Agriculture in Korea 2025

Korea Rural Economic Institute

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Foreword

The Enduring Roots and New Horizons of Korean Agriculture

Agriculture has always been more than just an industry in the Republic of Korea; it is the root of our nation's spirit and the bedrock of our economic stability. As we publish Agriculture in Korea 2025, we stand at a vantage point from which we can reflect on 80 years of remarkable progress since our independence, while simultaneously looking forward to a future filled with unprecedented challenges and opportunities.

A Journey of Resilience and Innovation: From Survival to Prosperity

The history of Korean agriculture is a testament to the resilience of our people. In the aftermath of the Korean War in the 1950s, amidst the ruins of conflict, agriculture was the lifeline that sustained the nation. During the 1960s and 1970s, facing chronic food shortages, our farmers and researchers achieved the miraculous "Green Revolution," attaining self-sufficiency in staple grains. This was accompanied by the "White Revolution," which modernized year-round vegetable production, and the nationwide "Saemaul Movement (New Village Movement)," which laid the physical and spiritual foundation for Korea's modernization. These efforts provided the essential labor and capital that fueled Korea's rapid industrialization, often referred to as the "Miracle on the Han River."

Entering the era of globalization in the 1990s and 2000s, Korean agriculture faced waves of market opening under the WTO and subsequent FTAs. Rather than retreating, we chose the path of structural reform. We shifted our focus from quantity to quality, enhancing competitiveness through technology and reforming policy paradigms to stabilize farm incomes through direct payment systems. In the 2010s and early 2020s, the policy focus expanded further to embrace the "public

value" of agriculture, recognizing its role in environmental conservation, landscape preservation, and community vitality.

2025: Meeting the Era of Great Transformation

Now, in 2025, we face a landscape vastly different from that of the past. The challenges we confront are both complex and interconnected. The climate crisis has moved beyond warnings and has become a tangible reality, with extreme weather events threatening global food production. Supply chain instabilities driven by geopolitical conflicts are a stark reminder that food security is a matter of national security. Domestically, the "demographic cliff" and the crisis of rural extinction are no longer distant fears but urgent realities requiring immediate action.

However, crisis breeds innovation. Agriculture in Korea 2025 documents how Korea is turning these challenges into opportunities for a "Great Transformation." We are witnessing the dawn of "Future Agriculture"—where data and Artificial Intelligence (AI) replace pure physical toil, and smart farming expands from greenhouses to open fields. We are seeing the rise of "K-Food," where Korean agricultural products, backed by safety and quality, are captivating global consumers. Additionally, we are embarking on a "Spatial Restructuring" of rural areas, transforming them from declining villages into vibrant spaces of rest, work, and innovation for the entire nation.

About This Report

The Korea Rural Economic Institute (KREI) has compiled this report to provide a comprehensive analysis of these dynamic changes. Organized into six chapters, Agriculture in Korea 2025 offers a roadmap for understanding the present and future of our agricultural sector.

Foreword

Chapters 1 and 2 lay the foundation by detailing the land, people, and economic structures of Korean agriculture. Here, we reflect on the historical trajectory of our agricultural policies—from the production-centric drives of the past to today's multifaceted approach, prioritizing sustainability and digital transformation. We also examine the current state of farmland and the agricultural workforce, providing essential data for understanding the sector's potential.

Chapter 3 delves into the core industries of grain, livestock, horticulture, and forestry. It highlights how these traditional sectors are adapting to climate change and changing consumption patterns. You will see how the livestock industry is addressing environmental issues, and how forestry is evolving to provide not only timber but also healing and welfare services to the public.

Chapter 4 explores the expanding boundaries of the agri-food value chain. It covers the dynamic growth of the food industry and agro-food marketing, driven by the global popularity of Korean culture. This chapter illustrates how the boundary between agriculture and the food service and processing industries is blurring, creating new value-added opportunities.

Chapter 5 addresses the heart of our rural challenges. It presents our vision for a "rural utopia"—strategies to combat depopulation by improving rural well-being, enhancing welfare, and fostering "relationship populations" who connect urban and rural lives.

Finally, Chapter 6 focuses on "Emerging Issues," the defining feature of this 2025 edition. This section provides analysis on:

Smart Agriculture & AI: The transition to data-driven farming.

Handover to the Next Generation: Policies to support young farmers and ensure generational succession.

Climate & Energy: The push for energy self-sufficiency and carbon neutrality in rural areas.

Income & Welfare: Discussions on strengthening the farm safety net and introducing basic rural income concepts.

New Growth Engines: The blossoming companion animal industry and the strategic utilization of foreign workers.

Global Responsibility: Korea's expanding role in International Agricultural Development and Cooperation (ODA).

A Message of Solidarity and Hope

Agriculture is a universal language. The challenges that Korea faces—climate change, food security, and an aging population—are not ours alone; they are shared by the global community. By publishing Agriculture in Korea 2025 in English, we aim to share not just our statistics but also our experiences in addressing these issues.

We hope this report serves as a valuable guide for policymakers, researchers, and global citizens committed to a sustainable future for agriculture. We believe that by sharing knowledge and fostering international cooperation, we can cultivate a better future together.

I extend my deepest gratitude to the researchers, authors, and editors who have dedicated their expertise to this publication, and to the farmers and rural residents who continue to guard the roots of our nation.

December 2025

HAN Doobong

President, Korea Rural Economic Institute

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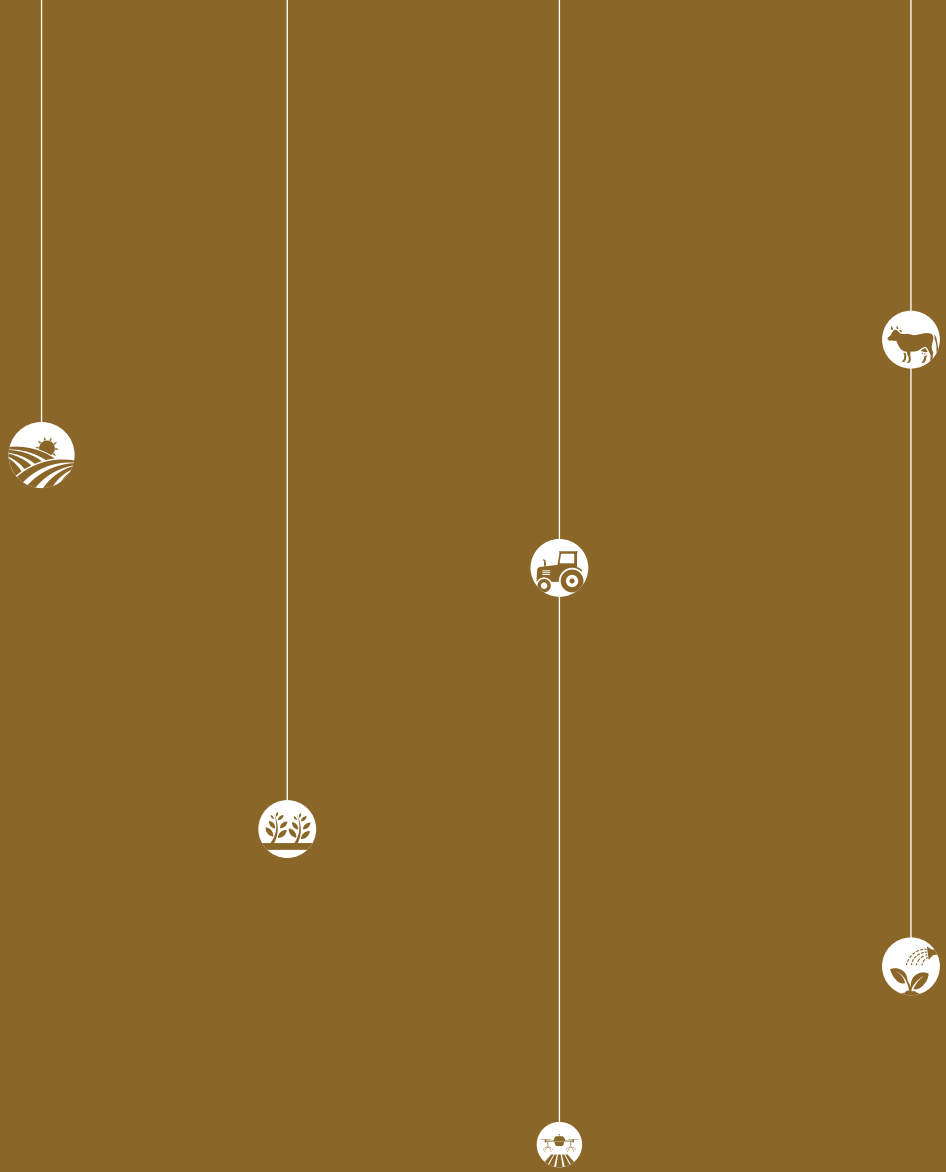


Agriculture in Korea 2025

CHAPTER

01

Introduction

CHAPTER 01

Introduction

Korea is located on the mid-latitude zone of the globe. It is situated on the Korean Peninsula at the eastern end of the Asian continent and has approximately 5,000 years of recorded history. In the early 20th century, the Korean Peninsula had gone through colonial rule by imperialist Japan. After Second World War, Korea experienced a division by the military stationing of the United States (US) and Soviet Russia, and the Korean War caused the division of the peninsula into South Korea and North Korea. In the south, the Republic of Korea (Korea, Daehan Minguk) was established in 1948, and in 2025, the country observed its 80th Independence Day.

Korea has a temperate climate. Its four seasons are distinct as it has a continental climate with a large climate range, with seasonal winds blowing from the Asian continent and broad seasonal differences of precipitation. In the summer, the temperature and the humidity are high. In the winter, the country is cold and dry. Although the country is small in size, it is extensively mountainous. It has the geographical features of a peninsula in that the three sides are coastlines. Because of these characteristics, there are rather big differences in weather in the east, west, south, and north.

With the backdrop of Asia's monsoon climate of high temperature and humidity in the summer, rice farming was developed early. Historically, the "agriculture first" principle, which considered farming as the foundation of the country, had prevailed. As there had been little agricultural land while there were numerous farmers, the country could hardly escape from small-scale farming. In modern times, the number

of farmers leaving agriculture rose because of industrialization, and the ongoing agricultural restructuring includes the reduction of farmland because of urbanization. To cope with the globalization era of the 21st century, the country is pursuing agricultural policies and systems in consideration of its distinct characteristics while complying with international norms. Simultaneously, how to respond to the accelerating aging population, the decline in the number of farmers, and climate change, including rising average temperature, are also challenges that agriculture faces.

Prior to taking up the main subject, we will provide an overview of Korean agriculture with respect to the land and population, national economy and agriculture, budget and the change in agricultural policies.

1. The Land and Population

Area and Topography

The Korean Peninsula is located at 33–43°N latitudes and 124–132°E longitudes. The Korean Peninsula stretches from north to south, containing approximately 3,400 islands. On the northern border, the Aprok and Tuman rivers flow. The East Sea and the South Sea are on the eastern and southern sides, respectively. To the west, the Yellow Sea lies between mainland China and the Korean Peninsula.

The total area of the Korean Peninsula is 223,000 ㎢, with South Korea occupying 100,284㎢ of the land. Farmland makes up 17.1% of the country, forests 63.5%, and others 19.4%. The total length of the coastlines of South and North Korea combined is 14,963 km. Of this, the coastline of land excluding islands reaches 7,753 km. The elevation of the land rises from west to the east, and thus, high mountains are found mostly on the eastern side of the peninsula. Rivers flow to the west and south along mountain slopes. At the mid- and lower streams of rivers, there are relatively wide plain regions.

Figure 1-1 South Korea in the map of Northeast Asia

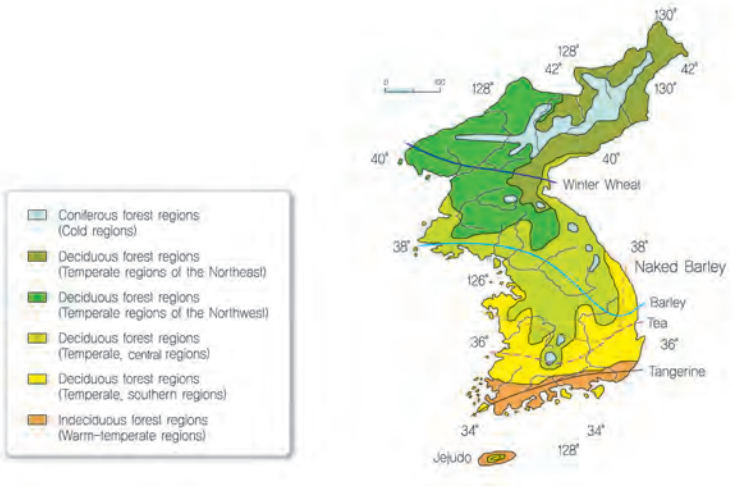
Climate

Geographically positioned in the mid-latitude zone of the northern hemisphere, Korea has a temperate climate. The four seasons of spring, summer, autumn, and winter are distinct. Situated between the Asian continent and the Pacific Ocean, the country has a continental climate significantly influenced by seasonal winds. As a result, and unlike the seasonal changes of West European countries and other mid-latitude countries, the Korean winter is comparatively cold, and the summer is very hot. In the spring and autumn, migratory anticyclones cause many clear and dry days. The average annual temperature ranges from 6℃ to 16℃, and the regional differences in average annual temperature are rather dramatic. If the mountainous areas are excluded, the distribution ranges from 10℃ to 16℃. The monthly average temperature of August, which is the hottest month of the year, is 25℃, and that of January, which is the coldest month of the year, is -0.7℃.

The annual amount of precipitation is 1,700mm in the southern region and 1,300mm in the central region. By season, approximately 50% to 60% of annual precipitation falls in the summer and 5% to 10% falls in the winter. Northwesterly seasonal winds from December to February are strong and are generally stronger than the southwesterly winds. In the months of September and October of the fall season, southwesterly winds change into northwesterly winds. The winds are usually weak, and the effect of land and sea breezes becomes clear in coastal regions. Humidity nationwide ranges from 80% to 90% and is the highest in July. The months with the lowest humidity are January and April, during which humidity ranges from approximately 30% to 50%. September and October are pleasant with humidity around 75%.

The torrential rain during the rainy season starts from the south coastal region in late June, gradually reaches the central region, and continues for approximately 30 days. However, because of climate change, it is becoming less distinct than before. Occasionally, the fall rainy season comes in early September. The typhoons from outside of Korea primarily occur between June and October, and about two or three of them directly or indirectly affect Korea.

Figure 1-2 The climate and distribution of vegetation in Korea



Population

In 2025, the population of Korea is 51.6 million, or 0.62% of the global population of 8.23 billion, ranking 29th worldwide (Population Health and Welfare Association 2025). The population growth rate had gradually declined from approximately 2% in 1970 to below 0.5% in 1990. We experienced a population decline for the first time in 2020. The shrinking of the population is expected to continue after 2025, decreasing at approximately 0.16% per year over the next decade, accelerating thereafter. It will reach approximately 36.2 million by about 2072 (Statistics Korea, Population long-term forecast: 2022~2072). In terms of population density, Korea globally ranked third in 2024 with a population density of 530 persons/㎢.

When looking at the population by age groups in 2022, those between 15 and 64 (youth to middle-aged) accounted for 71.7%, and those aged 65 or older (older adults) accounted for 17.4% in Korea. In terms of population structure, an aging population is a key characteristic. The aging index (older adult–child ratio) has steadily been rising from 0.069 in 1960 to 1.51 in 2022. It has crossed 1 in 2020 and is expected to be 5 by the end of 2050.

The farm population in 2024 was 2.09 million, which accounted for 4.0% of the total population. The number of farm households was 0.99 million, which recorded below 1 million for the first time in 2023. Although the number of farm households had increased to 2.6 million in the latter half of the 1960s, it started to decrease afterwards and declined rapidly. The major causes were industrialization and urbanization, which had occurred during rapid economic development. Getting smaller, the ratio of farm household population has gradually been shifting to that of developed countries, such as the US, Japan, France, and Germany, where the ratio of farm households stands between 2% and 4%.

The economically active population accounted for 71.1% of the total population in 2022. The number of people working in agriculture and forestry was 1.49 million, or 5.3% of the total working population. The number and percentage of those working in agriculture and forestry have been falling simultaneously.

2. National Economy and Agriculture

An Overview of Korean Economy

The modern era of Korea had a depressing start. At the beginning of the 20th century, when Korea had sought a change from feudalism to a Western-style economy, the country had to cry out loud about the colonial rule of imperialist Japan. Afterward, the country had to experience the Korean War that began in 1950 and then rebuild the economic foundation that had been ruined.

Korea pursued economic growth in the 1960s led by the government, which established the Economic Planning Board in 1961 to formulate five-year economic development plans to advance industrial structures and the increase in exports. It increased domestic industrial investment to support economic development and improved export financing and the export supporting system to increase Korean exports.

The high growth in the 1960s and 1970s supported both the government's intervention in the market and the leadership role in efficiently distributing resources. There had been much room for the government to play a positive role during the initial phase of economic development, when market competition had not been intensive. However, the government's excessive intervention led to inefficient distribution of resources and economic instability.

At the end of the 1970s, the Korean economy did not show the ripple effects that should have followed the heavy chemical industry. Instead, the second oil shock induced the Korean economy to undergo a crisis of unstable commodity price and negative growth. Taking this crisis experienced during the high-growth period as an opportunity, the government had emphasized economic stability, financial market reform, and industrial restructuring. Owing to the successful implementation of such policies, the increase rate of commodity prices was lowered from 21% in 1981 to 2% in 1984, and the economic growth rate rose from 6% to 9%.

From the mid-1980s, the so-called era of "triple lows" began with a drastic fall in

the value of US dollar, oil prices, and international interest rates. In this environment, the Korean economy enjoyed a prosperous time by seizing the "three rabbits" of large-scale current account surplus, high levels of growth, and stabilization of commodity prices for the first time since the founding of the country. Nevertheless, the demand for economic democratization by social echelons who had been alienated during the economic development started to grow fierce. In 1987, the government began to emphasize the importance of fairness and welfare together with efficiency and growth. Because of the increasingly vocal demands by the Korean society for democracy, large-scale labor-management disputes occurred frequently and wages rose sharply. In 1990, the current account balance turned to a deficit.

In the presidential election of 1992, a civilian government took power. To differentiate itself from the military regime of the past, the civilian government announced "The Five-Year Plan for a New Economy" and had emphasized participation and creativity of citizens instead of governmental control. It closed down the Economic Planning Board, which had been a symbol of economic development, and pursued market economy through economic reforms and liberalization. Korea became a member of the World Trade Organization (WTO) and the Organization for Economic Cooperation and Development (OECD). However, despite such efforts, Korea had gone through a financial crisis at the end of 1997. Consequently, it requested a financial bailout from the International Monetary Fund (IMF), and the foundation of Korea's high levels of economic growth was fundamentally changed.

A new government was installed in 1998, and it sought to restructure the overall society aggressively. Thanks to such efforts by the new government, the Korean economy quickly escaped the shock of the financial crisis. In August 2001, Korea completely came out of the IMF's bailout program. Unlike the situation in which Korea's foreign currency reserves were nearly exhausted 17 years ago, the amount of foreign currency reserves in 2015 rose to be the sixth largest globally.

After the financial crisis, the Korean government abolished the economic management practice of the industrialization period and followed a path of simultaneously achieving market competition, economic democratization, growth,

and distribution. With the world economy in recession recently, the Korean economy has slowed down as well. Consequently, recovery of growth potential and creation of employment have arisen as policy tasks.

According to the Bank of Korea's "National Accounts" and the World Bank's "World Development Indicators," the nominal gross domestic product (GDP) of Korea in 2023 was approximately US$1 trillion 839 billion. It ranked 12th, next to Russia and followed by Australia. Korea's per capita gross national income (GNI) in 2023 was US$ 36,194.

Table 1-1 Main indices of national accounts

Year	Nominal GDP (US$1 billion)	per capita GNI (US$)	Growth Rates (%)		The exchange rate against the US dollar (won/US dollar)
			GDP	GNI	
1970	8.1	254	-	-	311
1980	63.8	1,645	-1.5	-4.2	607
1990	263.7	6,147	9.2	8.9	708
2000	511.8	10,841	8.5	5.5	1,131
2010	1,265.3	22,170	6.5	7.0	1,156
2018	1,620.0	31,349	2.7	1.0	1,100
2023	1,839.0	35,570	1.4	2.2	1,300

Source: The Bank of Korea, various years, *National Accounts*.

Economic Development and the Role of Agriculture

Korea has walked the path of modernization and industrialization in the past 60 years, and it has grown to become an economic power that globally ranks approximately 10th. When we look at the economic structure of Korea, we can briefly describe it as having grown through primary, secondary, and tertiary industries. Although enough statistics were not available at the time of the country's establishment, the working population in the primary industry, which includes agriculture, must have reached at least 80 to 90%. Since 1960, with the economic

growth with industrialization having been processed, the number of workers in agriculture has declined. The number of workers in agriculture, forestry, and fisheries in 2023 was approximately 1.49 million, which was merely about 5.3% of the total economically active population.

The reduction in agricultural workforce resulting from economic advancement is a common phenomenon among developed countries. Nonetheless, Korea experienced changes in industrial structure at an unprecedented speed that is two to five times faster than those of developed countries. For example, the United Kingdom (UK) and the US had gone through an industrialization process that lasted approximately 100 years. However, in Korea, the transformation of industrial structure had taken place over merely 30 years. Moreover, the average time needed for the ratio of agricultural GDP to total GDP to be reduced from 40% to 5% was as follows: 120 years for the 5 European countries of the UK, Germany, France, the Netherlands, and Denmark, 95 years for the US, and 75 years for Japan. For Korea, it took only 30 years.

The ratio of agricultural GDP[1] to total GDP decreased over time, from 29.1% in 1970 to 8.7% in 1990, 2.5% in 2010, and 1.8% in 2023. With respect to the agricultural workforce, the ratio of the number of farmers to the total population decreased from 50.4% in 1970 to 17.9% in 1990, 6.6% in 2010, and to 5.3% in 2023. In this way, the agricultural GDP ratio, as well as the ratio of those employed in the agricultural sector, was reduced quickly.

In most countries, the dynamic force for industrialization was found in agriculture during the initial phase of economic development regardless of the type of national system. The ground for capital formation was laid through the dissolution of pre-modern land ownership, which had been the production base for agriculture. And the high levels of growth had been achieved through the supply of cheap labor from rural areas. Such cases are the empirical facts experienced by several countries, including the UK, which had gone through the Industrial Revolution in earlier days, and Japan, which had emerged as an industrially advanced country in the 20th century.

1 It covers agriculture, forestry, and fisheries.

Nevertheless, such drastic changes in industrial structure in Korea require us to respond more quickly to the problems that occurred to sustain agriculture and rural areas. It includes labor shortages and aging farmers, weakening of the agricultural management base, shrinking rural villages, and then the weakening of the rural economy.

Table 1-2 Changes in the national economic status of agriculture

Unit: %

Classification	The relative ratios in GDP				The relative ratios of employment		
	Agriculture, forestry, and fisheries	Agriculture	Forestry	Fisheries	Agriculture, forestry, and fisheries	Agriculture and forestry	Fisheries
1970	29.1	25.4	2.0	1.7	50.4	49.5	0.9
1980	16.0	13.7	1.1	1.2	34.0	32.4	1.6
1990	8.7	7.5	0.4	0.8	17.9	17.1	0.8
2000	4.4	3.7	0.2	0.4	10.6	10.2	0.4
2010	2.5	2.0	0.2	0.3	6.6	-	-
2018	2.0	1.7	0.1	0.2	5.0	-	-
2023	1.8	1.5	0.1	0.2	5.3	-	-

Note: Since 2009, workers in agriculture and forestry and those in fisheries have not been classified.
Source: The Bank of Korea, various years, *National Accounts*.

As mentioned before, agriculture has played an important role as the primary force in leading the development in many countries. The various roles of agriculture in the Korean economy can be summarized as follows:

First, agriculture plays the role of producing and supplying food. The fact that Korea achieved self-sufficiency in rice production in 1978 through the Green Revolution was a big achievement considering that the country's staple grain is rice. Although its self-sufficiency rate of food has continued to fall since then, a stable supply of food has been firmly established as an important role to be played by agriculture.

Second, agriculture contributes to the development of other industries. It has aided in the advancement of commerce and transportation through the exchange of agricultural products with other daily necessities, and industrial crops and livestock products have been supplied as industrial raw materials, thus forming a part of the manufacturing industry. The agricultural materials industry, which is related to the production of fertilizer, agricultural chemicals, machinery, and so on, has been developed as an upstream industry, while the food industry has been developed as a downstream industry where agricultural produce is processed.

Third, agriculture plays a role in preserving the natural environment and the national territory. Agriculture is mostly an environment-friendly industry. In modern times, agriculture has caused some pollution problems with the use of synthetic chemicals. Even so, there are more positive functions in agriculture in terms of environmental preservation. Green plants refine air, and the green space has been providing amenities. Recently, non-economic functions of agriculture, such as flood control, water resource development, air purification, and land preservation, have been emphasized. Evidence has also been found repeatedly that the economic values of such "public good" functions are much greater than the amount of agricultural production.

Fourth, agriculture promotes the preservation of genetic resources. At present, there are over one million species living on Earth. Such diversity of biological species plays an important role both in maintaining the harmony of nature and in achieving the serenity of the natural world. With Korea in particular, it can be said that the country with its four distinct seasons is blessed by heaven. The country has the world's sixth-largest genetic resources of plants. The potential for advancing bio-industries by utilizing agricultural genetic resources is very high.

Fifth, agriculture promotes economic and social stability. Food is an indispensable element for humans to live. Therefore, a decline in agriculture will soon bring about a decline of related industries and thus make the nation's economic and social life unstable. In addition, agriculture maintains the population of rural villages through the creation of income by employing their labor force. When rural communities collapse,

urban problems will become more serious accordingly, and it is a matter of course that the traditional culture of rural villages disappears. The natural scenery, which provides rest to citizens, can only be maintained through the continued existence of agriculture, forestry, and fisheries.

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3. Agricultural and Rural Budget

National Total Expenditure and Agricultural/Rural Budget

In 2025, the total national budget expenditure amounted to KRW 673.3 trillion, representing a 2.5% increase (KRW 16.7 trillion) compared with the previous year's budget. The detailed breakdown of expenditures is presented in <Table 1-3>. The resource allocated in Agriculture, Fishery and Foods has increased from KRW 25.4 trillion to KRW 25.9 trillion taking 2.0 percentage of total budget in 2025.

The Ministry of Agriculture, Food and Rural Affairs (MAFRA) has a total budget of KRW 18.7 trillion, marking a 2.2% increase from the previous year and accounting for 2.8% of the total national budget. MAFRA's 2025 budget plan focuses on the following key priorities: income safety nets for farmers (e.g., direct payment schemes), rural depopulation and spatial regeneration, growth drivers for the agri-food industry, food security, and stability of food supply.

Table 1-3 Resource Allocation by Sector in the 2025 Budget Proposal

Unit: KRW trillions, %, %p

	2024 (A)	2025 (B)	Changes	
			(B - A)	(B - A) / A
Total expenditure	656.6	673.3	16.7	2.5
1. Health, Welfare, Employment	237.6	248.7	11.1	4.7
2. Education	95.2	98.5	3.3	3.5
3. Culture, Sports, Tourism	8.7	8.8	0.1	1.1
4. Environment	12.5	13.0	0.5	4.0
5. R&D	26.5	29.6	3.1	11.7
6. Industry, SMEs, Energy	28	28.2	0.2	0.7
7. Social Overhead Capital	26.4	25.4	-1.0	-3.8
8. Agriculture, Fishery, Foods	25.4	25.9	0.5	2.0
9. Defense	59.4	61.2	1.8	3.0
10. Foreign Affairs, Unification	7.5	7.7	0.2	2.7
11. Public Order and Safety	24.4	25.0	0.6	2.5
12. General and Local Administration	110.5	110.7	0.2	0.2

Source: MAFRA, 2025, *Overview of the 2025 Budget and Fund Operation Plan.*

MAFRA's budget plan and size

MAFRA's finances consist of both the budget and various funds, which are classified according to their revenue sources and intended uses. The budget is further divided into the General Account and Special Accounts. The General Account is funded by general government revenues (tax income) and covers the government's ordinary fiscal expenditures. Special Accounts are operated with separate revenue sources to implement projects with specific purposes.

Funds are financial resources that can be operated outside the national revenue and expenditure budget framework, using contributions and levies as their sources of revenue for specific national projects. Compared with the strictly controlled budget, funds allow for more flexible fiscal management.

The budget of the MAFRA consists of the General Account and five Special Accounts.

General Account: An account used for MAFRA's general fiscal operations and administration of its affiliated departments.

Special Account for the Improvement of Agricultural and Rural Structure (hereinafter, the "Agricultural Structure Account"): Established to efficiently implement agricultural and rural structural improvement projects funded by the Agricultural and Rural Special Tax. This account is composed of two sub-accounts: the Special Tax Project Account and Structural Improvement Project Account.

Special Account for Energy and Resources Projects (hereinafter, the "Energy and Resources Account"): Established to stabilize energy supply, demand, and prices and to facilitate the effective implementation of energy- and resource-related projects.

Special Account for Regional Balanced Development (hereinafter, the "Regional Development Account"): Established to reduce regional disparities, improve the quality of life nationwide, and support national-level balanced development initiatives. This account operates four sub-accounts: the Regional Autonomy Account, Regional Support Account, Jeju Special Self-Governing Province Account, and Sejong Special

Self-Governing City Account.

Special Account for Higher and Lifelong Education Support: Established to enhance universities' capabilities in nurturing future talent and to improve conditions for education, research, and institutional operations.

Special Account for Grain Management (hereinafter, the "Grain Management Account"): Established under the Grain Management Act to manage and regulate the supply and demand of grain.

The funds under the jurisdiction of the MAFRA consist of seven separate funds.

Agricultural Products Price Stabilization Fund (hereinafter, the "Price Stabilization Fund"): A fund established to promote improvements in the distribution structure of agricultural products, ensure stable supply and demand and price stabilization, expand agri-food exports, and support the mutual growth of agriculture and the food industry.

Farmland Management Fund (hereinafter, the "Farmland Fund"): A fund established to support appropriate farm scale adjustment, farmland consolidation, farmland development, and efficient land management.

Livestock Industry Development Fund (hereinafter, the "Livestock Fund"): A fund created to promote the development of the livestock industry; facilitate stable supply, demand, and price stabilization of livestock products; improve industry structure and productivity; enhance distribution systems for livestock products; and strengthen the competitiveness of the domestic livestock sector.

Free Trade Agreement Implementation Support Fund (hereinafter, the "FTA Fund"): A fund established to secure the necessary financial resources for support measures for farmers and others who have suffered or are likely to suffer losses owing to the implementation of free trade agreements.

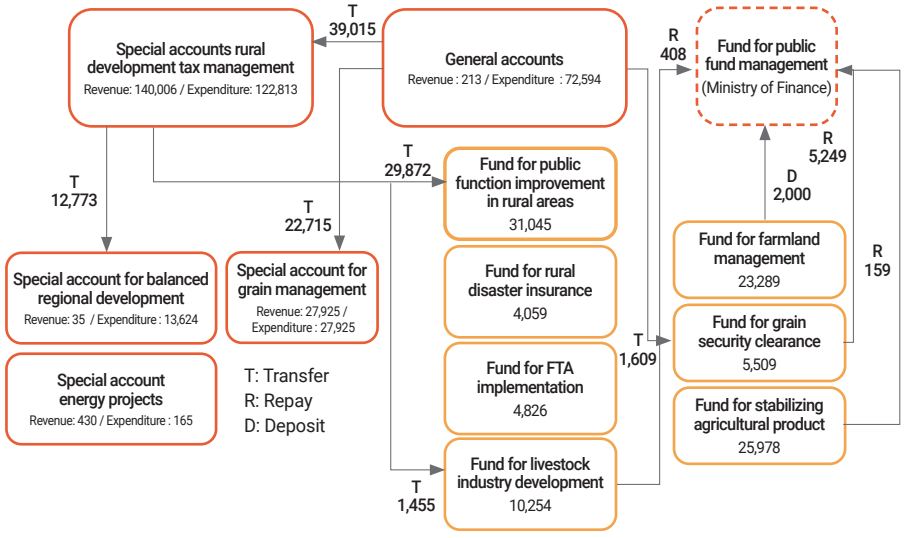
Agriculture and Rural Public Interest Enhancement Direct Payment Fund (hereinafter, the "Public Interest Fund"): A fund newly established in 2020, partially restructured from the previous direct payment fund, to enhance the public-interest functions of agriculture and rural areas.

Agriculture and Fisheries Disaster Reinsurance Fund (hereinafter, the "Disaster Reinsurance Fund"): A fund created to provide state-backed reinsurance for catastrophic disaster risks, thereby enabling stable program operation and supporting farm management stability.

Grain Bond Settlement Fund (hereinafter, the "Grain Bond Fund"): A fund established to manage the repayment of principal and interest on grain bonds issued to finance grain management projects.

Figure 1-3 Composition of Accounts and Funds under the Jurisdiction of the Ministry of Agriculture, Food and Rural Affairs

Unit: KRW 100 million



Source: MAFRA, 2025, *Overview of the 2025 Budget and Fund Operation Plan, Detailed Statement of the 2025 Budget and Fund Operation Plan.*

Based on the national budget, the scale of fiscal expenditure in the agriculture and forestry sector expanded from KRW 15.6 trillion in 2007 to KRW 25.8 trillion in 2025—an approximately 1.66-fold increase. The sector includes the affiliated agencies (the Rural Development Administration and the Korea Forest Service) and major

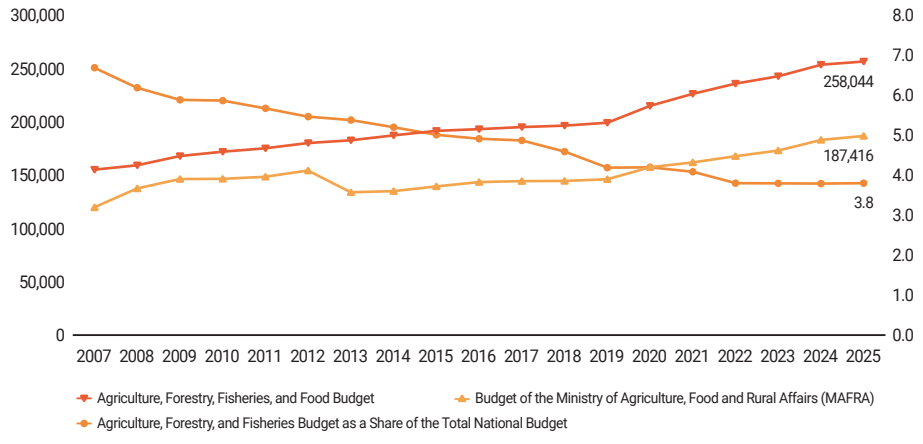
funds such as the Agricultural Products Price Stabilization Fund, Livestock Industry Development Fund, Farmland Management Fund, Rice Income Compensation Fund, FTA Implementation Fund, Crop Disaster Insurance Fund, and Grain Bond Settlement Fund. Over the past 18 years, the average annual growth rate has been 2.8%.

In terms of scale, agricultural and forestry expenditure accounted for 3.8% of the total national budget in 2025, down 2.9 percentage points from 6.7% in 2007, showing a steady downward trend. Excluding the affiliated agencies, the budget under the direct responsibility of the MAFRA increased from KRW 12.1 trillion in 2007 to KRW 18.7 trillion in 2025, indicating a relatively smaller increase compared with the overall sectoral total.

As agricultural market liberalization has expanded and production costs have increased, fiscal support to the agricultural sector has continued to grow in order to mitigate deteriorating farming conditions. However, the relative share of agriculture within the national economy has declined, and accordingly, its share of total government fiscal expenditure has also continued to decrease as shown in <Figure 1-4>.

Figure 1-4 Annual Budget for the Agriculture, Forestry, and Fisheries Sector and Its Share of the National Budget

Unit: KRW 100 million, %



Source: MAFRA, 2025, *Overview of the 2025 Budget and Fund Operation Plan*; Open Fiscal Data (Search date: Sep. 14, 2025).

Among MAFRA's budget expenditures, the largest share is allocated to the Farm Household Income and Management Stabilization sector (28.7% in 2025), followed by Grain Management and Distribution Innovation (24.4% in 2025) and the Innovation-Driven Growth and Structural Advancement sector (21.3% in 2025). Although the Structural Advancement sector accounted for a relatively high proportion of expenditure until the late 2000s, the emphasis has since shifted toward Farm Household Income and Management Stabilization and Grain Management, reflecting the recent expansion of direct payment programs <Table 1-4>.

Table 1-4 Share of the Budget by Sector

Unit: %

Category	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Innovative growth	21.1	19.3	20.1	20.9	21.5	22.8	21.5	20.4	21.3	21.2
Farm safety net	20.9	25.8	24.3	21.1	27.8	25.8	26.1	29.0	28.7	28.7
Rural welfare	3.0	3.0	11.4	11.9	7.6	8.2	8.1	8.1	7.3	7.3
Rural development	8.7	8.8								
Grains	11.1	9.8	22.8	24.7	23.0	22.7	24.4	23.5	24.4	24.4
Supply chain innovation	11.6	11.5								
Disaster prevention	15.0	13.8	13.6	13.6	12.2	12.1	12.0	11.1	10.6	10.4
Food industry	5.7	5.2	4.8	4.7	4.8	5.5	4.9	5.1	4.9	5.0
Animal welfare	-	-	-	-	-	-	-	-	0.1	0.4
Other expenses	2.8	2.9	3.0	3.1	3.0	3.0	3.0	2.8	2.7	2.7

Note: Since 2018, the Innovation-Driven Growth and Structural Advancement sector has included programs related to Agricultural Structural Advancement. The Disaster Preparedness and Infrastructure Improvement sector has been integrated in the Agricultural Production Infrastructure Development sector.

Source: MAFRA, 2025, *Overview of the 2025 Budget and Fund Operation Plan.*

Agriculture and Rural Budget in 2025

Directions

The basic policy direction for agricultural and rural fiscal expenditures in 2025 is to ensure that agriculture and rural areas become sources of opportunity open

to all citizens, while supporting the three major transitions in agricultural policy, namely, digital transformation, generational renewal, and rural spatial innovation, and strengthening the implementation of key policy priorities.

First, the government aims to reinforce the income and management safety nets for farmers.

- Expand direct payment programs to stabilize farm household income and enhance the public-interest functions of agriculture and rural areas;
- Alleviate management burdens on farm households and strengthen their capacity to respond to natural disasters.

Second, the government seeks to revitalize rural areas and respond to rural depopulation.

- Regenerate rural spaces by using rural spatial planning as a platform and improve living conditions in rural communities;
- Revitalize rural economies by promoting rural entrepreneurship and attracting new lifestyle-oriented population inflows.

Third, the government aims to strengthen the growth engines of the agri-food industry.

- Promote smart agriculture and establish the foundation for nurturing emerging industries, such as food tech and green bio;
- Accelerate generational renewal by expanding youth inflow into agriculture and rural areas;
- Enhance export competitiveness in the agri-food sector and its upstream and downstream industries.

Fourth, the government seeks to stabilize the supply and demand of agricultural and livestock products and reinforce food security.

- Improve the structural resilience of the fruit industry to ensure stable production

and supply even under disaster conditions;

- Establish a preemptive supply–demand stabilization system for agricultural and livestock products and improve distribution efficiency;
- Promote appropriate rice production levels and strengthen the domestic self-sufficiency base for key grains, such as wheat and soybeans.

Fifth, the government aims to support food-insecure and vulnerable groups and strengthen animal welfare.

- Improve food accessibility for vulnerable populations and address social service gaps in rural communities;
- Support the implementation of policies to end dog meat consumption and reinforce animal welfare and companion animal safety management.

Budget Expenditure by Sector

In 2025, the total expenditures under the MAFRA's budget and fund operation plan amounted to KRW 18.7416 trillion, representing a 2.2% increase (KRW 0.4024 trillion) compared with 2024 (KRW 18.3392 trillion). General budget expenditure totaled KRW 10.4818 trillion, a 5.9% increase from 2024, whereas general fund expenditure amounted to KRW 8.2598 trillion, marking a 2.2% decrease compared with the previous year <Table 1-5>.

Table 1-5 MAFRA's total expenditure in 2025

Unit: KRW 100 million

Category	2024 Budget (A)	2025 Budget (B)	Changes (B - A)	%
Budget + Funds (total expenditure)	183,392	187,416	4,024	2.2
Budget	98,963	104,818	5,855	5.9
Funds	84,429	82,598	△1,831	△2.2

Source: MAFRA, 2025, *Overview of the 2025 Budget and Fund Operation Plan.*

Expenditure increased across all sectors. The Farm Safety Net recorded the highest growth rate at 2.1%, followed by Grains and Supply Chain Innovation at 2.0%, and Rural Welfare and Regional Development at 1.9%. In contrast, Disaster Prevention showed only a 0.1% increase <Table 1-6>.

Table 1-6 Breakdown of Total Expenditures of the MAFRA in 2025

Unit: KRW 100 million

Category		2024 Budget (A)	Share (%)	2025 Budget (B)	Share (%)	Changes	
						(B - A)	%
Total		183,392	100	187,416	100	4,024	2.2
Sector	Subtotal	178,921	97.6	182,834	97.6	3,913	2.2
	◎ Agriculture and Rural Affairs	169,212	92.3	172,162	91.9	2,950	1.7
	• Innovative Growth	39,014	21.3	39,706	21.2	692	1.8
	• Farm Safety Net	52,636	28.7	53,722	28.7	1,086	2.1
	• Rural Welfare, Regional Development	13,350	7.3	13,597	7.3	247	1.9
	• Grains, Supply Chain Innovation	44,819	24.4	45,718	24.4	899	2.0
	• Disaster Prevention	19,393	10.6	19,419	10.4	26	0.1
	◎ Food Industry	8,939	4.9	9,383	5	444	5
	◎ Animal Welfare	242	0.1	781	0.4	539	222.7
	◎ Other Expenses	528	0.3	508	0.3	△20	△3.8
	Basic Operating Costs	4,471	2.4	4,582	2.4	111	2.5

Source: MAFRA, 2025, *Overview of the 2025 Budget and Fund Operation Plan.*

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4. The Past and Present of Korea's Agricultural Policy

As the Second World War ended in 1945, Korea was liberated from Japanese colonial rule. However, amid the conflict between communism and capitalism, two different governments were established in the north and the south in 1948.

The Korean War broke out in 1950, and North Korea (Democratic People's Republic of Korea, DPRK) and South Korea (Republic of Korea, ROK) confronted each other at the forefront of the Cold War era. Since then, the two Koreas have walked different political and economic paths. This section explores the past and current agricultural policies of the ROK (hereafter, Korea).

Korea's agricultural policies underwent significant changes over time. Prior to its industrialization (from government establishment to the 1950s), the nation was an agrarian society, with an industrial structure centered on agriculture. Agriculture, as a major industry, provided food and jobs. However, agricultural productivity was low, and the nation relied on food aid from the US.

During the industrialization period (until the mid-1980s), the agricultural sector provided a cheap labor force for the manufacturing industry and achieved food self-sufficiency through the Green Revolution. In addition to that, it started the Saemaul Movement to put more energy into developing rural areas.

In the late 1980s, the major characteristics of Korean agriculture were globalization and agricultural reforms. Its economy followed the global trend of free trade, and the agricultural sector had to open its market to the world. The government implemented agricultural reforms to reorganize systems and policies for market-oriented frameworks. Entering the 2010s, the government started to focus on improving agricultural competitiveness and raising rural sustainability. Significant changes at home and abroad in the 2010s included low growth, the demographic cliff, the 4th industrial revolution, climate change, an increase in rural villages going through population aging and decline, and the public's pursuit of various values. Amid these changes, problems in the growth-oriented agricultural policy were criticized, and policies to secure agricultural and rural sustainability became important.

Agricultural Policy before Industrialization (up to the 1950s)

Establishing Smallholdings through Land Reform

The Korean society liberated from Japanese colonial rule in 1945 held an industrial structure centered on agriculture. It was a typical agrarian society, with approximately 80% of the total population working in farming. The characteristics of agriculture at the time were the broad relationship between landowners and tenant farmers and the small farming system. Around two-thirds of lands were tenanted farms. In all, 85% of the farmers did farming on tenanted farms, regardless of their size. They worked hard on land smaller than 1 ha. Suffering from low productivity and expensive farm rent, they could not produce enough food to feed their families. Against this backdrop, the newly independent government's top agenda was farmland reform, which would stabilize farmers' livelihoods and improve agricultural productivity. The first Constitution of Korea prioritized land reform by specifying that farmland should be distributed to farmers. The land reform policy was implemented in early 1950 after the Land Reform Act was enacted in June 1949. Farmlands that were not cultivated by their owners and those larger than 3 ha were subject to distribution. The government forcibly purchased them and distributed them to small-income farmers and farmworkers. The area distributed through the land reform amounted to 585,000 ha. Moreover, the area sold off by landowners was 713,000 ha. In total, 60% of the total land in Korea was transferred to farmers through land reform.

The land reform policy intended to establish the smallholding system, guaranteeing farmers' minimum income. Well-educated children from farm households became an excellent labor force, serving as the engine for national growth. In addition to that, the collapse of the landed class removed the barrier to Korea's capitalism, which had significance in history.

Food Insufficiency and Grain Imports

Contemporaneous agricultural productivity in Korea was very low. Food crop productivity was approximately 1/4th to 1/3rd of today's, and rice production per

10a was only 160 kg. Low technology level, insufficient infrastructure, and the lack of production elements, such as fertilizers, chemicals, and farming machines, were the reasons behind low productivity. Additionally, the three-year long Korean War worsened food insufficiency. Therefore, the government focused on its agricultural policy to secure grains and solving food insufficiency. It introduced the grain purchasing system and made a plan to increase food production. The US offered several crop aids from 1956 to 1964 in accordance with the US Public Law 480. The crop aid from the US helped considerably in resolving food insufficiency. However, it decreased grain prices and farmers' income, leading to a decline in local grain production in the long term. In particular, with the collapse of the production base for wheat, whose price competitiveness was weak, Korea had to import the crop continuously even after the US aid ended.

Agricultural Policy during Industrialization

Production Increase in Staple Grains

The military regime came into power in 1961 and tried to earn popularity through economic development. As its biggest concern was to resolve livelihood problems before economic growth, the government put in public funds in 1961 to clear off high-interest private loans. In addition to that, it enacted the Price Maintenance of Agricultural Products Act to guarantee the production cost of agricultural products.

