machinery, and to foster them as export industries.

In the era of aging population, moreover, agricultural production will be mechanized, automated and developed based on a factory production system so that even aged or female farmers can participate in farming in a convenient and professional way. In response to the globalization of agriculture, corporate farming, food processing, marketing and export will expand, boosting specialized farming by commercialized farms with high technology. Agricultural production and sales will be also systematized by village, region and item, facilitating joint production and sales.

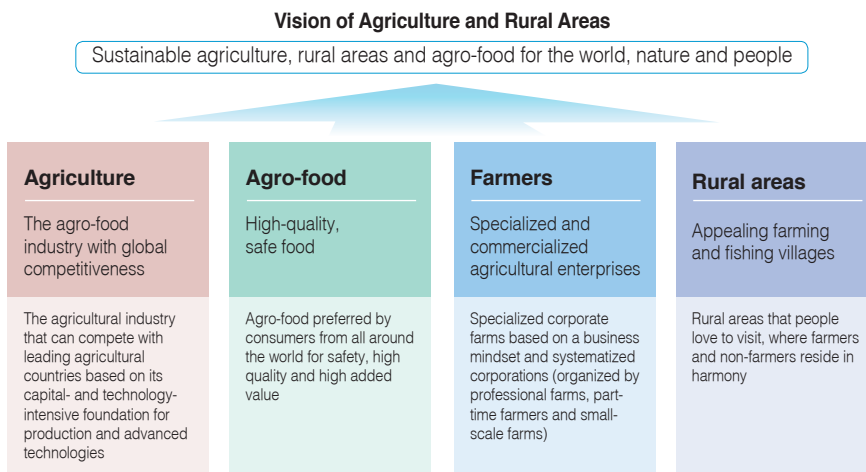
It is also expected that urban sprawl and the expansion of the diversion of farmland for non-agricultural purpose, such as the construction of a factory, will aggravate the environment of

agricultural production. This will raise the need for maintaining and protecting the natural environment and agricultural ecosystem and also increase the demand of consumers for eco-friendly agro-food, thereby expanding environment-friendly farming.

Second, as the development of information technology and transportation removes the boundary between urban and rural areas, farming villages have become places where a variety of people reside altogether, including urban residents enjoying country life, entrepreneurs, people who want to enjoy their life after retirement in nature, those who return to farming and rural areas, and farmers. The number of suburban house villages is on the rise, and that of white collar workers, entrepreneurs and small business owners who live in rural areas and commute to urban cities is also increasing. Based on this trend, rural areas will be preferred by people for pleasant residential areas in the future.

Third, there are various types of people engaged in agriculture depending on the purpose of producing agricultural products: corporate farms and professional farmers who produce agricultural products in a commercialized or professional method and make a large percentage of their income by selling agricultural products; part-time farmers who have diverse sources of income in addition to producing agricultural products with a larger proportion of non-farm income in their total income; small-scale farms focusing on self-consumption; and those who do farming as a hobby. Among them, corporate farms and professional farmers will perform as key players in agricultural production based on a business mindset. In addition to such farmers, corporations for joint production and distribution organized by professional and part-time farmers will

Figure 7-2 Vision of Agriculture and Rural Areas



also account for a large proportion as key players in agricultural production.

Thanks to the advancement of IT and transportation, there will be no need for those engaged in agriculture to necessarily reside in rural areas. People can live in nearby cities and commute to rural areas for farming, and a growing number of people will even use smartphones and PCs to farm in a remote control system or do farming at plant factories in urban areas. These shifts will change the definition and concept of agricultural workers.

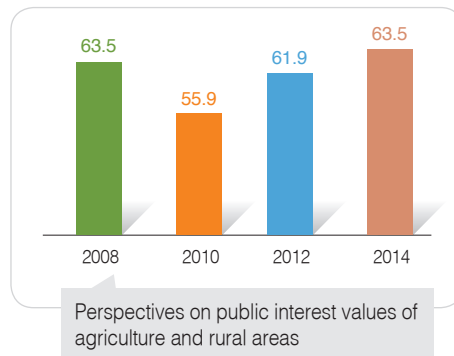
Expected Roles of the Agricultural Industry and Rural Areas

From October to November in 2014, the Korea Rural Economic Institute (KREI) conducted a survey of 1,500 urban residents and

1,209 farmers (2,709 in total) concerning their opinions about the roles of the agricultural industry and rural areas. The survey finds that a majority of respondents have positive opinions toward agriculture. In particular, 66.2% of the respondents believe that agriculture and rural areas have high public interest values in the sociocultural aspect. This figure is an increase from 55.9% in 2010, implying that public awareness toward agriculture has become more positive.

The result of the survey also shows that the respondents have positive views on the potential of agriculture for industrialization for future growth: 35.2% of farmers and 44.0% of urban residents responded that Korean agriculture has high potential to grow into an industry that increases added value and creates new markets by combining various technologies and ideas. On the contrary, 22.8% of farmers and 11.4% of urban residents believed that the Korean agricultural industry has (very) low potential to grow further in the future.