Figure 1-5 Rice Testing Ground for a New Variety, Tongil-rice

The government also integrated the Agricultural Bank and agricultural cooperatives in August 1961 to establish the National Agricultural Cooperative Federation for financing, marketing, and agricultural extension. The new organization contributed to promoting agricultural financing programs and extension projects; however, according to some critics, it was under the government's direct control, lacking autonomy. The government established the Rural Development Administration in 1962 and set the framework for agricultural extension projects for farming education and livelihood improvement by reshuffling local administrative organizations.

The first five-year economic development plan, launched in 1962, was the first comprehensive economic development program in Korea's history. It was the starting point of Korea's high growth for the next 30 years of modernization. Its target in agriculture was to achieve food self-sufficiency through agricultural production increases. To fulfill the goal, the government conducted land reclamation projects for farmland expansion, land consolidation and water system projects for production base rearrangement, and extension projects for productivity increase.

The second five-year economic development plan, launched in 1967, aimed to execute large-scale agricultural development programs for food production increases and implemented measures to support prices for rice and other crops by keeping rice prices high and buying barley at high prices from farmers while selling it at low prices to consumers. In addition to that, the government intended to develop agriculture and manufacturing simultaneously by processing local agricultural produce for domestic and overseas markets but failed to achieve a substantial outcome.

The national economy achieved a high growth of 10% per year during the first and second economic plans. However, the focus on manufacturing expanded gaps between agriculture and manufacturing and between rural areas and cities, causing massive rural-to-urban migration. Consequently, the rural population peaked at 16 million (53% of the total population) in 1967 and started to decline.

Green Revolution and the Saemaul Movement

As the rapid economic growth expanded the gap between urban and rural areas, the government's economic target changed to balancing growth and stability. It implemented various programs for balanced development by investing in agriculture and fisheries. However, its focus was still on increasing food production. To fulfill the target, the government executed large-scale rural development projects and pursued developing new rice varieties, such as Tongil, mechanizing farming works, and supporting agricultural product prices. In particular, Tongil, developed in 1971 in cooperation with the International Rice Research Institute (IRRI), substantially expanded rice production. New technologies, such as hotbeds, early cultivation, topdressing, and pest control, contributed significantly to increasing general rice varieties' yield per unit area. Consequently, rice production sharply grew from 3.5 million tons in the late 1960s to 5 million tons in the late 1970s.

Figure 1-6 Making Rural Village roads

The Saemaul Movement, launched by the former President Park Jung-hee in 1970, influenced rural communities considerably. With an emphasis on diligence, self-help, and collaboration, the national drive started as a movement to improve the village environment. Using materials provided by the government, such as cement and rebars, farmers broadened village roads, renovated roofs, built town halls, and cleaned up small streams. The national campaign encouraged farmers to resolve for a better living and transformed rural villages remarkably. Although it was a government-led movement, it significantly changed the rural landscape and gained global attention as an ideal rural development model.

Endeavors for Non-farming Income Expansion

High growth in non-farming sectors widened the gap between farming and non-farming sectors. The entire economy grew by 8.4% per year from 1977 to 1988. However, the farming sector grew by 1.0% during the same period. Agriculture's ratio in the gross domestic product shrank from 23.8% to 10.5% during the same period. Simultaneously, Korea gradually shifted its economic focus from growth to stability and from market protection to the opening. The government's agricultural policy turned the focus away from food self-sufficiency. Replacing the income increase policy with production increase and price maintenance, the government moved to new ideas such as cash crop production and non-farming income development. The government's price stabilization policy kept agricultural product prices low. The purchase price of rice sharply rose in the 1970s and froze or slightly increased in the 1980s. The government had to relieve its financial burden from the double-price system by lowering the purchase price and raising the release price. Agricultural product imports from other countries expanded significantly. Beef imports rose because of the increase in domestic demand. Pepper, garlic, onion, and sesame imports also increased because of a temporary poor harvest in those crops. As agricultural product prices kept low and imports increased, the rural economy worsened sharply. The government saw limits in farming income increase and turned to non-farming income expansion by forming manufacturing complexes in rural areas. However, the idea failed to be in full swing because of some unfavorable conditions. The contemporaneous rural economy deteriorated rapidly, and farmers' debt became a social issue in the late 1980s. Finally, the government announced debt relief measures, including non-farming and farming income expansion, debt reduction, and rural life quality improvement. Although the measures had significance in that they were the first comprehensive plans for agriculture, they had limitations as they focused on debt relief and non-farming income instead of improving rural competitiveness.

Agricultural Policy in the Globalized Era

Full-scale Liberation of Agricultural Product Imports

While the UR negotiations were in a deadlock in 1986, the outside pressure on opening local agricultural product markets rose continuously. In 1989, the Korean government announced a three-year plan to open local markets. Following the plan, the government decided to open 243 items from 1989 to 1991. Consequently, the import liberation ratio of agricultural products amounted to 88.5%. In addition to that, Korea had to relinquish the import restrictions under Article 18 (B) in the General Agreement and Tariffs and Trade (GATT), which allow developing countries to apply the restrictions to protect their balance-of-payments. Korea had to remove restrictions on all products immediately but gained an 8-year grace period for a gradual opening for 273 items. Following the decision, the government selected 131 items in 1991 to remove restrictions on them from 1992 to 1994.

Concerning beef imports, the government blocked the import after a collapse in cow prices in 1984. The US, Australia, and New Zealand filed a petition to GATT in 1989. As a result of bilateral negotiations, Korea agreed to increase import quotas phase by phase. As discussed above, Korea's agricultural product market opened to the world from the late 1980s to the early 1990s. Accordingly, the government's policy focus shifted to measures to respond to market opening.

Agricultural Restructuring

As the market opening proceeded, the government came up with various agricultural policies. One of the leading policies was the rural restructuring plan announced in 1991. The plan intended to improve agricultural competitiveness and the rural environment for a decade from 1992 to 2001 by investing KRW 42 trillion in total. However, agricultural restructuring was in full swing after the conclusion of the UR Agreement on Agriculture in 1994. Korea agreed on tariffication without exceptions and had to open all agricultural markets except for rice. However, as it gained a 10-year grace period for rice, and with its developing country status, it secured some time for preparation. The government

set up a rural development committee comprising 30 private-sector experts in 1994 to prepare for countermeasures. The committee listened to various public opinions and submitted a report to the president. Based on the report, the government made comprehensive measures, including production base renovation, distribution facility modernization, agricultural talent nurturing, full-time farming expansion, and rural welfare enhancement. To secure funds for execution, the government established a special tax for rural development in 1994 and decided to invest KRW 1.5 trillion every year for a decade. The contemporaneous target of the agricultural policy was to raise competitiveness by expanding farm business size and nurturing agricultural experts. The government made the largest-ever investment in agriculture, but competitiveness in agriculture did not increase as planned.

Supplementary Measures for Agricultural Restructuring

Amid the financial crisis in 1997, Korea received bailout funds from the International Monetary Fund (IMF). Consequently, its economic policy, including prices, foreign exchange, and interest rates, was under the IMF's control. The economy worsened rapidly and posted negative growth in 1998. Imported raw material prices rose considerably, along with domestic prices. The agricultural sector was also hit hard by the financial crisis. Imported feed prices surged because of increased exchange rates, and cow prices collapsed caused by a reduction in meat consumption. Farms cultivating vegetables and fruits in green vinyl greenhouses were in hardship because of oil price hikes. Indebted farms suffered from high-interest rates and low consumption. As farming businesses became unstable, the government focused on stabilizing them for consistent production. To achieve the goal, the government executed measures to nurture environment-friendly farming by introducing the direct payment program and implementing disaster insurance. The government tried to stabilize farm businesses, mostly small farms, through these measures—the agricultural policy characteristics in the late 1990s and the early 2000s. Previously, agricultural restructuring focused on expanding large farm businesses. However, the emphasis on environment-friendly agriculture was appropriate for small farms. The

government established the environment-friendly Agriculture Fosterage Act in 1997 to develop environment-friendly farming. In 1999, the government introduced direct payments for environment-friendly farming to help farms in the protected areas, such as water supply zones, to switch to green agriculture.

Direct payments were under review as an income protection measure to respond to the WTO system in the mid-1990s. In 1998, the government first introduced direct payments for business transfer to encourage aged farmers to retire. Then, the direct payment program was in full swing through its implementation for rice paddies in 2001. The government avoided excessive rice production by subjecting the paddies in which rice was planted between 1998 and 2000 to the program. In 2012, the government started to implement the program for a part of dry fields and expanded it to cover all dry fields in 2015. It also offered direct payments for environment-friendly farming, eco-friendly livestock farming, unfavorable farming conditions, and landscape preservation. However, the target scope and budget were not large. In 1999, the government established the Framework Act on Agriculture, Rural Community, and Food Industry, the backbone of all agriculture-related laws. The Act redefined agriculture, farmers, and rural communities and suggested future directions for them. Besides, it supported future investment and financing plans for agriculture.

Negotiations for Deferring Rice Tariffication

Korea received a special measure for rice in the UR Agreement on Agriculture in 1993. In other words, the Korean government agreed to import rice by 1–4% through the minimum market access while deferring rice tariffication for a decade from 1995 to 2004. In 2004, rice tariffication was again delayed for a decade. In return, the government agreed to gradually expand rice imports from 4% to 7.96% every year. It also agreed to increase edible rice imports from 10% of the total imports in 2005 to 30% in 2010. The government decided to shift to tariffication in 2014 when the grace period was over and notified its decision to the WTO. In response to rice negotiations, the framework of the local rice policy—the purchase system and the direct payment program—was transformed. The government abolished the rice purchasing system,

which was active for five decades, and introduced the public stockholding system for food security. It also strengthened the direct payment program in response to price drops because of its reduced market intervention and the agricultural market opening. In other words, it implemented variable direct payments to compensate for part of the difference between the target and market price (deducing fixed direct payments from 85% of the difference), in addition to fixed direct payments to pay for the cultivation area. The target price was an average of three years, except for the maximum and minimum prices during the previous five years.

As fixed direct payments have not been linked to production or prices, they are included in the WTO green box (subject to permission). However, as variable direct payments are linked to market prices and target lands that produce rice in the same year, they are classified as the amber box (subject to reduction). Currently, since 2020, rice tariffication applies, and the tariff ratio of rice is 513%. The government set up the public-purpose direct payment program, integrating fixed direct payments for rice, dry-field farming, and unfavorable farming conditions. However, variable direct payments for rice were abolished.

Figure 1-7 Countries in free trage agremments with Korea (as of February 2020)

Source: Korea Custom Service (Search date: July 20, 2020.).

FTAs and Responses in Agriculture

As free trade became a trend worldwide in 2000, FTAs became the norm. Korea was reluctant for FTAs, but it became active in negotiations after its FTA conclusion with Chile in 2002. As of today, in February 2020, Korea holds 16 FTAs with 56 countries, including Chile (effective in 2004), 10 ASEAN nations (2007), 28 EU nations (2011), the US (2011), Canada (2015), China (2015), and 4 Latin American nations (2019). As Korea's economic growth significantly relies on external trades, it has to be proactive in multilateral trade or FTA negotiations. However, it is impossible to avoid influences on local agricultural production and prices. In response, the government enacted the Special Act on Assistance to Farmers, Fishers, etc. following the Conclusion of Free Trade Agreements. In the short term, it introduced direct payments for FTA damage compensation and subsidization for FTA-related business closure. It has also implemented various long-term plans to raise rural competitiveness.

Current Administrative Directions and Major Policies

External and Internal Conditions

The global economy is experiencing sluggish growth because of the expansion of protectionism, aging demographics, shortages of skilled technical labor, fiscal vulnerabilities, financial market instability, climate shocks, and geopolitical tensions. The IMF has projected the global economic growth rate for 2026 at 3.1%. Meanwhile, the WTO forecasts that global merchandise trade growth will be limited to 0.5% in 2026, as the full-scale impact of global tariff hikes takes effect.

Despite slowing exports, the Korean economy is expected to grow by 1.8%, driven by a recovery in domestic demand. Private consumption (1.6%), facility investment (2.0%), and construction investment (2.2%) are all projected to rise, while consumer price inflation is expected to stabilize at around 2.0%. With the KRW/USD exchange rate stagnating in the KRW 1,400~1,500 range, a high exchange rate has become the "new normal." This is intensifying cost pressures not only on the agricultural sector—which is heavily dependent on imported raw materials such as fertilizers,

feed, and crude oil—but also on the food manufacturing and food service industries. Furthermore, the increasing frequency of extreme weather events because of global warming is leading to direct production losses, such as reduced crop yields, and is negatively impacting the entire agricultural system.

On the domestic front, Korea's total population is projected to decline at an average annual rate of 0.16% over the next decade. The agricultural sector faces an even steeper challenge, with the farm population expected to drop to 2 million and the proportion of older adult farmers (aged 65 and over) rising to 55.8%, signaling an acceleration of "rural extinction." In response, the government is strengthening its responsibility for farm income and management safety nets. This includes expanding revenue protection insurance, crop disaster insurance, and disaster relief measures, alongside the restructuring and expansion of the Public-Purpose Direct Payment System. Additionally, a pilot program for Rural Basic Income is being introduced to guarantee basic living standards for rural residents. To overcome productivity constraints caused by aging, collective farming initiatives are being implemented, and the acquisition of farmland for public lease is being increased to ensure stable land access for young farmers. As AI-driven smart agriculture reduces labor requirements and boosts productivity, agriculture is being redefined as a high-tech industry. This digital transformation is enhancing the prospects for revitalizing regional economies and improving rural living conditions. Finally, the robust performance of agri-food exports continues, with K-Food+ exports—including upstream and downstream industries such as smart farms, pesticides, and veterinary medicines—showing steady growth and a positive future outlook.

Key Tasks and Strategic Directions for Agricultural Policy

Through the "2023–2027 Framework Plan for Agriculture, Rural Communities, and the Food Industry," the Korean government has outlined five key pillars of its agricultural policy. These tasks aim to ensure national food security, foster innovation, and guarantee a sustainable future for rural areas.

1. Building a Robust Food Security System

In response to the global food security crisis, the government will establish a resilient security framework.

- Enhancing Self-Sufficiency: Significantly increasing the domestic food self-sufficiency rate.
- Securing Global Supply Chains: Establishing stable overseas supply chains to ensure a consistent procurement of essential grains.

2. Cultivating Future Agri-Food Industries for Economic Leap

To lead innovative growth, the government will foster next-generation industries and human capital.

- Fostering Young Farmers: Cultivating 30,000 young agricultural professionals to serve as the vanguard of agricultural innovation.
- Expanding New Industries: Accelerating growth and exports in high-tech sectors, including Smart Agriculture, FoodTech, and Green Bio.
- Pet Industry Vitalization: Promoting pet-related industries built on a foundation of improved agricultural environments and enhanced animal welfare.

3. Establishing a Strong Management Safety Net for Farm Households

The foundation for stable farm management will be fortified to protect against market and climate volatility.

- Expanding Direct Payments: Strengthening the financial base of farmers through the expansion of the Direct Payment System.
- Risk Management Systems: Developing advanced risk management frameworks to safeguard farm income and operational stability.

4. Ensuring a Reliable Supply of Safe Food

A comprehensive system will be established to provide high-quality food that the public can trust.

- Distribution & Supply Management: Reforming the distribution structure of agricultural and livestock products and improving supply-demand management systems.

• Safety & Support: Enhancing safety management standards for agricultural products and strengthening food support programs for vulnerable populations.

5. Creating Attractive and Vibrant Rural Spaces

The government will transform rural areas into pleasant spaces that offer new value to both rural and urban residents.

• Value Creation: Leveraging the pleasant environment of rural spaces to create new economic and social values.

• Social Welfare Net: Expanding the social welfare and safety net to ensure a high quality of life for all rural residents.

Figure 1-8 Key strategic priorities for agricultural policy

1 **Ensuring Robust Food Security** in Response to Global Food Crises
○ Enhancing Self-Sufficiency and Securing Global Supply Chains for Stable Grain Procurement * Self-sufficiency rates for Wheat and Soybeans (%): (2021) 1.1 / 23.7% → (2027P) 8.0% / 43.5%
2 **Fostering Future Agri-Food Industries** for Economic an Agricultural Leap
○ Cultivating 30,000 Young Farmers to Lead Innovative Growth in Agriculture ○ Fostering Emerging Sectors (Smart Agriculture, FoodTech, Bio-industry) and Expanding Exports * Smart Agriculture Adoption Rate (%): (2022) Greenhouses 12.8, Livestock 19.8 → (2027) Greenhouses 30 * Agri-food Export Performance (USD billion): (2022) 88.2 → (2027) 150 ○ Vitalizing Pet-Related Industries based on Environmental Improvement and Animal Protection and Welfare * Emissions Reduction: 22.5% reduction in agricultural carbon emissions by 2030 (relative to 2018 levels) * Pet Registration Rate (%): (2021) 55 → (2027) 70
3 Building a Robust **Farm Income Safety Net**
○ Expanding Direct Payments and Risk Management Frameworks to Strengthen Farm Income Stability * Agricultural Direct Payment Budget: Target of KRW 5.0 trillion
4 Establishing a **Reliable System for National Food Security and Safety**
○ Improving Agricultural and Livestock Distribution Structures and Supply-Demand Management Systems, Strengthening Food Safety Controls and Nutritional Assistance for Vulnerable Populations * Reduction in Distribution Costs (%): (2022) 48% → (2027) 45%
5 Creating **Livable and Vibrant Rural Spaces** for Rural and Urban Residents
○ Generating New Value Based on Rural Amenities and Expanding the Social Safety Net * Rural Quality of Life Satisfaction (Score): (2021) 5.7 (vs. Urban 6.5) → (2027P) 6.7

Source: MAFRA, 2023, *Master Plan for the Development of Agriculture, Rural Communities, and the Food Industry (2023–2027).*

The Framework Plan establishes the following strategic directions for agricultural policy. First, the government is committed to ensuring the long-term sustainability of agriculture, rural communities, and the agri-food industry. This involves strengthening food security by expanding domestic production and stockpiling while securing stable overseas supply chains. To address the climate crisis, the government will transition the agri-food system toward sustainability and enhance animal welfare standards. Furthermore, it will proactively prepare for the future by securing a stable workforce of both domestic and foreign agricultural labor through linkages with immigration systems. Additionally, pleasant rural environments will be created through the introduction of the Rural Space Planning System and comprehensive support for rural regeneration.

Second, the government will drive agricultural innovation to transform the sector into a future growth industry. This includes modernizing the human resource structure of the agri-food sector by fostering creative young talent and accelerating digital transformation across the entire value chain, from production and distribution to consumption. Advanced technologies such as Green Bio and FoodTech will be integrated through enhanced cross-industry convergence. To expand the global presence of "K-Food+," the government will pursue integrated strategies encompassing R&D, entrepreneurship, and global marketing.

Third, the administration will implement agricultural policies that maximize private sector autonomy and creativity. Efforts will be made to vitalize private investment and introduce corporate management models to agricultural entities. By leveraging the capital and technological prowess of private enterprises in both upstream and downstream industries, the government aims to strengthen the overall industrial ecosystem. Furthermore, regulations in new industries and technology sectors will be reformed to unlock the full creative potential of the private sector.

Fourth, a customer-oriented agricultural policy will be pursued to serve both farmers and consumers. The government will improve autonomous supply-and-demand management systems for agricultural and livestock products to stabilize the prices of key commodities. To earn consumer trust, the focus will remain on supplying

safe, high-quality agri-food products and expanding the reach of local food initiatives.

Finally, the government will strengthen social solidarity and mutual cooperation, focusing particularly on vulnerable groups such as small-scale and older adult farmers. To this end, measures will be taken to alleviate the burden of operating costs

Figure 1-9 Strategic direction for agricultural policy

◇ **Ensuring** the Long-term Sustainability of Agriculture, Rural Communities, and the Agri-food Industry

- ○ Strengthening Food Security by Expanding Domestic Production and Strategic Reserves, and Bolstering Global Supply Chain Resilience
- ○ Facilitating the Transition to Sustainable Agri-food Systems for Climate Resilience and Advancing Animal Welfare Standards
- ○ Proactively Preparing for Future Challenges by Securing Domestic and International Agricultural Workforce through Strategic Integration with Strategic Immigration Frameworks
- ○ Creating High-Quality Rural Living Environments by Implementing Rural Spatial Planning Systems and Supporting Rural Revitalization

◇ Driving **Agricultural Innovation** for Transformation into a Future Growth Industry

- ○ Modernizing the Agri-food Workforce Structure by Cultivating Creative Young Talents
- ○ Accelerating Digital Transformation Across the Entire Agri-food Value Chain, from Production and Distribution to Consumption
- ○ Integrating Advanced Technologies and Fostering Cross-sectoral Convergence in Emerging Industries, such as Green Bio and FoodTech
- ○ Driving R&D, Start-up Incubation, and Marketing Strategies to Scale K-Food+'s Presence in Global Markets

◇ Implementing Agricultural Administration **Driven by Private-Sector Autonomy and Creativity**

- ○ Stimulating Private Investment and Integrating Advanced Business Management Models into Agricultural Enterprises
- ○ Leveraging Corporate Capital and Technological Expertise Across Upstream and Downstream Agribusinesses Agricultural Industries
- ○ Regulatory Reform in Emerging Industries and Technologies to Maximize Private-Sector Creativity

◇ Implementing **Customer-Oriented or Stakeholder-Driven Agricultural** Administration for Farmers and Consumers

- ○ Improving Market-Oriented Supply-Demand Management Systems and Ensuring Price Stability for Key Agricultural and Livestock Commodities
- ○ Securing Consumer Trust by Ensuring the Supply of Safe, High-Quality Agri-food and Expanding Local Food Systems

◇ Strengthening **Social Safety Nets and Inclusivity** for Vulnerable Populations, including Small-scale and Elderly Farmers **(Social Cohesion and Mutual Growth)**

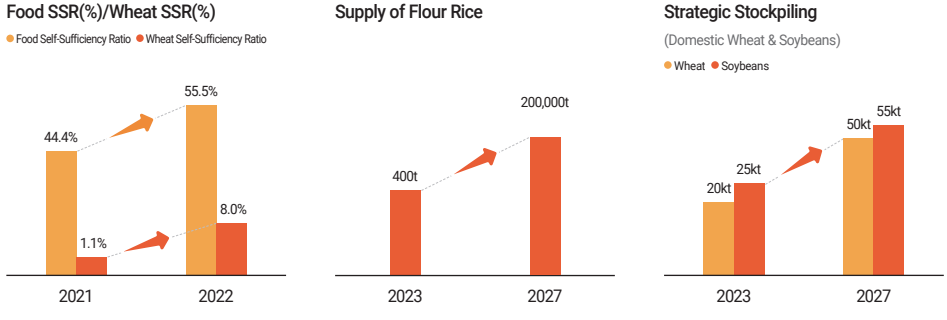
- ○ Mitigating Farm Operating Expenses Burdens and Expanding Income and Management Safety Nets through Direct Payments and Insurance
- ○ Enhancing Food Assistance Programs for Vulnerable Groups, including the Expansion of Agri-food Voucher Programs
- ○ Improving Rural Living Conditions, including Housing, and Expanding the Access to Social Welfare Services

Source: MAFRA, 2023, *Strategic Plan for Agriculture, Rural Communities, and the Food Industry (2023–2027).*

and expand income and management safety nets through refined direct payment and insurance systems. Support for food security, including agri-food vouchers for vulnerable populations, will be reinforced. Simultaneously, the government will improve rural living conditions, such as housing, and expand essential social welfare services to ensure a better quality of life for all rural residents.

The expected effects of implementing these key agricultural policy tasks are as follows. First, a robust system of national food security is expected to be significantly strengthened. By increasing the self-sufficiency rates of major grains such as wheat and soybeans—which currently rely heavily on imports—the nation will build a more resilient domestic foundation. Furthermore, food security will be further solidified through the expansion of public stockpiling and the strategic procurement of stable overseas supply chains.

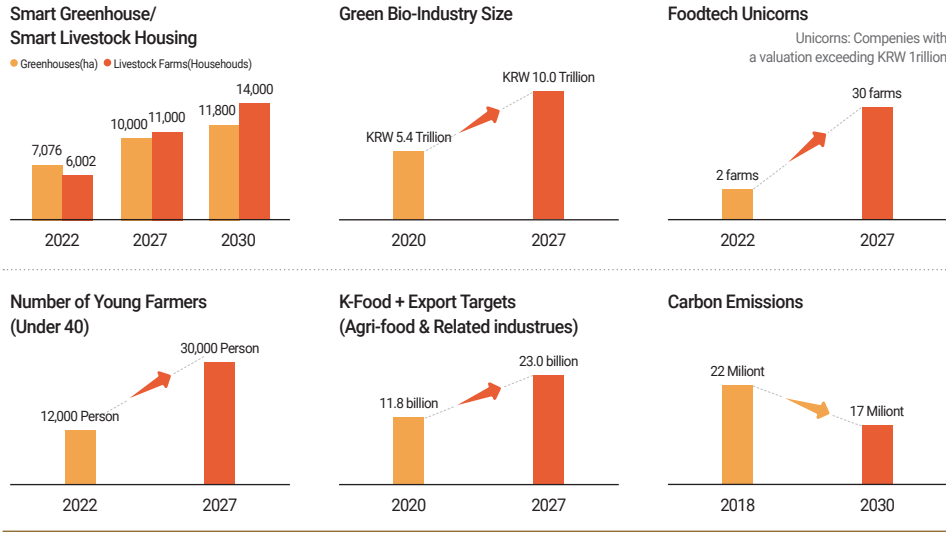
Figure 1-10 Projections for key food security indicators



Source: MAFRA, 2023, *Master Plan for the Development of Agriculture, Rural Communities, and the Food Industry (2023–2027).*

The agri-food industry is expected to leap forward as a future-oriented growth engine. By intensively fostering emerging sectors such as smart farming, Green Bio, FoodTech, and pet-related industries, the agri-food sector will establish itself as a core pillar of future growth. Furthermore, the sustainability of the industry will be secured by nurturing young farmers to lead the future of agriculture, expanding export markets, and significantly reducing carbon emissions across the agricultural sector.

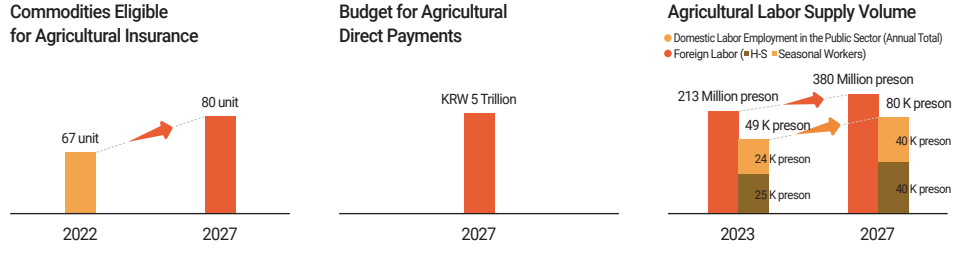
Figure 1-11 Projections for the agri-food industry



Source: MAFRA, 2023, *Master Plan for Agriculture, Rural Communities, and the Food Industry (2023–2027).*

The farm household management safety net is expected to become more robust and comprehensive. By expanding income and management safety nets—such as disaster insurance and direct payment systems—the government will provide a stronger buffer against volatility. Furthermore, farm management will be stabilized through the stimulation of private investment and the establishment of a reliable supply of agricultural labor.

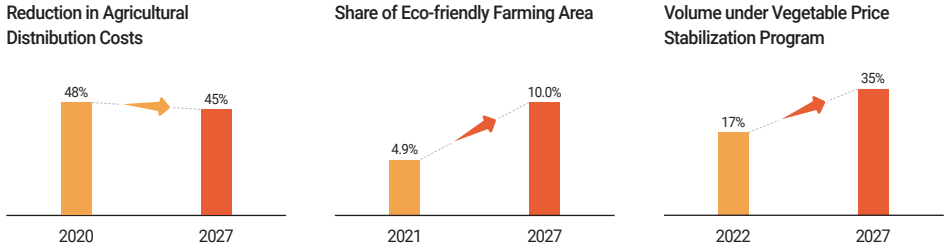
Figure 1-12 Projections for Key Farm Management Indicators



Source: MAFRA, 2023, *Master Plan for Agriculture, Rural Communities, and the Food Industry (2023–2027).*

Presumably, a stable supply of food, ensuring public peace of mind, will be established. By implementing producer-oriented, preemptive supply-and-demand adjustments, the prices of agricultural and livestock products will be stabilized. Furthermore, a comprehensive supply system will be built to ensure the delivery of safe, high-quality food to the general public.

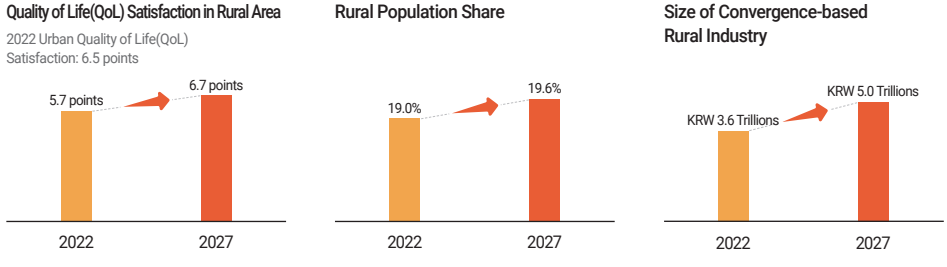
Figure 1-13 Projections for key indicators of safe food supply and quality assurance



Source: MAFRA, 2023, *Master Plan for Agriculture, Rural Communities, and the Food Industry (2023–2027).*

The creation of pleasant and attractive rural areas is highly anticipated. By regenerating rural spaces into environments that preserve their unique rural identity for both residents and urban dwellers, and by expanding essential social services, the overall quality of life in these communities will be significantly enhanced.

Figure 1-14 Projections for key indicators of rural areas



Source: MAFRA, 2023, *Master Plan for Agriculture, Rural Communities, and the Food Industry (2023–2027).*

Agricultural Policy Directions on the National Agenda of the Lee Jae-myung Administration

The agricultural policy directions of the Lee Jae-myung administration are integrated into the government's broader vision for national development. Under the national goal of "Balanced Growth Where Everyone Prospers," the administration has established a strategic framework to transform rural areas into regions of hope. A primary focus is to elevate agriculture into a strategic national industry that serves as a cornerstone for food sovereignty and public safety. This vision is supported by a "Grand Transformation of Agricultural Policy," which emphasizes strengthening the role and responsibility of the state in ensuring the stability of the agricultural sector. Furthermore, rural communities are envisioned as pioneers of balanced regional growth and the energy transition, evolving into hubs for sustainable development.

In addition to these structural shifts, the administration's agricultural policy is closely linked to its social welfare strategies. To achieve the national goal of a "Society with a Strong Foundation," the administration has introduced welfare policies centered on "Caring for People's Lives." Within this framework, a key national agenda item is to create a "Society Where People and Animals are Happy Together," which integrates animal welfare into the broader social fabric. This holistic approach reflects a shift toward a more inclusive agricultural policy that encompasses food security, environmental sustainability, and the harmonious coexistence of all living beings.

Table 1-7 National agricultural policy agenda and strategic framework of the Lee Jae-myung administration

National Policy Objectives	Implementation Strategy	Policy Priorities	Key Performance Indicators
Inclusive and balanced growth for shared prosperity	Prosperous rural and coastal communities fulfilling new hopes	Promoting agriculture as a strategic national industry to safeguard national food security	• Establishing a robust food security framework and maintaining price stability for rice and strategic crops through preemptive supply-demand management

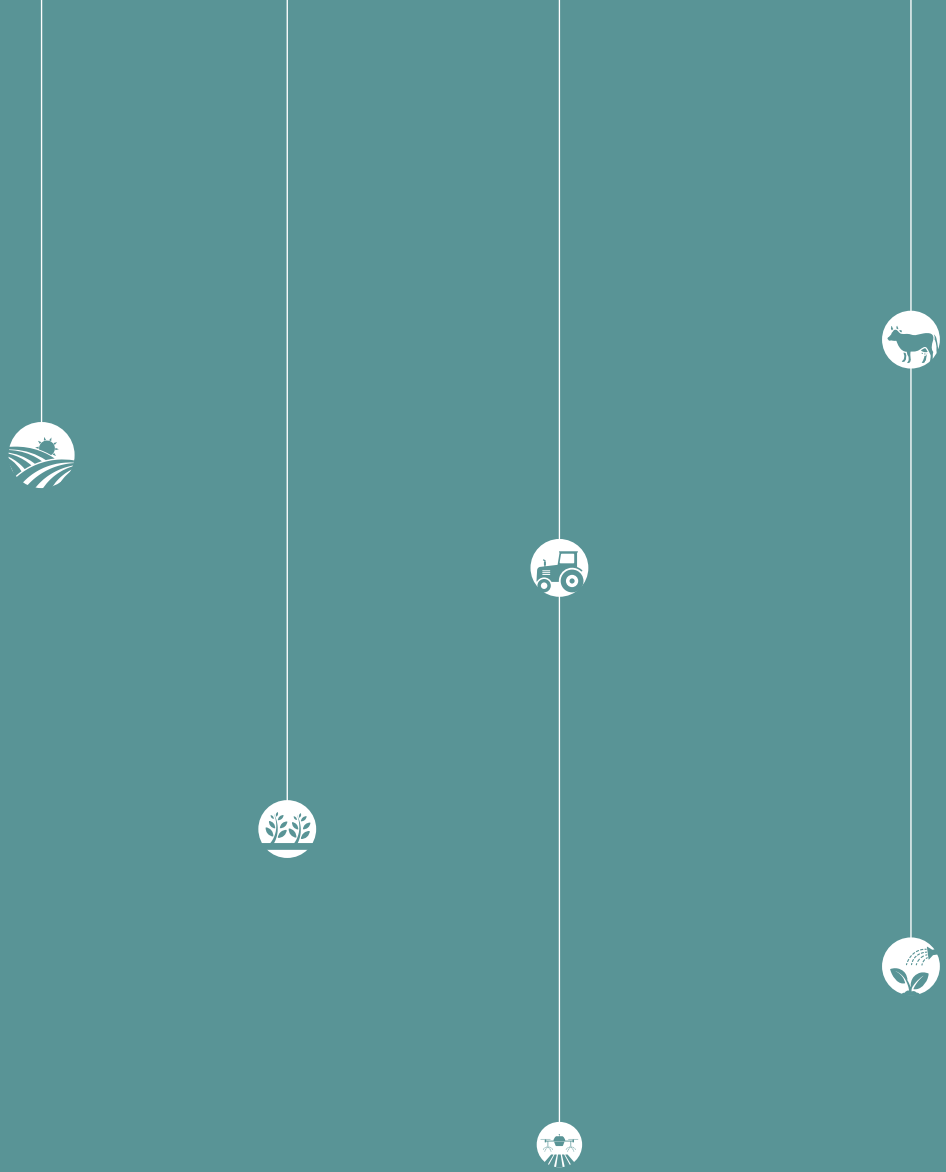
National Policy Objectives	Implementation Strategy	Policy Priorities	Key Performance Indicators
Inclusive and balanced growth for shared prosperity	Prosperous rural and coastal communities fulfilling new hopes	Promoting agriculture as a strategic national industry to safeguard national food security	• Advancing smart agriculture, expanding K-Food+ exports and organic farming, and driving supply chain reforms in agricultural distribution
		A great transformation of agricultural policy to enhance government accountability	• Strengthening the basic farm income safety net and ensuring income stability against fluctuations in production and market prices • Enhancing state accountability for agricultural disaster management, minimizing farm operating expenses, and accelerating generational renewal in agriculture
		Leading balanced growth and energy transition through thriving rural, coastal, and fishery communities	• Improving rural living conditions and expanding the living population through integrated support for housing, employment, essential services, and basic income • Scaling up renewable energy in rural and coastal areas by enhancing energy self-sufficiency and implementing solar-profit-sharing village initiatives
A society built on solid foundations	Welfare that cares for individual lives	Building a society for the harmonious coexistence and welfare of people and animals	• Shifting the paradigm from animal protection to animal welfare to build a society where humans and animals coexist in harmony • Reducing the financial burden of pet ownership and minimizing gaps in veterinary services for vulnerable groups and veterinary care deserts

Source: Government of the Republic of Korea, 2025, *123 National Policy Priorities of the Lee Jae-myung Administration.*

References

Government of the Republic of Korea, 2025, *123 National Policy Priorities of the Lee Jae-myung Administration.*

MAFRA, 2023, *2023–2027 Framework Plan for Agriculture, Rural Communities, and the Food Industry.*



Agriculture in Korea 2025

CHAPTER

02

Agricultural Resources and Structure

CHAPTER 02

Agricultural Resources and Structure

1. Farm Economy at a Glance

Economic Growth of the Agricultural Sector in Korea

The gross output and the value added of the Korean agricultural sector increased from KRW 33.0 trillion and KRW 24.7 trillion in 2003 to KRW 61.6 trillion and KRW 34.3 trillion in 2023, respectively <Figure 2-1>. This growth reflects the steady increase in total factor productivity (TFP) of the agricultural sector <Figure 2-2>. Although agricultural TFP growth has slowed since the 2000s, it continues to rise.

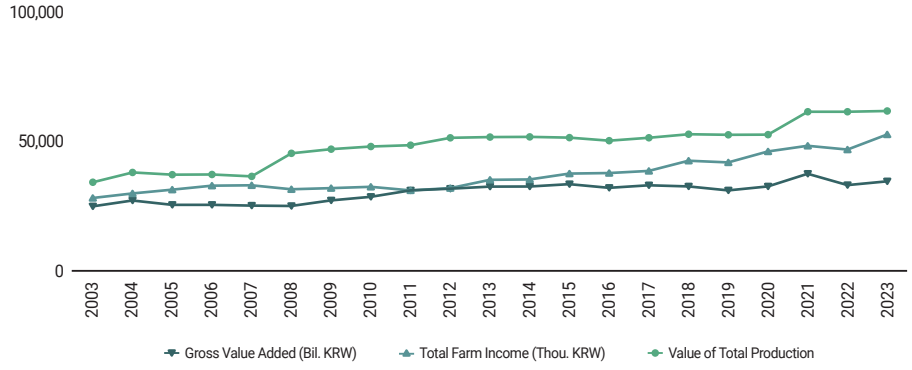
During this period, the value-added ratio to gross output declined from 74.8% to 55.7%. Farm household income increased faster than the value added but did not keep pace with the growth of gross agricultural output. Particularly since around 1995, the discrepancy between the growth of agricultural output and the slower increase in farm household income—termed the "growth–income gap"—has become more evident (Lee et al., 2012).

This phenomenon is partly explained by the slow progress in farm consolidation (enlargement), one of the most prioritized objectives of the Korean agricultural policy, alongside a continued decline in the agricultural workforce. The average cultivated area per farm increased only approximately 10%, from 1.37 ha in 2000 to 1.51 ha in 2023 (MAFRA, 2024). The number of average household members declined from 2.96 persons in 2003 to 2.30 persons in 2024, while the number of full-time agricultural

workers per household remained nearly unchanged, from 1.77 to 1.73 persons <Figure 2-3>. Consequently, the share of full-time agricultural workers within farm households rose from 59.8% to 75.2%, on average. However, the continued aging of the agricultural population makes it difficult to avoid a deterioration in labor quality, which may lead to long-term declines in agricultural productivity.

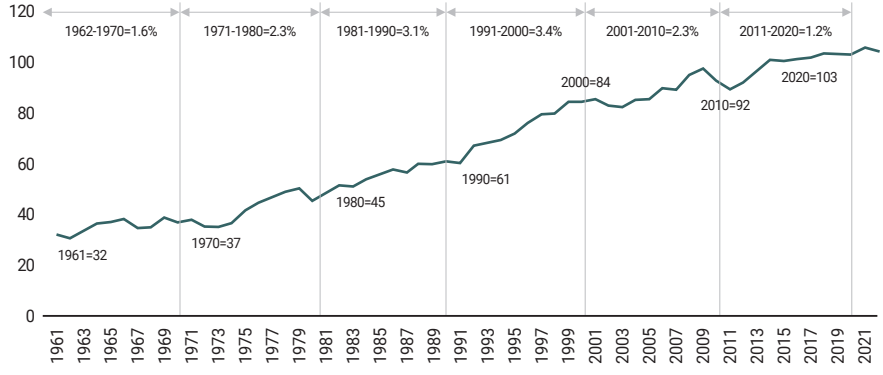
Figure 2-1 Gross output, value added, and average farm household income, 2003–2023

Unit: billion KRW for output and value added; thousand KRW for household income



Source: *Index Korea* (Search date: Aug. 21, 2025.).

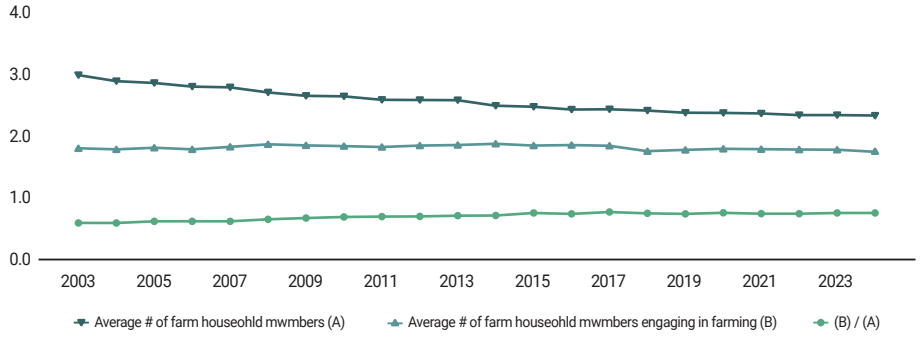
Figure 2-2 Changes in TFP of the agricultural sector, 1961–2022



Source: USDA ERS (Search date: Aug. 21, 2025.), *International Agricultural Total Factor Productivity (TFP) Indices, 1961–2022.*

Figure 2-3 Average number of household members and full-time agricultural workers per household, 2003–2024

Unit: persons



Source: MODS (Search date: Aug. 23, 2025.), *Farm Economy Survey.*

Farm Household Income

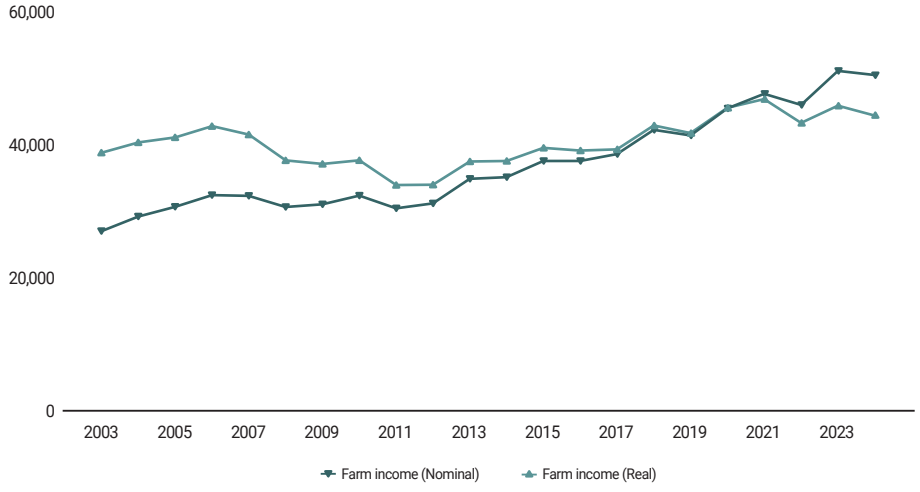
Household Income

Nominal farm household income increased from KRW 26.9 million in 2003 to KRW 50.6 million in 2024 <Figure 2-4>. However, real farm household income, deflated by the Consumer Price Index (2020=100), rose only modestly, from KRW 38.5 million to KRW 44.3 million during the same period. This outcome indicates, among other factors, the stagnation of agricultural income, as farm operating expenses have steadily increased despite fluctuations in agricultural product prices.

By income sources, the share of agricultural income has declined, while that of off-farm income and transfer income has risen <Figure 2-5>. The proportion of agricultural income in total farm household income decreased from 39.3% in 2003 to 18.9% in 2024. Over the same period, the share of off-farm income increased from 35.0% to 39.8%, and that of transfer income rose from 7.6% to 36.0%. In other words, farm households have long been unable to generate sufficient income through farming alone; instead, they maintain livelihoods largely through off-farm income, while government support plays a significant role in sustaining their economic viability.

Figure 2-4 Nominal and real average farm household income, 2003–2024

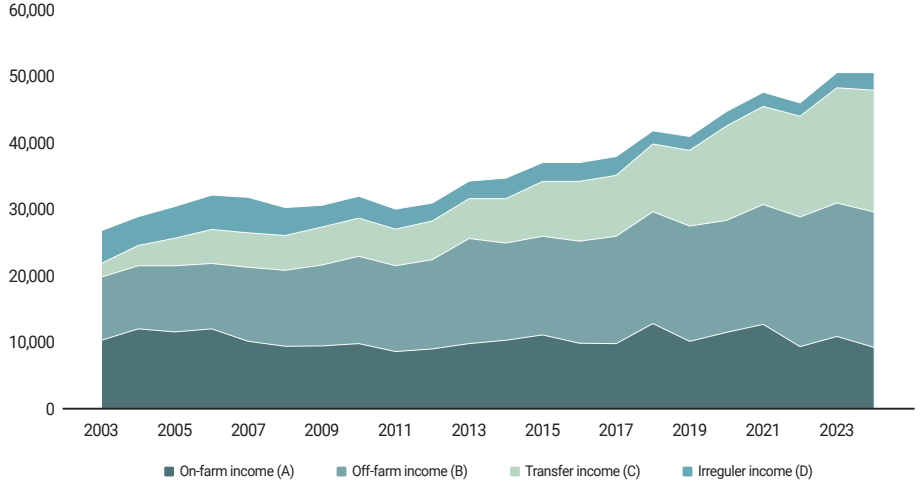
Unit: thousand KRW



Source: MODS (Search date: Aug. 17, 2025.), *Farm Economy Survey.*

Figure 2-5 Farm household income by source, 2003–2024

Unit: thousand KRW

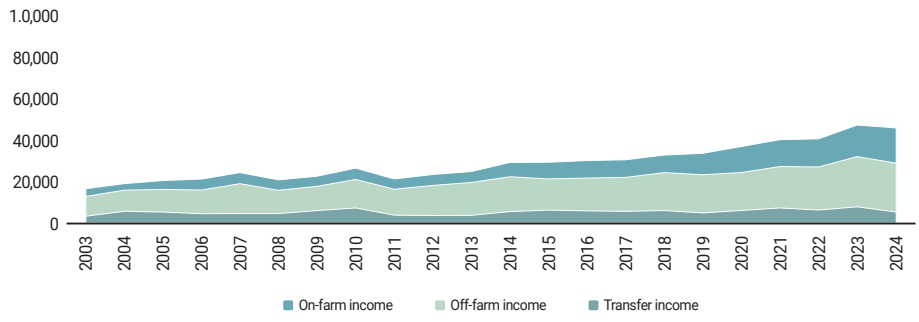


Source: MODS (Search date: Aug. 17, 2025.), *Farm Economy Survey.*

Figure 2-6 Comparison of farm household income by cultivated area, 2003–2024

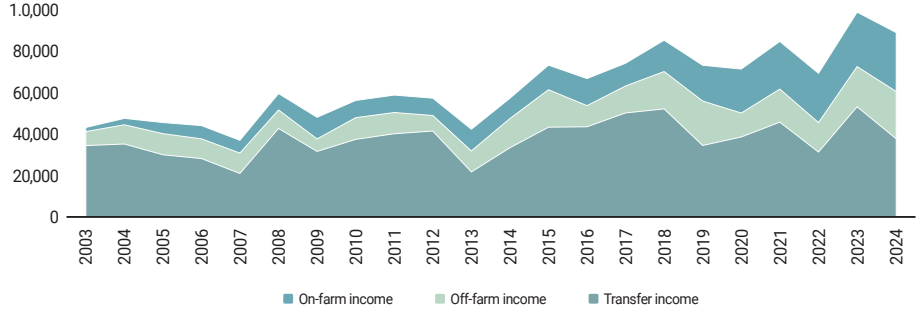
Unit: thousand KRW

[Farm size 0.5~1.0 ha]



[Farm size 2.0~3.0 ha]

[Farm size 7.0~10.0 ha]



Source: MODS (Search date: Aug. 19, 2025.), *Farm Economy Survey.*

Differences in farm household economy are also evident by farm size <Figure 2-6>. First, small-scale farms consistently earn low levels of agricultural income, whereas large-scale farms obtain higher agricultural income but with considerable annual fluctuations. Second, the share of off-farm income is inversely related to farm size: smaller farms, unable to secure sufficient agricultural income, devote more time to other economic activities. Third, average transfer income, including government subsidies, generally increases with farm size. This is largely because many income and management stabilization programs in Korea are designed to provide greater support to larger-scale farms.

From 2024 onward, Statistics Korea has begun publishing Farm Economy Survey results that include the economic status of one-person households. The survey has been conducted since 1962, and since 2013, the sample has included 100 one-person households. However, for the sake of statistical consistency, the published results had previously excluded these households. According to the 2020 Agricultural, Forestry, and Fishery Census, one-person households account for 20.0% of all farm households. Thus, excluding them from income statistics made it difficult to reflect precise conditions of farm household economy, and concerns were raised about this omission. For example, Rhew (2021), analyzing raw data from the 2019–2020 Farm Economy Survey, has argued that one-person households are characterized by "a very high proportion of elderly farmers (farm operators), small-scale farming, and heavy dependence on transfer income such as government subsidies" <Table 2-1>. Furthermore, the inclusion or exclusion of one-person households significantly affects average farm household income levels, suggesting their economic weight cannot be negligible <Figure 2-7>. Consequently, policy measures targeting these households—long situated in the "blind spots" of policy—need to be strengthened.

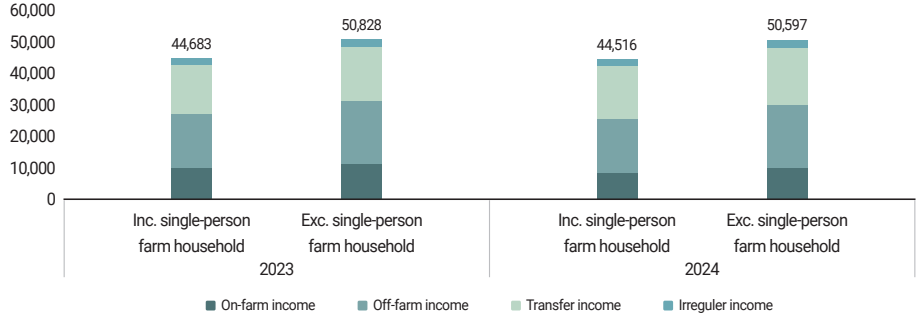
Table 2-1 Overview of one-person farm households

Category	Farm operator age		Farm size			Average income (KRW 10,000)				
	<65	≥65	<0.5 ha	0.5–1.0 ha	≥1.0 ha	Total income	Agricultural income	Off-farm income	Transfer income	Non-current income
2019	15.8%	84.2%	54.2%	22.3%	23.5%	1,557	202 (13.0%)	444 (28.5%)	718 (46.1%)	192 (12.3%)
2020	16.9%	83.1%	51.4%	24.9%	23.7%	1,604	254 (15.9%)	322 (20.1%)	879 (54.8%)	148 (9.2%)

Source: Rhew, 2021, *Illusions and Realities of Farm Household Income Statistics, and Policy Suggestions.*

Figure 2-7 Comparison of average farm household income with and without inclusion of one-person households, 2023–2024

Unit: thousand KRW



Source: MODS (Search date: Aug. 17, 2025.), *Farm Economy Survey.*

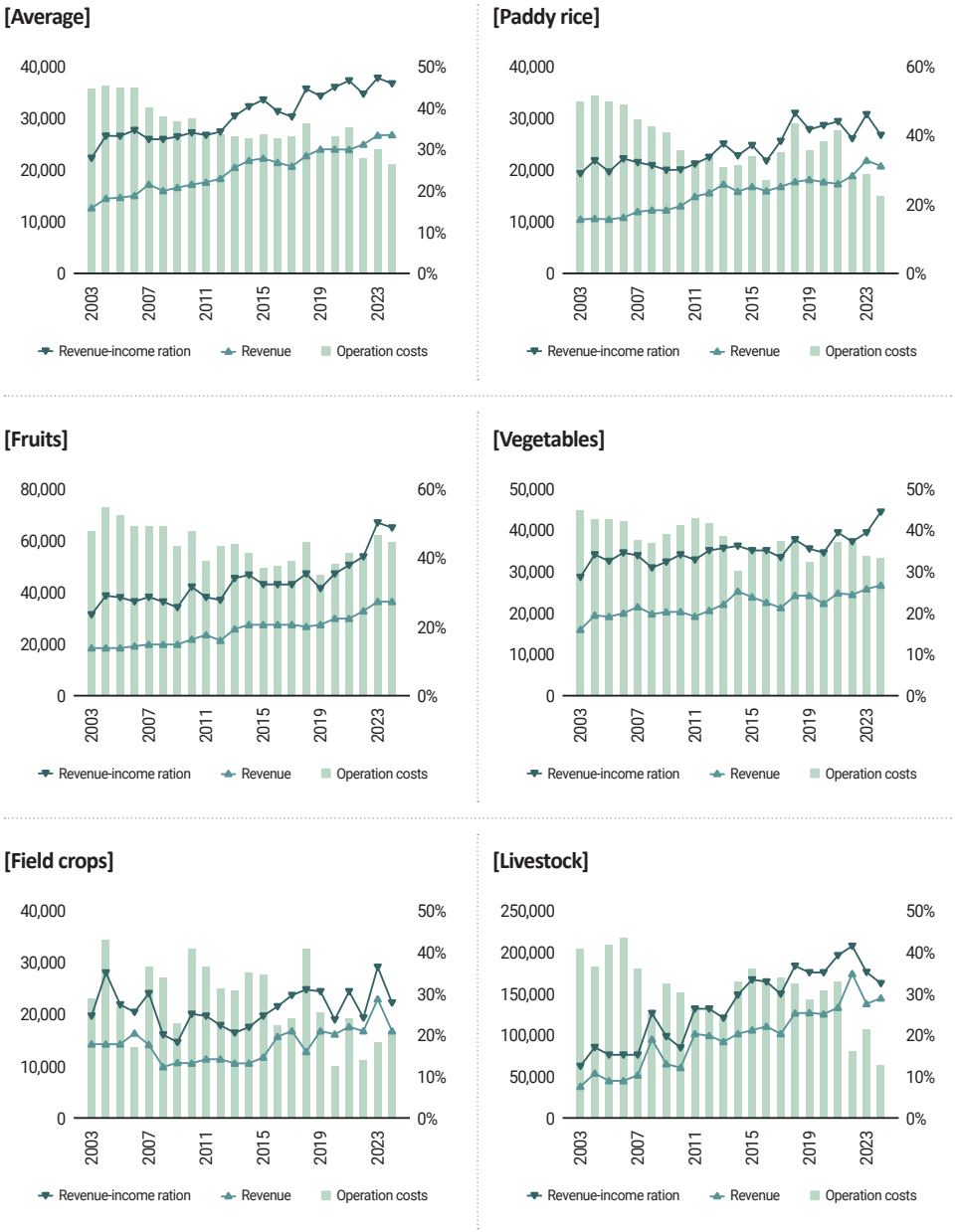
Agricultural Income

A closer look at agricultural income reveals several notable characteristics <Figure 2-8>.

First, although average gross farm revenue has generally increased with fluctuations, farm operating expenses have steadily risen regardless of commodity type. When gross farm revenue rises only slightly—or even falls—while production costs continue to climb, farm household agricultural income declines sharply. This phenomenon is referred to as “double squeezing” (van der Ploeg and Roep, 2003).

Figure 2-8 Gross farm revenue and operating costs by farming type, 2003–2024

Unit: thousand KRW



Source: MODS (Search date: Aug. 18, 2025.), *Farm Economy Survey.*

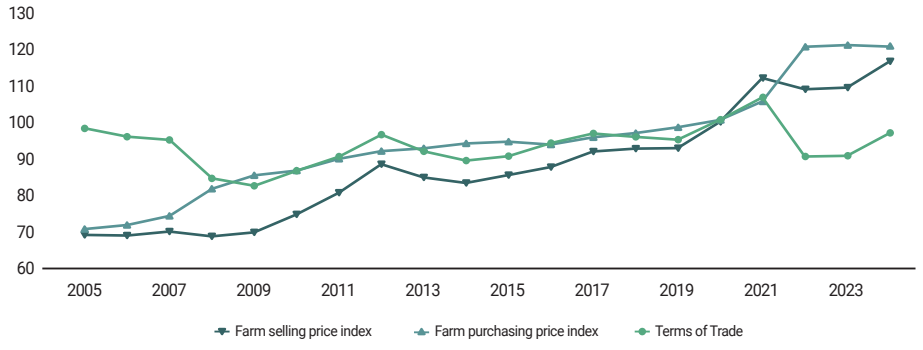
Second, gross agricultural revenue varies significantly across commodities. In particular, paddy rice, field crops, and livestock show high volatility. This indicates that farmers specializing in these commodities are more exposed to management risks.

Third, the agricultural income ratio (= agricultural income ÷ gross farm revenue × 100) has generally declined. By commodity, the trend is also downward or highly volatile. This suggests that farm households face not only difficulties in securing stable agricultural income but also a decline in profitability, a point consistent with the findings presented in <Figure 2-6>.

These problems concerning agricultural income and farm household economy are also evident in the terms of trade (TOT). The farm TOT are calculated as the index of farm product sales prices ÷ index of farm input purchase prices × 100. A TOT value greater than 100 indicates favorable profitability, while a value below 100 implies deteriorating profitability.

Between 2005 and 2024, excluding 2020–2021, the farm product sales price index consistently lagged behind the farm input purchase price index <Figure 2-9>. Consequently, the TOT generally fell below 100. That is, farmers have been operating under conditions of "buying expensively and selling cheaply," making it difficult to secure profitability.

Figure 2-9 Farm TOT (2020=100), 2005–2024



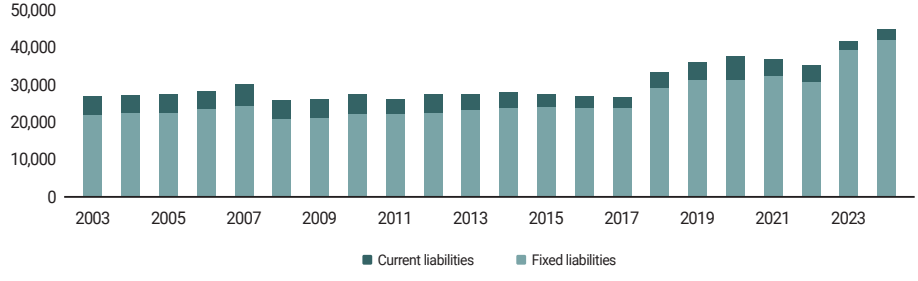
Source: MODS (Search date: Aug. 19, 2025.), *Farm Sales and Purchase Price Survey.*

Farm Household Debt

The average debt of farm households increased from KRW 27.8 million during 2003–2007 to KRW 35.6 million in 2018–2022 and further to KRW 43.3 million in 2023–2024 <Figure 2-10>. The overwhelming majority of this debt comprises fixed liabilities with a repayment period of more than one year. Rising debt may indicate financial distress for farm households or increased new investment. However, in light of the broader analysis of farm household economies, the recent increase in farm debt more likely reflects the reality that, despite poor profitability, farmers must continue farming and maintaining their livelihoods by relying on loans. In other words, the growth of farm debt can be attributed more to the expansion of non-agricultural liabilities than to (new) investments for productivity enhancement.

Figure 2-10 Farm household debt, 2003–2024

Unit: thousand KRW

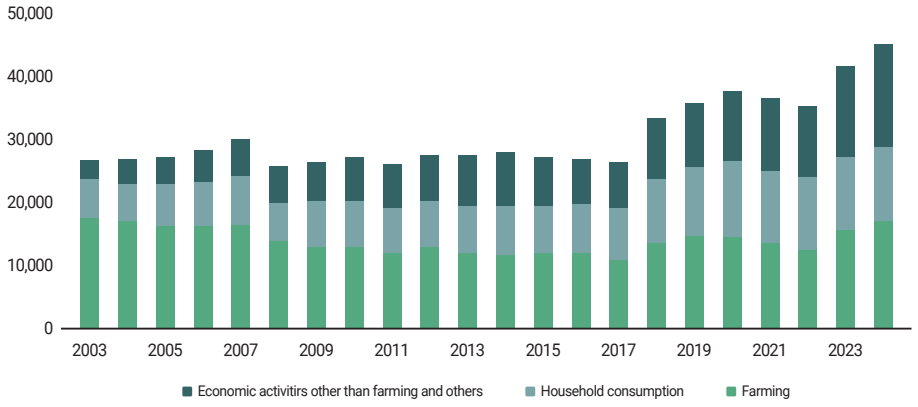


Source: MODS (Search date: Aug. 21, 2025.), *Farm Sales and Purchase Price Survey.*

The share of agricultural-use debt declined from an average of 60.1% in 2003–2007 to 38.7% in 2018–2022, while the share of household debt increased from 24.4% to 31.6%. Similarly, the proportion of debt for other business purposes rose from 15.4% to 29.8% during the same period <Figure 2-11>. That is, as it becomes increasingly difficult to cover household expenses with agricultural or total farm income, households take on more household debt, while simultaneously, more resources are allocated to off-farm economic activities, reducing the capacity for agricultural investment.

Figure 2-11 Farm household debt by purpose, 2003–2024

Unit: thousand KRW



Source: MODS (Search date: Aug. 19, 2025.), Farm Sales and Purchase Price Survey.

Differences in the composition of household debt by purpose are further revealed when examined by farm size <Figure 2-12>. For small-scale farms with 0.5–1.0 ha of cultivated land, the share of household debt increased from an average of 33.4% in 2003–2007 to 41.8% in 2018–2022. As shown in <Figure 2-6>, such farms earn relatively little income, making it difficult to cover household expenditures, thereby increasing household debt. Simultaneously, because small-scale farms have limited agricultural income, they face fewer incentives to invest in farming activities, which may explain the decline in agricultural debt. Indeed, the share of agricultural debt among such farms decreased from 34.3% in 2003–2007 to 16.4% in 2018–2022.

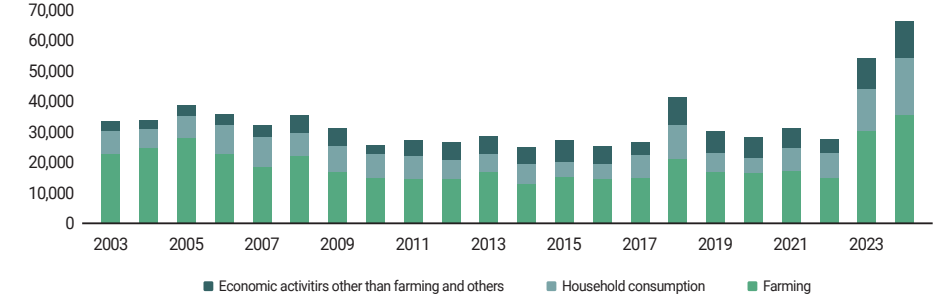
By contrast, the share of agricultural debt rises with farm size. Among farms cultivating 2.0–3.0 ha, the proportion of agricultural debt fell from 66.7% in 2003–2007 to 54.5% in 2018–2022 but still exceeded half. For large-scale farms cultivating 7.0–10.0 ha, agricultural debt accounted for 79.6% in 2003–2007 and 67.0% in 2018–2022, remaining overwhelmingly dominant compared to other categories of debt. This reflects the fact that as farm size increases, agricultural income becomes the primary income source <Figure 2-12>, providing stronger incentives for continued agricultural investment.

Figure 2-12 Farm household debt by farm size and purpose, 2003–2024

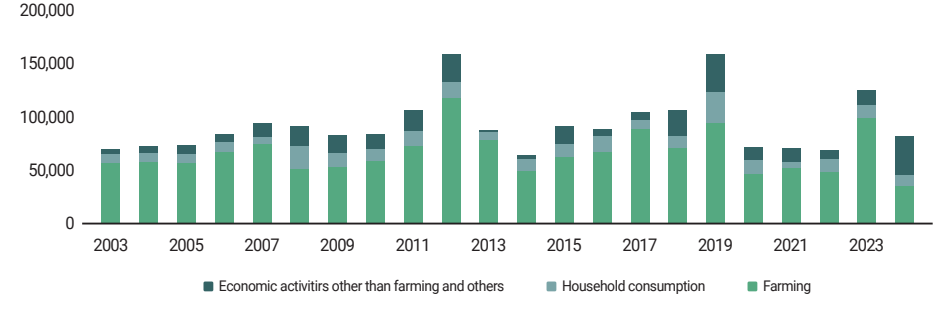
Unit: thousand KRW

[Farm size 0.5~1.0 ha]

[Farm size 2.0~3.0ha]



[Farm size 7.0~10.0ha]

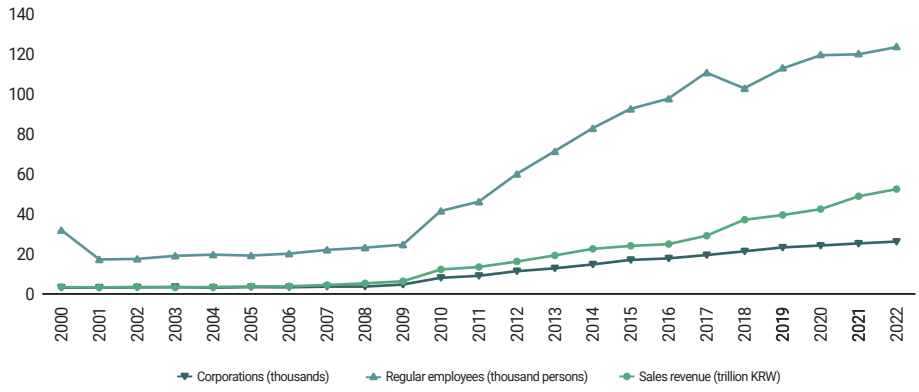


Source: MODS (Search date: Aug. 19, 2025.), *Farm Sales and Purchase Price Survey.*

Agricultural Corporations[1]

Agricultural corporations were first introduced in 1990, and after revisions to the relevant legislation in 2009, the sector began to expand rapidly. The number of agricultural corporations grew at an annual average of 4.3% between 2000 and 2009, but this accelerated to 13.7% per year from 2009 to 2022 <Figure 2-13>. Similarly, the number of regular employees in agricultural corporations, which had been declining at an average of 2.4% annually, turned upward after 2009, increasing by 13.1% per year.

Figure 2-13 Number of agricultural corporations, number of employees, and sales, 2000–2022



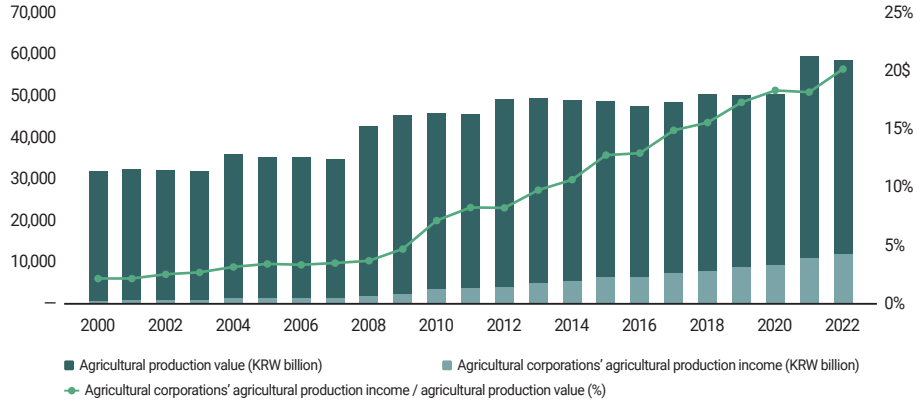
Source: MODS, various years, *Survey on Agricultural Corporations*; re-cited in Yeon et al., 2025.

As the number of agricultural corporations and their employment capacity expanded, their sales volumes also grew <Figure 2-14>. Consequently, the share of agricultural corporations in gross agricultural output also increased. The proportion of agricultural corporations' sales in Korea's gross agricultural output rose from 2.3% in 2000 to 20.0% in 2022. Notably, even during periods when Korea's agricultural output stagnated or declined, sales of agricultural corporations continued to rise, helping to mitigate shocks and drive growth.

1 *For more information, see Yeon et al. (2025).*

Figure 2-14 Korea's agricultural output and agricultural corporations' production income, 2000–2022

Unit: billion KRW



Note: Agricultural output = annual production volume by commodity × average farm sales price. Corporate agricultural production income is defined as the sales revenue of corporations engaged in crop cultivation or livestock farming. From 2000 to 2017, it was calculated as "sales reported for corporate tax + annual sales of corporations not required to submit financial statements." From 2018, it has been based on corporate tax-reported sales only.

Source: MODS, various years, Survey on Agricultural Corporations; MODS, various years, *Index of Agricultural and Forestry Production*; re-cited in Yeon et al. (2025).

Despite this quantitative expansion, the management conditions of agricultural corporations remain fragile and in need of improvement. The average sales revenue of agricultural corporations rose from about KRW 900 million in 2000 to KRW 2.0 billion in 2009, growing at an average annual rate of 9.5%. However, between 2009 and 2022, sales grew only 0.2% per year. Similarly, average operating profits increased by 8.3% annually from 2000 to 2009 but declined by 1.8% annually after 2009. Net income per corporation also deteriorated, shifting from an average annual growth of 29.2% in 2000–2009 to an average annual decline of 2.3% in 2009–2022.

In short, agricultural corporations grew both quantitatively and qualitatively during 2000–2009; however, since 2009, their quantitative growth has not been accompanied by improved management performance. This underscores the need to strengthen managerial capacity, ensure sustainable investment, and enhance the overall business performance of agricultural corporations.

Prospects and Policy Challenges

Most farm households face difficulties in maintaining their livelihoods solely through farming. Given the deterioration of farm TOT, the ongoing liberalization of agricultural markets, and changing conditions such as tariff negotiations with the US, the outlook remains uncertain. Farm households have adopted livelihood strategies such as expanding off-farm economic activities, reducing expenditures in line with their income levels, or, in extreme cases, increasing reliance on loans. If individual household-level responses cannot substantially improve the farm economy, public sector intervention—by the government and related institutions—becomes imperative. Simultaneously, farm-and-household efforts must continue as well. What matters most are the objectives, direction, and methods of such responses.

Farm income and management stabilization policies have evolved in line with changing conditions. In the 1970s, the focus was on boosting agricultural production and achieving self-sufficiency. In the 1980s, policies shifted toward creating opportunities for off-farm income. Since the 1990s, the emphasis has been on strengthening competitiveness in response to market liberalization. From the late 1990s, income and management stabilization instruments such as direct payment schemes and agricultural disaster insurance were expanded. In 2020, the direct payment system was reformed to strengthen the multifunctionality of agriculture. More recently, new initiatives such as income stabilization insurance and climate change adaptation measures have been introduced. However, given the slow pace of farm consolidation and the increasing share of older adult farmers cultivating small plots, the effectiveness of existing measures must be reconsidered.

Policies to foster large-scale and specialized farms, as well as to support full-time farm corporations as the backbone of agricultural production, should continue. In particular, the recent increase in farm household debt could lead to reduced investment because of worsening profitability and negative outlooks, while rising operating costs add to management risks. Thus, proactive policy interventions are needed to mitigate these challenges.

Simultaneously, small and medium-sized farms—which constitute the majority of farm households—should not be regarded merely as targets of exit or welfare policies. Instead, they should be assigned roles that sustain rural communities. As these farms struggle to secure sufficient agricultural income, they urgently require supplementary income. From the perspective of enhancing environmental sustainability and multifunctionality in agriculture, policies should provide them with roles such as managing agricultural environmental resources, accompanied by appropriate compensation. This approach would improve the economic viability of these households while also enhancing environmental quality and increasing social welfare. In parallel, climate change adaptation programs should be implemented with incentives that encourage active farmer participation.

Additionally, policies must be improved for groups that have long remained in policy "blind spots," including one-person households and older adult farmers. Priority should be given to enhancing healthcare and medical services, improving transportation accessibility, and strengthening access to nutritious food.

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2. Agricultural Holding and Labor

The total number of farm households has declined <Table 2-2>. However, the number of small-scale farms has increased. The total number of farm households fell from 1.264 million in 2003 to 974 million households in 2024. In contrast, the number of farms under 0.5 ha in size (including holdings without cultivated land) rose from 463 thousand households in 2003 to 522 thousand households in 2024. Meanwhile, the agricultural population also declined sharply, decreasing from 3.530 million persons in 2003 to 2.004 million persons in 2024.

Table 2-2 Farm Households and Agricultural Population

Unit: households, persons, %

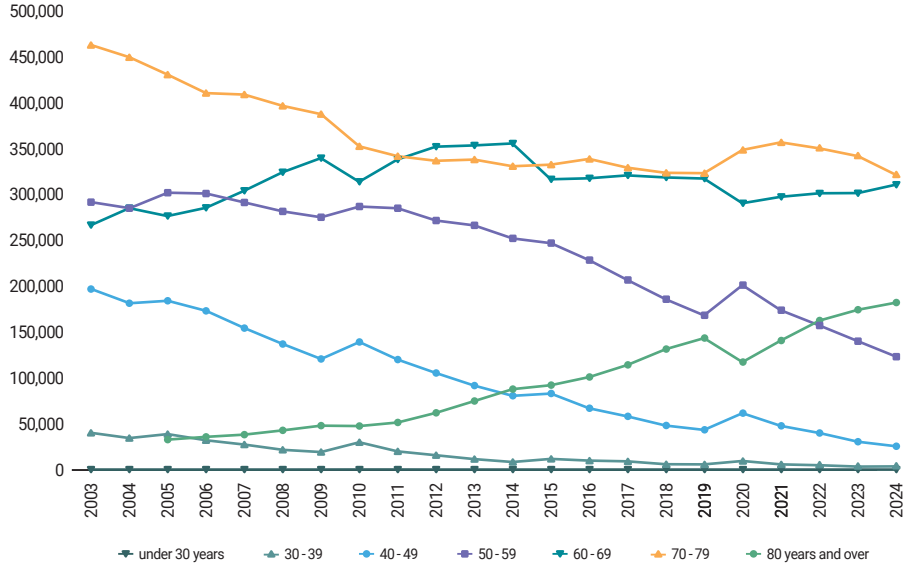
Year	Farm Households	Agricultural Population
2003	1,264,431	3,530,102
2004	1,240,406	3,414,551
2005	1,272,908	3,433,573
2006	1,245,083	3,304,173
2007	1,231,009	3,274,091
2008	1,212,050	3,186,753
2009	1,194,715	3,117,322
2010	1,177,318	3,062,956
2011	1,163,209	2,962,113
2012	1,151,116	2,911,540
2013	1,142,029	2,847,435
2014	1,120,776	2,751,792
2015	1,088,518	2,569,387
2016	1,068,274	2,496,406
2017	1,042,017	2,422,256
2018	1,020,838	2,314,982
2019	1,007,158	2,244,783
2020	1,035,193	2,314,064
2021	1,031,210	2,215,498
2022	1,022,797	2,165,626
2023	999,022	2,088,781
2024	973,707	2,003,520

Source: MODS, various years, *Census of Agriculture, Forestry and Fisheries.*

A prevailing perception is that farm work is hard and not profitable, which discourages younger generations from engaging in agriculture. The number of farm households whose principal operator is aged 70 years or older has been increasing, whereas the number of farm households with a principal operator under age 59 years has been decreasing, indicating a continuing trend of aging among principal operators. The number of farm households with a principal operator aged 70 years or older increased from 269 thousand in 2003 to 495 thousand in 2024.

Figure 2-15 Number of Farm Households by Age of Principal Operator

Unit: households



Note: For 2003 and 2004, the 70-79 age group also includes those aged 80 years and over.
Source: MODS, various years, *Census of Agriculture, Forestry and Fisheries.*

The polarization of landholding sizes has deepened alongside the aging of farm operators <Table 2-3>. In 2023, farms less than 0.5 ha in size and operated by principal operator aged 70 years or older account for 26.2% of the total. Farms under 1.0 ha in size and operated by principal operator aged 60 years or older—in other words,

elderly, small-scale farms—make up 61.1% of the total. Between 2013 and 2023, the number of elderly farms under 0.5 ha in size and the number of large farms 7.0 ha or more in size both increased substantially. This indicates that the polarization of farm structure has progressed. Among farm operators aged 30–59 years, almost all farm size categories experienced substantial declines. however, the number of farms sized 7.0–10.0 ha managed by operators aged 30–39 years increased by 11.3%.

Table 2-3 Number and Share of Farm Households by Landholding Size and Age of Principal Operator (2023)

Unit: households, %

Category	Total	Under 30 years	30-39 years	40–49 years	50–59 years	60–69 years	70 years or older
Nationwide	999,022 (100.0)	765 (0.1)	4,674 (0.5)	32,862 (3.3)	141,421 (14.2)	341,976 (34.2)	477,323 (47.8)
Farms without land	6,398 (0.6)	9 (0.0)	280 (0.0)	985 (0.1)	1,511 (0.2)	2,418 (0.2)	1,195 (0.1)
Under 0.5 ha	521,914 (52.2)	245 (0.0)	1,828 (0.2)	15,772 (1.6)	71,428 (7.1)	170,513 (17.1)	262,130 (26.2)
0.5 to under 1.0 ha	212,584 (21.3)	115 (0.0)	871 (0.1)	6,131 (0.6)	27,621 (2.8)	68,880 (6.9)	108,966 (10.9)
1.0 to under 2.0 ha	138,030 (13.8)	188 (0.0)	717 (0.1)	4,005 (0.4)	19,310 (1.9)	47,803 (4.8)	66,005 (6.6)
2.0 to under 3.0 ha	46,054 (4.6)	55 (0.0)	226 (0.0)	1,721 (0.2)	6,894 (0.7)	17,681 (1.8)	19,478 (1.9)
3.0 to under 5.0 ha	38,946 (3.9)	73 (0.0)	389 (0.0)	2,243 (0.2)	6,548 (0.7)	17,138 (1.7)	12,557 (1.3)
5.0 to under 7.0 ha	14,628 (1.5)	34 (0.0)	79 (0.0)	616 (0.1)	2,897 (0.3)	6,992 (0.7)	4,009 (0.4)
7.0 to under 10.0 ha	9,742 (1.0)	0 (0.0)	158 (0.0)	560 (0.1)	2,042 (0.2)	5,255 (0.5)	1,728 (0.2)
10.0 ha or more	10,725 (1.1)	46 (0.0)	126 (0.0)	830 (0.1)	3,171 (0.3)	5,296 (0.5)	1,255 (0.1)

Note: Values in parentheses represent the percentage (%) of the total number of farm households (999,022).
Source: MODS, various years, *Census of Agriculture, Forestry and Fisheries* compiled by the author.

Table 2-4 Percentage Change in the Number of Farm Households by Landholding Size and Age of Principal Operator (2023 vs. 2013)

Unit: %

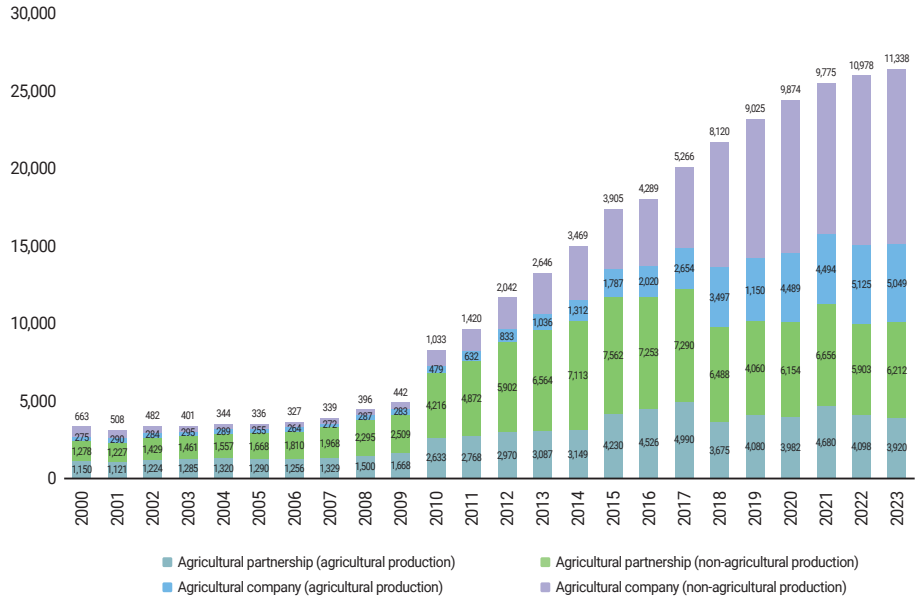
Category	Total	Under 30 years	30–39 years	40–49 years	50–59 years	60–69 years	70 years or older
Nationwide	-12.5	48.8	-64.2	-64.6	-47.1	1.3	10.9
Farms without land	-35.9	-92.1	-11.1	-49.0	-58.4	-12.0	-3.9
Under 0.5 ha	10.0	28.3	-64.7	-57.0	-28.3	33.4	27.8
0.5 to under 1.0 ha	-21.1	139.6	-66.4	-68.1	-50.1	-11.8	-4.6
1.0 to under 2.0 ha	-35.7	164.8	-65.8	-74.8	-60.8	-31.9	-14.4
2.0 to under 3.0 ha	-38.1	139.1	-81.0	-73.4	-67.2	-33.3	1.1
3.0 to under 5.0 ha	-29.7	121.2	-61.6	-65.6	-65.7	-11.6	34.6
5.0 to under 7.0 ha	-29.3	.	-73.8	-76.2	-64.3	-1.9	57.6
7.0 to under 10.0 ha	-19.6	-100.0	11.3	-66.9	-65.4	54.6	79.1
10.0 ha or more	0.2	91.7	-46.2	-55.9	-41.6	124.1	62.6

Source: MODS, various years, *Census of Agriculture, Forestry and Fisheries* compiled by the author.

The share of agriculture Production accounted for by agricultural corporations has increased. Scale-driven, professional agricultural management entities have become central actors in agriculture. The number of agricultural corporations classified as “agricultural companies (agricultural production)” rose from 275 in 2000 to 5,049 in 2023. The number of “Agricultural partnerships (agricultural production)” increased from 1,150 in 2000 to 3,920 in 2023 <Figure 2-16>.

Figure 2-16 Number of Agricultural Corporations

Unit: Number of Agricultural Corporations



Source: MODS, various years, *Food and Rural Affairs*, Agricultural-Corporation Survey.

A comparison of the changes in production value and share by type of farming between 2003 and 2023 reveals the following patterns. For rice, production value declined somewhat and its share dropped significantly. For Food grains other than rice, both production value and share increased. Fruit production increased in both value and share. Vegetable production value rose, but its share stagnated. For specialty crops, both value and share increased. Floriculture decreased in both production value and share. Livestock production recorded increases in both value and share. In summary, over the past 20 years, the share of paddy rice has fallen sharply, while that of livestock has grown markedly. Meanwhile, the shares of food grains other than rice, fruit, and specialty crops increased; the vegetable share remained unchanged; and floriculture declined <Table 2-5>.

Table 2-5 Changes in Production Value and Share by Farming Type (2003–2023)

Unit: KRW billions, %

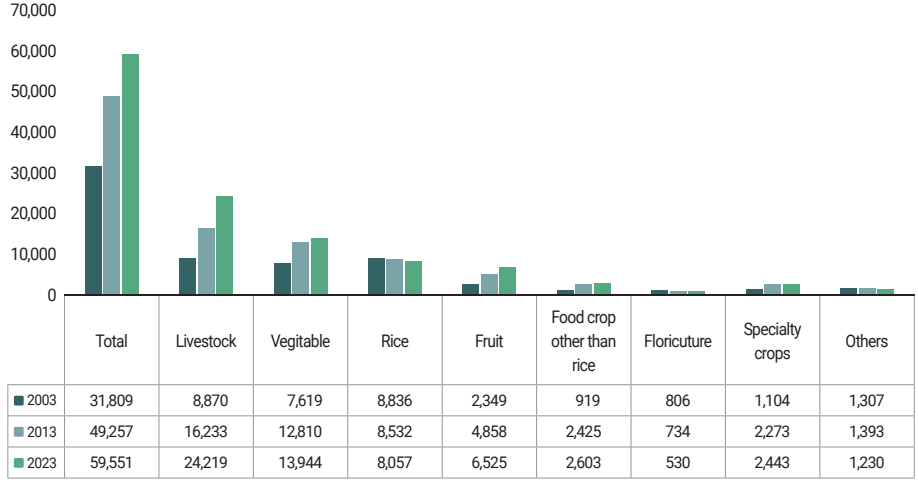
Year	Rice	Food grains other than rice	Fruit	Vegetables	Specialty crops	Floriculture / Ornamental crops	Livestock	Others	Total
2003	8,836 (27.8)	919 (2.9)	2,349 (7.4)	7,619 (24.0)	264 (0.8)	806 (2.5)	8,870 (27.9)	2,147 (6.8)	31,809 (100.0)
2004	9,963 27.6	1,240 3.4	2,942 8.1	7,669 21.2	327 0.9	917 2.5	10,840 30.0	2,257 6.2	36,156 100
2005	8,537 (24.3)	1,202 (3.4)	3,082 (8.8)	6,919 (19.7)	347 (1.0)	995 (2.8)	11,767 (33.5)	2,241 (6.4)	35,089 (100.0)
2006	8,406 (23.9)	1,006 (2.9)	2,971 (8.4)	7,353 (20.9)	283 (0.8)	941 (2.7)	11,676 (33.1)	2,597 (7.4)	35,232 (100.0)
2007	7,858 (22.7)	1,052 (3.0)	2,822 (8.1)	7,483 (21.6)	327 (0.9)	924 (2.7)	11,277 (32.5)	2,942 (8.5)	34,685 (100.0)
2008	9,380 (21.9)	1,769 (4.1)	4,401 (10.3)	9,623 (22.5)	454 (1.1)	904 (2.1)	13,593 (31.8)	2,658 (6.2)	42,781 (100.0)
2009	8,680 (19.3)	1,809 (4.0)	4,100 (9.1)	10,064 (22.3)	414 (0.9)	864 (1.9)	16,484 (36.6)	2,654 (5.9)	45,070 (100.0)
2010	6,787 (14.8)	1,741 (3.8)	4,095 (9.0)	11,323 (24.8)	522 (1.1)	851 (1.9)	17,471 (38.2)	2,932 (6.4)	45,724 (100.0)
2011	8,009 (17.6)	2,203 (4.8)	4,147 (9.1)	11,396 (25.1)	452 (1.0)	817 (1.8)	15,041 (33.1)	3,388 (7.5)	45,454 (100.0)
2012	8,118 (16.6)	2,480 (5.1)	4,243 (8.7)	13,501 (27.6)	487 (1.0)	751 (1.5)	16,094 (32.9)	3,246 (6.6)	48,919 (100.0)
2013	8,532 (17.3)	2,425 (4.9)	4,858 (9.9)	12,810 (26.0)	597 (1.2)	734 (1.5)	16,312 (33.1)	2,989 (6.1)	49,257 (100.0)
2014	8,154 (16.8)	1,751 (3.6)	4,250 (8.7)	11,418 (23.5)	665 (1.4)	702 (1.4)	18,875 (38.8)	2,855 (5.9)	48,669 (100.0)
2015	7,697 (15.9)	1,716 (3.5)	4,317 (8.9)	11,676 (24.1)	700 (1.4)	630 (1.3)	19,212 (39.6)	2,523 (5.2)	48,471 (100.0)
2016	6,392 (13.5)	1,616 (3.4)	4,495 (9.5)	11,545 (24.4)	729 (1.5)	558 (1.2)	19,299 (40.8)	2,643 (5.6)	47,276 (100.0)
2017	6,620 (13.7)	1,758 (3.6)	4,736 (9.8)	11,032 (22.9)	746 (1.5)	563 (1.2)	20,178 (41.9)	2,539 (5.3)	48,170 (100.0)

Year	Rice	Food grains other than rice	Fruit	Vegetables	Specialty crops	Floriculture / Ornamental crops	Livestock	Others	Total
2018	8,401 (16.8)	2,330 (4.7)	4,508 (9.0)	11,529 (23.0)	594 (1.2)	536 (1.1)	19,782 (39.5)	2,372 (4.7)	50,051 (100.0)
2019	8,351 (16.8)	2,142 (4.3)	4,547 (9.1)	11,127 (22.3)	732 (1.5)	514 (1.0)	19,923 (40.0)	2,467 (5.0)	49,803 (100.0)
2020	8,449 (16.8)	2,032 (4.1)	4,589 (9.1)	11,259 (22.4)	640 (1.3)	524 (1.0)	20,366 (40.6)	2,314 (4.6)	50,173 (100.0)
2021	9,526 (16.1)	2,423 (4.1)	5,683 (9.6)	13,205 (22.3)	999 (1.7)	535 (0.9)	24,598 (41.5)	2,235 (3.8)	59,204 (100.0)
2022	7,875 (13.6)	2,344 (4.0)	5,823 (10.0)	12,668 (21.8)	1,094 (1.9)	562 (1.0)	25,409 (43.8)	2,297 (4.0)	58,072 (100.0)
2023	8,057 (13.6)	2,598 (4.4)	6,308 (10.6)	13,884 (23.4)	943 (1.6)	530 (0.9)	24,231 (40.9)	2,718 (4.6)	59,269 (100.0)

Note: The numbers in parentheses are the percentages of production value by farming type for each year.
Source: MODS, various years, *Agricultural & Forestry Production Index* compiled by the author.

Figure 2-17 Changes in Production Value by Farming Type

Unit: KRW billions



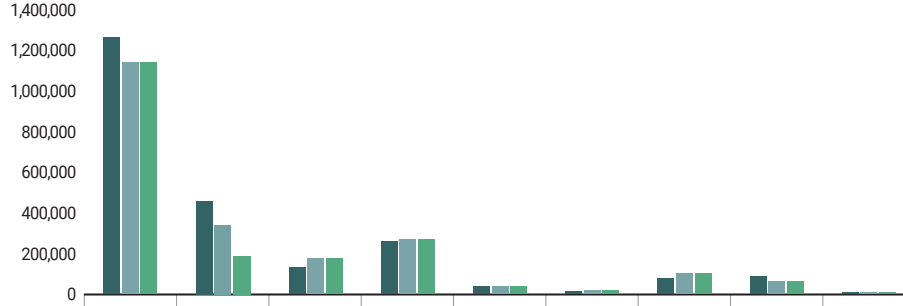
	Total	Livestock	Vegitable	Rice	Fruit	Food crop other than rice	Floricuture	Specialty crops	Others
2003	31,809	8,870	7,619	8,836	2,349	919	806	1,104	1,307
2013	49,257	16,233	12,810	8,532	4,858	2,425	734	2,273	1,393
2023	59,551	24,219	13,944	8,057	6,525	2,603	530	2,443	1,230

Note: Specialty crops include medicinal plants and mushrooms.
Source: MODS, various years, *Agricultural & Forestry Production Index* compiled by the author.

A comparison of the number of farm households by farming type between 2003 and 2023 reveals the following trends <Figure 2-18>. The number and share of households cultivating paddy-rice decreased substantially. Households growing vegetables and wild herbs saw a slight decline in number, while their share in total households increased modestly. The number of orchard fruit farms rose, and their share also increased. The number of farms cultivating food crops other than paddy-rice increased, along with their share. Livestock farms declined sharply in both number and share. The number and share of households engaged in specialty crops increased markedly. Households producing ornamental flowers/horticultural plants also increased in both number and share. In summary, over the past 20-year period, the share of paddy-rice and livestock farm dropped significantly, whereas the farm shares of orchard fruit, food crops other than paddy-rice, special crops, and ornamental/horticultural crops increased.