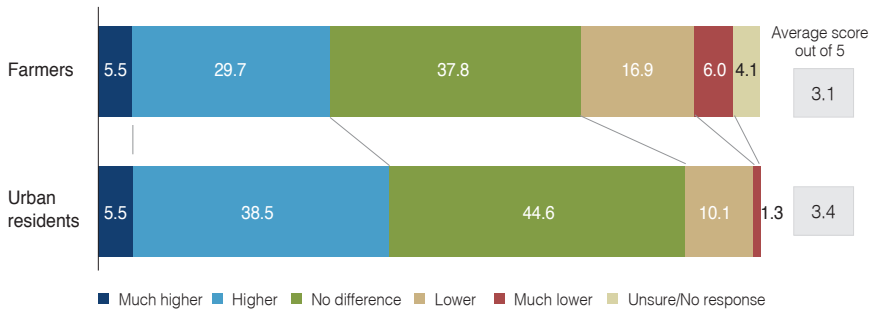
Figure 7-3 Perspectives on Public Interest Values of Agriculture and Rural Areas



Source: Korea Rural Economic Institute, 2014 *Public Opinion Survey on Agriculture and Rural Areas*.

Figure 7-4 Perspectives on Growth Potential of Agriculture

Unit: %



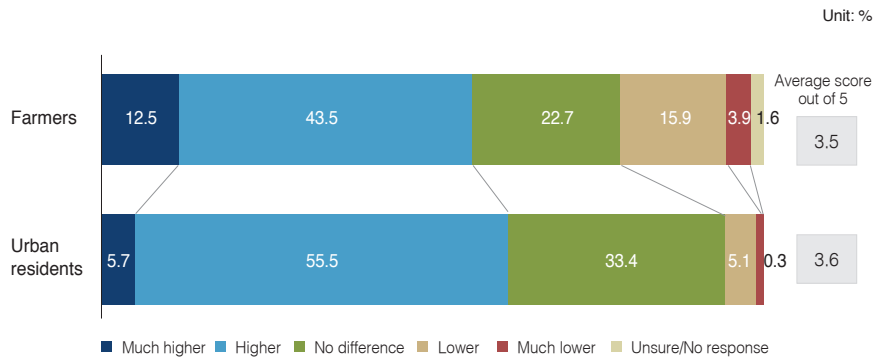
Source: Korea Rural Economic Institute, 2014 *Public Opinion Survey on Agriculture and Rural Areas*.

In addition, the respondents think that Korean agriculture has higher sustainability compared to a decade ago. The result indicates that 56.0% of farmers and 61.2% of urban residents have positive views on the sustainability of the Korean agricultural industry compared to ten years ago. Moreover, 84.4% of farmers and 78.0% of urban residents consider the adoption of sustainable agriculture significant.

There is a growing need for Korean agriculture to perform multiple roles as a food industry that produces foodstuffs for Korean people, as an environmental industry that protects the environment, and as a key industry that creates added value and employment.

First, Korean agriculture should perform the role of a life industry that provides people with quality food at reasonable prices on a safe and secure basis. If it is impossible for a country to take care of issues related to food, a source of life, by its own capability,

Figure 7-5 Perspectives on Sustainability of Agriculture Compared to a Decade Ago



Source: Korea Rural Economic Institute, 2014 Public Opinion Survey on Agriculture and Rural Areas.

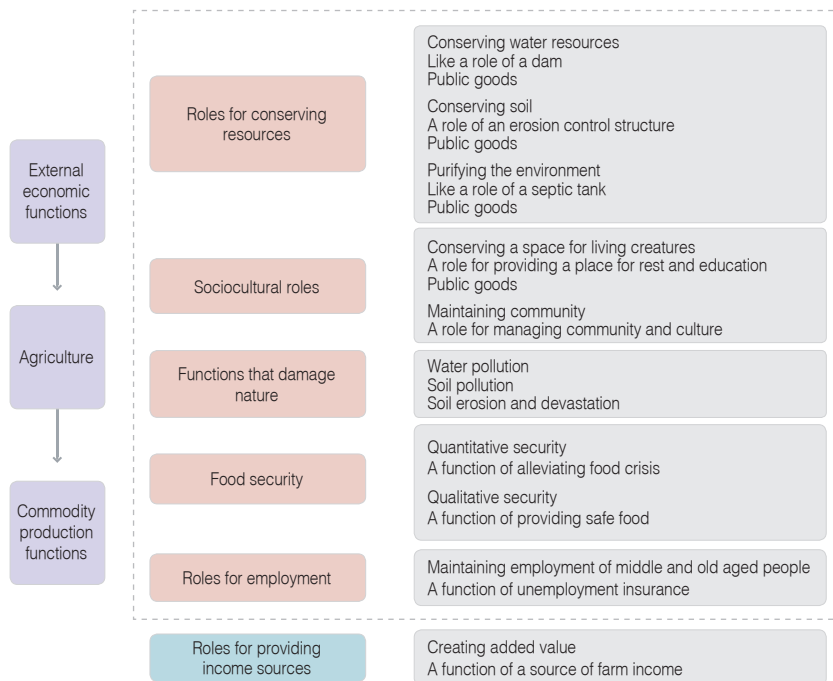
it will be hard to maintain the foundation of the country. Also, if the country fails to maintain and develop the agricultural industry on its own and weakens its foundation, it will take considerable time and expense to restore the foundation.