Figure 2-18 Change in Number of Farm Households by Farming Type

Unit: households



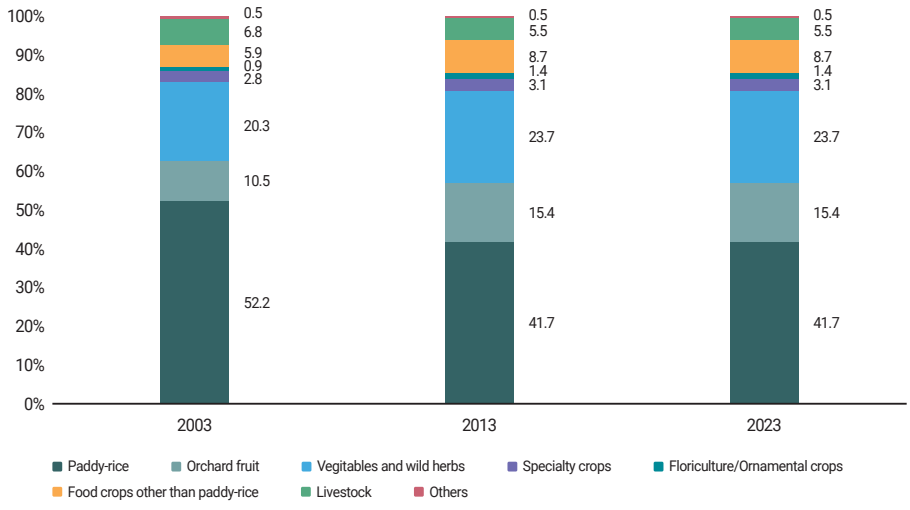
	Total	Paddy-rice	Orchard fruit	Vegitables and wild herbs	Specialty crops	Floriculture/ Ornamental crops	Food crops other than paddy-rice	Livestock	Others
2003	1,264,43	660,149	132,850	256,646	35,970	11,474	74,304	86,156	6,882
2013	1,142,02	475,972	175,704	270,272	35,415	16,288	99,913	62,797	5,670
2023	1,142,02	475,972	175,704	270,272	35,415	16,288	99,913	62,797	5,670

Note 1) "Food crops other than paddy-rice" before 2009 corresponded to "general field crops."
2) "Floricultural/ornamental crops" before 2009 corresponded to "flower (floriculture)."
3) Specialty crops include medicinal plants and mushrooms.

Source: MODS, various years, *Census of Agriculture, Forestry and Fisheries* compiled by the author.

Figure 2-19 Change in Share of Farm Households by Farming Type

Unit: %



Note 1) "Food crops other than paddy-rice" in 2009 corresponded to "general field crops."
2) "Floricultural/ornamental crops" in 2009 corresponded to "flower (floriculture)."

Source: MODS, various years, *Census of Agriculture, Forestry and Fisheries* compiled by the author.

When considered together with the changes in production value by farming type described earlier, although the number of livestock farm households and their share declined, livestock production grew significantly owing to farm consolidation and scaling up. Paddy-rice saw declines both in number of households and share, and also decreases in production value and share, reducing its importance in agriculture. Food crops other than paddy-rice, fruit, and special crops all saw increases in number of households, household share, production value, and production-value share: their relative importance in agriculture rose. Vegetable saw a slight decrease in household numbers while its share increased modestly; production value increased, but its share remained largely unchanged. Its overall role in agriculture did not change markedly. Floriculture/ornamental crops saw increases in number of households and share, but production value and its share declined. Compared with 2005, the number of large-scale (1.5 ha or larger) greenhouse/facility farms had increased by 2024 <Table 2-6>.

Table 2-6 Number and Share of Farm Households by Facility-Area Size

Unit: households, %

Year	Under 0.1 ha	0.1 to under 0.5 ha	0.5 to under 1.5 ha	1.5 to under 2.0 ha	2.0 ha or more	Total
2005	85,350 (46.0)	65,529 (35.3)	31,835 (17.2)	1,835 (1.0)	968 (0.5)	185,517 (100.0)
2006	90,869 (49.4)	62,985 (34.3)	27,917 (15.2)	1,447 (0.8)	590 (0.3)	183,807 (100.0)
2007	99,242 (50.7)	65,879 (33.6)	28,398 (14.5)	1,731 (0.9)	563 (0.3)	195,813 (100.0)
2008	99,527 (50.5)	66,203 (33.6)	28,957 (14.7)	1,827 (0.9)	483 (0.2)	196,995 (100.0)
2009	98,274 (49.9)	66,902 (33.9)	29,610 (15.0)	1,679 (0.9)	631 (0.3)	197,097 (100.0)
2010	28,210 (23.2)	58,825 (48.4)	30,919 (25.4)	2,189 (1.8)	1,518 (1.2)	121,661 (100.0)
2011	68,300 (42.6)	59,437 (37.0)	29,634 (18.5)	1,987 (1.2)	1,155 (0.7)	160,514 (100.0)
2012	79,766 (46.4)	59,238 (34.5)	29,184 (17.0)	2,429 (1.4)	1,290 (0.8)	171,906 (100.0)
2013	84,356 (46.7)	61,820 (34.3)	31,122 (17.2)	2,096 (1.2)	1,097 (0.6)	180,490 (100.0)
2014	82,752 (46.6)	62,165 (35.0)	29,585 (16.7)	1,883 (1.1)	1,098 (0.6)	177,483 (100.0)
2015	39,668 (31.7)	54,119 (43.3)	27,279 (21.8)	2,239 (1.8)	1,785 (1.4)	125,090 (100.0)
2016	66,171 (45.0)	53,161 (36.2)	24,280 (16.5)	1,935 (1.3)	1,440 (1.0)	146,985 (100.0)
2017	61,954 (43.4)	53,451 (37.4)	24,248 (17.0)	1,660 (1.2)	1,476 (1.0)	142,788 (100.0)
2018	61,279 (44.2)	49,651 (35.8)	24,325 (17.6)	1,996 (1.4)	1,334 (1.0)	138,584 (100.0)
2019	52,587 (41.5)	47,902 (37.8)	23,328 (18.4)	1,739 (1.4)	1,297 (1.0)	126,851 (100.0)
2020	53,060 (42.0)	47,329 (37.5)	22,434 (17.8)	1,983 (1.6)	1,544 (1.2)	126,350 (100.0)
2021	72,906 (50.1)	48,188 (33.1)	20,999 (14.4)	1,934 (1.3)	1,623 (1.1)	145,649 (100.0)
2022	70,877 (49.8)	48,237 (33.9)	20,127 (14.1)	1,924 (1.4)	1,221 (0.9)	142,386 (100.0)

Year	Under 0.1 ha	0.1 to under 0.5 ha	0.5 to under 1.5 ha	1.5 to under 2.0 ha	2.0 ha or more	Total
2023	69,080 (49.3)	47,352 (33.8)	20,272 (14.5)	2,070 (1.5)	1,319 (0.9)	140,092 (100.0)
2024	62,439 (47.7)	45,924 (35.1)	19,337 (14.8)	1,534 (1.2)	1,650 (1.3)	130,884 (100.0)

Note : Figures in parentheses indicate the percentage of farm households falling within each facility area-size category for the corresponding year."
Source: MODS, various years, *Forestry and Fisheries* compiled by the author.

A comparison of the number and share of farm households by farm size (cultivated area) and farm type between 2003 and 2023 shows a polarization in farm size <Table 2-7>. The number of households in both the very large (7.0 to under 10.0 ha and 10.0 ha or more) and very small size categories (under 0.5 ha) increased, whereas those in the intermediate size categories decreased.

In the under 0.5 ha category, the share of paddy-rice farm households fell sharply, whereas the shares of orchard fruit and specialty crop farm households rose substantially, indicating a marked shift away from paddy-rice toward other farming types among small-scale farm households. In the mid-size category (1.5 to under 2.0 ha), the shares of paddy-rice and vegetable farm households declined, whereas the shares of fruit, food crops other than paddy-rice, and livestock farm houeholds increased. In the 5.0 to under 7.0 ha range, the shares of paddy-rice and specialty-crop farm households declined, whereas shares of fruit, vegetables and wild herbs, food crops other than paddy-rice, and livestock farm households increased.[2]

Among large-scale farms of 10.0 ha or more, the shares of paddy-rice and livestock farm households increased, whereas the shares of other farming types decreased. However, because the number of farm households in this size class rose significantly from 3,785 households in 2003 to 10,725 households in 2023, the absolute number of farm households in all farming type categories increased <Table 2-7>.

2 In the farming type classification used in the *Census of Agriculture, Forestry and Fisheries*, a farm's "type" is defined by the category that contributes the largest share of sales revenue. Thus, if livestock is designated as the farming type, livestock sales exceed those from paddy rice, vegetables, fruit, and other produce.

Table 2-7 Share of Farm Households by Farming Type and Landholding Size in 2003 and 2023

Category	Under 0.5 ha		0.5 to under 1.0 ha		1.0 to under 1.5 ha		1.5 to under 2.0 ha	
	2003	2023	2003	2023	2003	2023	2003	2023
Paddy-rice	195,101 (44.2)	151,169 (29.0)	190,032 (57.2)	97,045 (45.7)	106,789 (57.8)	43,317 (51.0)	58,308 (54.6)	24,682 (46.4)
Orchard fruit	38,585 (8.7)	81,487 (15.6)	37,497 (11.3)	42,139 (19.8)	23,458 (12.7)	17,125 (20.2)	14,720 (13.8)	10,717 (20.2)
Vegetables and wild herbs	109,667 (24.8)	144,366 (27.7)	64,950 (19.5)	35,938 (16.9)	34,523 (18.7)	13,449 (15.8)	21,265 (19.9)	8,941 (16.8)
Food crops (non-paddy)	50,155 (11.4)	62,999 (12.1)	13,097 (3.9)	13,403 (6.3)	4,605 (2.5)	4,276 (5.0)	2,339 (2.2)	2,887 (5.4)
Specialty crops	12,927 (2.9)	57,262 (11.0)	6,298 (1.9)	11,040 (5.2)	4,459 (2.4)	2,273 (2.7)	4,011 (3.8)	1,585 (3.0)
Floriculture/ Ornamental crops	5,638 (1.3)	6,535 (1.3)	3,049 (0.9)	3,242 (1.5)	1,168 (0.6)	732 (0.9)	719 (0.7)	953 (1.8)
Livestock	26,370 (6.0)	15,019 (2.9)	15,804 (4.8)	8,790 (4.1)	8,963 (4.8)	3,469 (4.1)	4,936 (4.6)	3,321 (6.2)
Others	2,925 (0.7)	3,077 (0.6)	1,688 (0.5)	988 (0.5)	916 (0.5)	225 (0.3)	397 (0.4)	80 (0.2)
Total	441,371 (100.0)	521,914 (100.0)	332,417 (100.0)	212,584 (100.0)	184,881 (100.0)	84,865 (100.0)	106,694 (100.0)	53,165 (100.0)

Category	2.0 to under 3.0 ha		3.0 to under 5.0 ha		5.0 to under 7.0 ha		7.0 to under 10.0 ha		10.0 ha and more	
	2003	2023	2003	2023	2003	2023	2003	2023	2003	2023
Paddy-rice	55,366 (58.6)	24,184 (52.5)	35,924 (63.1)	21,159 (54.3)	11,028 (72.2)	9,019 (61.7)	5,195 (71.4)	5,885 (60.4)	2,406 (63.6)	7,075 (66.0)
Orchard fruit	12,073 (12.8)	7,927 (17.2)	5,532 (9.7)	4,707 (12.1)	595 (3.9)	1,144 (7.8)	259 (3.6)	455 (4.7)	129 (3.4)	370 (3.4)
Vegetables and wild herbs	15,628 (16.6)	7,083 (15.4)	7,816 (13.7)	6,174 (15.9)	1,482 (9.7)	2,357 (16.1)	830 (11.4)	1,493 (15.3)	484 (12.8)	1,195 (11.1)

Category	2.0 to under 3.0 ha		3.0 to under 5.0 ha		5.0 to under 7.0 ha		7.0 to under 10.0 ha		10.0 ha and more	
	2003	2023	2003	2023	2003	2023	2003	2023	2003	2023
Food crops (non-paddy)	2,056 (2.2)	2,333 (5.1)	1,099 (1.9)	2,349 (6.0)	314 (2.1)	845 (5.8)	217 (3.0)	684 (7.0)	423 (11.2)	916 (8.5)
Specialty crops	4,042 (4.3)	1,082 (2.3)	2,583 (4.5)	1,083 (2.8)	956 (6.3)	396 (2.7)	451 (6.2)	346 (3.6)	244 (6.4)	542 (5.1)
Floriculture/ Ornamental crops	477 (0.5)	342 (0.7)	350 (0.6)	581 (1.5)	28 (0.2)	29 (0.2)	18 (0.2)	30 (0.3)	27 (0.7)	53 (0.5)
Livestock	4,330 (4.6)	3,009 (6.5)	3,380 (5.9)	2,857 (7.3)	739 (4.8)	819 (5.6)	288 (4.0)	848 (8.7)	61 (1.6)	517 (4.8)
Others	442 (0.5)	93 (0.2)	220 (0.4)	36 (0.1)	135 (0.9)	19 (0.1)	24 (0.3)	- (0.0)	13 (0.3)	57 (0.5)
Total	94,415 (100.0)	46,054 (100.0)	56,904 (100.0)	38,946 (100.0)	15,277 (100.0)	14,628 (100.0)	7,281 (100.0)	9,742 (100.0)	3,785 (100.0)	10,725 (100.0)

Note 1) Only households with land are counted.
2) "Food crops": before 2009, this category corresponded to "general field crops."
3) "Ornamental/horticultural crops": before 2009, this category corresponded to "floriculture."
4) The percentages in parentheses represent, for each landholding size category, the proportion of farm households by farming type for various years.
Source: MODS, various years, *Census of Agriculture, Forestry and Fisheries* compiled by the author.

An examination of the changes in the share of farm households by main/side-business type reveals the following patterns. The Share of Farm were weighted by household weight in the Farm Household Economy Survey, The proportion of "professional farm households" decreased sharply from 31.3% in 2003 to 23.9% in 2023[3]. The share of "general farm households" dropped from 34.8% in 2003 to 31.0% in 2023[4]. The share of "part-time farm households" remained almost unchanged

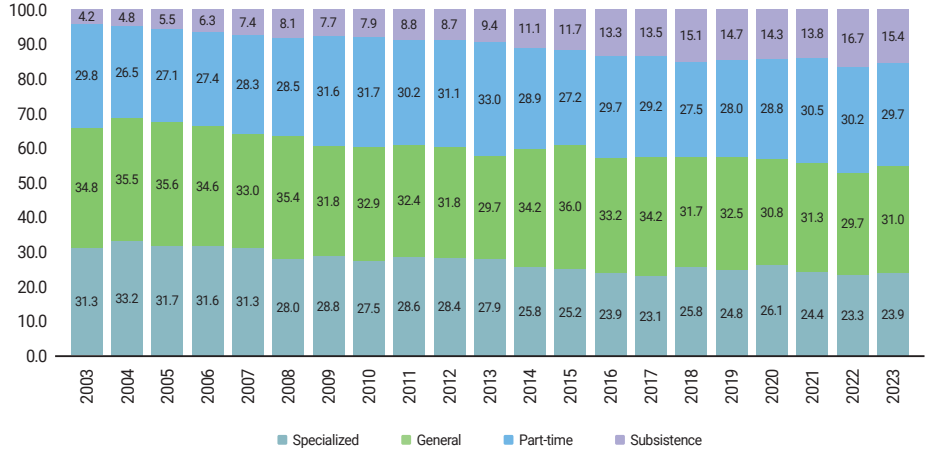
3 A "professional farm household" is defined as follows: among main-business farms (i.e., households with 0.30 ha or more of farmland or with cash + credit sales income of at least KRW 2 million, and for which total agricultural income exceeds non-agricultural income), those households having either a farmland size of 3 ha or more, or cash + credit sales income from agriculture of at least KRW 20 million are classified as "professional farm households." (Ministry of Data and Statistics, 2025)

4 A "general farm household" refers to a main-business farm whose landholding size is less than 3 ha, and whose cash + credit sales income from agriculture is less than KRW 20 million. (Ministry of Data and Statistics, 2025)

from 29.8% in 2003 to 32.9% in 2023[5]. The share of "subsistence farm households" rose sharply from 4.2% in 2003 to 15.4% in 2023[6]. In other words, the country saw a decrease in the proportion of main-business farm households (professional + general) whose agricultural income exceeds non-farm income. Meanwhile, the share of part-time farm households, whose non-farm income exceeds agricultural income, remained almost unchanged. Moreover, the more than three-fold increase in the share of subsistence farm households indicates a substantial rise in the number of farm households for which agricultural income is only a minor part of total household income <Figure 2-20>.

Figure 2-20 Change in Proportion of Farm Households by Main/Side-Business Type

Unit: %



Note: The number of households by main/side-business type is calculated by applying sample weights. Single-person households are included from 2017.

Source: MODS, various years, Farm Household Economy Survey raw data compiled by the author.

5 A "part-time farm household" is defined as follows: among households with 0.30 ha or more of farmland or with agricultural cash + credit sales income of at least KRW 2 million, those whose non-agricultural income exceeds their agricultural income are classified as "part-time farm households." (Ministry of Data and Statistics, 2025)

6 A "subsistence farm household" is defined as a farm household that has no farmland, or has less than 0.30 ha of farmland, and whose agricultural cash + credit sales income is less than KRW 2 million. (Ministry of Data and Statistics, 2025)

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3. Farmland

Overview of Agricultural Land Status

Changes in South Korea's agricultural land area over the past 28 years (1995–2023) reflect the encroachment on cultivated land driven by industrialization and urbanization, as well as shifts in the agricultural structure. The total agricultural land area decreased from approximately 1.985 million ha in 1995 to about 1.512 million ha in 2023. The total reduction in farmland over this 28-year period amounts to 473,000 ha, representing approximately 23.8% of the total agricultural land in 1995. On an annual basis, this implies that an average of approximately 16,900 ha of farmland has been diverted or lost each year.

Agricultural Promotion Areas (APAs) were not immune to this trend of declining overall farmland. As the total agricultural land shrank, the absolute area of APAs also saw a significant decrease in 2023 compared to 1995. The area of APAs fell from 841,000 ha in 1995 to 772,000 ha in 2023. This accounts for 50.7% of the total cultivated land area (1.512 million ha) in 2023. Farmland outside of APAs was directly exposed to development pressure, resulting in a much faster rate of decline. The proportion of farmland outside APAs relative to total agricultural land dropped from 57.6% in 1995 to 49.3% in 2023.

The westernization of dietary patterns and the decline in rice consumption have brought about structural changes in the composition of agricultural land. The decline in farmland was steeper in paddy fields than in upland fields; consequently, a structural shift occurred where the proportion of paddy fields decreased while that of upland fields increased. The overall paddy field area plummeted from 1.206 million ha in 1995 to 764,000 ha in 2023; the reduction of 442,000 ha accounts for 93.4% of the total farmland loss (473,000 ha). In contrast, the reduction in the total upland field area was only 31,000 ha, representing a decline rate of 4.1%. Consequently, the share of paddy fields in total farmland decreased from 60.8% in 1995 to 50.5% in 2023, while that of upland fields increased (from 39.2%), bringing the ratio of paddy fields to upland fields close to a 5:5 level.

Table 2-8 Status of farmland in APAs

Unit: 1,000ha, %

Category		1995	2000	2005	2010	2015	2020	2023
Total Farmland Area (A)		1,985	1,889	1,824	1,715	1,679	1,565	1,512
Land Type	Paddy	1,206	1,149	1,105	984	908	824	764
	Upland	779	740	719	731	771	741	748
Agricultural Promotion Area (B)		841	919	919	807	810	776	766
land zone	Agricultural Promotion Zone	723	790	792	751	754	696	687
	Agricultural Protection Zone	118	129	127	56	56	80	79
Land Type	Paddy	703	768	771	710	713	687	678
	Upland	138	151	148	97	97	89	88
Ratio (B/A)		42.4	48.7	50.4	47.1	48.2	49.6	50.7
Outside Agricultural Promotion Area		1,144	970	905	908	869	789	746
Land Type	Paddy	503	381	334	274	195	137	86
	Upland	641	589	571	634	674	652	660

Source: MAFRA, various years, *Major Statistics on Agriculture, Food and Rural Affairs.*

Historical Process of Farmland System Evolution

South Korea's farmland system has continuously evolved in response to the demands of the times, based on the constitutional premise of the "Land-to-the-Tiller" principle. The paradigm has shifted through the following stages: ① Distribution (Land Reform) → ② Conservation (Industrialization Era) → ③ Utilization & Scale-up (Open Market Era) → ④ Strengthened Management (Anti-speculation & Public Interest). Recently, the direction has turned once again toward strengthening regulations to eradicate speculation and reinforce public management.

Immediately after liberation in the 1940s and 50s, the top priority was to abolish the feudal tenancy system and return land to farmers. The Farmland Reform Act, enacted in 1949, banned farmland ownership by non-farmers in principle and limited ownership to a maximum of 3 jeongbo (approximately 3 ha), serving as a decisive momentum for establishing an agricultural structure centered on owner-farmers.

As full-scale industrialization and urbanization began in the 1970s, causing indiscriminate conversion of farmland for other uses, the government devised farmland conservation policies for food security. The Act on the Conservation and Utilization of Farmland, enacted in 1972, classified farmland into "Absolute Farmland" and "Relative Farmland," strictly regulating the conversion of Absolute Farmland. Subsequently, as the rural exodus intensified in the 1980s, the Farmland Leasing Management Act (1986) was introduced to allow leasing on a limited basis, attempting to narrow the gap between reality and the institutional system.

In the 1990s, the conclusion of the Uruguay Round (UR) negotiations and the launch of the WTO posed significant threats to Korean agriculture. In response, the government reformed the system to increase competitiveness by scaling up farming operations. The Special Act on Rural Development (1990) allowed agricultural corporations to own farmland, and in 1992, the Absolute Farmland system (regulated by individual parcels) was reorganized into the APA system (regulated by zones) to efficiently conserve prime farmland.

The year 1994, in particular, marks one of the most significant turning points in the history of Korea's farmland system. Diverse and complex farmland-related laws were integrated into a single legal framework to concretely realize the constitutional Land-to-the-Tiller principle and respond to the rapidly changing agricultural environment. The Farmland Reform Act (1950s) and the Act on the Conservation and Utilization of Farmland (1972) were abolished and unified under the Farmland Act. This act systematically regulated the ownership, utilization, conservation, and conversion of farmland. The enacted Farmland Act clearly stipulated the principle that farmland must be owned and used to increase agricultural productivity and must not become a subject of speculation (Article 3, Paragraph 2). Furthermore, while maintaining the principle prohibition on owning non-self-cultivated land, it allowed leasing exceptionally for unavoidable reasons (illness, inheritance, etc.).

After the Farmland Act was fully implemented in 1996, key regulations, such as residency restrictions, began to be relaxed starting in 2003. In 2003, the restriction on the distance between residence and farmland (commuting distance) was abolished,

allowing individuals to acquire and farm land regardless of where they lived. To encourage the influx of urban residents into rural areas and revitalize urban–rural exchange, non-farmers were permitted to own less than 1,000 m² of farmland for "weekend/experience farming" purposes. Additionally, the Farmland Bank system was introduced in 2005. The Korea Rural Community Corporation began a lease entrustment business, accepting non-self-cultivated farmland and leasing it to full-time farmers. This expanded exceptions so that people, who could not farm due to inheritance or were leaving rural areas, could continue to own farmland if they entrusted it to the Farmland Bank.

In 2009, to increase the utilization of so-called "marginal farmland" that was prone to abandonment because of low productivity, exceptions to the Land-to-the-Tiller principle and the ban on leasing were expanded. Specifically, farmland with poor farming conditions and low productivity (defined as marginal farmland with an average slope of 15% or more, grouped in sizes less than 20,000 m² in Eup/Myeon areas, as designated by the Mayor/County Governor) was defined as "Disadvantaged Farmland" (Yeongnong-yeokeon-bulli-nongji). For such land types, the regulations on ownership and use were relaxed. Non-farmers were allowed to own Disadvantaged Farmland even if they did not use it for their own agricultural management, and owners were fully permitted to lease or provide it for free use (rent-free) to others even if they did not farm it themselves.

In 2012, system improvements were made primarily to protect tenant farmers and ensure flexibility in farmland use. A system guaranteeing a minimum farmland lease period of three years was introduced. Additionally, if a tenant received confirmation from the head of the Si/Gun/Eup/Myeon and took delivery of the farmland, they gained opposability (legal protection) against third parties even without a registered contract, ensuring stable farming. A system for applying for designated proxy cultivators was also introduced for the efficient use of idle farmland.

The year 2021 was a period when legal and institutional mechanisms were strengthened to block the misuse of the farmland system as a means of speculation, triggered by the LH speculation scandal that caused a major stir in Korean

society. The core of the amendments during this period was the introduction of punitive regulations to prevent speculation and the reorganization of the farmland management system. Numerous punitive provisions were introduced to strictly implement the Land-to-the-Tiller principle and block speculative farmland ownership by non-farmers at the source. First, restrictions on farmland acquisition were tightened, and immediate disposal orders were expanded. Acquisition restrictions were strengthened for types of land with high speculation potential. Acquisition of farmland within APAs for weekend/experience farming purposes was completely banned, and screening was intensified upon acquisition even for farmers. Second, the level of economic sanctions for violating the Farmland Act was drastically raised.

In 2022, a major overhaul of administrative procedures and management systems followed to effectively apply the strengthened legal standards in the field. First, the farmland acquisition screening procedure was made substantive and institutionalized. Screening procedures at the pre-acquisition stage were strengthened, making entry for non-farmers virtually difficult. A system mandating deliberation by a Farmland Committee, involving local farmer representatives and experts, was introduced for farmland acquisitions in areas deemed to have speculation concerns. Second, the existing management system was shifted to a parcel-based approach to strengthen state monitoring of farmland use status. The existing "Farmland Ledger" (household-based) was renamed to "Farmland General Ledger" (Nongji-daejang), and the recording standard was changed from "per farmer" to "per parcel," enabling systematic management of information for all farmland.

Through the 2024 amendment of the Farmland Act, regulations regarding the establishment of Basic Guidelines for Farmland Management, which present the mid-to-long-term direction of farmland management, were newly established. The Minister of Agriculture, Food and Rural Affairs must establish Basic Guidelines for Farmland Management every 10 years and review them every 5 years. These basic guidelines include mid-to-long-term policy directions such as target areas for managed farmland, matters regarding the prevention of farmland area reduction, and criteria for setting target areas by city/province.

These phased changes focus to strictly conserving farmland as a means of production rather than a means of speculation, inducing use centered on actual users, and simultaneously building a stable management environment for agricultural workers.

Composition and System of the Current Farmland System

The farmland system based on the current Farmland Act is founded on the constitutional ideology of farmland conservation and efficient utilization. Recently, it has been developing by significantly strengthening mechanisms for anti-speculation and systematic management. The system is largely composed of four pillars: restrictions on ownership and use, regulations on conservation and development, farmland management systems, and sanctions and post-management.

First is the definition of farmland and the ownership/use system. The foundation of the farmland system is to restrict ownership to those who use or intend to use the farmland for agricultural management, in accordance with the Land-to-the-Tiller principle. Land actually used for cultivating crops or growing perennial plants is defined as farmland, regardless of its legal land category (Jimok). Sites for land improvement facilities (waterways, embankments, etc.) and for agricultural/livestock production facilities (fixed greenhouses, barns, farm huts, etc.) are also included in the scope of farmland. In principle, only farmers or agricultural corporations may own farmland. However, exceptions allow non-farmers to own inherited farmland (within 10,000 m^2), farmland retained after leaving rural areas following 8+ years of farming (within 10,000 m^2), and farmland for weekend/experience farming purposes (less than 1,000 m^2 per household, outside APAs). Farmland leasing is prohibited in principle but is allowed on a limited basis only for unavoidable reasons such as illness, conscription, old age (over 60), or entrustment to the Farmland Bank. The farmland lease period is guaranteed for at least 3 years (5 years for perennial plant cultivation sites), and tenant rights are granted opposability through a contract confirmation procedure.

Second is content related to farmland conservation. To conserve prime farmland, land is designated and managed by classifying it into Agricultural Promotion Zones

(for agricultural production purposes) and Agricultural Protection Zones (for agricultural environment protection purposes). Within APAs, acts other than those directly related to agricultural production and land improvement are restricted in principle. Additionally, the conversion of farmland for non-agricultural purposes requires permission from the Minister of Agriculture, Food and Rural Affairs (including delegated authority). A Farmland Conservation Charge, which is the cost required for conserving and creating farmland, is imposed on those who convert farmland.

Third is content related to the establishment of farmland management plans and systems. A planning system has been established wherein the Minister of Agriculture, Food and Rural Affairs establishes Basic Guidelines for Farmland Management every 10 years, and local governments establish plans accordingly. These basic guidelines contain mid-to-long-term policy directions, such as management target areas and prevention of farmland reduction. Furthermore, the existing Farmland Ledger system has been changed to the "Farmland General Ledger" (Nongji-daejang), which is created and managed for every parcel of farmland. Farmland owners or tenants must apply for changes within 60 days when utilization information changes, such as lease contracts or facility installation. Additionally, a farmland information system has been built to computerize and manage all farmland administrative information—such as the Farmland General Ledger, acquisition and disposal, and conversion—and to link information with relevant agencies.

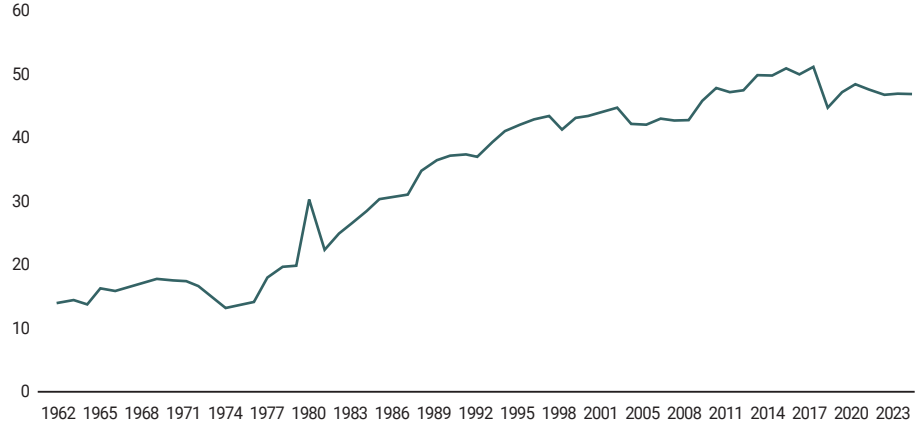
Finally, sanctions for violations of ownership and use obligations are strengthened to eradicate speculative ownership. In a farmland utilization survey, mayors, county governors, and district heads survey the status of farmland utilization at least once a year. If reasons for disposal arise, such as non-use for agricultural management, fraudulent acquisition, or an agricultural corporation engaging in real estate business, a disposal order is issued. If the disposal order is not fulfilled, or if an order to restore the land to its original state after illegal conversion is not fulfilled, a performance enforcement penalty equivalent to 25% of the land value is imposed. Moreover, when acquiring farmland in areas where speculation is a concern, deliberation by the Farmland Committee is mandatory to strictly screen acquisition qualifications.

Status of Farmland Utilization

First, looking at the trend of the farmland tenancy rate (the ratio of leased area to total cultivated area) in <Figure 2-21>, the rate remained at a low level of less than 20% until the 1960s and 1970s but has shown a continuous upward trend since the early 1980s. The farmland tenancy rate gradually increased to 37.4% in 1990, 43.6% in 2000, and 47.9% in 2010. It reached the 50.0% level for the first time in 2013, recorded an all-time high of 51.4% in 2017, and currently maintains a level of 47.0% as of 2024. The average annual growth rate of leased farmland area from 1962, when the tenancy rate began to be surveyed, to 2024 is approximately 1.96%. This demonstrates that during this period, the mode of farmland utilization has shifted significantly from owner-farming to lease-farming.

Figure 2-21 Trends in the ratio of leased farmland area

Unit: %



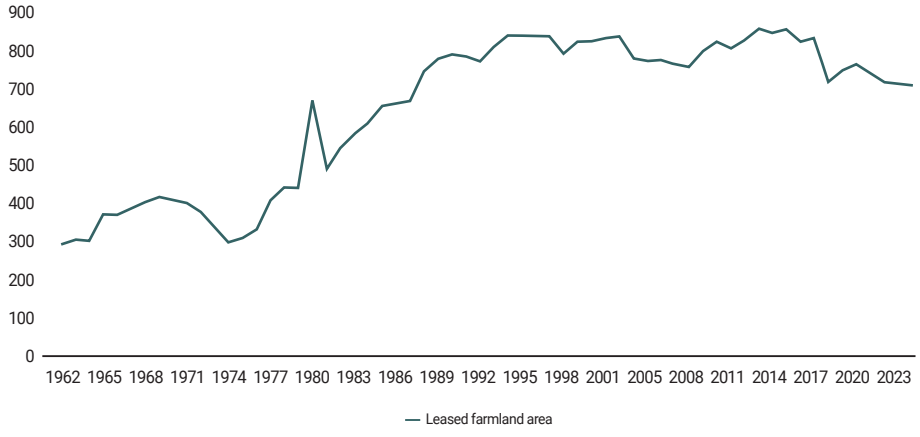
Source: MODS, various years, *Farmland Lease Survey.*

<Figure 2-22> illustrates the changes in the scale of leased farmland area. The leased farmland area peaked at 856,000 ha in 2013, rising from 295,000 ha in 1974. During this period, the leased area increased by 561,000 ha, representing an annual

average increase of 14,400 ha. Since peaking in 2013, the leased farmland area has decreased to 707,000 ha in 2024, showing an annual average decline of 13,600 ha. In summary, the absolute scale of leased farmland expanded until 2013; however, it is currently on the decline because of the overall reduction in farmland area and various factors constraining the supply and demand for farmland leases.

Figure 2-22 Trends in leased farmland area

Unit: ha



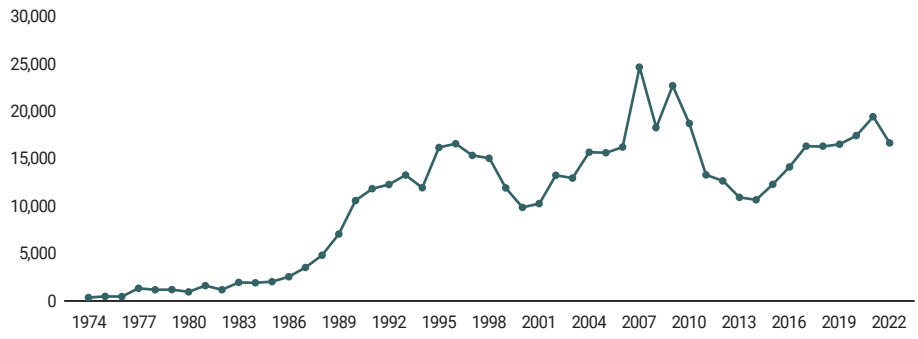
Source: MODS, various years, *Farmland Lease Survey.*

Status of Farmland Conversion

From the introduction of the farmland conversion permit system following the enactment of the Act on the Conservation and Utilization of Farmland, the total area of farmland permitted for conversion from 1974 to 2022 amounted to 523,279 ha. This translates to an annual average of 10,679 ha of farmland being converted to other uses each year. The annual area of farmland conversion exceeded 10,000 ha for the first time in 1990; notably, the total area converted since 1990 accounts for 93.7% of the total conversion area over the entire period.

Figure 2-23 Annual trends in farmland conversion area

Unit: ha



Source: MAFRA, *internal data.*

Specifically, over the past 20 years (2003–2022), a total of 322,000 ha of farmland (an annual average of 16,000 ha) was converted; of this, 57,000 ha (18.0%) was inside APAs, while 264,000 ha (82.0%) was outside these areas. APAs impose restrictions on the types of installable facilities and their surface areas. The significantly larger area of farmland conversion outside APAs can be attributed to fewer regulations compared to inside these areas, as well as the broader scope of authority for farmland conversion permits delegated to local governments for land outside these areas.

Table 2-9 Farmland conversion area over the past 20 years (2003–2022)

Unit: ha

Category		'03~'07	'08~'12	'13~'17	'18~'22	Total
Farmland Conversion Area		85,222	85,633	64,422	86,300	321,577
Paddy		46,758	46,225	32,036	40,917	165,936
	APAs	13,972	11,469	8,761	11,054	45,256
	Outside APAs	32,786	34,756	23,275	29,863	120,680
Upland		38,464	39,408	32,386	45,383	155,641
	APAs	3,817	3,014	2,279	3,346	12,456
	Outside APAs	34,647	36,394	30,107	42,037	143,185

Source: MAFRA, *internal data.*

An analysis of the farmland conversion area by permitting authority over the last 10 years (2013–2022) shows that the largest share was approved by Si/Gun/Gu (62.5%), followed by Si/Do (23.8%) and MAFRA (13.7%). More than half of all farmland conversion permits are granted at the Si/Gun/Gu level. Specifically, within APAs, the breakdown was MAFRA (36.2%), Si/Gun/Gu (32.1%), and Si/Do (31.7%). However, outside APAs, the order was Si/Gun/Gu (68.8%), Si/Do (22.1%), and MAFRA (9.2%).

Table 2-10 Status of farmland conversion by permitting entity (2013–2022)

Unit: ha

Category			'13~'17	'18~'22	Annual average ('13~'22)
			Area	Area	Area
Total	Sum		64,422	86,300	15,072
		APAs	11,040	14,400	2,544
		Outside APAs	53,382	71,900	12,528
MAFRA	Sum		10,940	9,750	2,069
		APAs	4,937	4,275	921
		Outside APAs	6,003	5,475	1,148
Si/Do	Sum		12,701	23,129	3,583
		APAs	2,307	5,852	816
		Outside APAs	10,394	17,277	2,767
Si/Gun/Gu	Sum		40,781	53,421	9,420
		APAs	3,796	4,273	807
		Outside APAs	36,985	49,148	8,613

Source: MAFRA, *internal data.*

It is estimated that within APAs, the area approved by MAFRA is extensive because of frequent large-scale farmland conversions for infrastructure such as roads and railways. Conversely, outside these areas, the area approved by Si/Gun/Gu appears to constitute the majority, driven by numerous small-scale development projects such as warehouses and parking lots. While farmland conversion within APAs was primarily for public facilities (64.4%) such as roads and railways, conversion outside these areas

was largely dominated by "Other" uses (36.2%), such as neighborhood living facilities, followed by public facilities (27.3%).

Table 2-11 Annual average farmland conversion status by purpose of use (2013–2022)

Unit: ha

Category	Public	Residential	Industrial	Agricultural /Fishery	Other	Sum
Total	50,534	29,164	16,853	6,048	48,123	150,722
APAs	16,387	2,127	1,726	2,460	2,734	25,434
Outside APAs	34,147	27,037	15,127	3,588	45,389	125,288

Source: MAFRA, *internal data.*

The total volume of APAs, where prime farmland is concentrated, is continuously decreasing, and designating additional areas is difficult due to resistance from farmland owners. The acceleration of farmland conversion and the continuous decline of APAs pose a significant threat to future food self-sufficiency rates, as well as the multifunctional value and sustainability of agriculture and rural areas. In the current situation where farmland conversion is accelerating, it is necessary to strengthen farmland conservation measures and utilization systems to ensure that an appropriate scale of farmland can be continuously utilized to enhance agricultural productivity.

Outlook and Tasks

It is projected that the paradigm of farmland policy will shift from management centered on quantitative security and ownership (Land-to-the-Tiller) to management centered on quality and substantive utilization (vitalizing leasing). Regarding farmland use, policy will move away from inducing formalistic self-farming (e.g., sham self-farming) bound by the constitutional Land-to-the-Tiller principle toward inducing actual farming through legal leasing, even for farmland owned by non-farmers. Regarding farmland conservation, the approach will evolve from simply suppressing the lifting of APAs to introducing a system that sets national targets for total farmland

volume, grades the value of farmland, and systematically manages land to be conserved versus land to be developed.

Under these conditions, the tasks that farmland policy must address are largely divided into ① establishing a systematic farmland conservation system and ② formalizing and increasing the efficiency of the farmland lease market.

First, a systematic conservation and management framework must be built regarding farmland conversion. To prevent indiscriminate conversion and secure prime farmland for food security, the introduction of the following systems is required. A "Total Volume Management System for Available Agricultural Promotion Areas" should be introduced to set a national target area for conservation and to allocate and manage the total liftable amount of APAs by city/province. Furthermore, when lifting an APA, the designation of replacement land or the payment of an adjustment fee must be institutionalized to maintain the total volume. Additionally, a "(Tentative) Farmland Conversion Impact Assessment System" should be introduced. Similar to the Environmental Impact Assessment, this would analyze the impact on the agricultural environment and food production prior to large-scale development projects or planning, reviewing the appropriateness of the plan, the validity of the location, and damage prevention plans. Finally, scientific management techniques should be adopted—such as the LESA (Land Evaluation and Site Assessment) system in the US—to comprehensively evaluate farmland based on soil, location, and productivity, grade the farmland, and restrict the conversion of land with high conservation value based on these grades.

Second, drastic improvements to the lease system are needed to formalize shadow (undisclosed) leasing and to support the retirement of elderly farmers and the entry of young farmers. To achieve this, customized protection mechanisms for lessors and lessees must be established first. For example, for older adult farmers who are reluctant to lease due to the fear of farmland damage, a "Restoration Guarantee System" should be introduced to restore the farmland condition upon lease termination. Support tailored to user characteristics is needed, such as linking financial support for growth-oriented farmers (who have high debt but wish to scale

up) and providing rent subsidies for young farmers. Furthermore, the role of the Farmland Bank must be expanded from simple brokerage to a comprehensive platform that provides standard lease contracts, dispute mediation, and legal consultation.

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4. Agricultural Cooperatives

Korean Agricultural Cooperatives and Characteristics

Korean agricultural cooperatives are divided into two groups based on their founding legislation. The first group includes cooperatives known as "NongHyup," which are established under the *Agricultural Cooperatives Act*. The second group consists of cooperatives formed under the *Framework Act on Cooperatives*. NongHyup, founded in 1958 as Korea's first cooperative, continues to significantly influence agriculture and rural development. The *Framework Act on Cooperatives*, enacted in 2012, permits any group of five or more individuals to form a cooperative in any sector except finance and insurance.. In most cases, "Korean agricultural cooperatives" refers to NongHyup, as defined by the *Agricultural Cooperatives Act*. NongHyup is recognized as Korea's leading cooperative in terms of history, function, and impact. Therefore, this section focuses on NongHyup when discussing Korean agricultural cooperatives.

NongHyup is the most influential organization in agriculture and rural areas. It operates in every region of the country where agricultural production occurs, and nearly all farm households are members. Most primary cooperatives and the National Federation function as multipurpose cooperatives, conducting marketing, purchasing, credit, and utilization businesses, which makes them the largest business entities in rural areas. In the credit business, the combined operations of the primary cooperatives and the National Federation make NongHyup the largest financial group in Korea, with the most financial branches and assets. NongHyup also has unique characteristics that are rarely found in agricultural cooperatives in other countries. These characteristics can be summarized in five points as follows.

First, as multipurpose cooperatives, they manage both economic activities (e.g., marketing agricultural products and purchasing farming inputs and daily necessities) and credit services (including accepting deposits, providing loans, and offering insurance). This structure is similar to Japan's JA and Taiwan's Farmers' Associations,

but it differs from the specialized commodity-based cooperatives found in Western countries.

Second, it has a two-tier organizational system composed of primary agricultural cooperatives, whose members are agricultural producers, and a national federation, whose members are the primary cooperatives. Although primary cooperatives and the National Federation are independent legal entities, all NongHyups across the country are connected through a cooperative system.

Third, both primary cooperatives and the National Federation conduct business operations. In most other countries, the national federation, as an umbrella organization, typically provides only guidance and does not conduct business. However, the National Agricultural Cooperatives Federation (NACF) in Korea holds both guidance and business functions. The NACF's business activities are managed by two holding companies, NongHyup Agribusiness Group and NongHyup Financial Group, a structure that is uncommon among agricultural cooperatives in other countries.

Fourth, the financial system combines cooperative finance and commercial finance. The mutual finance of primary cooperatives serves only members, while the bank under the Federation's financial holding company provides commercial finance to the general public. The Federation's financial holding company is a large financial group that owns insurance, securities, and investment companies in addition to the bank. This combination of cooperative and commercial finance creates a unique structure not found in other countries.

Fifth, although joining NongHyup is not mandatory, all farmers are members. Because the target of government policy aligns with NongHyup membership, NongHyup can effectively implement policy projects on behalf of the government. This effectiveness is based on the historical context in which the government, considering NongHyup part of its economic development strategy, led the establishment of the cooperative.

History[7]

Background of Establishment

In 1945, after Korea gained independence from Japanese colonization, developing agriculture became the most urgent priority, and agricultural cooperatives were considered essential for this goal. Following liberation, Korea was divided into North and South and faced low income, poverty, high inflation, political instability, and war. Food shortages became the most severe issue, and the market did not function effectively. Rural areas, which made up 70% of the population, remained trapped in poverty and exploitative lending practices. Agricultural policy aimed to increase production for food self-sufficiency, stabilize markets through supply and demand management, reduce rural poverty, and stabilize rural society. NongHyup was expected to contribute to achieving these objectives.

Establishment and Growth[8]

The Ministry of Agriculture and Forestry introduced a multipurpose cooperative model for agricultural cooperatives in 1948, which conducted both credit and economic activities, similar to the German Raiffeisen cooperatives. However, the Ministry of Finance opposed combining credit operations with high-risk economic activities. Conflicting views between ministries and the impact of the war delayed legislation. After 10 years of discussion, the Agricultural Cooperatives and the Agricultural Bank were established separately in 1958, in line with the Ministry of Finance's position.

The division of labor structure, which separated economic and credit businesses, aimed to enable two specialized institutions to support agricultural development through cooperation and efficiency. However, this outcome was not achieved. Agricultural cooperatives, lacking sufficient funds, were unable to operate effectively, and the Agricultural Bank, concerned about credit risks, did not provide loans to

7 Kim, 2013; Park, 2016.

8 NACF, various years.

the cooperatives. In 1961, the government merged the two institutions to form a multipurpose cooperative responsible for both economic and credit activities.

At the time of NongHyup's establishment, the organization was envisioned as a typical agricultural cooperative model that adhered to cooperative principles. However, after its establishment, the government prioritized NongHyup's role as an agent for executing government policy. In 1962, the government enacted the Temporary Measures Law, which changed the selection process for cooperative heads and the chairman of the National Federation to an appointment system, thereby increasing government control over NongHyup.

At its inception, NongHyup established a three-tier organizational system: Village Cooperatives (village-level primary coops), City/County Cooperatives (regional federations), and the National Federation (national federation). However, the village cooperatives were too small to conduct business effectively. While City/County cooperatives operated in rural areas, the distance made communication with members difficult. To become a cooperative focused on members, revitalizing primary cooperatives was necessary. NongHyup organized two merger movements for village cooperatives from 1964 to 1972, successfully integrating village cooperatives in each Eup and Myeon into a single primary cooperative. The number of village cooperatives decreased from 21,518 at the end of 1962 to 1,549 primary cooperatives by the end of 1973.

After the establishment of the Eup/Myeon unit cooperative system, primary cooperatives were able to open offices and stores, hire employees, and conduct business activities. They managed agricultural materials such as fertilizer and pesticides provided by the government, sold members' agricultural products on consignment, and operated chain stores for daily necessities. Mutual finance, introduced as a pilot project in 1969, expanded to cooperatives nationwide in 1973. As primary cooperatives began full-scale operations, they grew rapidly, which revitalized the functions of the entire NongHyup. However, the growth of primary cooperatives led to functional overlap with City/County cooperatives, creating a need for structural change.

In 1981, the government abolished City/County cooperatives and assigned their responsibilities to primary cooperatives, reducing the organizational hierarchy to two tiers (Primary Cooperative, National Federation). The government also separated livestock cooperatives from NongHyup to form the Livestock Cooperatives (ChukHyup), citing the need for specialization in line with the development of commercial agriculture. The Livestock Cooperatives operated until the end of June 2000, when they were integrated into NongHyup along with the Ginseng Cooperatives as part of public sector institutional reform. As a result, all agricultural cooperatives were reorganized into a single NongHyup system.

In its early stages, NongHyup did not have suitable businesses, so the government assigned it tasks such as supplying agricultural materials, procuring goods required by the government, and providing agricultural funds. Because agricultural commercialization had not advanced, the share of agricultural product marketing was necessarily small. In the 1960s, the National Federation led most business activities, while City and County cooperatives mainly provided support. More than 80% of NongHyup's purchasing activities involved fertilizer supplied by the government, and approximately 70% of its marketing activities were conducted through wholesale market centers operated by the National Federation. Additionally, about 70% of the funds supplied by NongHyup originated from government finances and central bank loans.

This business structure, which was centered on the National Federation, changed in the 1970s to a form that developed gradually alongside primary cooperatives. The mutual finance of primary cooperatives notably increased the proportion of local funds through the rural savings movement and absorbed rural informal financial markets. <Table 2-12> presents the growth rate of NongHyup's business by period, showing that growth rates in the 1970s and 1980s were the highest. NongHyup's business maintained double-digit growth rates until the 1990s, but these rates shifted to single digits in the 2000s, indicating that NongHyup's business has entered a maturity phase (Park Sung-jae, 2016).

Although NongHyup's business appeared to grow, it could not resolve the structural

issue of relying on profits from the credit business while the economic business operated at a deficit. Cross-subsidization, in which credit business profits covered economic business losses, became established. This structure can reduce investment in the economic business and allow inefficiency to persist. When the Uruguay Round agricultural negotiations began in the late 1980s, the separation of the credit business and economic business (i.e., separation of banking and business) within the National Agricultural Cooperatives Federation became a significant issue. Faced with the threat of market opening, revitalizing economic business became a significant topic, and awareness increased regarding the importance of efficiency in the NongHyup business system. In this context, some argued that the multipurpose cooperative was the optimal model for the Korean small-scale farming structure. However, the prevailing view was that, for the National Federation conducting nationwide business, operational inefficiency posed a greater challenge than the structural issues of the small-scale farming economy. As a result, a business structure reform separating the credit business and economic business was implemented in 2012.

Table 2-12 Annual growth rate (%) of NongHyup businesses (in nominal prices)

Period	Marketing businesses			Financial businesses		
	Purchasing	Sale	Sub-total	Deposit	Loan	cooperative insurance
1965~1970	5.2	19.6	10.3	56.0	39.1	76.2
1970~1980	38.7	34.7	37.0	35.2	31.8	32.3
1980~1990	11.9	15.8	13.5	26.7	25.5	27.8
1990~2000	9.1	14.0	11.6	20.0	18.9	27.2
2000~2010	9.4	5.2	7.2	9.2	10.4	3.1

Note 1) The numbers are the total of primary cooperatives and the NACF.
2) Deposit and loan are year-end balance
Source: NACF, 1991, 2011; Park, 2016.

Contribution to Agricultural and Rural Development

NongHyup has taken a different approach from agricultural cooperatives in advanced Western countries, which developed independently. During the period when economic development was the highest priority, NongHyup functioned more as a state agency supporting agricultural development than as a cooperative solely for agricultural producers. In this context, NongHyup effectively carried out its responsibilities and contributed to the development of agriculture and rural areas.

In the rural financial market, where commercial financial institutions did not enter because of low profitability and high risk, NongHyup acted as a channel for funds. It collected savings in rural areas through mutual finance and directed funds raised in cities to the agricultural sector. By distributing government policy funds to producers, it encouraged agricultural investment and reduced reliance on high-interest private lending. NongHyup supported increased agricultural productivity by supplying inputs such as fertilizers, pesticides, and agricultural machinery in a timely manner. It also improved daily life for rural residents by operating chain stores that provided daily necessities.

Through the joint marketing of members' agricultural products, the organization aimed to raise farm-gate prices and increase income, while leading the modernization of agricultural distribution with government support. Local residents became consumers of NongHyup's businesses and users of its facilities, where they received education and training, accessed information, and communicated with one another. NongHyup became a regional center that played a central role in maintaining rural communities, and it is now expected to expand its role beyond agriculture by providing a range of services needed by the local community.

Current Organization of NongHyup

The organizational system of NongHyup <Figure 2-24> is a two-tier structure comprising primary cooperatives, whose members are farmers, and the National Federation, whose members are the primary cooperatives. Primary cooperatives are

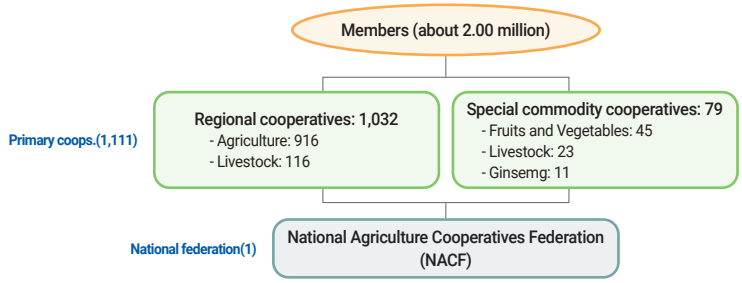
divided into regional cooperatives, which are established according to administrative units, and special commodity cooperatives, which are organized by specific items. Regional cooperatives are based on administrative districts, whereas special commodity cooperatives are limited to producers of the same commodity.

Regional cooperatives include regional agricultural cooperatives, which are established based on the Eup or Myeon administrative units, and regional livestock cooperatives, which are based on the Gun unit. The term "regional cooperative" indicates that NongHyups are present in all areas of the country where agricultural production occurs. Any farmer who resides or farms within the designated area may join a regional agricultural cooperative. For regional livestock cooperatives, any farm household that raises livestock above a specified scale, regardless of species, is eligible for membership. Regional agricultural cooperatives were first organized at the village level but were reorganized in the early 1970s to follow the principle of one primary cooperative per Eup or Myeon. This structure has remained, but the number of cooperatives has declined due to ongoing mergers in response to economic and social changes. In rural areas, a regional agricultural cooperative must have at least 1,000 members.

Unlike regional cooperatives, special commodity cooperatives select their own establishment areas. For commodities with many producers, several cooperatives may operate at the regional level. In contrast, commodities with few producers may have a single cooperative that operates nationwide. Special commodity cooperatives are classified into three types based on the items they handle: cooperatives focusing on horticultural crops such as vegetables and fruits are called special commodity agricultural cooperatives; those established by species for livestock are called special commodity livestock cooperatives; and cooperatives formed by ginseng producers are called ginseng cooperatives.

The total number of agricultural and livestock cooperatives in the country is 1,111, as of the end of 2025.

Figure 2-24 The organizational structure of NongHyup



Source: NACF, 2024.

The National Agricultural Cooperatives Federation (NACF) is a national business federation that integrates business and guidance functions, which differs slightly from Japan's JA. The central headquarters manages guidance projects and cooperative finance (mutual finance), while economic businesses and general financial businesses are assigned to holding companies that are fully funded by the Federation. The NongHyup Agribusiness Group includes 18 subsidiaries, and the NongHyup Financial Group includes 9 subsidiaries. The Mutual Finance Headquarters of the Federation acts as a central bank for the mutual finance of member cooperatives, managing activities such as depositing surplus funds, lending necessary funds, risk management and supervision, and operating the depositor protection fund.

The Federation operates regional headquarters in 16 provincial units and maintains city and county branches in 158 city and county units, providing guidance to member cooperatives and maintaining liaison with the Federation. Additionally, 10 facilities, such as a newspaper company, NongHyup University, and various training institutes, perform guidance and education functions.

As of the end of 2024, NongHyup had 2,046,229 members, more than twice the number of farm households nationwide (974,000 households) and exceeding the farm population of 2.003 million (see <Table 2-13> for a description of the primary cooperatives). This difference exists because a single farm household may hold memberships in multiple types of cooperatives, and several individuals from the

same household may become members. In addition, there are 20.12 million associate members who do not have voting rights but can use NongHyup services, a number 10 times greater than that of regular members.

Table 2-13 Description of primary cooperatives

Primary Coop.		2019			2024		
		Main	Branch	Total	Main	Branch	Total
Agriculture	Regional	923	2,698	3,621	916	2,768	3,684
	Special	45	209	254	45	226	271
	subtotal	968	2,907	3,875	961	2,994	3,955
Livestock	Regional	116	584	700	116	615	731
	Special	23	146	169	23	154	177
	subtotal	139	730	869	139	769	908
Ginseng		11	18	29	11	23	34
Total		1,118	3,655	4,773	1,111	3,786	4,897

Source: NACF, 2024.

Business and Activities

As a multipurpose cooperative managing both economic and credit operations, NongHyup conducts nearly all activities required for farming and rural life. NongHyup's business areas are divided into Education & Support Business, Economic Business, and Credit Business.

Education and Support Business includes activities such as education and training for members and employees, research and surveys, and public relations for agricultural policies. This is a nonprofit business.

Economic business includes the marketing of agricultural products, the purchase and supply of farming materials and daily necessities, and the storage, processing, and transportation of agricultural products.

Credit business refers to activities such as cooperative finance (mutual finance), banking, insurance, investment, and securities.

NongHyup operates through a division of roles in which member cooperatives manage production-related businesses, while the Federation's holding companies oversee distribution and consumption-area businesses. For example, agricultural and livestock cooperatives focus on marketing and distribution in producing areas, whereas subsidiaries of the Federation's Agribusiness Group manage distribution in consumption areas. In the purchasing business, the Agribusiness Group procures items at the Federation level and supplies them to members via member cooperatives.

The Credit Business has a slightly more complex structure.

Mutual Finance refers to cooperative finance that accepts deposits from members and provides loans to members. Each member cooperative operates as an independent legal entity, or cooperative bank, while the Mutual Finance Headquarters of the Federation serves as a central bank. Member cooperatives that cannot fully use funds raised through local deposits place surplus funds with the Mutual Finance Headquarters. Cooperatives that lack sufficient funds borrow from the Headquarters to support lending in their regions. The Mutual Finance Headquarters also establishes and manages a depositor protection fund to address situations in which a failed cooperative cannot repay deposits. In addition, it manages and supervises risk across the entire mutual finance system.

NH Bank, part of the NongHyup Financial Group, serves general citizens in both urban and rural areas and acts as a supply channel for government policy finance.

Other Financial Areas include life insurance and non-life insurance companies as subsidiaries, with member cooperatives acting as insurance agencies. In addition, NongHyup Financial Group has subsidiaries in asset management, investment securities, REITs management, and venture investment.

NongHyup performs Credit Guarantee Services for farmers, foresters, and fishermen as mandated by the government. Introduced in 1972, this system guarantees the credit of farmers, foresters, and fishermen who are unable to secure bank loans because they lack collateral assets, allowing them to obtain loans.

Although NongHyup conducts various businesses essential for its members and rural areas, profitability varies significantly by business type. Generally, the economic

business operates at a deficit because costs exceed income. In contrast, the credit business generates profit, which offsets the economic business deficit and allows for member dividends and capital accumulation (see <Table 2-14> for a description of primary cooperative business).

Table 2-14 Description of primary cooperative business

Unit: 100 million KRW

Category			2019	2022	2024
Economic Operations	Sales		255,135	317,491	333,288
	Purchase		107,770	151,612	136,099
	Retail Store		98,004	123,347	129,260
	Processing		54,112	62,653	61,792
	others		13,853	15,627	17,011
	Subtotal		528,874	670,730	677,450
Credit Operations	Mutual deposits	Balance	3,373,241	4,108,769	4,552,677
		Average Balance	3,269,231	3,968,399	4,447,815
	Mutual loans	Balance	2,551,323	3,361,881	3,557,748
		Average Balance	2,498,708	3,260,497	3,487,032

Source: NACF, 2024.

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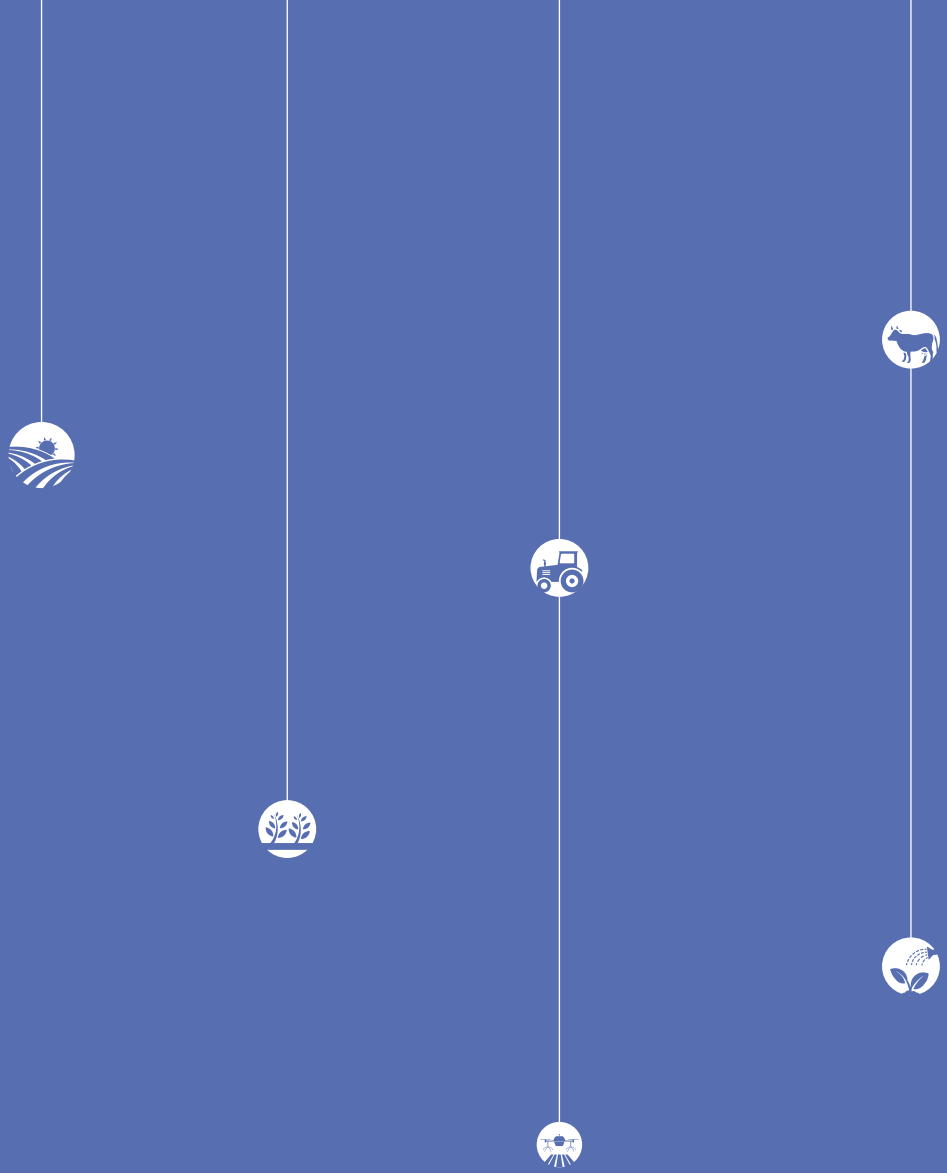


Agriculture in Korea 2025

CHAPTER

03

Agricultural Industry Trends by Item

1. Grains
2. Livestock
3. Horticulture and Specialty Crops
4. Forest

CHAPTER 03

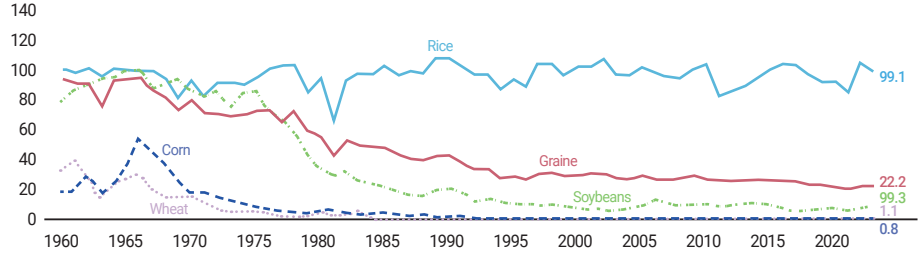
Agricultural Industry Trends by Item

1. Grains

Changes in Domestic and Global Conditions

Grain self-sufficiency in Korea has continued to decline as domestic grain production decreases and imports increase. Since the 1990s, the rice self-sufficiency rate has fluctuated but has remained close to 100%. However, because of a long-standing policy bias toward rice, most major grains other than rice now rely heavily on imports, resulting in only a nominal level of self-sufficiency. The self-sufficiency rate for soybeans has recently dropped below 9%, while the rates for wheat and maize remain around 1% <Figure 3-1>.

Figure 3-1 Trends in grain self-sufficiency rates

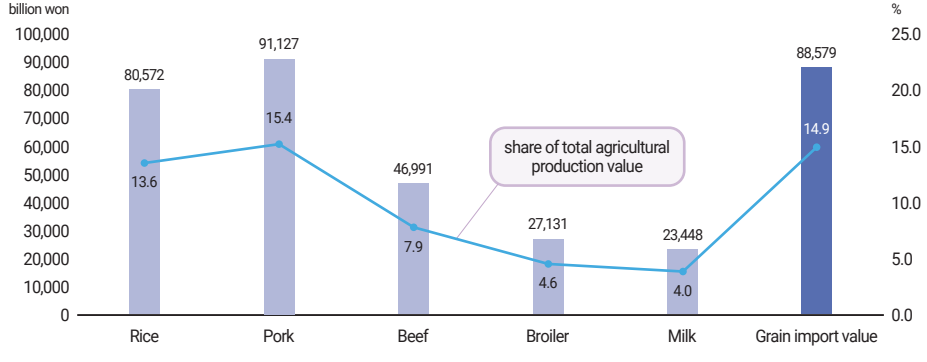


Note: Figures include feed use and are based on the marketing year.
Source: MAFRA, various years, *Grain Supply and Demand Statistics*.

The decline in domestic production and self-sufficiency is partly due to market liberalization, changes in domestic consumption patterns, and widening domestic–international price gaps (Park et al., 2016). In recent years, annual imports of wheat, maize, and soybeans have remained at approximately 18 million tons, with an import value of KRW 8.5 trillion in 2023. This value exceeds the production value of rice and represents about 15% of total agricultural output.

As dependence on imported staple grains has increased, Korea's food supply is now highly vulnerable to fluctuations in the global market and geopolitical developments. Uncertainty in the international grain market continues to grow, raising concerns about food security. Grain exports are concentrated in a few major exporting countries, so international prices and availability are strongly affected by changes in supply and demand in these countries. This situation affects Korea's ability to secure raw grains and causes volatility in the prices of related processed foods and livestock feed. Climate change has further increased international price volatility by causing poor harvests in major producing countries. In addition, global supply chain disruptions caused by the COVID-19 pandemic, the Russia–Ukraine war, and U.S.–China tensions have increased food security risks worldwide, resulting in more export restrictions and food protectionism <Figure 3-2>.

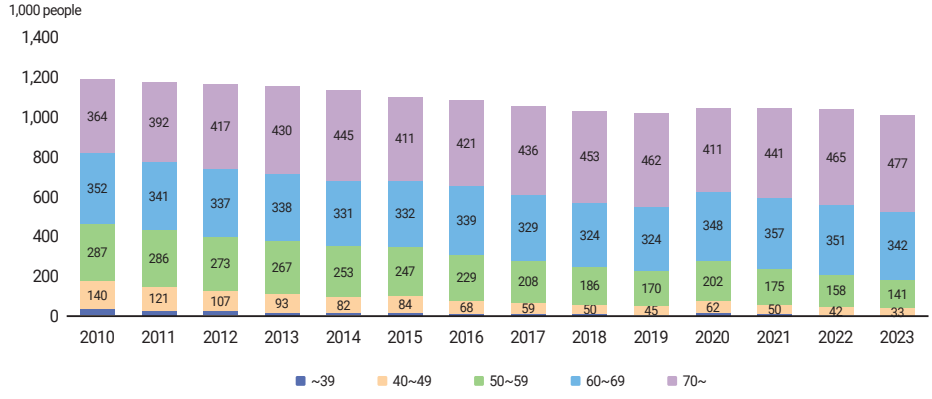
Figure 3-2 Agricultural production value and grain import value



Source: MAFRA, *Major Agricultural Statistics;* Korea Customs Service, *Trade Statistics.*

Domestically, the agricultural population is aging, with the average age of farmers now over 65, thereby delaying generational turnover in the agricultural workforce. In 2023, individuals aged 60–69 made up 34.2% of all farm households, while those aged 70 or older comprised 47.8%. Thus, more than 80% of farmers are over 60. In comparison, only 0.5% of farmers were aged 39 or younger. Older farmers often choose rice cultivation because it is relatively easy to produce. This preference contributes to a persistent oversupply of rice and limits the expansion of production for other key grains, such as soybeans, wheat, and maize, which increases reliance on imports <Figure 3-3>.

Figure 3-3 Number of farm households by age of farm operator



Source: MODS, various years, *Census of Agriculture, Forestry and Fisheries.*

Supply and Demand Trends

Rice

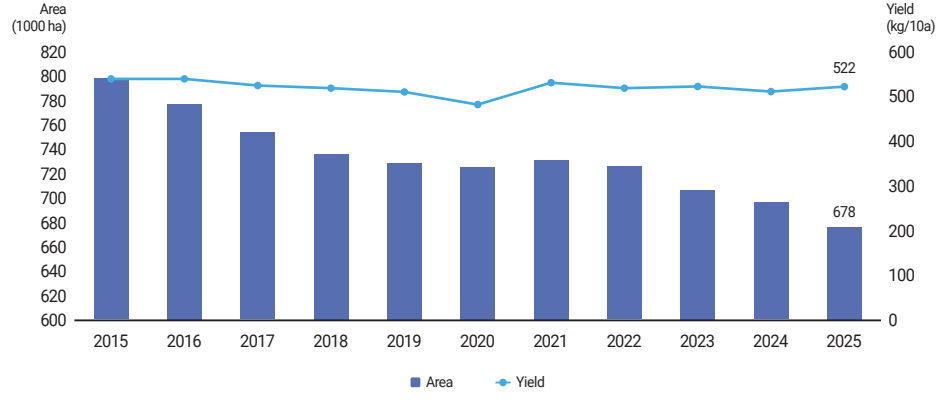
In 2025, rice production is estimated at 3.54 million tons, reflecting an average annual decline of 2.0% since 2015 due to reductions in both harvested area and yields, largely driven by unfavorable weather conditions. The area under paddy rice cultivation decreased at an average annual rate of 1.6% from 2015 to 2025, mainly

because of farmland conversion and government policies intended to maintain an appropriate level of rice production. Although the cultivated area has decreased, rice oversupply has continued, as the decline in consumption has been even greater.

To address the structural oversupply of rice, the government implemented the Paddy Land Diversification Support Program from 2018 to 2020 and has operated the Strategic Crops Direct Payment Scheme since 2023. During this period, rice yields declined by an average of 0.4%, reflecting the effects of changing weather conditions and policy efforts to improve quality by discouraging the cultivation of high-yield varieties.

In 2023, there were 514,000 rice-farming households, representing 51.4% of all farm households. The proportion of rice-farming households among total farm households was 77.9% in 2000, but has steadily declined since then. The average paddy rice area per farm household increased gradually from 0.99 ha in 2000 to 1.38 ha in 2019, which shows that farm sizes remain very small <Figure 3-4>.

Figure 3-4 Trends in rice cultivation area and yield per unit area

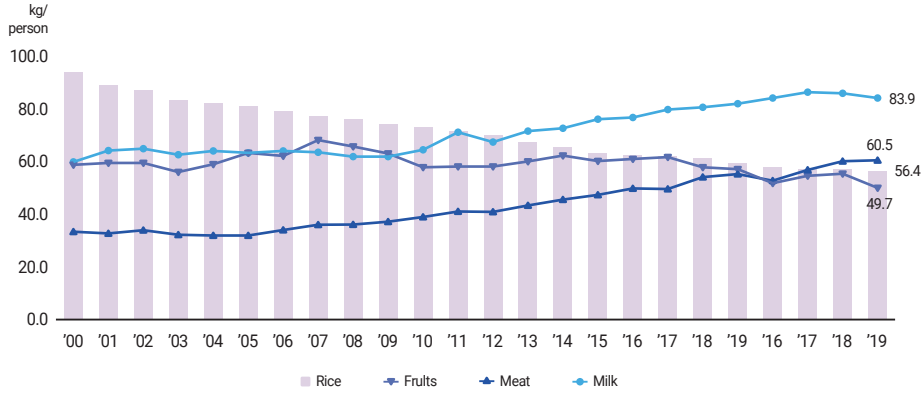


Source: MODS, various years, *Crop Production Survey.*

Per capita rice consumption has consistently declined because of increased consumption of substitute foods and changes in dietary patterns. Between 2000 and

2023, the average annual decline in per capita rice consumption was 2.2%, similar to the 2.3% rate observed in the 1990s. Annual per capita rice consumption decreased from 93.6 kg in 2000 to 56.3 kg in 2023. In contrast, consumption of livestock products increased. Per capita meat consumption rose from 32.9 kg in 2000 to 60.5 kg in 2023, with an average annual growth rate of 2.7%. Per capita milk consumption also increased by an average of 1.5% over the same period <Figure 3-5>.

Figure 3-5 Trends in consumption of major agricultural and livestock products



Source: MAFRA, various years, *Major Agricultural Statistics.*

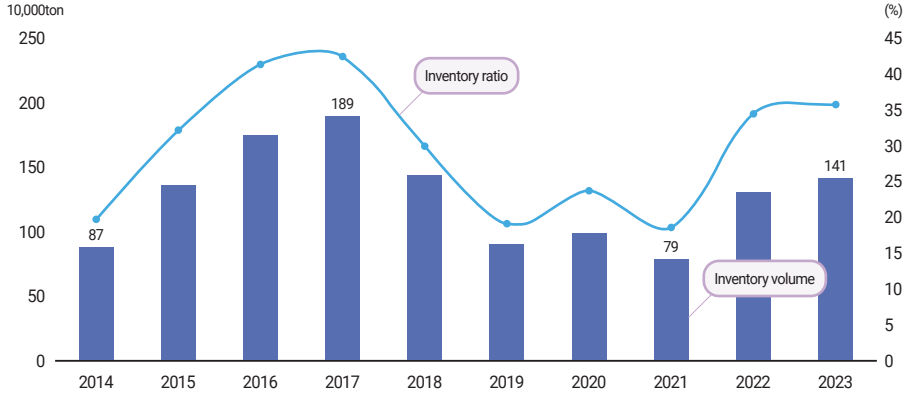
As diets have diversified to include a wider range of food groups and livestock products, per capita rice consumption in Korea has declined, leading to a steady decrease in food-use rice consumption for direct human consumption from 4.425 million tons in the 2000 marketing year to 2.896 million tons in the 2023 marketing year. Given the ongoing decline in per capita rice consumption, food-use rice demand is also expected to continue falling. At the same time, changes in dietary habits and government policies promoting the processing industry have increased demand for rice for processing. In the 2023 marketing year, rice consumption for processing reached 652,000 tons, a significant increase from 175,000 tons in 2000. When including rice for processing, alcohol production, and aid to North Korea, total

annual rice demand declined from 5.114 million tons in the 2000 marketing year to 3.952 million tons in the 2023 marketing year.

Rice ending stocks have varied over time due to harvest conditions and government policies. In the early to mid-2000s, rice ending stocks averaged approximately 800,000 tons and remained stable. Two consecutive bumper crops in the 2008 and 2009 crop years increased ending stocks in the 2010 marketing year to 1.509 million tons. Poor harvests in the early 2010s then reduced rice ending stocks to about 800,000 tons, which is the long-term average. Afterward, continued abundant harvests, with yields averaging more than 520 kg per 10 a, gradually increased government stocks. Repeated market intervention and stockholding caused ending stocks in the 2014–2017 marketing years to rise to 1.89 million tons.

Since then, government policies targeting stock reduction, including increased use of rice for feed and processing, have contributed to lower stocks. In the 2021 marketing year, which had a poor harvest, ending stocks declined to approximately 790,000 tons. Rice yields then recovered, and production increased, leading to a rise in ending stocks to 1.41 million tons in the 2023 marketing year <Figure 3-6>.

Figure 3-6 Trends in rice ending stocks and stock-to-use ratios

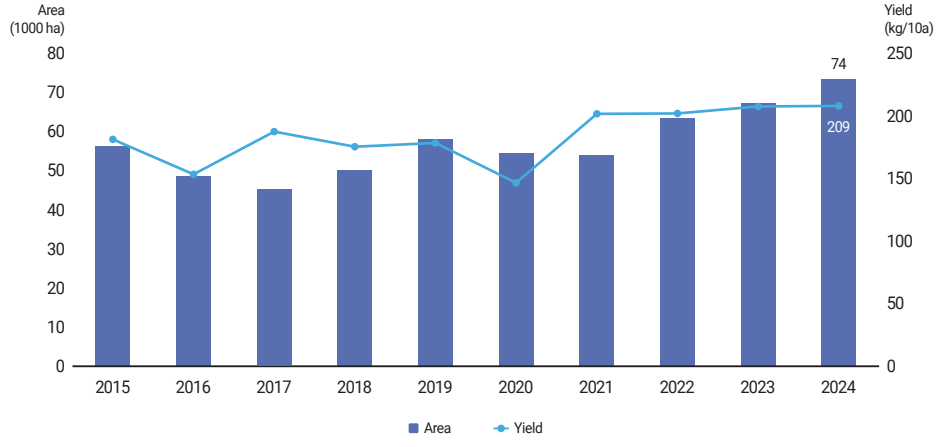


Note: Based on marketing year.
Source: MAFRA, various years, *Grain Supply and Demand Statistics*.

Soybeans

Over the past 10 years (2015–2024), soybean production increased at an average annual rate of 4.6%, driven by growth in both cultivated area and yield. The area under soybean cultivation grew at an average annual rate of 3.0% during this period, supported by the Paddy Land Diversification Support Program (2018–2020) and the introduction of the Strategic Crops Direct Payment Scheme in 2023. Soybean yields increased by an average of 1.5% per year, reflecting greater use of high-yielding varieties and the expansion of paddy-based soybean cultivation. In 2024, soybean production reached 155,000 tons, representing a 9.5% increase from the previous year <Figure 3-7>.

Figure 3-7 Trends in soybean area and yield



Source: MODS, various years, *Crop Production Survey.*

Annual soybean demand during the 2015–2023 marketing years was approximately 1.4 million tons. Of this total, about 1 million tons were used for feed, 300,000 tons for processing, and 100,000 tons for food. Feed-use and processing-use soybeans relied almost entirely on imports, while most domestically produced soybeans were used for food, with only a small amount used for processing. In recent years, increased

consumer preference for domestic soybeans and government support to encourage appropriate rice production and increase soybean self-sufficiency have contributed to a rise in domestic soybean production.

From 2018 to 2022, edible oil represented 56% of total soybean use, followed by tofu and related products at approximately 21%, and non-food uses at up to 15%. Imported soybeans made up nearly 100% of the soybeans used for edible oil and non-food purposes, while domestic soybeans supplied only about 20% of the raw materials for tofu and related products.

Per capita annual soybean consumption has shown a gradual downward trend. While per capita consumption was around 8 kg about a decade ago, it has recently declined to approximately 6 kg <Table 3-1>.

Table 3-1 Trends in soybean supply and demand by year

Unit: Thousand tons, kg/person

Marketing Year	2000	2005	2010	2015	2020	2021	2022	2023(p)
Supply	1,781	1,493	1,448	1,603	1,519	1,540	1,555	1,508
Beginning Stocks	79	118	73	147	172	115	156	110
Production	116	139	139	139	105	81	111	130
Imports	1,586	1,236	1,236	1,317	1,242	1,343	1,288	1,268
Demand	1,694	1,420	1,381	1,474	1,404	1,383	1,445	1,400
Food/Processing	399	441	417	423	337	333	377	354
Feed	1,282	965	952	1,041	1,057	1,042	1,058	1,036
Seeds/Other	13	14	12	11	10	8	10	11
Ending Stocks	87	73	67	129	115	156	110	108
Per Capita Annual Consumption	8.5	9.3	8.3	8.2	6.5	6.4	7.3	6.9

Note: Based on marketing year.
Source: MAFRA, various years, *Grain Supply and Demand Statistics.*

Government-held soybean stocks have varied with policy measures and annual harvest conditions, but typically remained around 40,000 tons. Recently, as domestic

soybean production increased, the proportion of domestic soybeans in total stocks also rose. In 2024, government soybean stocks reached 80,000 tons, an increase from the previous year, reflecting higher government procurement due to expanded cultivation area and production <Table 3-2>.

Table 3-2 Trends in government soybean stocks

Unit: 10,000 tons

Category	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total	5.5	3.8	3.7	3.7	4.4	3.1	2.1	4.9	6.8	8.2
Imports	3.2	2.8	2.4	3.4	2.8	2.3	1.6	2.7	1.8	2.2
Domestic	2.4	1.0	1.3	0.3	1.7	0.8	0.5	2.2	4.9	6.0
Domestic Share	43.0	26.7	34.4	8.7	37.9	25.9	25.8	44.5	72.8	73.1

Source: KREI, 2025, *Agricultural Outlook 2025: Trends and Outlook for Food Crop Supply and Demand reproduced.*

Under the Uruguay Round (UR) negotiations, tariffs on soybeans were determined using the tariff equivalent (TE) of the domestic–international price differential, and market access (current market access, CMA) quotas have been in place since 1995. The CMA quota volume is 1.032 million tons, with 186,000 tons allocated for food and 846,000 tons for feed.

The CMA quota was determined using average import volumes from 1988 to 1990. The government may increase the quota depending on current supply and demand conditions. This approach aims to limit upward pressure on consumer prices, because soybean import prices directly influence the prices of processed products, such as tofu, and contribute to consumer price inflation. However, some critics argue that discretionary increases in market access volumes reduce the price competitiveness of domestic soybeans and weaken the domestic production base.

In recent years, soybean import volumes have remained relatively stable, influenced by tariff-rate quota (TRQ) plans and both domestic and international market conditions. In 2022, increased demand for whole soybeans caused a temporary rise

in imports, as soybean meal prices increased because of the Russia–Ukraine war. In 2024, imports of food-use soybeans declined to 270,000 tons, a 3.2% decrease from the previous year's 280,000 tons, reflecting the ongoing annual reduction in planned TRQ volumes <Table 3-3>.

Table 3-3 Trends in food-use soybean imports

Unit: 10,000 tons

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
29	28	25	24	28	28	28	32	28	27

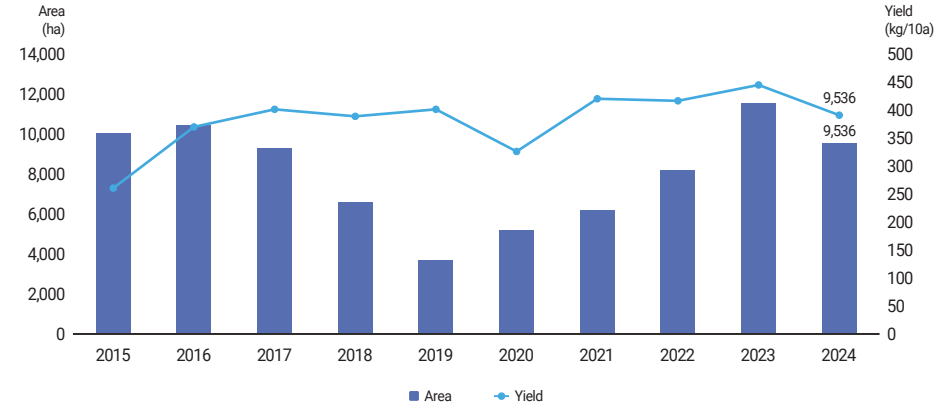
Source: KREI, 2025, *Agricultural Outlook 2025: Trends and Outlook for Food Crop Supply and Demand reproduced.*

Wheat

The Korea Wheat Revival Movement Headquarters was established in 1991 to promote and protect the domestic wheat industry. Domestic wheat production expanded as a policy response to the global grain and food crisis caused by the 2007 agflation episode. Wheat production has varied with changes in cultivated area and stock levels. The wheat cultivation area declined until the late 2010s, then increased following the enactment of the Wheat Industry Promotion Act and the introduction of the Strategic Crops Direct Payment Scheme. In 2024, the wheat cultivation area reached 9,536 ha, similar to the level 10 years earlier, while yields increased to 392 kg per 10 a, with an average annual growth rate of 4.6% since 2015. As a result, wheat production rose to 37,000 tons in 2024, representing an average annual increase of 3.9% over the same period.

Wheat has very limited domestic production and relies heavily on imports. Since 2000, the wheat self-sufficiency rate, including feed use, has remained below 1%. Among major grains, wheat was the first to be fully exposed to market liberalization. The government wheat procurement program ended in 1984, which caused a sharp decline in domestic production. The procurement scheme was reinstated in 2019, and recent procurement volumes have remained around 20,000 tons <Figure 3-8>.

Figure 3-8 Trends in wheat area and yield



Source: MODS, various years, *Crop Production Survey.*

Wheat imports were less than 3 million tons in the 1990s but increased in the 2000s. In 2012, imports of feed wheat alone reached 3 million tons, and total imports exceeded 5 million tons. In 2024, wheat imports reached 2.73 million tons, representing a 16.5% increase from the previous year, when higher international prices caused a 9.2% decline in annual import volume. Korea's major wheat suppliers are the United States, Australia, and Canada, with the United States and Australia providing a particularly high share of wheat for milling.

Total wheat demand increased from 3.279 million tons in 2000 to 4.519 million tons in 2023. In 2023, food and processing use accounted for 2.556 million tons, while domestic wheat production met only about 2.0% of total demand. All wheat used for feed is imported, and in 2023, feed use represented 42.6% of total wheat demand <Table 3-4>.

Table 3-4 Trends in wheat supply and demand by year

Unit: Thousand tons, kg/person

Marketing Year	2000	2005	2010	2015	2020	2021	2022	2023(p)
Supply	3,740	3,878	4,816	4,102	3,811	4,795	5,397	5,069
Beginning Stocks	472	464	458	444	455	599	797	744

Marketing Year	2000	2005	2010	2015	2020	2021	2022	2023(p)
Production	2	8	39	27	17	26	35	52
Imports	3,266	3,406	4,319	3,631	3,339	4,170	4,565	4,273
Demand	3,279	3,378	4,386	3,647	3,284	3,998	4,653	4,519
Food/Processing	2,243	2,039	2,139	2,128	2,085	2,476	2,539	2,556
Feed	1,016	1,257	2,124	1,495	1,186	1,491	2,081	1,923
Seeds/Other	20	133	123	24	13	31	34	39
Ending Stocks	461	500	430	455	527	797	744	551
Per Capita Annual Consumption	35.9	33.2	32.1	32.2	31.2	36.9	38.0	38.3

Note: Based on marketing year.
Source: MAFRA, various years, *Grain Supply and Demand Statistics.*

Grain Policies

Policies to Strengthen the Production Base

In 1999, amendments to the Framework Act on Agriculture, Rural Community and Food Industry introduced quantitative targets for food self-sufficiency. Since 2013, based on this Act, the government has set food self-sufficiency targets every five years and announced related medium- to long-term implementation plans. These targets cover food and grain self-sufficiency, caloric self-sufficiency, and specific goals for meat, root and tuber crops, vegetables, and fruits. Recently, the government revised these targets downward. For example, the 2020 food self-sufficiency target of 60.0% was reduced to 55.5% for 2027. Although the overall achievement rate for food self-sufficiency targets has remained relatively high at about 80%, performance for wheat and maize has been notably poor.

Production adjustment programs, which are key policy instruments for stabilizing rice supply and prices and promoting the diversification of paddy land into non-rice crops, have been implemented three times. However, these programs did not meet their initial objectives of reducing paddy rice area or providing sufficient incentives for farmers to switch to alternative crops. Increased production of certain substitute crops also resulted in price declines (Kim et al., 2021). Frequent poor harvests caused

by unfavorable weather further reduced the consistency of these programs, ultimately preventing them from achieving the intended goal of increasing self-sufficiency for non-rice crops grown on paddy fields.

To address the limitations of previous temporary Paddy Land Diversification Support Programs and to improve food self-sufficiency, manage grain supply and demand, and increase the use of paddy land, the government introduced and legislated the Strategic Crops Direct Payment Scheme in 2023 (Seung et al., 2024). Since the implementation of this scheme, the cultivated areas of wheat and soybeans have shown an upward trend.

Public Stockholding Scheme

Following grain policy reforms in 2004, the government has operated public stockholding schemes for rice, wheat, and soybeans. These programs are implemented under the Grain Management Act and the Framework Act on Agriculture, Rural Community, and Food Industry.

Because wheat and soybeans depend heavily on imports to meet most domestic demand, their self-sufficiency rates remain very low. Uncertainty in the global grain market is increasing, and food protectionism is spreading as major exporting countries impose more export restrictions. Additionally, various risk factors can reduce the stability of agri-food supply chains, including geopolitical tensions such as international conflicts, the spread of protectionism, pandemic shocks such as COVID-19, changes in agricultural production technologies and food demand, fluctuations in international prices, and trade-related regulations (Kim et al., 2024).

In a food security crisis, such as a sharp decline in grain imports, domestic public stocks of wheat and soybeans would not be sufficient to respond effectively. For example, annual food-use demand for wheat is approximately 1 million tons, while public wheat stocks are only about 10,000 tons, or roughly 1% of food-use demand. This demonstrates a strong reliance on imports to meet most domestic demand and suggests that managing a sudden import disruption or export ban using only domestic public stocks would be extremely difficult <Table 3-5>.

Table 3-5 Public grain stocks as a share of food-use demand

Unit: Thousand tons, %

Marketing Year	rice			Soybeans			Wheat		
	Food-use Demand	Stock Volume	Stock-to-Demand Ratio	Food-use Demand	Stock Volume	Stock-to-Demand Ratio	Food-use Demand	Stock Volume	Stock-to-Demand Ratio
2019	3,070	340	11.1	88	17	19.3	1,074	10	0.9
2020	2,991	359	12.0	98	1	1.0	1,076	1	0.1
2021	2,940	322	11.0	88	2	2.3	1,091	8	0.7
2022	2,918	341	11.7	87	19	21.8	1,135	17	1.5
2023	2,896	440	15.2	98	33	33.7	1,113	19	1.7

Source: MAFRA, various years, *Grain Supply and Demand Statistics, various years.*

Policies to Enhance Import Stability

Following the agflation episode in the late 2000s, the government designated the Korea Agro-Fisheries and Food Trade Corporation (aT) as the lead agency to secure stable overseas grain supplies and launched a national grain procurement system based on public–private consortia. However, the initiative ended because of difficulties in securing grain elevator facilities in exporting countries.

To establish a more stable overseas supply chain, the government enacted the Act on Overseas Agriculture and Forest Resources Development and Cooperation in 2012. Additionally, under the Framework Act on Agriculture, Rural Community and Food Industry and the Korea Rural Community Corporation and Farmland Management Fund Act, the government has supported private companies' overseas agricultural ventures and related policy initiatives. The Overseas Agricultural Development Program was introduced to produce major grains, such as soybeans, wheat, and maize, which are heavily imported to meet domestic demand, by developing overseas farms and importing the products to Korea.

Production of grains and other agricultural products under the Overseas Agricultural Development Program has increased steadily. In 2009, the program's first year, overseas production was 25,000 tons; since 2020, annual production has reached

approximately 2 million tons. By the end of 2024, 225 companies had registered for overseas agricultural resource development. In 2024, 65 participating companies cultivated 371,000 hectares of farmland overseas, producing and distributing 2.6 million tons of agricultural products, including grains. Of this total, 378,000 tons were imported into Korea. Although the ratio of imports to total overseas production has increased compared with the program's early years, it has remained low at around 10%, except in 2021, indicating a limited contribution to overall grain imports.

Issues and Challenges

Korea's current food supply and demand is characterized by a persistent oversupply of rice and low self-sufficiency with increasing import dependence for major grains such as wheat, maize, and soybeans. Improving the stability of food crop supply and demand requires reallocating agricultural resources that are overly concentrated on rice. Stabilizing food supply and demand involves both reducing the oversupply of rice and increasing domestic production of key grains such as wheat, maize, and soybeans. The Strategic Crops Direct Payment Scheme, introduced in 2023, should be implemented consistently to reduce paddy rice area and expand the cultivation of alternative crops. Consistency and predictability in the operation of this scheme are essential so that farmers can make rational decisions based on stable expectations about future policy conditions.

However, policies that focus mainly on increasing production without adequate demand support may cause negative side effects. For domestic wheat, consumer demand has not matched the growth in supply. Therefore, policy support should aim to expand demand alongside the increased supply of wheat and soybeans following the introduction of the Strategic Crops Direct Payment Scheme. This requires a shift from traditional supply-centered policies to approaches that also address demand-side factors.

Although grain procurement and imports through the Overseas Agricultural Development Program have increased, their share of total grain imports remains

negligible, indicating a need for improvement. To expand the volume imported into Korea under normal conditions, more strategic overseas engagement and policy support are necessary. This includes developing products that meet domestic demand, stabilizing the operations of participating firms early, and strengthening connections with user companies. Lessons from the previous failure of the government-led national grain procurement system, which lost momentum after not achieving early results, highlight the importance of setting clear, measurable objectives and pursuing relevant initiatives consistently and over the long term.