The second role of agriculture is to maintain the natural environment of the country beautiful and safe. As the global trend of farming shows, nationwide awareness of multiple functions of agriculture, including flood control, water provision, soil protection, and atmosphere purification, is growing, and the value of agriculture as an eco-friendly industry will increase thanks to the efforts to protect the global environment. Therefore, it is crucial for the agricultural industry in the 21st century to perform as many functions as possible to provide public interests in the sociocultural aspect, while minimizing harmful effects on the environment.

The third role is to contribute to the growth and stabilization of the national economy. It should be recognized that agriculture is a

basic industry that creates employment and added value of natural resources and that rural areas are a ground for the succession of tradition and local cultures and a stable foundation of politics and society. For instance, the expense in urban areas for supporting a person is three times higher than that in rural areas, and a rapid exodus from rural areas will increase social expenses of cities to resolve housing shortage, traffic issues and poverty. Rural areas are places that keep unique traditions and cultural heritages, and rural tourism has recently emerged as a new source of income.

Figure 7-6 Multiple Functions of Agriculture



Note: Functions within a dotted line indicate non-market functions of agriculture.

Shift in Paradigm for Future Vision of Korean Agriculture

In the era of the fully open market, aging agricultural population, a shift in generations, the spreading of integration and convergence with the cutting-edge science and technology, and a growing awareness of the significance of global warming and the environment, it is essential to shift a paradigm of agriculture, rural areas and agricultural policies, which means a conceptual shift, to pursue a desirable future vision of Korean agriculture.

First, global strategies should be changed. To date, the agricultural industry has carried out passive and defensive strategies by controlling imports and protecting the domestic market of agricultural products in response to the opening of the market. However, a defensive strategy would not work anymore in the future in which the fully open market is pursued, so it is necessary to come up with active and aggressive strategies that can expand the proportion of Korean agricultural products in the global market. It is needed to pioneer new markets in countries with a large population, such as China and India, and large emerging markets with high potential, such as Southeast Asian countries, the halal food market in the Middle East and former Soviet Union countries, in addition to the existing targets such as the US and Japan. Moreover, it is needed to try a strategic approach for importing agricultural products. For instance, a differentiation strategy against domestic products is needed for commodities with low price competitiveness, while a strategy for securing products on a stable basis is needed for ingredients of processed food to be exported.

Second, the focus of competition strategies should be shifted from price to values. The shift does not have to be applied to

commodities such as vegetables that require inevitable competition against low-priced Chinese products. However, it is necessary to employ a value-centered strategy for agricultural products with high added value based on high quality, safety, technology and a proved place of origin, which can differentiate and sell such products at home and abroad, thereby fundamentally blocking the competition with low-priced Chinese agro-food.

Third, it will be desirable to utilize a resource-using strategy that pursues capital- and technology-intensive farming, while reducing the use of land-using farming methods. The global competitiveness can be strengthened by expanding controlled agriculture (horticulture, stockbreeding) and plant farming (mushrooms, etc.) based on the convergence of latest technologies including IT and BT, minimizing the use of land and maximizing productivity. Chili peppers and fruits, which have been planted mostly on the bare ground, should be cultivated inside rain-proof facilities that protect crops from meteorological changes and damages by harmful insects and increase productivity. In terms of chili peppers, yield can be tripled or even quintupled compared to that of outdoor cultivation by utilizing rain-proof facilities, which can guarantee price competitiveness against low-priced Chinese products.

Fourth, the concept of agricultural producers should be also changed. To date, independent farmers who were nurtured by the farmland reform in 1949 and have farmed on their own land have led agricultural production. As farming association corporations and agricultural corporations were included in key players of agricultural production in 1993, systematized corporations have been nurtured as agricultural producers too. However, a shift in generations is

now occurring, and farming on leased land takes up almost half of the total farming cases, implying that the land-to-tillers principle is nominal. In addition, as there is a growing need for expansion, specialization and commercialization of agricultural production in the era of the fully open market, it is important to expand the scope of the concept of agricultural producers and to nurture corporate farms and agricultural corporations beyond focusing only on individual farmers. In other words, the concept of an agricultural producer should be changed from an individual farmer to a farm enterprise. This shift is crucial because the number of corporations or farmers who live in urban areas and commute to rural areas for farming or employ workers to farm in a remote control system, or even that of companies that construct plant factories in cities can increase in the future, although the number of farmers who live near farmland is still large. The farmland-related policies should also move their focus from ownership to the use of land, and the concept of agricultural workers required in nurturing farm enterprises should be reconsidered as well.

Fifth, there should be a policy that clearly distinguishes between agricultural production and rural life, or between production and welfare. The target of agricultural policies should be producers qualified at a certain level to focus on policies for nurturing specialized farms. Small-scale farmers and those who farm as a hobby should be classified as the target of policies for rural areas and welfare.

Last but not least, the focus of agricultural policies should be shifted from rice to horticultural and specialty crops, livestock, food processing and eco-friendly farming.