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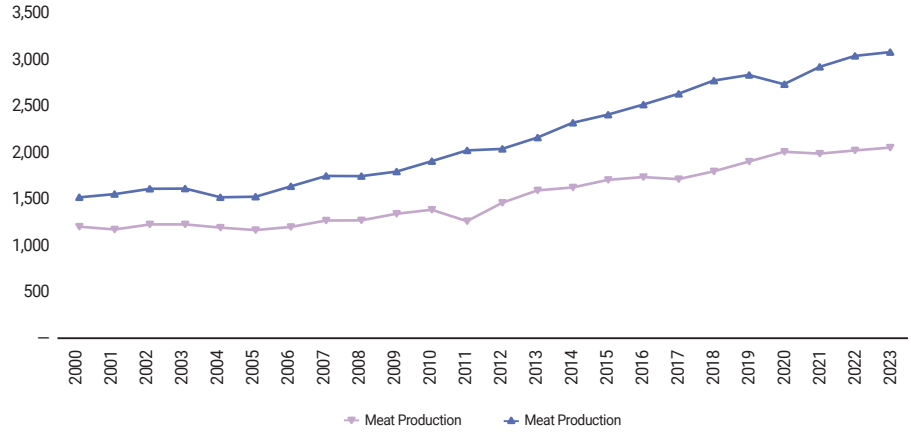
2. Livestock

Outline

Domestic livestock production has continued to expand despite various challenges faced by the agricultural industry, as rising national income and population growth have driven up demand for livestock products. Consequently, the share of livestock production within the agricultural sector has steadily increased. Meat consumption grew from 1.509 million tons in 2000 to 3.067 million tons in 2023, recording an average annual increase of 3.1%. Over the same period, domestic meat production rose from 1.19 million tons to 2.045 million tons, growing at an average annual rate of 2.4%. As consumption increased at a faster pace than production, meat imports expanded, and the self-sufficiency rate declined from 78.8% to 66.7%. Although domestic meat production temporarily decreased in 2011 owing to the large-scale culling of cattle and pigs caused by the foot-and-mouth disease outbreak at the end of 2010, it has continued to increase amid growing consumption <Figure 3-9>.

Figure 3-9 Trends in Meat Consumption and Production

Unit: thousand tons



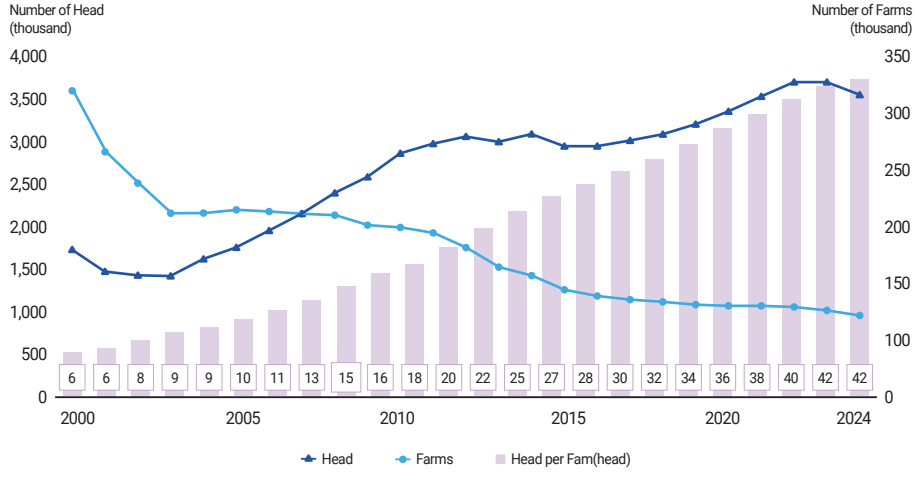
Source: National Agricultural Cooperative Federation, various years, *Livestock Product Prices and Supply.*

Beef

The number of Korean cattle (Hanwoo) declined to 1.423 million head in 2002 owing to the impacts of the 1998 foreign exchange crisis and tariff-based import regime for beef introduced in 2001. However, driven by rising demand for Hanwoo beef and higher market prices, the number of Hanwoo cattle recovered rapidly and surpassed 3 million head in 2012. After undergoing some adjustment from 2013 onward, the Hanwoo population began to rise again in 2017, reaching an all-time high of 3.695 million head in 2023, before slightly decreasing to 3.549 million head in 2024.

The number of Hanwoo farms decreased sharply from 310,000 households in 2000 to 84,000 households in 2024. Following the 1998 financial crisis and 2001 import liberalization, the number of farms raising fewer than 10 head of Hanwoo cattle dropped significantly. Recently, the decline of small-scale farms has accelerated owing to Free Trade Agreement (FTA)-related closure support programs. As herd size increased and the number of farms continued to fall, the average number of cattle raised per farm grew from 5.5 head in 2000 to 42.4 head in 2024 <Figure 3-10>.

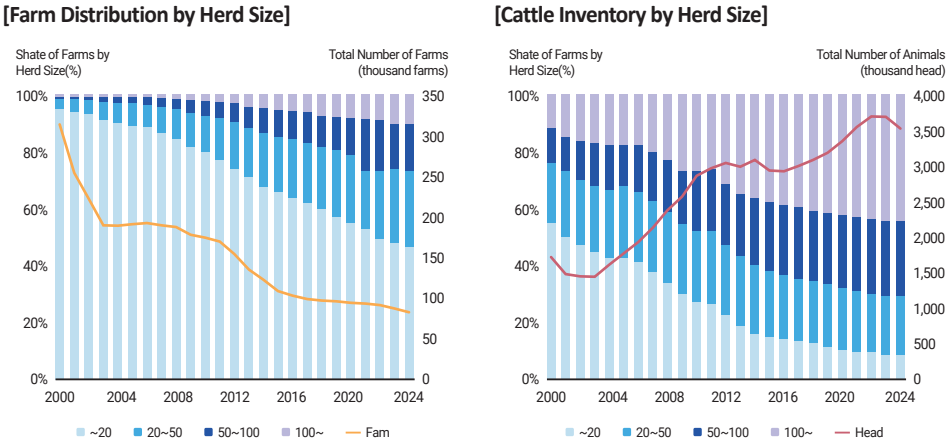
Figure 3-10 Number of Hanwoo Farms and Hanwoo Cattle Inventory



Source: MODS, various years, *Livestock Census*.

Hanwoo farms have continued to scale up over time. The number of farms raising fewer than 20 head has declined by an average of 8.1% per year since 2000, whereas farms raising 100 head or more have increased by an average of 9.1% annually. The share of farms raising 50 head or more rose steadily from 23.5% in 2000 to 47.4% in 2010 and further to 70.7% in 2024. As of 2024, farms raising at least 100 head account for 10.6% of all Hanwoo farms <Figure 3-11>.

Figure 3-11 Hanwoo Inventory by Farm Size



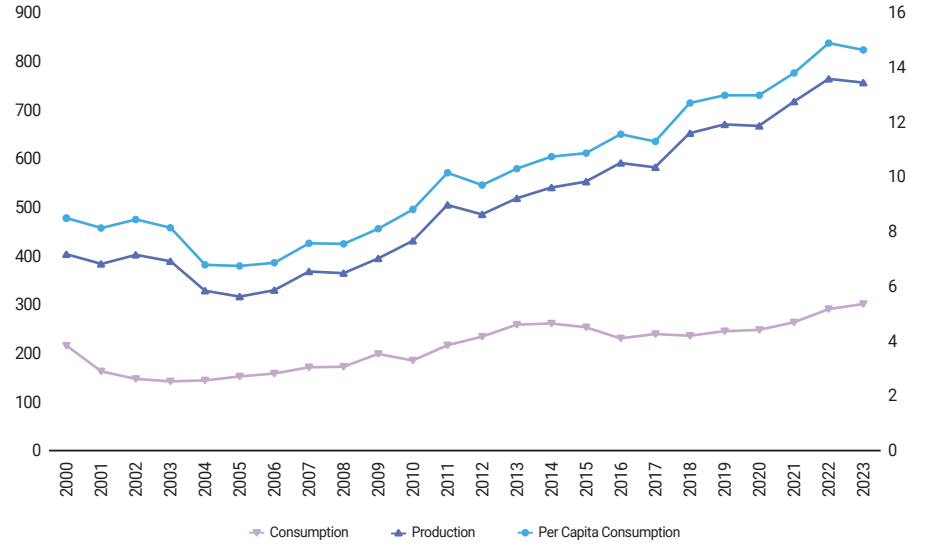
Note: Data are based on the Livestock Traceability System from 2014 onward.
Source: MODS, various years, *Livestock Trend Survey (quarterly averages).*

With rising national income, annual per capita beef consumption increased from 8.5 kg in 2000 to 14.7 kg in 2023. However, owing to the impact of the U.S. Bovine Spongiform Encephalopathy (BSE) outbreak, consumption fell to 6.7 kg in 2005 before recovering to 8.1 kg in 2009. The beef self-sufficiency rate, which had remained above 50% prior to 2000, declined to 42.3% in 2001 following the tariff-based import regime and further dropped to 36.3% in 2003. After 2004, beef imports from the U.S. decreased significantly owing to quarantine issues, whereas domestic beef production increased, bringing the self-sufficiency rate back up to 50.0% in 2009. However, as Hanwoo prices rose, beef imports expanded again, dropping the self-sufficiency rate

to 36.5% in 2019. As of 2023, it has recovered to 40.0%. Domestic beef production has continued to increase since its 2003 low, driven by growth in the cattle inventory. Although production temporarily declined in 2010 owing to a foot-and-mouth disease outbreak, beef consumption has steadily increased as the imported beef market expanded <Figure 3-12>.

Figure 3-12 Beef Production and Consumption

Unit: thousand tons, kg



Source: National Agricultural Cooperative Federation, various years, *Livestock Product Prices and Supply.*

After the Uruguay Round negotiations concluded in December 1993, beef imports were fully liberalized in 2001. The tariff applied to imported beef in 2001 was 41.6%, and it was reduced gradually each year until it reached 40% in 2004. However, following the implementation of the Korea–U.S. FTA in 2012 and the Korea–Australia FTA in 2014, tariffs imposed on major beef-exporting countries have been steadily declining. Under these FTAs, tariffs on U.S. and Australian beef are reduced evenly over a 15-year period <Table 3-6>. In 2024, Korea's beef imports amounted to

approximately 445,000 tons, of which U.S. beef accounted for 48.3% and Australian beef for 44.7%. Beef imported from New Zealand represented 3.1%.

Table 3-6 Beef Imports by Country (Inspection Standard)

Unit: boneless meat, tons

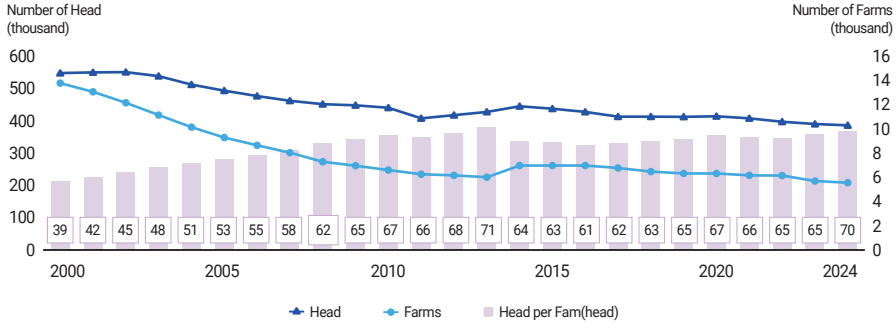
Year	United States	Australia	New Zealand	Canada	Mexico	Uruguay	Others	Total
2014	10,182	16,174	1,377	545	22	110	78	28,488
2015	163,361	193,731	21,672	6,101	1,377	3,098	746	390,086
2016	153,179	177,557	20,295	5,556	1,355	2,988	668	361,598
2017	168,366	150,095	17,670	4,490	1,417	1,805	457	344,300
2018	219,905	167,348	18,264	3,684	4,301	1,646	432	415,580
2019	237,720	163,160	12,760	5,672	6,192	743	379	426,626
2020	228,719	158,311	17,651	6,017	7,374	795	617	419,484
2021	254,837	160,137	17,629	11,429	5,681	2,254	834	452,801
2022	263,576	162,085	23,038	19,184	7,009	577	1,273	476,742
2023	229,740	187,940	18,469	12,446	3,534	1,104	681	453,914
2019	215,243	199,241	14,034	13,316	2,549	462	845	445,690

Source: Ministry of Food and Drug Safety, various years.

Milk

The number of dairy cattle decreased from 540,000 head in 2000 to around 380,000 head in 2024, whereas the number of dairy farms declined from 13,710 households in 2000 to 5,466 households in 2024. Because the number of farms decreased more rapidly than the cattle inventory, the average herd size per farm increased from approximately 39 head in 2000 to 71 head in 2013. The number of dairy farms continues to decline owing to the growing closure of small-scale operations, whereas the average herd size per farm shows an upward trend as the number of farms falls <Figure 3-13>.

Figure 3-13 Trends in Dairy Farm Numbers and Dairy Cattle Inventory

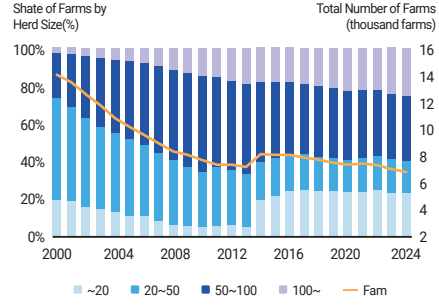


Source: MODS, various years, *Livestock Census*.

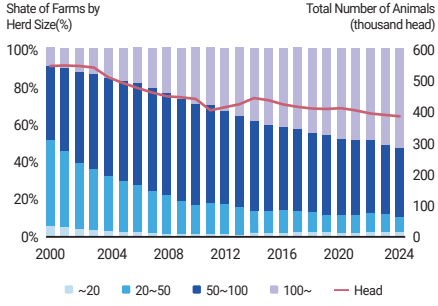
As small farms raising fewer than 50 head have increasingly exited the industry and larger farms with 100 head or more have expanded and specialized, the share of farms raising at least 50 dairy cattle rose from 26.3% in 2000 to 65.7% in 2010 <Figure 3-14>. As of 2024, this share has slightly decreased to 59.4%. In 2024, the distribution of dairy farms by herd size is as follows: farms with fewer than 20 head account for 22.8%; those with 20–50 head, 17.8%; those with 50–100 head, 24.1%, and those with 100 head or more, 25.4%.

Figure 3-14 Dairy Cattle Inventory by Farm Size

[Farm Distribution by Herd Size]



[Cattle Inventory by Herd Size]



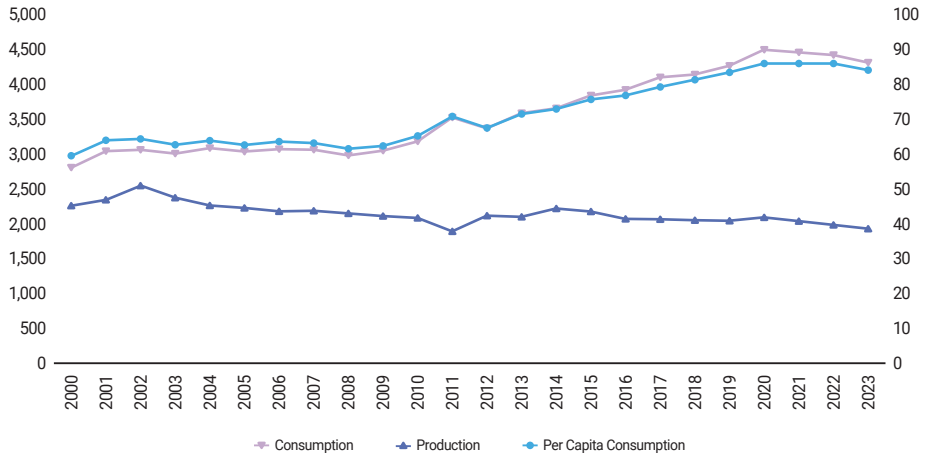
Note: Data are based on the Livestock Traceability System from 2017 onward.
Source: MODS, various years, *Livestock Trend Survey (quarterly averages)*.

Despite the decline in the number of dairy cattle, raw milk production increased from 2.798 million tons in 2000 to 3.06 million tons in 2002; milk yield per cow continued to rise. While production expanded, consumption remained stagnant. This raised the excess inventory problem of powdered milk in 2002. To reduce raw milk production, the government implemented the Surplus Milk Differential Pricing System in 2002, which was later replaced in 2023 by the Use-Based Raw Milk Differential Pricing System as part of recent reforms to the dairy policy framework. Raw milk production peaked at 4.49 million tons in 2020 and slightly declined to 4.308 million tons in 2023.

Annual per capita dairy product consumption increased from 59.2 kg in 2000 to 86.1 kg in 2021, before falling slightly to 83.9 kg in recent years <Figure 3-15>. Among dairy products, fluid milk consumption rose from 1.672 million tons in 2000 to 1.708 million tons in 2019, but has since decreased to 1.584 million tons in 2023. In contrast, the consumption of natural and processed cheese has grown significantly: from 44,000 tons in 2000 to 193,000 tons in 2023.

Figure 3-15 Milk Consumption and Domestic Production

Unit: thousand tons, kg



Source: MAFRA, various years; MODS, various years.

In 2024, dairy product imports amounted to approximately USD 1.49 billion, a significant increase from USD 110 million in 2000. In 2019, cheese accounted for the largest share of total dairy product imports at 43.8%. Skim and whole milk powder represent a relatively small portion of imports because quantities exceeding the tariff-rate quota are subject to high out-of-quota tariffs <Table 3-7>.

Table 3-7 Annual Dairy Product Import Values

Unit: USD thousands

Category	Total Imports	Infant Formula	Skim Milk Powder	Whole Milk Powder	Butter	Whey	Cheese
2000	115,819	3,135	4,939	1,307	1,999	12,748	70,640
2005	238,945	17,469	14,568	4,342	12,806	14,746	143,572
2010	517,893	36,022	24,345	4,410	24,401	118,425	258,750
2015	843,443	61,156	55,055	6,392	26,912	111,978	501,736
2020	1,226,863	83,175	49,116	21,060	88,924	169,925	629,008
2021	1,416,246	97,501	42,307	18,909	146,434	200,479	685,366
2022	1,712,047	90,051	57,032	33,478	202,202	253,318	792,750
2023	1,739,021	96,762	28,142	24,383	217,118	212,305	862,605
2024	1,486,202	83,538	31,571	29,631	202,405	190,008	650,229
Category	**Lactose**	**Fermented Milk**	**Milk Preparations**	**Ice Cream**	**Milk and Cream**	**Condensed Milk**	**Buttermilk**
2000	8,899	130	2,887	5,543	3,553	44	-
2005	9,759	396	5,559	9,573	5,724	361	67
2010	15,648	590	805	16,733	16,913	696	157
2015	23,404	2,738	3,342	27,092	22,803	140	700
2020	31,268	5,532	6,397	43,773	98,517	131	35
2021	32,778	12,509	6,930	48,112	124,640	147	131
2022	34,320	14,235	7,605	45,124	181,464	461	3
2023	37,322	12,812	10,101	46,447	190,169	850	8
2024	28,419	13,055	6,525	55,033	195,221	551	12

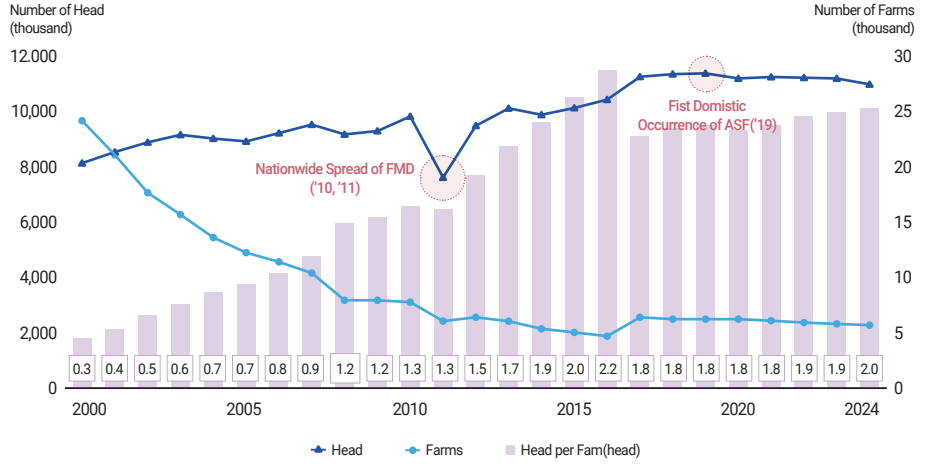
Source: Korea Dairy Committee, various years.

Pork

The number of pigs raised in Korea increased from 8.15 million head in 2000 to 11.02 million head in 2024. Although the pig population reached 9.82 million head in 2010, it declined to 7.58 million head in 2011 owing to the nationwide foot-and-mouth disease outbreak at the end of 2010. As the reduced number of pigs marketed in 2011 pushed up wholesale prices, the sow population expanded, and the total pig inventory surpassed 10 million head for the first time in 2013. Although a temporary adjustment occurred in 2014 owing to falling wholesale prices, the pig population continued to grow on the back of strong demand and favorable price conditions.

In contrast, the number of pig farms fell sharply from 24,058 households in 2000 to 5,610 households in 2024 <Figure 3-16>. The average herd size per farm increased significantly: from 300 head to 2,000 head over the same period.

Figure 3-16 Trends in the Number of Pig Farms and Pig Inventory

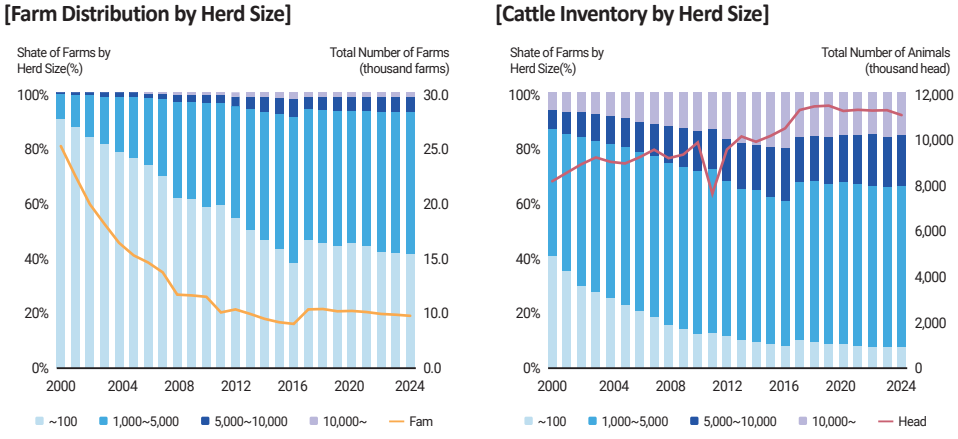


Source: MODS, various years, *Livestock Census*.

Pig farms have continued to scale up, with the share of farms raising more than 1,000 head steadily increasing. In 2024, the distribution of pig farms by herd size

was as follows: farms with fewer than 1,000 head accounted for 41.4%; those with 1,000–5,000 head, 51.5%; those with 5,000–10,000 head, 5.2%; and those with more than 10,000 head, 2.0%. The share of pigs raised on farms with at least 1,000 head has risen consistently: from 59.4% in 2000 to 87.4% in 2010, and further to 92.3% in 2024 <Figure 3-17>.

Figure 3-17 Pig Inventory by Farm Size



Note: Data are based on the Livestock Traceability System from 2017 onward.
Source: MODS, various years, *Livestock Trend Survey (quarterly averages).*

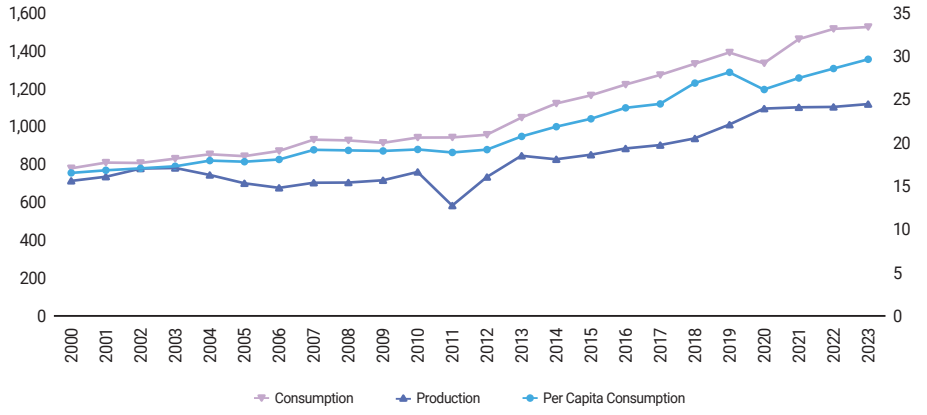
With rising national income, annual per capita pork consumption increased from 16.5 kg in 2000 to 29.6 kg in 2023 <Figure 3-18>. Over the same period, pork production also grew: from 714,000 tons to 1.112 million tons. However, domestic production has not kept pace with demand, leading to an increase in pork imports and a decline in the pork self-sufficiency rate from 91.6% in 2000 to 73.5% in 2023.

Under the Uruguay Round negotiations, Korea's pork import tariff was reduced from 33.4% in 1997 through annual phased cuts, reaching 25% in 2004. Following the Korea–Chile FTA, which took effect on April 1, 2004, tariffs on Chilean pork imports were scheduled to be phased out within 10 years. Under the Korea–U.S. FTA (effective in 2012), tariffs on U.S. pork were eliminated beginning in 2016. Under the Korea–EU

FTA (effective in 2011), tariffs on EU pork imports have been gradually abolished since 2020, and several pork products are now subject to zero tariffs.

Figure 3-18 Trends in Pork Production and Consumption

Unit: thousand tons, kg



Source: National Agricultural Cooperative Federation, various years, Livestock Product Prices and Supply Data.

Pork imports increased from 37,000 tons in 2000 to 452,000 tons in 2024. Most pork is imported from Europe and the U.S., and in 2024, U.S. pork accounted for 39.1% of total pork import volume <Table 3-8>.

Table 3-8 Pork Imports by Country

Unit: boneless meat, tons

Category	United States	Spain	Canada	Chile	Netherlands	Germany	Others	Total
2014	9,592	6,795	1,176	2,468	1,042	5,996	10,927	37,996
2015	130,313	44,318	16,519	26,562	16,047	58,106	67,872	359,737
2016	106,111	41,757	13,093	22,157	14,724	59,112	61,591	318,545
2017	135,128	35,196	14,706	21,779	22,829	79,930	59,668	369,236
2018	184,685	55,981	22,572	25,965	24,994	83,721	65,753	463,671
2019	173,753	56,724	25,305	24,882	19,901	77,999	42,783	421,347

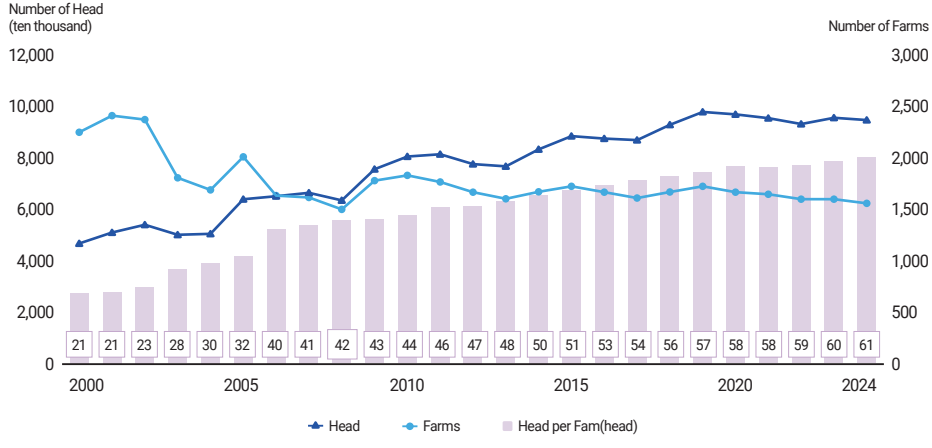
Category	United States	Spain	Canada	Chile	Netherlands	Germany	Others	Total
2020	128,686	35,121	21,684	22,743	13,411	52,314	36,511	310,470
2021	121,058	66,964	21,933	23,204	29,599	-	70,009	332,767
2022	125,292	122,847	36,398	28,379	48,280	-	81,185	442,381
2023	143,475	79,622	51,984	29,718	26,144	1,068	70,696	402,707
2024	176,722	63,212	53,216	36,039	29,343	29,114	64,263	451,909

Source: Ministry of Food and Drug Safety, various years.

Chicken meat

The number of broilers raised increased from 46.89 million birds in 2000 to 95.19 million birds in 2024. Although the broiler inventory temporarily declined during major avian influenza outbreaks, the overall trend has been consistently upward. Meanwhile, the number of broiler farms decreased from 2,259 in 2000 to 1,561 in 2019. As broiler inventories grew while the number of farms declined, the average number of broilers per farm rose from 21,000 birds to 61,000 birds <Figure 3-19>.

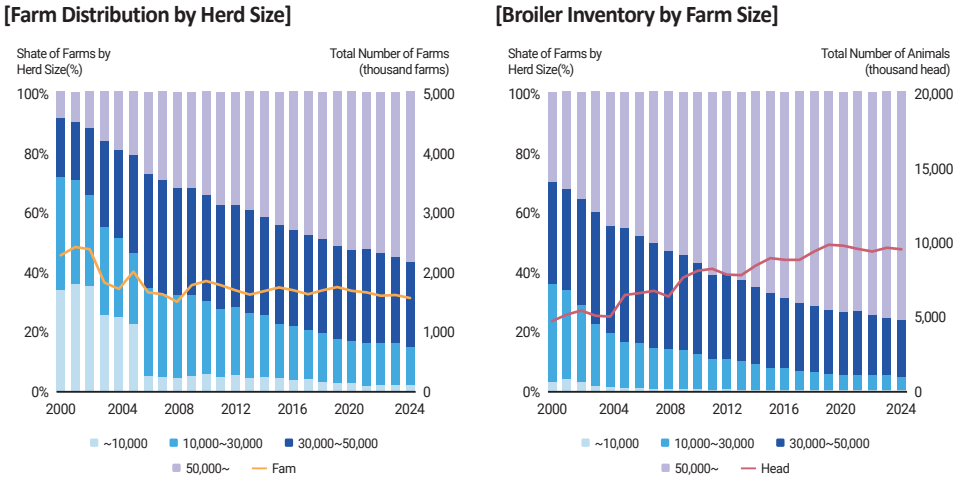
Figure 3-19 Trends in Broiler Farm Numbers and Broiler Inventory



Source: MODS, various years, *Livestock Census.*

In the broiler sector, the share of farms raising fewer than 10,000 birds decreased sharply from 34.0% to 2.2%, whereas farms raising more than 50,000 birds increased significantly from 8.8% to 56.5%. In terms of inventory share, farms with fewer than 10,000 birds declined from 2.8% to 0.2%, and farms raising 30,000 to 50,000 birds saw their share drop from 33.8% to 18.8%. Meanwhile, the share of broilers raised on farms with more than 50,000 birds expanded considerably from 29.8% to 76.4% <Figure 3-20>.

Figure 3-20 Broiler Inventory by Farm Size



Note: Data are based on the Livestock Traceability System from 2017 onward.
Source: MODS, various years, *Livestock Trend Survey (quarterly averages).*

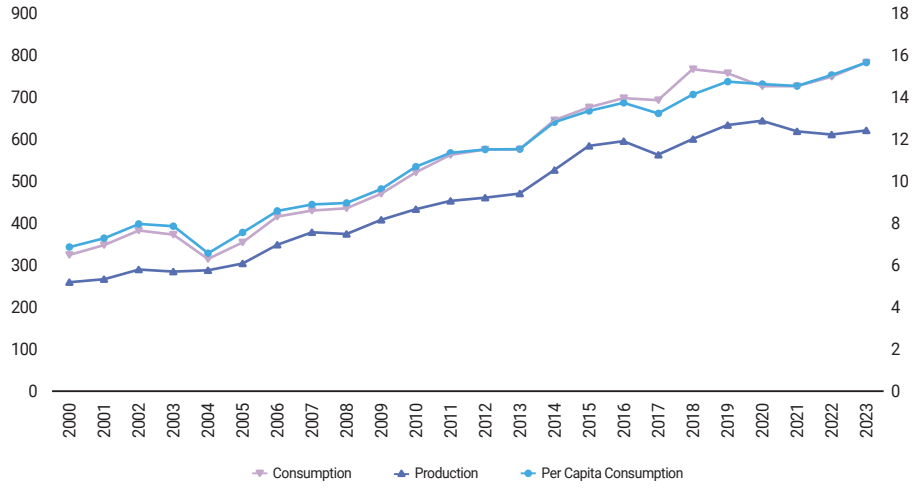
As the number of broilers increased, the number of slaughtered broilers also rose, from 390 million in 2000 to 1.07 billion in 2020, before declining slightly to around 1.02 billion in 2024. Owing to the sharp increase in slaughter volume, chicken meat production grew from 262,000 tons in 2000 to 647,000 tons in 2020, and currently stands at approximately 624,000 tons in 2024.

The broiler industry has pursued vertical integration aggressively. At present, more than 90% of chicken meat production is handled through integrated supply chains.

Annual per capita chicken meat consumption rose significantly from 6.9 kg in 2000 to 15.7 kg in 2023 <Figure 3-21>. Meanwhile, the chicken meat self-sufficiency rate, which increased from 79.9% in 2000 to 90.2% in 2004, has gradually declined since, reaching 79.1% in 2024.

Figure 3-21 Trends in Chicken Meat Production and Consumption

Unit: thousand tons, kg



Source: National Agricultural Cooperative Federation, various years, *Livestock Product Prices and Supply Data.*

Following the implementation of the Korea–EU FTA in 2011 and the Korea–U.S. FTA in 2012, tariff rates on imported frozen chicken began to decline. Tariffs on chicken imported from the EU and the U.S. continued to fall and were fully eliminated in 2020 and 2021, respectively. In 2015, chicken imports from the U.S. were restricted owing to an avian influenza outbreak in the U.S., whereas domestic demand for deboned chicken legs (used for dak-galbi) increased. Consequently, imports of Brazilian chicken rose sharply. In 2024, Korea imported approximately 250,000 tons of chicken, of which Brazilian chicken accounted for 71.7% <Table 3-9>.

Table 3-9 Chicken Imports by Country

Unit: tons, %

Country	Brazil	Thailand	China	Denmark	United States	Others
2014	52,377	14,406	2,384	6,483	64,937	814
2015	80,134	15,469	3,089	7,208	10,752	1,948
2016	93,553	15,371	3,468	6,357	7,110	2,478
2017	86,289	22,543	4,261	5,349	12,368	1,063
2018	108,485	28,345	6,174	5,465	10,041	4,276
2019	116,996	38,750	6,768	7,654	3,007	4,623
2020	114,852	33,811	5,441	8,248	3,278	4,658
2021	130,364	35,735	5,076	1,019	2,561	1,262
2022	158,806	42,158	6,239	1,654	5,068	1,773
2023	192,308	53,806	6,835	4,130	3,925	5,501
2024	178,957	52,571	7,641	4,166	2,552	3,866

Source: Korea Agro-Fisheries & Food Trade Corporation, various years.

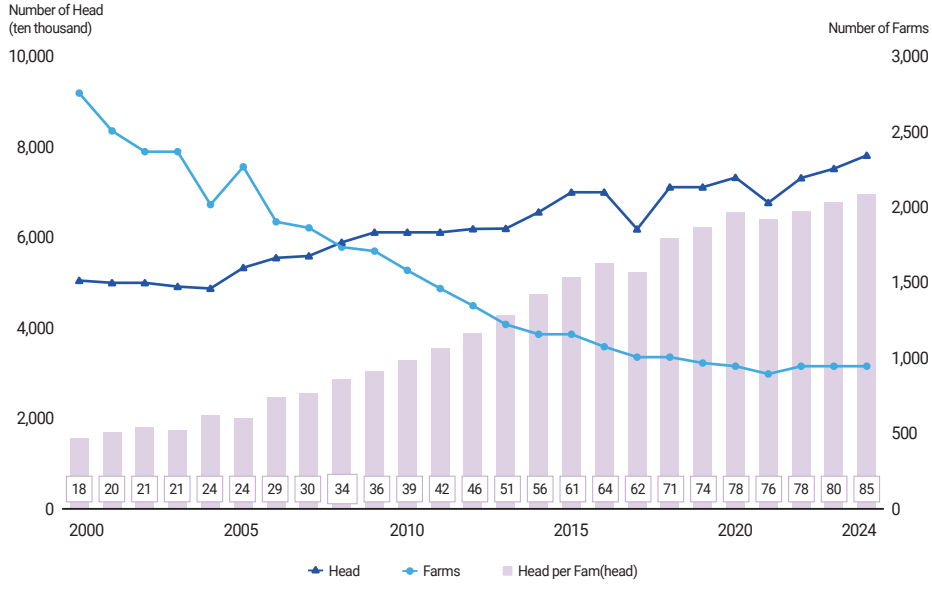
Korea's chicken meat exports increased from 15,000 tons in 2000 to 601,000 tons in 2024. Although exports have grown steadily since major export efforts began in 2002, the industry experienced setbacks in years with avian influenza outbreaks. After falling slightly from 231,000 tons in 2020 to 200,000 tons in 2021, exports surged to 650,000 tons in 2022. As of 2024, export volume stands at approximately 610,000 tons. In 2024, whole chicken represented the largest share of exports at 61.1%, followed by frozen chicken cuts (other than legs) at 20.4%, and frozen chicken legs at 7.4%.

Eggs

The number of layer hens, based on December counts, increased from 50.54 million birds in 2000 to 78.45 million birds in 2024. Although the layer inventory temporarily declined in years when avian influenza outbreaks occurred—specifically in 2003,

2006, 2008, 2010, 2014, 2017, and 2021—it has maintained an overall upward trend. Meanwhile, the number of layer farms fell sharply from 2,772 in 2000 to 952 in 2024. As the number of birds increased while the number of farms decreased, the average number of layers raised per farm rose from 18,000 to 82,000 birds <Figure 3-22>.

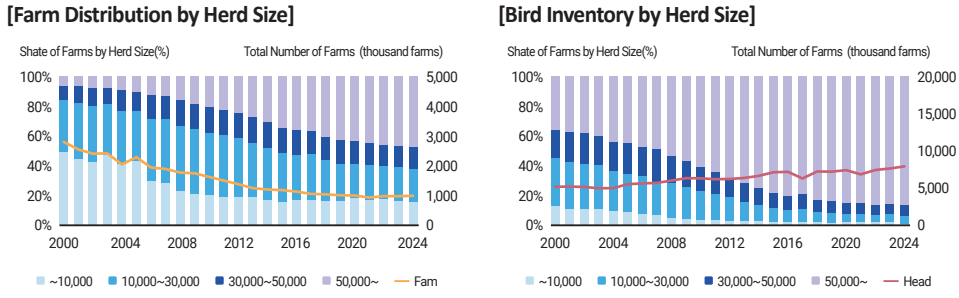
Figure 3-22 Trends in Layer Farm Numbers and Layer Inventory



Source: MODS, various years, *Livestock Census*.

When examining layer farms by population scale, the share of farms raising fewer than 10,000 birds declined from 49.0% in 2000 to 14.9% in 2024. In contrast, the proportion of large farms raising more than 50,000 birds surged from 6.0% to 47.7% over the same period. In terms of inventory share, farms with fewer than 10,000 birds dropped from 12.6% to 1.1%, whereas farms with more than 50,000 birds expanded their share dramatically from 36.0% to 86.9% <Figure 3-23>.

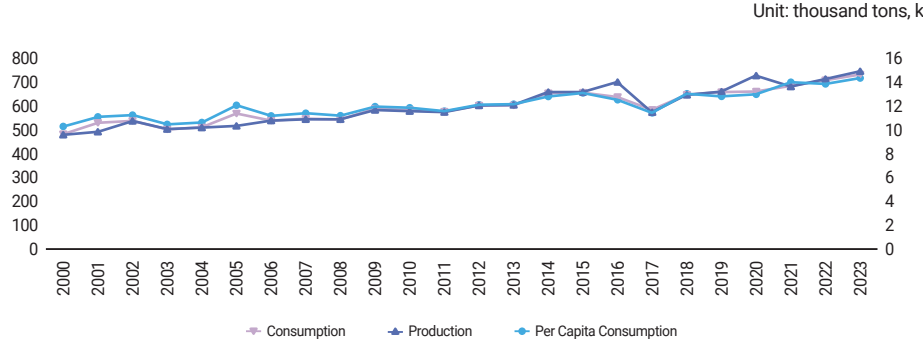
Figure 3-23 Layer Inventory by Farm Size



Note: Data are based on the Livestock Traceability System from 2017 onward.
Source: MODS, various years, *Livestock Trend Survey (quarterly averages).*

As the number of layer hens increased, egg production also rose substantially. Egg production grew from 479,000 tons in 2000 to 701,000 tons in 2016 but dropped sharply to 577,000 tons in 2017 owing to the egg contamination scandal. Production recovered quickly, rising to 659,000 tons in 2019 and reaching 747,000 tons in 2023. Annual per capita egg consumption increased from 10.2 kg in 2000 to 14.3 kg in 2023. The egg self-sufficiency rate has remained unchanged, from 100.0% in 2000 to 101.6% in 2023 <Figure 3-24>.

Figure 3-24 Trends in Egg Consumption and Production



Note: Official egg production statistics are not published after 2020; estimates are from the Agricultural Outlook Center of the Korea Rural Economic Institute.
Source: National Agricultural Cooperative Federation, various years, *Livestock Product Prices and Supply Data.*

Outlook and Tasks

Despite the challenges posed by market liberalization, the Korean livestock industry has achieved remarkable growth through continuous quality improvement as well as efforts to enhance productivity via specialization and farm-scale expansion. As such, livestock farm income has steadily increased, and the industry has played a vital role in ensuring a stable supply of high-quality protein. In addition, the sector has contributed to the growth of related industries and creation of jobs, thereby reinforcing its importance as a cornerstone of the rural economy. However, issues related to livestock manure management and odor, which tend to intensify as production expands, remain sensitive tasks requiring a deeper understanding and cooperation between farms and local communities. To remain as a trusted and endorsed industry, the Korean livestock sector must continue to make an effort to improve productivity as well as foster an environmentally harmonious production environment.

To develop into a sustainable sector for the future, the livestock industry must build upon its traditional focus on competitiveness while embracing the value of coexistence with the environment, which requires sustained efforts beyond regulatory compliance. It must proactively adopt environment-friendly feeding and management policies and make use of livestock manure as a valuable recycling resource. Sustained efforts are necessary to mitigate odors and improve the surrounding environment of livestock farms.

References

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3. Horticulture and Specialty Crops

Vegetables

Production Trends

Vegetable cultivation area increased from 300,000 ha in 1990 to 370,000 ha in 1995; however, it subsequently shifted to a declining trend, falling to 350,000 ha, 230,000 ha, 210,000 ha, and 200,000 ha in 2000, 2010, 2015, and 2020, respectively, and remaining at a similar level in recent years. This contraction has been largely driven by the deepening aging of the farming population and the expansion of market-opening pressures following major free trade agreements (FTAs).

Vegetable production rose from 8.28 million tons in 1990 to 10.5 million tons in 2000 at an average annual growth rate of 2.4%, largely attributable to yield improvements supported by greenhouse modernization and technological advancement. Production levels continued to fluctuate around an average of 9.42 million tons in the 2000s. However, vegetable output in 2010 declined to 8.19 million tons, a 12.4% decrease from 2009, and has since shown an average annual decline of 0.5%, reaching 7.58 million tons in 2024. This downward trend reflects a combination of shrinking cultivation area (1.0% annually over the same period) and worsening production conditions because of recurring abnormal weather events associated with climate change.

Vegetables are commonly classified into seasoning, root, leafy, fruit, and Western vegetables, among which seasoning vegetables account for the largest share of cultivated area throughout the entire period. The cultivation area of seasoning vegetables decreased from 136,000 ha in 1990 to 107,000 ha in 2010 and has remained around 94,000 ha as of 2024, showing a gradual downward trend with an average annual decline of 1.0%. Their share of the total vegetable cultivation area increased from 43.1% in 1990 to 46.3% in 2024.

Root vegetables have shown a clear and continuous decline since 1990. The cultivation area shrank from 42,000 ha in 1990 to 26,000 ha in 2010 and further to 22,000 ha in 2024, corresponding to an average annual decrease of 1.6%. Their share

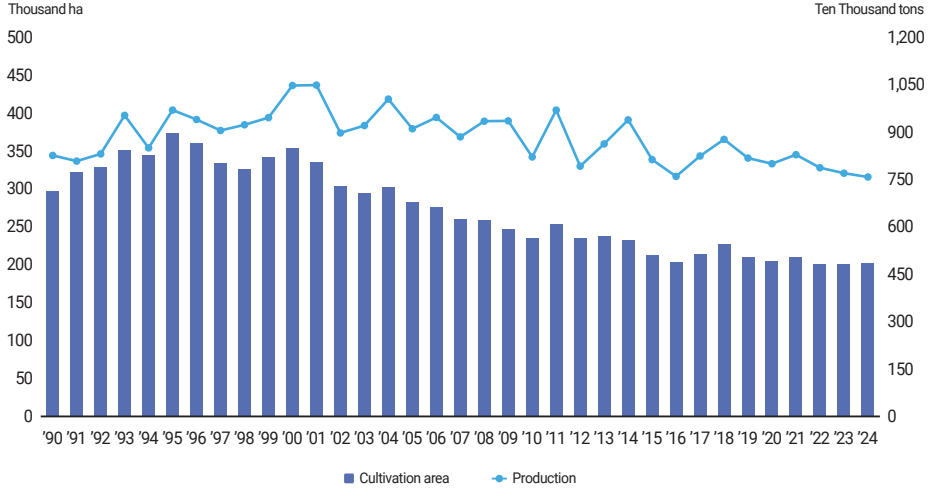
of the total vegetable area also fell from 13.2% in 1990 to 10.6% in 2024.

Leafy vegetable cultivation has similarly exhibited a declining trend, with an average annual decrease of 0.8%. The area decreased from 63,000 ha in 1990 to 47,000 ha in 2010 and has remained approximately 46,000 ha in 2024.

Fruit vegetables expanded until the mid-1990s because of their relatively high income per unit area, reaching 90,000 ha in 1995. However, the trend reversed thereafter, and by 2024, the cultivation area had declined to approximately 41,000 ha. Their share of total vegetable cultivation also fell slightly, from 22.4% in 1990 to 20.4% in 2024.

Although Western vegetables account for only 1~2 % of the total vegetable cultivation area, they have shown the most pronounced long-term increase. The cultivation area expanded from just 400 ha in 1990 to 3,700 ha in 2010 and further to around 3,900 ha in 2024, recording a high average annual growth rate of 8.0%.

Figure 3-25 Trends in the vegetable cultivation area and production



Source: MAFRA, each year, *Greenhouse Status of Protected Vegetables and Production Performance of Vegetables.*

Table 3-10 Trends in the cultivation area by vegetable type

Unit: thousands ha (%)

Category	1990	1995	2000	2005	2010	2015	2020	2021	2022	2023	2024
Condiment vegetables	136.4 (43.1)	172.7 (42.8)	162.7 (42.1)	132.4 (44.4)	107.5 (43.8)	90.8 (40.4)	92.1 (42.3)	93.4 (41.2)	104.5 (43.6)	91.6 (45.8)	93.6 (46.3)
Root vegetables	41.8 (13.2)	42.4 (10.5)	45.3 (11.7)	31.3 (10.5)	25.5 (10.4)	24.3 (10.8)	22.6 (10.3)	26.0 (11.4)	26.6 (11.1)	23.8 (11.9)	21.6 (10.6)
Leafy vegetables	63.3 (20.0)	72.2 (17.9)	74.3 (19.2)	59.5 (20.0)	47.3 (19.3)	46.5 (20.7)	43.6 (20.0)	50.4 (22.2)	51.1 (21.3)	43.9 (22.0)	45.9 (22.7)
Fruiting vegetables	57.7 (18.2)	90.4 (22.4)	75.7 (19.6)	67.0 (22.5)	56.5 (23.0)	56.7 (25.2)	52.1 (23.9)	49.3 (21.7)	49.7 (20.7)	40.6 (20.3)	41.4 (20.4)
Western vegetables	0.4 (0.1)	0.5 (0.1)	1.7 (0.4)	2.3 (0.8)	3.7 (1.5)	3.6 (1.6)	3.6 (1.6)	4.0 (1.7)	3.8 (1.6)	4.4 (2.2)	3.9 (1.9)

Note: Each figure in round brackets shows the ratio of the cultivation area of the relevant vegetable to the total vegetable cultivation area.

Source: MAFRA, various years, *Greenhouse Status of Protected Vegetables and Production Performance of Vegetables.*

Among seasoning vegetables, the decline in cultivated area is most pronounced for chili peppers and garlic. Chili pepper area remained approximately 60,000 ha until the mid-2000s but fell to 44,000 ha in 2010 and further to 26,000 ha in 2024. Production also declined sharply from 190,000 tons in 2000 to 68,000 tons in 2024, reflecting the combined effects of labor shortages, aging farm households, and increasing imports of dried chili peppers. Garlic shows a similar pattern: its cultivated area decreased from 45,000 ha in 2000 to 22,000 ha in 2010 and stood at 23,000 ha in 2024. Although the decline has been slower than that of chili peppers, production still fell from 470,000 tons to 280,000 tons over the same period, indicating continued weakening of the supply base. In contrast, onions are the only seasoning vegetable showing a consistent upward trend. Their cultivated area has steadily expanded since 2000, reaching approximately 19,000 ha in 2024, while production has increased significantly from 880,000 tons to 1.17 million tons.

For root vegetables, the decline in radish and carrot cultivation has continued. Radish area fell from 40,000 ha in 2000 to 18,000 ha in 2024, with production declining from 1.76 million tons to 1.03 million tons. Carrot cultivation area decreased

from 4,500 ha in 2000 to approximately 3,000 ha in 2024, and production declined from 150,000 tons to approximately 100,000 tons.

Among leafy vegetables, the decline is most evident for cabbage. Its cultivated area dropped sharply from 52,000 ha in 2000 to 28,000 ha in 2010 and has remained at a similar level through 2024. Production also declined from 3.15 million tons to 1.95 million tons, likely influenced by reduced kimchi consumption and greater price volatility. In contrast, Chinese cabbage (cabbage) cultivation has expanded because of increased demand from the foodservice sector and growing interest in functional consumption, reaching 8,000 ha in 2024.

Table 3-11 Cultivation area and production by major items of vegetables

Unit: thousands ha, thousands tons

Category		1990		2000		2005		2010		2015		2020		2024	
		Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Condiment vegetables	Chili	62.8	132.7	74.5	193.8	61.3	161.4	44.6	95.4	36.1	97.7	31.1	60.1	26.4	68.1
	Garlic	43.6	416.8	44.9	474.4	31.8	375.0	22.4	271.6	20.6	266.3	25.4	363.4	23.3	284.9
	Onion	7.6	407.4	16.8	877.5	16.7	1,023.3	22.1	1,411.6	18.0	1,093.9	14.7	1,168.2	18.6	1,175.3
Root vegetables	Radish	37.1	1,760.6	40.2	1,759.4	27.1	1,277.5	21.9	1,039.3	20.1	1,249.3	20.5	1,178.6	18.5	1,035.6
	Carrot	4.3	87.0	4.5	157.8	3.2	121.4	2.7	102.1	3.1	118.6	3.0	429.1	3.1	105.2
Leafy vegetables	Kimchi Cabbage	47.5	3,373.4	51.8	3,149.3	37.2	2,325.3	28.3	1,783.0	26.2	2,059.8	30.9	2,242.6	28.6	1,948.3
	Cabbage	4.0	146.9	6.1	274.1	5.2	289.9	4.5	252.7	6.4	318.2	7.1	313.2	8.3	340.9
Fruiting vegetables	Cucumber	7.0	216.1	7.3	453.5	5.9	403.3	4.4	306.0	4.1	271.0	4.7	335.6	4.2	294.5
	Pumpkin	4.1	82.3	8.4	240.5	9.3	339.1	9.0	302.9	10.6	364.4	9.6	325.3	10.4	319.4
	Tomato	2.5	77.7	4.9	276.7	6.7	439.0	5.3	324.8	7.0	457.0	5.5	344.0	6.1	371.4
	Strawberry	6.9	108.6	7.1	180.5	7.0	202.0	7.0	231.8	6.4	194.5	5.7	163.6	5.6	155.3
	Watermelon	25.7	593.2	30.5	922.7	23.2	904.9	16.4	678.8	15.2	634.4	11.6	466.5	10.7	404.1

Source: MAFRA, various years, *Greenhouse Status of Protected Vegetables and Production Performance of Vegetables.*

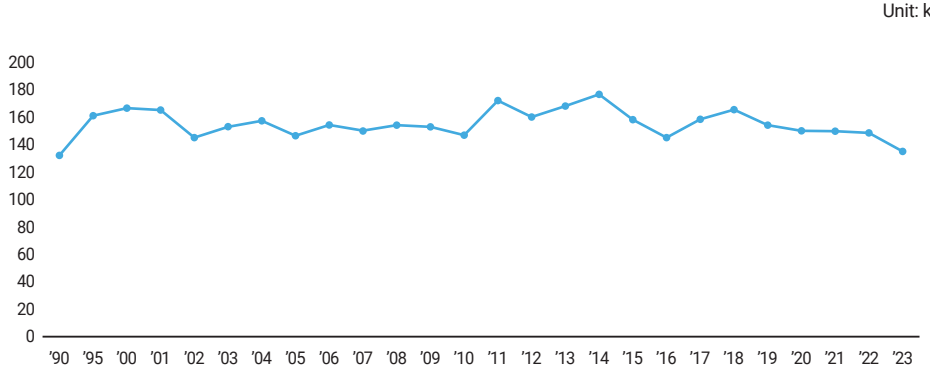
Fruit vegetables exhibit relatively large variability across items, with watermelon and cucumber showing the most pronounced declines. The cultivated area of watermelon fell sharply from 30,500 ha in 2000 to 10,700 ha in 2024, and production decreased from 920,000 tons to 400,000 tons over the same period. Cucumber cultivation has also shown a steady decline since 2000, with the area and production dropping to 4,200 ha and 290,000 tons, respectively, in 2024.

In contrast, pumpkin and tomato cultivation has continued to expand. The cultivated area of pumpkin increased from 8,000 ha in 2000 to 10,400 ha in 2024, while tomatoes also expanded after 2000, reaching 6,000 ha and 370,000 tons as of 2024. Strawberry cultivation declined gradually from 7,000 ha in 2000 and has stabilized at around 5,600 ha in 2024, showing relatively limited fluctuations in recent years.

Consumption Trends

Per capita annual vegetable consumption increased from 132.6 kg in 1990 to 165.9 kg in 2000 but subsequently declined to the 140?150 kg range. Consumption rose again to 176.2 kg in 2014 because of changes in consumption patterns, including increased food-away-from-home intake. However, it has since fallen back to around 140 kg, reaching 134.8 kg in 2024.

Figure 3-26 Trends in per capita annual consumption of vegetables



Source: MAFRA, various years, *Major Statistics of Agriculture, Forestry, Livestock, and Food.*

Per capita annual vegetable consumption increased from 132.6 kg in 1990 to 165.9 kg in 2000 but subsequently declined to the 140~150 kg range. Consumption then rose again, reaching 176.2 kg in 2014, driven by changes in dietary patterns such as the expansion of foodservice consumption. However, the trend reversed thereafter, and consumption fell to approximately 140 kg, reaching 134.8 kg in 2024.

Looking at trends by item, per capita annual consumption of chili peppers and garlic key seasoning vegetables shows an overall declining pattern. Chili pepper consumption decreased slightly from 3.1 kg in 2018 to 2.9 kg in 2023, while garlic consumption fell from 7.6 kg to 6.9 kg over the same period. These shifts appear to reflect a combination of factors, including reduced kimchi consumption and the simplification of dietary habits.

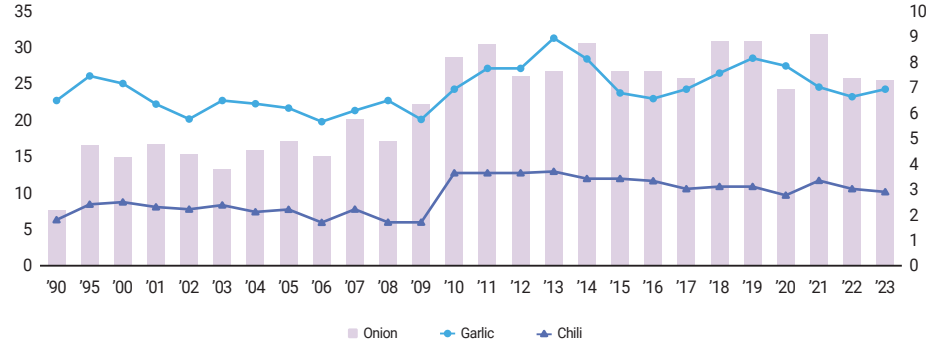
Onions represent a notable exception, maintaining a long-term upward trend. Per capita onion consumption rose steadily from just 7.4 kg in 1990 to 25.4 kg in 2023, likely driven by heightened awareness of health benefits and increased use in foodservice and ready-to-eat meals.

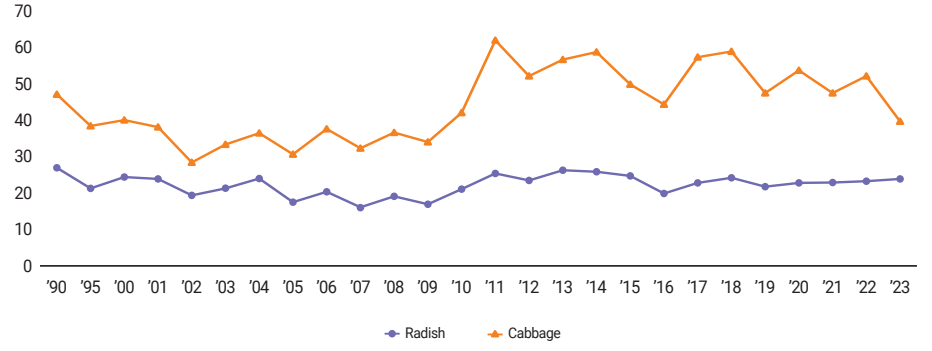
Among leafy vegetables, kimchi cabbage shows a pattern closely linked to kimchi consumption. Per capita consumption fell from 46.9 kg in 1990 to 33.8 kg in 2009 and then rose again to 58.7 kg in 2018 before declining to 39.3 kg in 2023. Large fluctuations reflect changes in kimchi preparation practices, including reduced home production and the spread of convenient and small-packaged kimchi.

For root vegetables, radish consumption has also trended downward in the long term. Per capita annual consumption decreased from 26.7 kg in 1990 to 23.6 kg in 2023. However, in recent years, consumption has remained relatively stable in the low-to-mid 20 kg range.

Figure 3-27 Trends in per capita annual consumption by major items of vegetables

Unit: Left-Onion (kg), Right- Garlic, Chili (kg)





Source: MAFRA, various years, *Major Statistics of Agriculture, Forestry, Livestock, and Food.*

Export and Import Trends

Vegetable export values increased from USD 110 million in 1995 to approximately USD 420 million in 2024. Although the pace of growth has been moderate compared with earlier periods, exports have continued to expand steadily over the long term. By item, export growth remains concentrated in fruit–vegetable categories such as kimchi, tomatoes, strawberries, and paprika. In particular, kimchi has established itself as the largest export item, recording USD 163 million in 2024 and accounting for roughly 38% of total vegetable exports. Tomato exports have declined since 2018,

falling to USD 8.78 million in 2024, while strawberry exports have shown a relatively stable upward trend, remaining approximately USD 69 million. Paprika exports grew rapidly through the mid-2010s but declined to USD 49 million in 2024, indicating a recent downward shift.

Table 3-12 Trends in exports and imports of vegetables

Unit: Thousands tons, USD hundred thousands

Category	1995		2000		2005		2010		2015	
	volume	Amount	volume	Amount	Volume	Amount	volume	Amount	volume	Amount
Vegetable Exports (A)	55.6	1,104.30	64.2	1,859.20	88.9	2,314.30	96.4	2,767.50	109.6	3,098.3
Tomato	2.1	35.2	12.7	229.5	4.3	88.3	2.3	66.4	5.7	125.9
Strawberry	2.4	48.6	3.5	95.3	1	44.1	3.3	261.2	3.7	330.3
Cucumber	2.6	55.3	5.8	98.9	1	15.5	0.1	1.6	0.2	7.5
Kimchi	12.5	509.1	23.4	788.5	32.3	929.6	29.7	983.6	23.1	735.4
Paprika	-	-	-	-	17.8	531.4	16.2	583	29.4	852.1
Vegetable Imports (B)	93.2	1,322.40	220.1	1,872.60	587.6	3,812.40	853.9	7,194.90	1,104.40	9,215.8
Chili	4.8	128.5	6.3	108.2	83.1	516	156.1	1,137.40	199.2	1,230.3
Garlic	11.3	105.7	10.5	91.2	42.2	212.4	64	1,013.30	62.2	700.6
Onion	8	59.8	6.1	23	41.2	85.4	21.3	111.8	154.4	633.4
Carrot	1.1	15.8	11.4	50.6	73.2	292.4	86.4	405.1	97.4	490.4
Kimchi	-	-	0.5	2	111.5	513.4	192.9	1,020.20	224.1	1,132.4
Trade balance (A-B)	-	△218.1	-	△13.4	-	△1,498.1	-	△4,427.4	-	△6,117.5

Category	2020		2021		2022		2023		2024	
	volume	Amount	volume	Amount	volume	Amount	volume	Amount	volume	Amount
Vegetable Exports (A)	146.8201	4,619.98	146.4072	4,859.22	125.9946	4,346.40	119.6045	4,487.66	103.5558	4,277.88
Tomato	6.7094	157.211	7.8743	182.452	6.7172	121.431	6.8403	123.167	4.9823	87.889
Strawberry	4.8234	537.47	4.8711	646.785	4.0252	586.34	5.1204	710.829	5.0121	692.698
Cucumber	0.2108	6.128	0.2055	4.339	0.1075	4.752	0.1431	6.482	0.178	6.278
Kimchi	39.7483	1,445.12	42.544	1,599.15	41.1177	1,408.16	44.0368	1,555.99	47.0525	1,635.71
Paprika	30.2743	864.373	27.4322	820.587	26.7891	730.755	21.7004	641.411	14.7639	492.899

Category	2020		2021		2022		2023		2024	
	volume	Amount	volume	Amount	volume	Amount	volume	Amount	volume	Amount
Vegetable Imports (B)	1,238.03	10,152.47	1,212.94	11,158.15	1,262.19	12,206.96	1,342.41	12,530.12	1,428.84	13,356.47
Chili	248.2103	1,697.95	252.6137	1,786.10	223.2945	1,727.31	218.5881	1,910.52	203.5467	1,540.66
Garlic	37.8142	366.518	44.9089	413.013	70.6533	680.624	39.1017	381.201	43.5972	495.118
Onion	42.0799	183.088	54.9943	289.587	88.0301	470.053	137.9562	632.736	102.8229	430.774
Carrot	108.6174	471.016	99.8582	518.709	104.7971	539.587	118.6475	483.276	127.068	610.695
Kimchi	281.1867	1,524.26	240.6062	1,407.42	263.4346	1,694.00	286.5454	1,635.76	311.5704	1,898.61
Trade balance (A-B)	-	△5,532.5	-	△6,298.9	-	△7,860.6	-	△8,042.5	-	△9,078.6

Note 1) The data on tomatoes include (fresh and refrigerated) tomatoes, tomato juice, tomato paste, etc.
2) The data on strawberries include (fresh) strawberries, (frozen) strawberries, and (temporarily stored) strawberries.
3) The data on cucumbers include (fresh and refrigerated) cucumbers, (temporarily stored) cucumbers, and cucumbers (processed with vinegar or acetic acid).
4) Kimchi is categorized as a vegetable in the export and import statistics.
5) The data on chilis and onions include dried and temporarily stored ones, those on garlic include frozen garlic, those on carrots include dried carrots, and so on. The yields of the vegetables are not reflected.
6) The data on carrots include (fresh and refrigerated) carrots, (frozen) carrots, and (dried) carrots.

Source: Korea Agro-Fisheries and Food Trade Corporation, various years, *Agricultural & Fishery Trading Information.*

In contrast, vegetable imports increased sharply from USD 130 million in 1995 to USD 1.33 billion in 2024, driven by deeper market liberalization and diversification of import sources. The rate of import growth has been significantly faster than that of exports, resulting in a widening structural trade deficit from USD 20 million in 1995 to more than USD 900 million in 2024. Imports are dominated by major seasoning and root vegetables such as chili peppers, garlic, onions, and carrots. As of 2024, imports amounted to USD 154 million, USD 49 million, USD 43 million, and USD 61 million for chili peppers, garlic, onions, and carrots, respectively. China accounts for an overwhelming share of imports for these items, and the recent surge in imports of Chinese kimchi reaching USD 1.9 billion has further eroded the domestic consumption base for domestically produced kimchi cabbage, chili peppers, and garlic.

Fruits

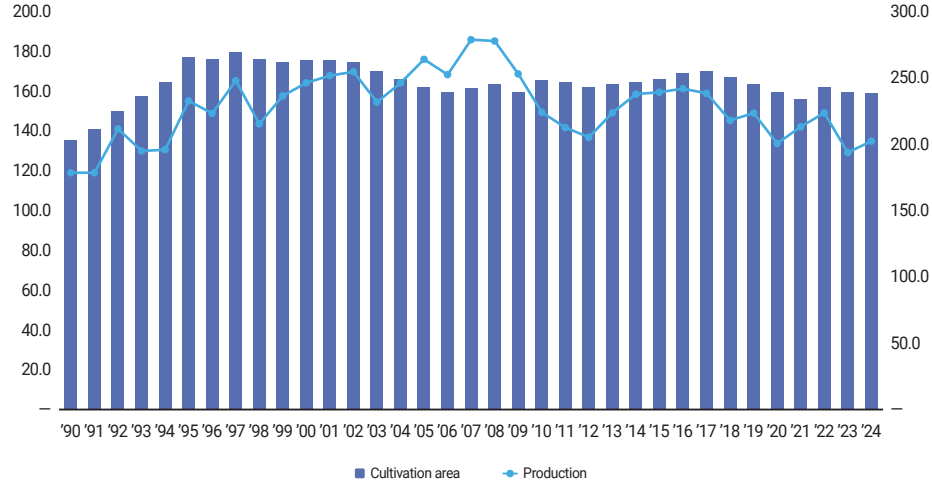
Production Trends

The cultivated area for fruit crops expanded from 130,000 ha in 1990 to 170,000 ha in 1998 but shifted to a declining trend following the full-scale liberalization of agricultural markets, falling to approximately 150,000 ha by the mid-2000s. Although periods of decline and partial recovery have alternated since then, the combined effects of population aging, labor constraints, and increasing price volatility have led to stagnation, with the cultivated area remaining at approximately 150,000~ 160,000 ha in recent years.

In contrast to the long-term decline in cultivated area, production has continued to rise steadily because of improvements in varieties, advances in cultivation techniques, and the spread of high-density planting systems. Consequently, fruit crop production increased from 1.77 million tons in 1990 to approximately 2.2 million tons in the 2020s.

Figure 3-28 Trends in the fruit cultivation area and production

Unit: Left-Thousand ha, Right-Ten Thousand tons



Source: Korean Statistical Information Service, various years.

The cultivated area for apples expanded from 48,000 ha in 1990 to 50,000 ha in 1995 but then declined sharply to 29,000 ha in the early 2000s. As price conditions stabilized and variety renewal began to take effect, the pace of decline moderated, and by the late 2010s, the area had recovered to approximately 30,000 ha. In recent years, including 2024, it has remained at approximately 33,000 ha. The area of bearing orchards also fell from 32,000 ha in 1995 to 16,000 ha in 2005 but gradually expanded thereafter, reaching approximately 24,000 ha in 2024. Apple production increased during the 2010s despite fluctuations in cultivated area; however, weather-related variability has grown in recent years, with output recorded at 460,000 tons in 2024.

For pears, cultivated area once expanded to 26,000 ha around 2000 but shifted to a persistent decline beginning in 2001 because of weak prices and rising orchard removals. The area declined to 12,000 ha in 2015 and further to 9,400 ha by 2024. Bearing orchard area also peaked at 17,000 ha in 2005 and has since decreased to about 8,500 ha as of 2024. Production has become increasingly variable with the shrinkage of cultivated area, amounting to 178,000 tons in 2024.

Grape cultivated area expanded rapidly through the mid-1990s, reaching 29,000 ha in 2000. However, aging growers, rising imports of fresh fruit, and restructuring of old orchards contributed to a steady decline thereafter, with the cultivated area stabilizing around 14,000 ha in the 2020s. Bearing orchard area likewise decreased from 22,000 ha in 2000 to approximately 9,500 ha in 2024. Although production peaked at 470,000 tons in 2000 and then declined, recent improvements in cultivars and the rapid expansion of Shine Muscat vineyards have contributed to a rebound, with output reaching 216,000 tons in 2024.

Peach cultivation declined through the late 1990s but began to expand again in the early 2000s because of stable prices and growing consumer demand, maintaining a level of 16,000 to 20,000 ha after 2015. The cultivated area reached 20,294 ha in 2024, continuing its upward trend over the past decade. Bearing orchard area has remained around 15,000 ha since the mid-2010s, and production has been relatively stable, amounting to 194,000 tons in 2024.

Table 3-13 Cultivation area and production by items of fruit

Unit: Ha, thousands tons

Category		1990	1995	2000	2005	2010	2015	2020	2021	2022	2023	2024
Apple	Cultivation area	48,833	50,103	29,063	26,907	30,992	31,620	31,598	34,359	34,603	33,789	33,313
	Area for mature trees	26,002	32,222	21,259	16,379	20,582	21,965	23,330	26,302	25,767	24,687	24,066
	Production	628,947	715,982	488,960	367,517	460,285	582,846	422,115	515,931	566,041	394,428	460,088
Pear	Cultivation area	9,058	15,752	26,206	21,735	16,239	12,664	9,091	9,675	9,680	9,607	9,421
	Area for mature trees	7,137	7,602	13,290	17,059	14,772	11,782	8,530	9,122	9,033	8,819	8,529
	Production	159,335	178,321	324,166	443,265	307,820	260,975	132,580	210,293	251,093	183,802	178,451
Grape	Cultivation area	14,962	26,030	29,200	22,057	17,572	15,397	13,183	13,349	14,655	14,706	14,649
	Area for mature trees	12,845	13,955	22,245	16,481	13,060	11,007	8,285	8,166	8,532	9,370	9,574
	Production	131,324	316,443	475,594	381,436	257,128	223,695	165,906	168,150	188,771	195,747	216,470
Peach	Cultivation area	12,333	10,241	13,876	15,014	13,908	16,704	20,450	19,475	20,314	20,127	20,294
	Area for mature trees	10,466	7,473	7,688	9,830	9,923	10,811	15,324	15,447	15,326	14,904	15,405
	Production	114,578	129,640	170,044	223,701	134,665	153,882	189,058	192,094	191,310	182,975	194,801
Tangerine	Cultivation area	19,287	24,348	26,821	21,504	21,143	21,265	21,111	22,029	22,125	22,108	21,951
	Area for mature trees	17,089	19,460	23,705	18,642	17,573	16,112	15,514	15,468	15,209	14,924	14,322
	Production	492,676	614,801	563,470	637,961	614,871	639,892	658,859	635,835	610,454	607,766	556,921
Sweet Persimmon	Cultivation area	9,869	20,158	23,816	17,199	15,244	11,849	8,404	8,899	9,477	9,203	9,227
	Area for mature trees	5,000	8,387	16,463	14,747	13,474	10,672	7,614	8,211	8,501	8,206	8,098
	Production	65,682	154,737	227,394	235,854	154,165	157,990	89,354	99,918	103,851	84,529	92,863

Note: The data on the area for mature trees are based on open fields.

Source: Korean Statistical Information Service, various years.

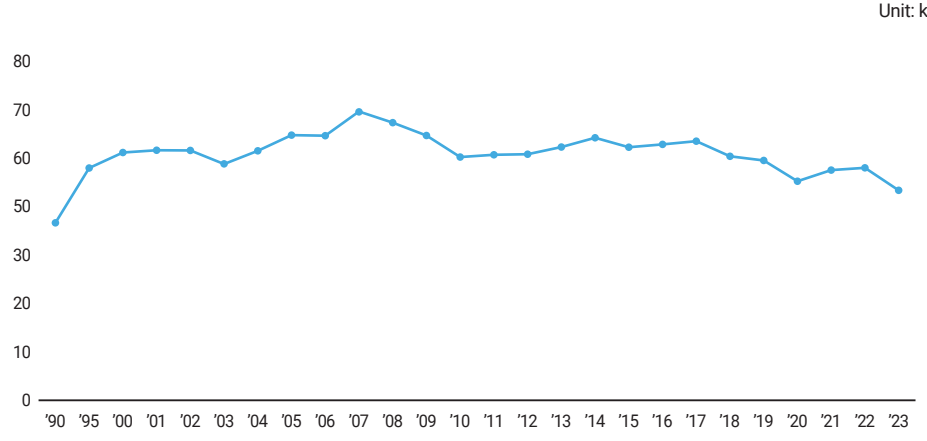
Citrus cultivation area decreased from 26,000 ha in 2000 to 21,000 ha in 2005 but has remained largely unchanged since then, staying approximately 22,000 ha as of 2024. Bearing orchard area has declined over the long term, reaching approximately 14,000 ha in 2024. Production fluctuates with weather conditions but generally remains within the 550,000~ 650,000 ton range, totaling 557,000 tons in 2024.

Persimmon cultivated area expanded through the 1990s, reaching 23,000 ha in 2000. However, orchard removals and the aging of farm operators led to a steady decline thereafter, with cultivated area falling to 11,000 ha in 2015 and further to 9,200 ha in 2024. Bearing orchard area has also decreased since the mid-2000s, dropping to approximately 8,000 ha in 2024. Production has fluctuated in line with the reduction in area, recorded at 92,000 tons in 2024.

Consumption Trends

The annual per capita consumption of total fruit increased from 41.8 kg in 1990 to 49.7 kg in 2023, reflecting an average annual growth rate of 0.5%, driven by rising household income and the expansion of imported fruit availability.

Figure 3-29 Trends in per capita annual fruit consumption



Note: Per capita consumption= (production+import volum - export volume)/population.
Source: MAFRA, various years, *Major Statistics of Agriculture, Forestry, Livestock, and Food.*

To examine consumption trends by item, per capita annual apple consumption increased from 14.5 kg in 1990 to 15.8 kg in 1995 but fell to the 7~ 10 kg range after the 2000s because of shrinking cultivation area and the expansion of imported fruits. In recent years, despite fluctuations in production and prices, consumption has remained within the 8~ 11 kg range during the 2020s, recording 7.7 kg in 2023. Pear consumption rose to the 9 kg range in the early 2000s; however, it has continuously declined because of the growth of imported fruit and changes in consumption patterns. It has fluctuated within the 3~4 kg range in recent years, standing at 3.1 kg in 2023.

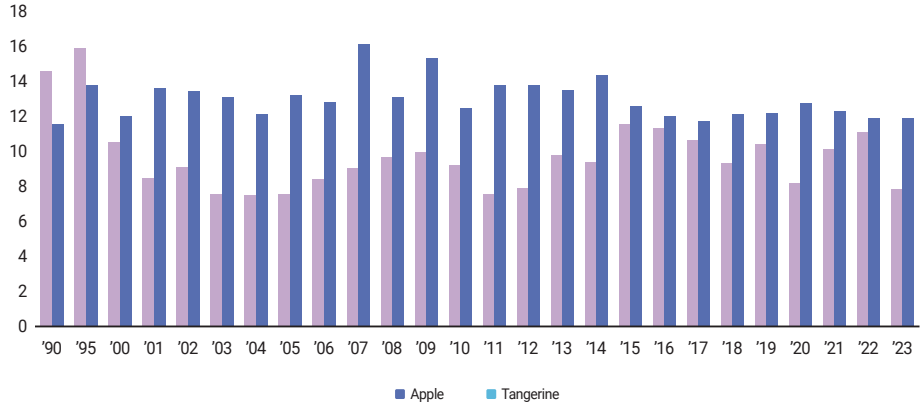
Peach consumption has remained approximately 4 kg over the long term, supported by income growth and increased production. It rose steadily from 2.7 kg in 1990, stabilizing at 3.5~4.3 kg since the mid-2000s, recording 3.6 kg in 2023. Persimmon consumption, which was in the 4- kg range in the early 2000s, gradually declined because of reduced production and substitution effects in fruit consumption. It has remained at 2~3 kg since the 2010s, falling to 1.6 kg in 2023.

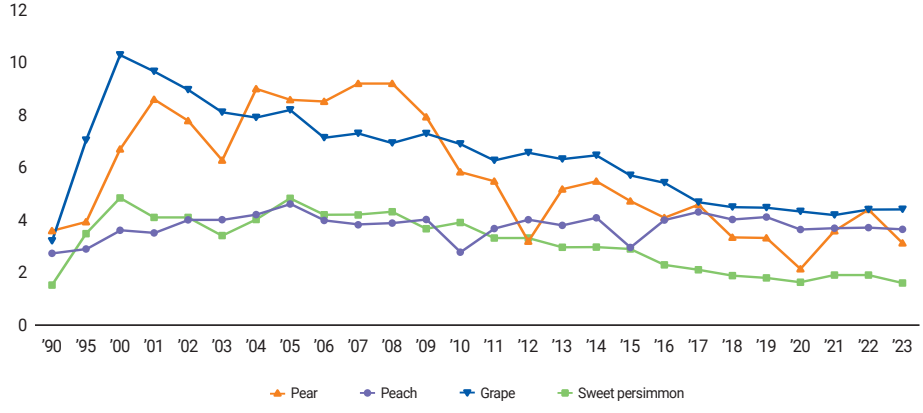
Per capita annual grape consumption peaked at 10.3 kg in 2000 but subsequently declined because of increased imports and the removal of aging orchards, stabilizing in the low 4- kg range in the 2020s. It recorded 4.4 kg in 2023. Tangerine consumption has shown a long-term downward trend because of changes in consumer fruit preferences and increased imports of tangerines and oranges, recording 11.8 kg in 2023, a modest decrease compared with the early 2010s.

Consumption of other fruit categories such as kiwifruit, blueberries, and various tropical fruits has continued to increase owing to diversifying consumer preferences. Per capita annual consumption rose from 4.9 kg in 1990 to the 18–23 kg range after the 2010s and reached 17.5 kg in 2023, establishing this group as a key driver of overall changes in fruit consumption patterns.

Figure 3-30 Trends in per capita annual consumption by major items of fruit

Unit: kg





Note: Per capita consumption= (production + import volume−export volume)/population.
Source: MAFRA, various years, *Major Statistics of Agriculture, Forestry, Livestock, and Food.*

Export and Import Trends

Fruit exports rose from USD 60 million in 1995 to USD 120 million in 2005 and USD 190 million in 2010, maintaining a steady upward trend after a temporary decline in 2000. Exports continued to grow to USD 340 million in 2020 and surpassed USD 400 million in 2021. However, because of global economic fluctuations and demand

adjustments in major importing countries, fruit export values have remained stagnant at approximately USD 380 million between 2022 and 2024.

By item, pear has consistently recorded the highest export value, reaching USD 70 million, 71 million, and 74 million in 2020, 2021, and 2022, respectively, and maintaining its status as a major export item with approximately USD 58 million in 2024. Apple exports expanded to approximately USD 17 million in 2010; however, they have continued to decline in the 2020s, standing at approximately USD 28 million in 2024.

Persimmon exports showed strong growth through the mid-2010s but became more volatile thereafter, dropping from USD 90 million in 2020 to USD 38 million in 2021, before recovering to approximately USD 58 million in 2024. Tangerine exports have fluctuated within a range of USD 30~ 60 million annually and recorded USD 45 million in 2024. Yuzu exports expanded steadily after the 2010s; they have stably remained in the USD 50~60 million range since 2020. Grape exports driven primarily by Shine Muscat have increased the most rapidly in recent years, rising from USD 31 million and USD 38 million in 2020 and 2021 to USD 46 million and USD 57 million in 2023 and 2024, respectively.

In contrast, fruit imports have continued to grow since market liberalization, rising from USD 320 million in 1995 to USD 940 million in 2010, USD 1.7 billion in 2015, and reaching USD 2.43 billion in 2024. Among major import items, bananas recorded the largest import value at USD 380 million in 2024, followed by oranges at USD 270 million, kiwifruit at USD 175 million, and cherries at USD 138 million. Grapes have remained approximately USD 150 million, while mango imports have proliferated in recent years, reaching USD 160 million in 2024. This diversification of imported fruits including bananas, oranges, grapes, and cherries has kept overall import levels high.

The fruit trade balance, thus, has continued to deteriorate, with the deficit expanding from USD 2.5 billion in 1995 to USD 7.5 billion in 2010, USD 15.9 billion in 2020, and approximately USD 20.5 billion in 2024. This widening deficit reflects the much faster growth of imports compared to exports, with a rising consumption of tropical and imported fruits such as bananas, mangoes, kiwifruit, and cherries further accelerating the deterioration of the trade balance.

Table 3-14 Trends in exports and imports of fruit

Unit: USD hundred thousands

Category	1995	2000	2005	2010	2015	2020	2021	2022	2023	2024
Fruit Exports(A)	599.8	451.4	1,208.8	1,954.2	2,501.7	3,488.15	4,091.01	3,904.79	3,862.30	3,845.99
Apple	135.9	23.4	78.0	179.4	86.8	59.36	48.19	76.216	36.41	28.228
Pear	70.9	171.0	560.9	541.2	578.4	717.398	718.348	743.942	745.254	588.545
Sweet Persimmon	0.9	39.2	55.9	83.5	111.9	92.724	38.915	69.736	29.403	58.541
Tangerine	12.8	44.9	34.0	16.0	32.9	59.825	65.453	34.419	45.544	45.62
Citron	-	-	-	326.1	410.0	507.736	529.396	564.404	590.178	613.231
Grape	11.7	1.1	9.2	21.1	35.2	311.504	386.179	342.755	460.718	579.084
Fruit imports (B)	3,154.2	3,493.9	6,155.6	9,451.3	17,361.3	19,445.69	21,501.03	20,423.71	20,516.19	24,321.36
Grape	206.0	311.0	529.8	1,231.1	2,423.6	2,129.29	2,068.24	1,822.24	1,603.70	1,498.79
Orange	1,014.4	1,160.1	1,624.3	1,740.9	2,088.8	2,256.26	2,366.69	2,039.92	2,266.76	2,740.65
Banana	495.1	752.5	1,148.4	2,103.5	3,171.2	2,758.64	2,901.60	2,838.76	3,047.46	3,820.43
Pineapple	225.3	184.6	489.9	582.7	785.1	709.102	778.762	924.402	895.098	1,131.807
Kiwi	96.5	86.5	533.1	565.1	569.1	1,141.501	1,454.526	1,589.447	1,311.001	1,751.289
Mango	0.2	13.1	22.1	61.0	532.1	652.407	952.755	1,022.12	1,122.062	1,611.708
Cherry	31.5	50.6	131.4	369.1	1,298.5	1,448.25	1,727.53	1,219.93	1,472.13	1,384.30
Trade balance (A-B)	△2,554	△3,042	△4,947	△7,497	△14,860	△15,958	△17,410	△16,519	△16,654	△20,475

Note 1) The data on apples include (fresh and dried) apples, apple juice, etc.
2) The data on pears include (fresh) pears and pears (prepared by other methods).
3) The data on persimmons include (fresh) persimmons, etc.
4) The data on tangerines include (fresh and dried) tangerines.
5) The data on citrons include citrons (prepared by other methods).
6) The data on grapes include (fresh and dried) grapes, fresh juice (others), grapes (prepared by other methods), etc.
7) The data on oranges include (fresh and dried) oranges, orange juice (others/frozen), etc.
8) The data on bananas include (fresh and dried) bananas, banana (plantains), and bananas (others).
9) The data on pineapples include (fresh and dried) pineapples, pineapples (prepared by other methods), pineapple juice (others), etc.
10) The data on kiwis include (fresh) kiwis; and the data on mangoes mean data on (fresh and dried) mangoes.
11) The data on cherries include data on (fresh) cherries and cherries (prepared by other methods), etc.

Source: Korea Agro-Fisheries and Food Trade Corporation, various years, Agricultural & Fishery Trading Information.

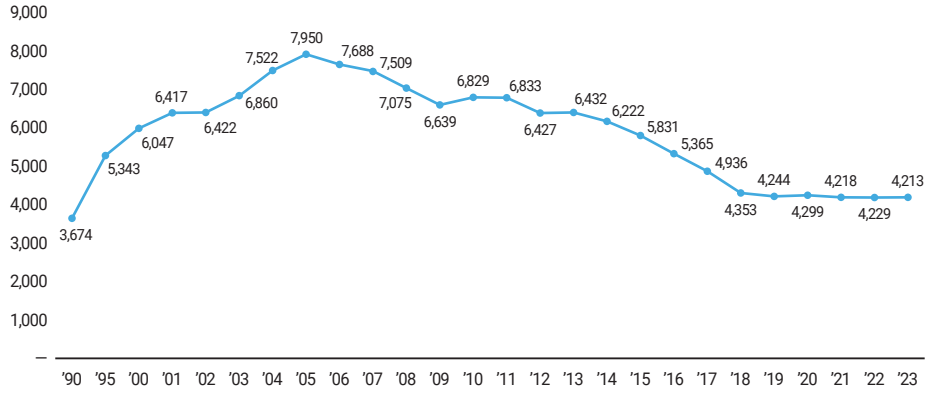
Flowers

Production Trends

The cultivation area for floriculture expanded significantly from 3,674 ha in 1990 to a peak of 7,950 ha in 2005. However, the area declined steadily thereafter to 6,829 ha in 2010, 5,831 ha in 2015, and 4,213 ha in 2023 corresponding to an average annual decrease of 3.5% between 2005 and 2023. Consequently, the current cultivation area has fallen back to levels comparable to the early to mid-1990s.

Figure 3-31 Trends in the flower cultivation area

Unit: ha



Source: MAFRA, various years, *Cultivation Status of Flowers*.

By category, cut flowers accounted for 27.4% of the total floriculture cultivation area in 1990, and this share rose to 32.7% by 2005 as cultivation expanded through the mid-2000s. However, because of declining domestic demand for cut flowers and increasing imports, the area has continued to shrink, stabilizing at approximately 28% in the 2020s. As of 2023, cut flowers represent 28.7% of the total area.

Potted plants decreased from 22.9% in 1990 to the mid-16% range in the early 2000s; however, since then, they have remained relatively stable, maintaining a level of approximately 17.7% in 2023. Bedding plants increased from 3.2% in 1990 to 6.3% in

2005; however, as overall cultivation declined, their share has stayed around 4% in the 2020s, recording 3.9% in 2023.

Ornamental trees held the largest share among floriculture categories in 1990 at 33.5%, but this declined to 27.8% by 2005 amid structural shifts such as the expansion of cut-flower production. Despite fluctuations thereafter, ornamental trees have maintained a comparatively high share even as total cultivation area has fallen, reaching 30.3% in 2023, the highest among all categories.

Flowering shrubs increased from 10.3% of the total area in 1990 to 16.0% in 2005; they have continued to maintain a stable level of around 18%, also recording 18% in 2023. Seeds and nursery stock account for only a slight share of total floriculture area— approximately 0.5–0.6% from 1990 to 2023, showing little variation. Bulb crops likewise declined sharply from 2.3% in 1990 and have since remained in the 0.5–0.8% range in the 2020s, registering 0.8% in 2023.

Table 3-15 Cultivation area by type of flowers

Unit: ha, %

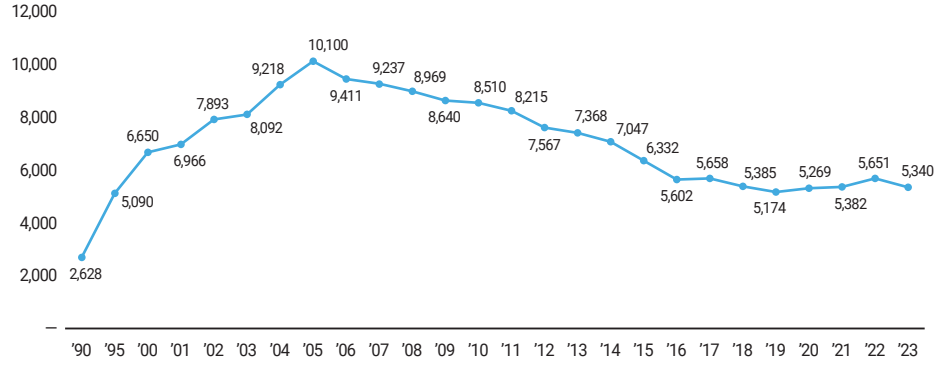
Category	1990	2000	2005	2010	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total flowers	3,674 (100.0)	6,047 (100.0)	7,950 (100.0)	6,829 (100.0)	5,831 (100.0)	5,365 (100.0)	4,936 (100.0)	4,353 (100.0)	4,244 (100.0)	4,299 (100.0)	4,218 (100.0)	4,229 (100.0)	4,213 (100.0)
Cut flowers	1,006 (27.4)	2,625 (43.4)	2,597 (32.7)	1,975 (28.9)	1,459 (25.0)	1,364 (25.4)	1,314 (26.6)	1,215 (27.9)	1,183 (27.9)	1,224 (28.5)	1,205 (28.6)	1,195 (28.3)	1,208 (28.7)
Potted plants	840 (22.9)	965 (16.0)	1,288 (16.2)	1,249 (18.3)	905 (15.5)	830 (15.5)	788 (16.0)	746 (17.1)	732 (17.2)	743 (17.3)	742 (17.6)	755 (17.9)	745 (17.7)
Flowering plants	118 (3.2)	71 (1.2)	501 (6.3)	314 (4.6)	349 (6.0)	214 (4.0)	210 (4.3)	175 (4.0)	202 (4.8)	195 (4.5)	178 (4.2)	174 (4.1)	164 (3.9)
Ornamental plants	1,230 (33.5)	1,628 (26.9)	2,209 (27.8)	2,134 (31.2)	1,995 (34.2)	1,903 (35.5)	1,648 (33.4)	1,363 (31.3)	1,306 (30.8)	1,314 (30.6)	1,283 (30.4)	1,285 (30.4)	1,278 (30.3)
Flowering shrubs	377 (10.3)	685 (11.3)	1,274 (16.0)	1,087 (15.9)	1,068 (18.3)	996 (18.6)	921 (18.7)	807 (18.5)	775 (18.3)	773 (18.0)	760 (18.0)	763 (18.0)	759 (18.0)
Seeds and seedlings	18 (0.5)	5 (0.1)	64 (0.8)	25 (0.4)	27 (0.5)	30 (0.6)	28 (0.6)	21 (0.5)	24 (0.6)	23 (0.5)	25 (0.6)	25 (0.6)	26 (0.6)
Bulbs	85 (2.3)	68 (1.1)	18 (0.2)	45 (0.7)	29 (0.5)	27 (0.5)	27 (0.5)	27 (0.6)	22 (0.5)	27 (0.6)	25 (0.6)	33 (0.8)	33 (0.8)

Note: Each figure in round brackets shows the ratio of the cultivation area of the relevant flower to the total flower cultivation area.
Source: MAFRA, various years, *Cultivation Status of Flowers*.

Flower sales amounted to 239.3 billion KRW in 1990 but expanded significantly to 1.0105 trillion KRW by 2005. However, because of weakened consumer demand stemming from economic downturns, consumption-suppression policies, and broader market liberalization, flower sales have continued to decline after peaking in 2005. Sales fell to 851 billion KRW in 2010 and further to 534 billion KRW in 2023, reflecting an average annual decrease of 3.5% between 2005 and 2023.

Figure 3-32 Trends in flower sales

Unit: KRW 100 millions



Source: MAFRA, various years, *Cultivation Status of Flowers*.

The share of cut flowers accounted for 27.4% of the total floriculture cultivation area in 1990 and increased to 32.7% by 2005 as the cultivated area expanded through the mid-2000s. However, because of declining domestic demand for cut flowers and rising imports, the area has continued to contract, stabilizing at around 28% in the 2020s. As of 2023, cut flowers represent 28.7% of the total.

For potted plants, the share declined from 22.9% in 1990 to the mid-16% range in the early 2000s; however, it has since remained relatively stable, recording approximately 17.7% in 2023. Bedding plants increased from 3.2% in 1990 to 6.3% in 2005; however, with the decline in the overall cultivation area, their share has remained approximately 4% in the 2020s, standing at 3.9% in 2023.

Ornamental trees held the largest share in 1990 at 33.5%, but their share decreased to 27.8% by 2005 because of structural shifts such as the expansion of cut-flower production. Despite fluctuations since then and continued reductions in overall area, ornamental trees have maintained a relatively high proportion and remained the largest category in 2023 at 30.3%.

Woody ornamentals increased from 10.3% in 1990 to 16.0% in 2005; they have remained steady at around 18% in recent years, also recording 18% in 2023. Seeds and nursery stock have consistently accounted for a slight share, remaining between 0.5 and 0.6% from 1990 to the present without notable change. Bulbs also declined sharply from 2.3% in 1990; they have remained between 0.5 and 0.8% throughout the 2020s, reaching 0.8% in 2023.

Table 3-16 Sales by major items of flowers

Unit: KRW 100 million, %

Category	1990	2000	2005	2010	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total sales of cut flowers	592 (100.0)	3,012 (100.0)	4,517 (100.0)	2,976 (100.0)	2,174 (100.0)	1,774 (100.0)	1,833 (100.0)	1,786 (100.0)	1,781 (100.0)	1,699.2 (100.0)	1,740 (100.0)	1,838 (100.0)	1,845 (100.0)
Rose	102 (17.2)	1,271 (42.2)	1,823 (40.4)	996 (33.5)	677 (31.1)	528 (29.8)	502 (27.4)	525 (29.4)	499 (28.0)	503 (29.6)	536 (30.8)	618 (33.6)	604 (32.7)
Chrysanthemum	125 (21.1)	562 (18.7)	1,030 (22.8)	774 (26.0)	517 (23.8)	438 (24.7)	492 (26.8)	455 (25.5)	468 (26.3)	376.8 (22.2)	386 (22.2)	393 (21.4)	389 (21.1)
Lily	78 (13.1)	281 (9.3)	346 (7.7)	293 (9.9)	172 (7.9)	156 (8.8)	147 (8.0)	120 (6.7)	115 (6.5)	96.7 (5.7)	101 (5.8)	107 (5.8)	98 (5.3)
Carnation	78 (13.2)	162 (5.4)	327 (7.2)	197 (6.6)	132 (6.0)	100 (5.7)	89 (4.8)	88 (4.9)	83 (4.6)	65.9 (3.9)	63 (3.6)	62 (3.4)	61 (3.3)
Gypsophila elegans	81 (13.7)	197 (6.5)	271 (6.0)	60 (2.0)	45 (2.1)	50 (2.8)	59 (3.2)	59 (3.3)	67 (3.8)	63.5 (3.7)	64 (3.7)	63 (3.4)	62 (3.4)
Total sales of potted plants	1,150 (100.0)	2,617 (100.0)	3,490 (100.0)	2,942 (100.0)	2,215 (100.0)	1,947 (100.0)	1,928 (100.0)	1,969 (100.0)	2,014 (100.0)	1935 (100.0)	2,077 (100.0)	2,208 (100.0)	2,115 (100.0)
Cactus	31 (2.7)	87 (3.3)	148 (4.3)	148 (5.0)	112 (5.1)	109 (5.6)	87 (4.5)	95 (4.8)	93 (4.6)	86.1 (4.4)	85.8 (4.1)	106.6 (4.8)	106.11 (5.0)
Orchid	154 (13.4)	1,071 (40.9)	1,214 (34.8)	852 (28.9)	584 (26.4)	518 (26.6)	339 (17.6)	464 (23.6)	448 (22.2)	407 (21.0)	437 (21.0)	457 (20.7)	409 (19.3)

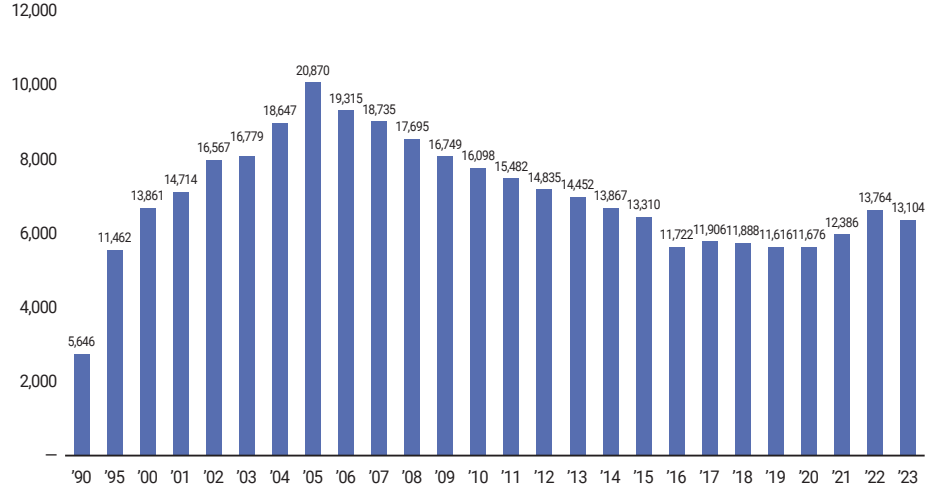
Source: MAFRA, various years, *Cultivation Status of Flowers*.

Consumption Trends

Flowers have traditionally been perceived as luxury goods rather than daily necessities; thus, per capita annual spending on floriculture did not exceed 10,000 won until the early 1990s. However, as national income rose with economic growth, spending increased steadily each year. Per capita floriculture expenditure was only 5,646 won in 1990 but rose sharply to 20,870 won in 2005. Since then, however, the trend has reversed, with per capita spending declining continuously. Between 2006 and 2017, per capita expenditure decreased at an average annual rate of 4.6%, falling to 11,906 won in 2017 returning to levels seen in the late 1990s. In 2023, spending declined by another 4.8% from the previous year (13,764 won), reaching 13,104 won.

Figure 3-33 Trends in per capita flower consumption

nit: KRW



Source: MAFRA, various years, *Cultivation Status of Flowers*.

Export and Import Trends

The structure of Korea's floriculture trade was heavily import-dependent until the mid-1990s. However, during the 1997 foreign exchange crisis, domestic consumption

of orchids contracted, and the sharp depreciation of the Korean won caused bulb imports to plummet, reducing the import value of floricultural products from USD 26.73 million in 1995 to USD 10.34 million in 1998. Over the same period, weak domestic demand and falling prices led growers to shift their marketing channels toward exports, resulting in an increase in export value from USD 6.36 million to USD 11.48 million.

Subsequently, floriculture exports grew steadily until the mid-2000s, reaching approximately USD 103 million in 2010. Cut flowers, such as roses, chrysanthemums, and lilies, were the major drivers of export expansion. These products had shown almost no export performance until the early 1990s because of strict grading standards and high logistics costs, but exports surged rapidly from the mid-2000s as production, grading, and distribution systems became more sophisticated.

However, the export growth of cut flowers slowed after 2010 because of heavy dependence on the Japanese market, prolonged yen depreciation, and intensifying price competition from emerging producers such as Kenya and Colombia. After 2015, the decline became even more pronounced: the combined export value of roses, chrysanthemums, and lilies fell from USD 79 million in 2010 to approximately USD 11 million in 2024. The total floriculture exports also decreased from USD 28.46 million in 2015 to USD 17.15 million in 2019 and further to 6.36 million dollars in 2024.

Table 3-17 Trends in exports and imports of flowers

Unit: USD thousands

Category	1995	1998	2000	2005	2010	2015	2019	2020	2021	2022	2023	2024
Flower exports (A)	6,363	11,484	28,888	52,142	103,067	28,460	17,159	15,858	16,558	12,446	9,313	6,363
Rose	47	3,419	10,324	10,597	34,235	3,264	1,709	1,484	1,173	871	695	516
Chrysanthemum	152	272	4,682	8,577	13,802	2,370	1,000	918	728	365	23	160
Lily	2,318	3,388	4,395	10,484	27,845	9,328	6,110	5,000	4,048	1,686	1,063	411
Cactus	3,312	2,266	2,736	1,881	2,756	3,786	4,063	4,322	4,894	4,447	3,443	2,792
Orchid	216	660	3,250	16,668	19,279	6,648	1,442	815	417	475	577	415

Category	1995	1998	2000	2005	2010	2015	2019	2020	2021	2022	2023	2024
Flower imports (B)	26,739	10,336	19,472	28,845	44,744	60,769	86,515	81,716	105,253	125,048	119,166	121,537
Orchid	13,354	6,603	10,826	14,546	24,023	22,209	15,656	16,277	16,526	19,339	16,941	16,878
Chrysanthemum	-	3	88	134	728	9,572	10,407	10,071	16,398	23,883	23,147	23,164
Carnation	1,149	131	698	1,120	1,377	2,282	6,987	7,372	11,882	17,116	18,455	19,091
Trade balance (A-B)	△20,376	1,148	9,416	23,297	58,323	△32,309	△69,356	△65,858	△88,695	△112,602	△109,853	△115,174

Source: Korea Agro-Fisheries and Food Trade Corporation, various years, *Agricultural & Fishery Trading Information.*

In contrast, floriculture imports have continued to increase over the long term. Import value rose from USD 19.47 million in 2000 to USD 60.76 million in 2015, USD 86.51 million in 2019, and reached USD 119.17 million in 2023, maintaining a similarly high level of USD 121.54 million in 2024. In particular, imports of chrysanthemums and carnations have grown markedly, while orchid imports have also remained at a high level—between USD 15 and 19 million annually—since the mid-2010s.

Consequently, the floriculture trade balance has deteriorated steadily after posting a surplus of USD 58.32 million in 2010. It turned into a deficit of USD 69.36 million in 2019, which expanded to USD 112.6 million in 2022, USD 109.86 million in 2023, and USD 115.17 million in 2024. This indicates that the industry has become increasingly dependent on imports compared with the past.

Specialty Crops

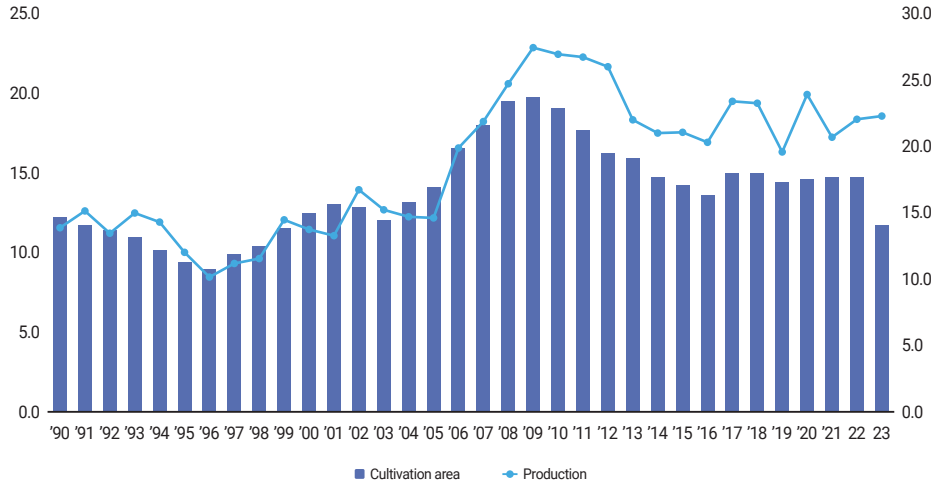
Production Trends

The cultivation area of ginseng decreased from 12,184 ha in 1990 to 8,940 ha in 1996, recording an average annual decline of 4.3%. However, as agricultural market liberalization accelerated, ginseng became recognized as a high-income crop, and the cultivated area began to increase from 1997 onward, expanding at an average annual rate of 6.1% to reach 19,702 ha in 2009. Since then, the cultivation area has shifted back

to a declining trend, falling to 11,745 ha in 2023. Ginseng production also rose to 27,460 tons in 2009 but later decreased to 22,223 tons in 2023 because of the contraction in cultivated area.

Figure 3-34 Trends in the ginseng cultivation area and production

Unit: Left-Thousand ha, Right-Ten thousand tons



Source: MAFRA, various years, *Statistics of Ginseng*.

Ginseng cultivation is categorized into non-contract cultivation (singopo) and contract cultivation (jijeongpo). In 1990, non-contract cultivation accounted for 73.5% of the total, while contract cultivation represented only 26.5%, indicating a production structure heavily dominated by non-contract farming. Beginning in the late 1990s, however, the share of non-contract cultivation gradually declined; by 2005, non-contract and contract cultivation accounted for 62.6% and 37.4%, respectively. With policies promoting contract farming and increasing demand for stable contract-based supply led by major export companies, the share of contract cultivation rose to 48.8% in 2010 and surpassed non-contract cultivation in 2015, reaching 55.2%.

Table 3-18 Trends in the cultivation area by classification of ginseng

Unit: ha, %

Category	1990	1995	2000	2005	2010	2015	2019	2020	2021	2022	2023
Cultivated area	12,184 (100.0)	9,375 (100.0)	12,445 (100.0)	14,153 (100.0)	19,010 (100.0)	14,213 (100.0)	14,770 (100.0)	14,600 (100.0)	14,729 (100.0)	14,734 (100.0)	11,745 (100.0)
Non-contract cultivation (reported cultivation)	8,955 (73.5)	5,642 (60.2)	9,811 (78.8)	8,856 (62.6)	9,742 (51.2)	6,364 (44.8)	10,439 (70.1)	6,871 (47.1)	5,771 (39.2)	9,061 (61.5)	5,789 (49.3)
Contract cultivation (designated cultivation)	3,229 (26.5)	3,733 (39.8)	2,634 (21.2)	5,297 (37.4)	9,268 (48.8)	7,849 (55.2)	4,421 (29.9)	7,729 (52.9)	4,958 (33.7)	5,673 (38.5)	5,956 (50.7)

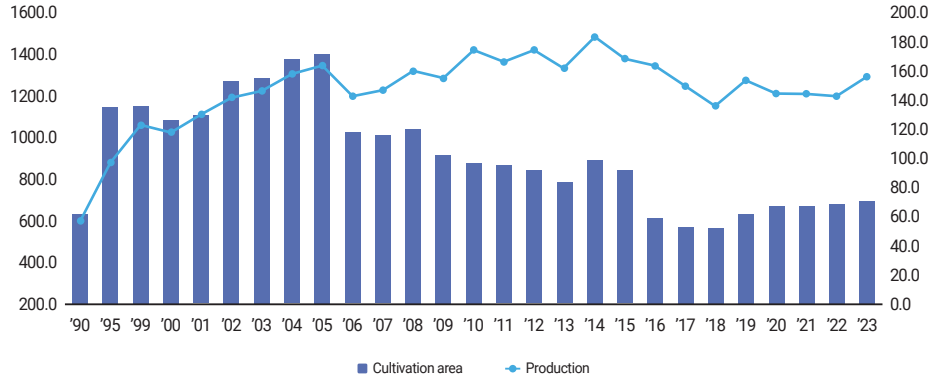
Source: MAFRA, various years, *Statistics of Ginseng.*

However, around 2019, cultivation patterns shifted again toward non-contract production (singopo). The share of singopo rose to 70.1% in 2019, while jigyeongpo (contract cultivation) fell to 29.9%. Although the proportions of the two cultivation types fluctuated annually from 2020 to 2023, they have recently converged. As of 2023, singopo accounted for 49.3% and jigyeongpo for 50.7%, indicating that, unlike in the past, the structure has evolved toward a near balance between contract and non-contract cultivation.

Mushrooms are classified into agricultural mushrooms, which are cultivated using agricultural by-products as substrate, and forest mushrooms, which are harvested from woodlands or produced using logs as substrate. The cultivation area for agricultural mushrooms increased from 483 ha in 1990 to 1,361 ha in 2005, reflecting a high average annual growth rate of 6.7%. However, because of changes in consumption patterns and rising imports, the cultivation area began to decline thereafter, falling to 411 ha in 2018. The area rebounded to 488 ha in 2019; it has since continued to expand, reaching 558 ha in 2023. Production increased each year up to 2005 because of the expanding cultivation area and rising yields; however, in recent years, production has shown a downward trend as the decline in cultivation area accelerated. Production in 2018 stood at 135,598 tons. More recently, with the renewed expansion of the cultivation area, mushroom production increased to 154,623 tons in 2023.

Figure 3-35 Trends in the mushroom cultivation area and production

Unit: ha, 10 thousand tons



Source: MAFRA, various years, *Major Statistics of Agriculture, Forestry, Livestock, and Food.*

Recent mushroom production trends vary significantly by item. Oyster mushrooms have experienced a continuous decline in cultivated area since the mid-2000s; however, yields have steadily increased because of the expanding bottle-cultivation and bag-cultivation techniques as well as greater adoption of automated production systems. In fact, although the cultivated area decreased from 556 ha in 2005 to 156 ha in 2023, production remained stable or even increased, from around 56,000 tons to approximately 58,000 tons during the same period. That is, the advancement of cultivation methods has directly contributed to productivity improvements.

For button mushrooms, the substrate-based production system requires intensive labor, which has led to a steady decline in cultivated area in recent years. The area decreased from 125 ha in 2010 to 83 ha in 2023, and production dropped sharply from about 21,000 tons in 2019 to approximately 8,000 tons in 2023. Labor constraints and rising reinvestment costs for facilities appear to be key contributing factors.

Enoki mushrooms entail relatively low labor and production costs and have shown stable consumption growth. After experiencing an expansion in production for some time, they have recently shifted into stagnation or slight decline. Their cultivated area remained almost unchanged at around 34–35 ha between 2018 and 2023, but

production decreased from 31,000 tons in 2019 to approximately 26,000 tons in 2023.

Reishi mushrooms have continued to show a decline in cultivated area despite rising demand for health-functional products. As of 2023, the cultivated area has shrunk to about 12 ha, while production has generally remained in the range of 80–100 tons since 2020.

Table 3-19 Cultivation area and production by mushroom item

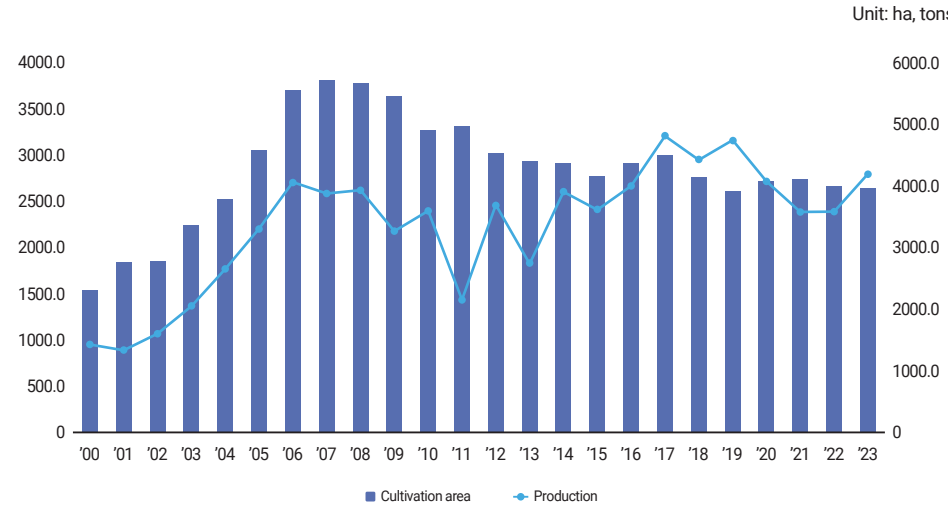
Unit: ha, tons

Category	1990		1995		2000		2005		2010		2015	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Button	54	10,281	121	15,723	148	21,813	174	18,985	125	22,635	92	9,732
Oyster	335	43,732	542	72,801	670	70,759	556	56,866	215	45,191	168	62,467
Reishi	94	810	393	3,346	100	653	91	448	26	650	18	140
Enoki	0.2	404	10	3,867	61	23,837	84	40,161	45	53,187	18	37,554
Category	2018		2019		2020		2021		2022		2023	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Button	102	11,348	123	21,913	107	20,493	76	9,259	86	7,954	83	7,983
Oyster	121	39.497	144	48,327	151	45,724	146	47,084	151	49,951	156	58,887
Reishi	11	79	8	78	10	80	12	104	13	105	12	102
Enoki	35	28,532	35	31,818	34	26,128	35	27,038	35	26,478	35	26,454

Source: MAFRA, various years, *Major Statistics of Agriculture, Forestry, Livestock, and Food; Production Performance of Specialty Crops.*

The cultivated area of tea leaves was only 715 ha in 1995 but expanded significantly to 3,800 ha by 2007 as tea consumption increased with its growing perception as a health-promoting food. This corresponds to a high average annual growth rate of 12.3%. However, as consumption of substitute beverages such as coffee expanded, the cultivation area shifted to a downward trend, falling to 2,624 ha in 2023, a 30.9% reduction compared to 2007. Production increased each year during the period of area expansion but later declined because of the contraction in cultivated area. More recently, however, improvements in yield have helped maintain production at approximately 4,000 tons.

Figure 3-36 Trends in the cultivation area and production of tea leaves



Source: MAFRA, various years, *Major Statistics of Agriculture, Forestry, Livestock, and Food.*

Consumption Trends

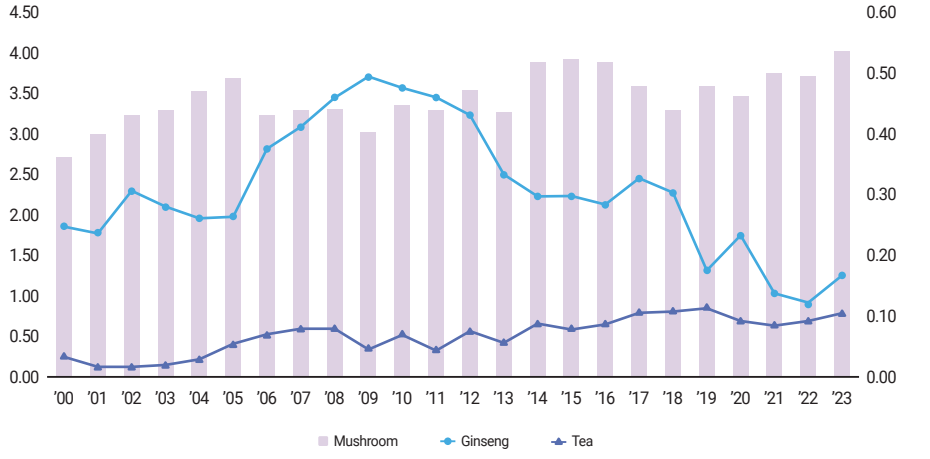
Per capita ginseng consumption remained stable at around 0.25~0.30 kg in the early 2000s, before temporarily increasing to 0.40~0.50 kg between 2007 and 2010. However, consumption has steadily declined since then because of the expansion of alternative forms such as health-functional foods and rising consumer price burdens. Consequently, per capita consumption fell to 0.14 kg in 2021 and 0.12 kg in 2022 and remained at 0.17 kg in 2023 significantly lower than the levels observed in the past.

Mushroom consumption increased steadily following the expansion of home meal replacement (HMR) and foodservice demand after the 2000s, reaching a peak of 3.95 kg in 2015. Although consumption declined temporarily thereafter, it rose again in 2020 because of the increase in at-home eating during the COVID-19 pandemic, recording 3.77 kg in 2021 and 4.05 kg in 2023 the highest level since the statistics began to be recorded. This trend reflects the combined effects of a stable supply of low-priced, widely consumed items such as enoki and oyster mushrooms, along with broader dietary changes.

Tea consumption increased gradually from around 0.02~0.03 kg per capita in the early 2000s to 0.08 kg in 2007~2008. However, it has since stagnated within the 0.08~0.11 kg range as coffee consumption expanded, and ready-to-drink (RTD) tea beverages became more common. In 2023, per capita tea consumption stood at 0.10 kg, showing only minor fluctuations over the past decade.

Figure 3-37 Per capita annual consumption of specialty crops

Unit: Left: Mushroom- kg/person, Ginseng, Right: Tea- kg/person



Note: The data on consumption of mushrooms and tea are estimates calculated based on (production + imports - exports)/ population.

Source: MAFRA, various years, *Statistics of Ginseng; Major Statistics of Agriculture, Forestry, Livestock, and Food.*

Export and Import Trends

Ginseng is one of Korea's representative export crops. In the 1990s, annual export volumes remained approximately 2,000 tons; however, exports steadily expanded thereafter because of rising overseas demand and the growth of processed ginseng exports, reaching 13,600 tons in 2021 and 16,000 tons in 2022. In 2024, exports remained high at approximately 15,000 tons. In contrast, imports temporarily increased in the mid-2000s as low-priced Chinese ginseng entered the market; however, more recently, imports have declined sharply because of safety and

quality concerns. Import volumes were only 58 tons in 2019, 87 tons in 2023, and approximately 89 tons in 2024, effectively remaining at negligible levels.

Mushroom exports surged in the early to mid-2000s, led especially by enoki mushrooms, reaching 21,178 tons in 2010. However, as production expanded in competing countries such as China and price competition intensified, exports turned downward. Recently, exports have shown renewed growth, reaching 22,010 tons in 2019 and maintaining around 12,800 tons in 2023. In 2024, exports rose slightly to approximately 13,000 tons, indicating a modest recovery. Imports, however, have continued to rise since 2010, increasing to 56,000 tons in 2019, 68,000 tons in 2023, and surpassing 76,000 tons in 2024.

Tea exports grew significantly until the mid-2000s, reaching 1,481 tons in 2005. However, the declining domestic cultivation area and stagnation in the processed green tea market led to a persistent downward trend, with export volumes falling to 363 tons in 2019. Recently, exports have shown a mild rebound because of the expanding small-scale exports and rising demand for functional teas, recording 515 tons in 2021, 417 tons in 2023, and 471 tons in 2024. In contrast, tea imports have increased steadily because of diversified demand for black tea, fruit tea, and herbal tea, rising from 1,510 tons in 2019 to 1,533 tons in 2023 and 1,669 tons in 2024.

Table 3-20 Trends in exports and imports of specialty crops

Unit: Tons, USD 100 thousands

Category		1995		2000		2005		2010		2015		2018	
		Volume	Amount	Volume	Amount	Volume	Amount	Volume	Amount	Volume	Amount	Volume	Amount
Exports	Ginseng	2,527	1,400	2,527	1,400	2,527	1,400	3,298	1,242	5,925	1,551	7,514	1,879
	Mush room	97	12	187	56	504	28	21,178	389	15,079	366	19,822	496
	Tea	366	13	371	10	1,481	48	708	44	287	44	354	59
Imports	Ginseng	37	8	107	32	297	61	160	40	96	41	29	24
	Mush room	7,600	104	11,801	91	17,411	154	16,185	138	48,976	336	55,054	387
	Tea	117	7	410	17	850	40	585	42	807	98	1,514	209

Category		2019		2020		2021		2022		2023		2024	
		Volume	Amount	Volume	Amount	Volume	Amount	Volume	Amount	Volume	Amount	Volume	Amount
Exports	Ginseng	10,575	2,103	11,894	2,298	13,652	2,670	15,965	2,697	13,657	2,602	15,092	2,493
	Mush room	22,010	544	19,114	490	15,457	451	12,430	383	12,845	356	13,049	368
	Tea	363	47	500	68	515	168	484	132	417	126	471	208
Imports	Ginseng	58	36	62	66	66	42	89	31	87	26	89	53
	Mush room	56,391	402	55,925	395	66,798	458	63,046	463	67,909	462	76,691	544
	Tea	1,510	200	1,374	212	1,461	249	1,627	262	1,533	240	1,669	245

Source: MAFRA, various years, *Major Statistics of Agriculture, Forestry, Livestock, and Food; Production Performance of Specialty Crops.*

Prospects and Tasks

The entire horticulture sector has been experiencing a contraction in cultivated area and a weakening of its production base across vegetables, fruits, flowers, and specialty crops. This trend is driven by farm population aging, labor shortages, greater market openness, and shifts in consumption patterns. In the vegetable sector, production of key items such as chili peppers, garlic, radish, and cabbage has been declining, while the expansion of low-priced Chinese imports, growth in frozen and dried vegetable imports, reduced kimchi consumption, and simplified eating habits are collectively eroding the domestic production base. In fruit production, traditional orchard crops such as apples, pears, grapes, and persimmons are losing acreage, whereas consumption of imported fruits—bananas, oranges, kiwifruit, mangoes, and cherries—is increasing, structurally weakening the competitive position of domestic fruit producers. In the floriculture sector, both cultivated area and sales peaked in the mid-2000s; they have since entered a sustained decline. Specialty crops such as ginseng, mushrooms, and tea are also seeing their cultivation base weaken because of increased imports, substitution in consumption, and farm aging.

More recently, the increasing frequency of extreme weather events associated with climate change has further weakened production and supply capacity. Repeated occurrences of heatwaves, cold spells, heavy rainfall, drought, and pest and disease

outbreaks have intensified production volatility across items, accelerating shifts in major production regions, adjustments in cropping schedules, and changes in cultivars. In protected cultivation, structural vulnerabilities—aging facilities, low levels of automation and environmental control, and aging orchards—are heightening sensitivity to climate risks. This context indicates the need for institutional and infrastructural improvements that go beyond short-term productivity gains and support climate-adaptive production systems and stable supply-demand management.

Given these conditions, several policy directions are recommended as follows.

First, transitioning to a high-quality, high-efficiency production structure through the adoption of advanced technologies and the standardization of cultivation practices is essential. Phased improvement of aging facilities, expansion of smart-farm systems, enhanced environmental control, and energy-saving greenhouse technologies, along with greater mechanization and labor-saving cultivation systems, can mitigate climate risks and reduce production costs. Simultaneously, varietal improvement and diversification—emphasizing functionality, processing suitability, and storability—are required to differentiate domestic products from imports. For specialty crops such as ginseng, mushrooms, and tea, linking production with functional ingredients and processed foods is desirable for creating higher added value.

Second, upgrading logistics infrastructure—such as pre-cooling, cold-chain systems, sorting, and packaging at the production site—and strengthening transaction standards related to grades, packaging, and delivery requirements can improve distribution efficiency and quality management. Joint sorting and shipment through producer organizations and APCs, investment in cold-chain expansion, and advanced small-pack and pre-processing systems for online and fresh-convenience markets can help maintain supply continuity and stabilize prices even under climate-induced production fluctuations.

Third, in response to evolving consumer preferences—health-oriented diets, growth in convenience foods and foodservice consumption—reliable information should be provided on product functionality, production area, cultivar, cultivation

methods, and climate and supply-demand outlooks. Simultaneously, consumer demand should be expanded through diverse product formats and channels, including HMR, salads, convenience-ready vegetables, processed fruits, and health-oriented products based on ginseng, mushrooms, and tea.

Fourth, as climate change and import expansion proceed simultaneously, a systematic supply-demand management framework is required to mitigate instability across items. This includes 1) building an integrated system for production forecasting and early warning using climate, growth, and supply-demand data, 2) institutionalizing tools such as contract farming, stockpiling and market-stabilization measures, and incentives for shipment-timing dispersion, and 3) moderating extreme price volatility.

Finally, in responding to low-priced imports, competitive vegetables, fruits, ginseng, mushrooms, and tea should be cultivated as strategic export items. Strengthening comprehensive support that links production, processing, distribution, certification, and marketing with climate-adaptive R&D, supply-demand management, and export infrastructure is essential for securing a sustainable growth base for the horticulture and specialty-crop sectors under conditions of market liberalization and climate change.

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4. Forest

Forest Resources and Forest Industry

Forest Resource

Korea's total land area is 10.019 million hectares, with forests covering 6.287 million hectares, or 62.6%. The forest cover rate declined from 65.4% in 2001 to 62.6% in 2023. Within the total forest area, Age Class IV and Age Class V represent the largest proportions, covering 2.45 million hectares and 2.07 million hectares, respectively. Together, these two classes account for approximately 69% of all forests. In comparison, young forests (Age Class I and II) constitute only 4% and 3%, respectively. These data indicate that Korean forests have reached a mature stage, with a stable structure dominated by middle- and older-aged stands.

By ownership type, national forests cover 1.65 million ha, representing about 26% of all forests, with more than half in Age Classes IV and V. Age Class V alone accounts for 650,000 ha, while Age Class VI (older forests) exceeds 200,000 ha. These Figures reflect long-term planned management and large-scale reforestation programs in national forests, resulting in more mature forest stands than those in private forests. Community forests, although smaller at 480,000 ha (7.7%), also have a high proportion of Age Classes IV and V, indicating stable forest conditions. Private forests, which constitute the largest share at 66%, have a lower proportion of Age Classes IV and V compared to national forests and contain fewer older forests (Age Class VI). This pattern suggests that private forests are relatively younger because timber harvesting and replanting activities are more frequent, and management primarily focuses on economic use.

Coniferous forests, covering 2.32 million ha, have a high proportion of Age Class IV and V, indicating that many areas reforested through past national tree-planting programs have now matured. Broad-leaved forests, totaling 2.00 million ha, have transitioned naturally over time, resulting in a balanced distribution of middle- and older-aged stands and a relatively high proportion of older forests.

Mixed forests (1.66 million ha), where coniferous and broad-leaved species coexist, contain 760,000 ha in Age Class IV, the largest area among their classes. This distribution indicates a stable structure dominated by middle-aged forests. "Other" forests (300,000 ha) mainly consist of non-stocked areas and other special-purpose forest lands.

By forest use category, production forests account for 3.28 million ha (52%), representing the largest share. These forests contain a high proportion of Age Class IV and V stands, indicating that timber production capacity is well established. Public-benefit forests cover 1.61 million ha and include water conservation forests, recreational forests, and urban forests; these areas are also primarily composed of stable, middle- and older-aged stands. Quasi-conservation forests, which cover 1.40 million ha and are subject to development restrictions, have the highest proportion in Age Class IV, indicating a dominant structure of middle-aged forests suitable for long-term conservation (see <Table 3-21> and <Figure 3-38>).

Table 3-21 Distribution of forest area by age class (2020)

Unit: ha, %

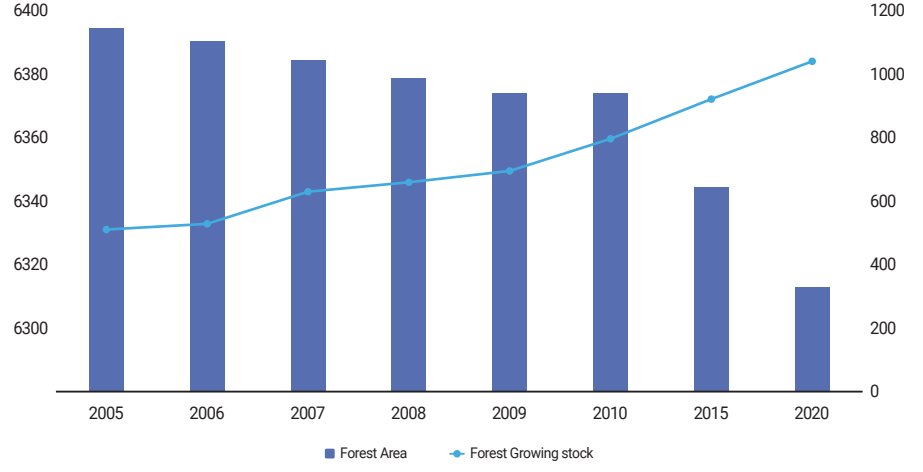
Category		Total	I	II	III	IV	V	VI	Others
Total		6,298,134 (100.0)	257,507 (4.1)	199,215 (3.2)	674,014 (10.7)	2,452,066 (38.9)	2,069,279 (32.9)	344,138 (5.5)	301,915 (4.8)
Ownership	National Forest	1,652,736 (26.2)	41,615 (2.52)	27,747 (1.68)	144,009 (8.71)	529,266 (32.02)	657,301 (39.77)	207,846 (3.3)	44,952 (2.7)
	Community Forest	483,202 (7.7)	8,978 (1.86)	8,247 (1.71)	41,012 (8.49)	190,274 (39.38)	187,004 (38.70)	33,439 (6.92)	14,248 (2.95)
	Private Forest	4,162,196 (66.1)	206,914 (4.97)	163,221 (3.92)	488,993 (11.75)	1,732,526 (41.63)	1,224,974 (29.43)	102,853 (2.47)	247,715 (5.95)
Forest Type	Coniferous Forests	2,324,085 (36.9)	125,494 (5.40)	73,073 (3.14)	221,732 (9.54)	992,392 (42.70)	795,072 (34.21)	116,322 (5.01)	-
	Broad-leaved forests	2,005,883 (31.8)	92,957 (4.63)	77,578 (3.87)	241,874 (12.06)	698,147 (34.80)	729,812 (36.38)	165,515 (8.25)	-
	Mixed Forest	1,666,251 (26.5)	39,056 (2.34)	48,564 (2.91)	210,408 (12.63)	761,527 (45.70)	544,395 (32.67)	62,301 (3.74)	-
	Other	301,915 (4.8)	-	-	-	-	-	-	-

Category		Total	I	II	III	IV	V	VI	Others
Forest Use	Production Forests	3,286,458 (52.2)	167,868 (5.11)	106,562 (3.24)	334,066 (10.16)	1,304,352 (39.69)	1,117,524 (34.00)	145,274 (4.42)	110,812 (3.37)
	Public purpose Forest	1,611,152 (25.6)	23,062 (1.43)	21,976 (1.36)	125,215 (7.77)	575,307 (35.71)	636,910 (39.53)	170,992 (10.61)	57,690 (3.58)
	Quasi-Conservation Forests	1,400,524 (22.2)	66,577 (4.75)	70,677 (5.05)	214,733 (15.33)	572,407 (40.87)	314,845 (22.48)	27,872 (1.99)	133,413 (9.53)

Note: ( ) indicate the proportion of the total forest area.
"Others" refers to the combined area of bamboo forests and non-stocked forest land.
Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry; Forest statistics are compiled every five years.*

Figure 3-38 Changes in forest area and growing stock

Unit: Million ㎥, Thousand ha



Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry; Forest statistics are compiled every five years.*

Forest area decreased slowly and steadily from 2005 to 2020, with the decline becoming more pronounced after 2015. In contrast, forest growing stock increased throughout the entire period. By 2020, the growing stock was more than twice the level recorded in 2005.

Although total forest area is decreasing, the volume of wood in forests is increasing.

The rise in growing stock shows that forests are becoming older and denser. Higher stock per hectare indicates an improvement in overall forest quality. However, the long-term decline in forest area may reduce total carbon absorption in the future, so stronger forest-use control and protection are needed. The chart presents a structural change: forest area is decreasing, but forest growing stock is increasing. This trend highlights the importance of managing forest age structure and preventing further forest loss.

Forest Industry

The graphs show changes in the share of forestry in Korea's total GDP from 2003 to 2023. In 2003, forestry represented 0.012% of total GDP. By 2023, this share rose to 1.47%. This indicates a significant increase in the economic contribution of the forestry sector over the past 20 years. While forestry remains a small part of the national economy, its relative importance has grown as production, value-added activities, and forest-related industries expanded. The increase in forestry's share of GDP is due to higher forest productivity, greater economic value from forest-based industries, and the expansion of new forest services, such as carbon absorption, recreation, and eco-tourism. As a result, the forestry sector now contributes more to the national economy than in previous years <Figure 3-39>.

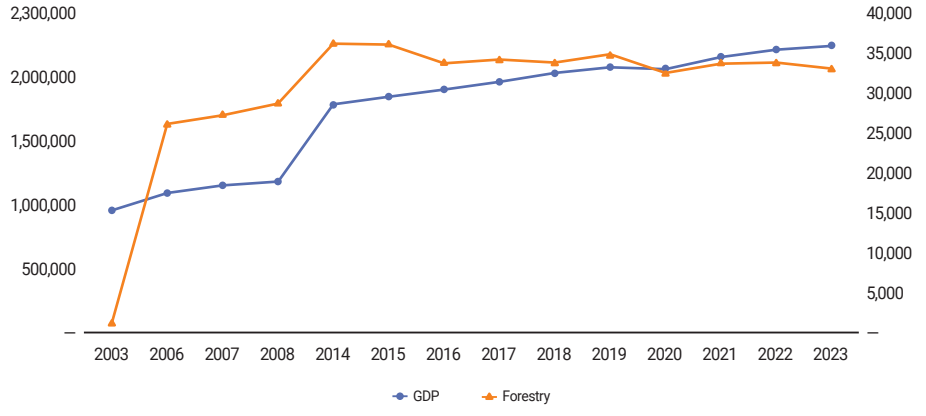
Figure 3-39 Share of forestry in total GDP

Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry; Forest statistics are compiled every five years.*

<Figure 3-40> compares Korea's total GDP with the GDP of the forestry sector from 2003 to 2023. After an initial increase, the growth rate of forestry GDP remained high and continued to rise steadily. Although the rate of increase slowed in later years, the forestry sector maintained stable production and economic contribution. This long-term trend indicates that forestry is now a more established and consistent part of the national economy.

Figure 3-40 Comparison of Korea's total GDP with the GDP of the forestry sector from 2003 to 2023

Unit : Billion Won

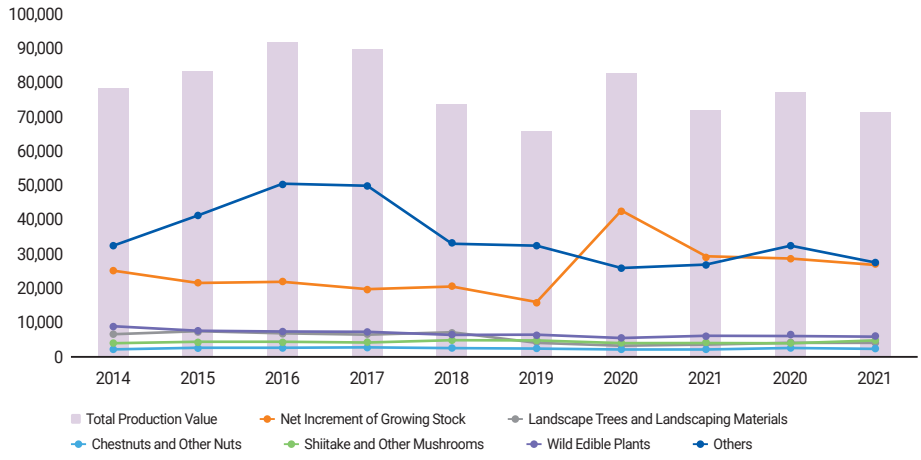


Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry; Forest statistics are compiled every five years.*

Total production value increased steadily until peaking in 2016, then declined through 2019, with temporary rebounds in 2020 and 2022 (see <Figure 3-41>). The 2023 level remains below previous highs, indicating ongoing variability in the sector. The net increment of growing stock also showed considerable variation. It decreased from 2014 to 2019, increased sharply in 2020, and then remained relatively high and stable, which suggests improved forest growth and biomass accumulation. Landscaping trees and related materials remained stable until 2018, then declined significantly in 2019–2020, followed by a moderate recovery and a slight decrease in 2023. These trends reflect changes in market demand and the effects of the COVID-19 period.

Figure 3-41 Value of forest products

Unit : Billion Won



Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry; Forest statistics are compiled every five years.*

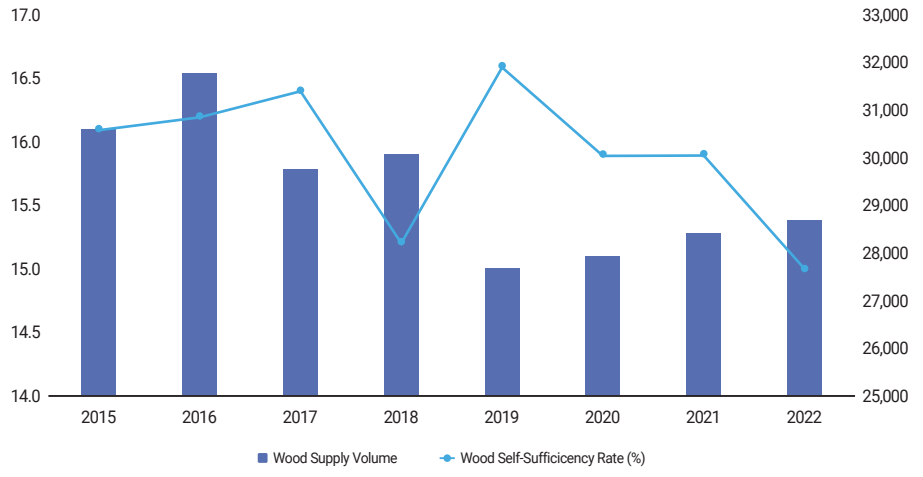
Chestnuts and other nuts declined gradually until 2018, remained stable from 2019 to 2022, and decreased slightly in 2023, indicating reduced productivity and market fluctuations. Mushrooms remained stable, providing a consistent but modest contribution to forestry income. Wild edible plants increased until 2019, declined in 2020, and then stabilized, with a notable increase in 2023. The "Other Products" category, which accounts for a large share of total production, increased sharply until 2016, declined in 2018 and 2020, and recovered in 2022. Its strong year-to-year volatility indicates high sensitivity to market conditions and environmental factors.

<Figure 3-42> shows changes in Korea's wood supply volume and wood self-sufficiency rate from 2015 to 2022. Both indicators fluctuate during this period. The wood supply volume, represented by blue bars, remains relatively stable from 2015 to 2018, then declines in 2019. After 2019, the supply volume remains lower than in previous years, with only slight increases in 2020 and 2021 and a small increase in 2022. These trends show that domestic wood production does not return to the levels observed in the mid-2010s.

The wood self-sufficiency rate, indicated by the red line, fluctuated significantly. The rate increased gradually from 2015 to 2017, dropped sharply in 2018, and then rose to its highest point in 2019. After 2019, the self-sufficiency rate declined steadily through 2022. These changes reflect shifts in domestic roundwood production compared to wood imports.

Figure 3-42 Wood supply (including roundwood)

Unit : %, 1000 m3



Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry; Forest statistics are compiled every five years.*

<Table 3-22> presents Korea's exports and imports of wood products, stone products, and non-timber forest products (NTFPs) from 2020 to 2024. Overall, exports are significantly lower than imports, indicating Korea's ongoing dependence on foreign wood and related materials.

Exports of wood products increased steadily over the period. In contrast, exports of stone products fluctuated, rising sharply in 2022 before declining. Exports of NTFPs grew consistently, reflecting expanding global demand for Korean forest products, such as mushrooms and nuts.

Imports of wood products stayed extremely high each year, peaking in 2022 before slightly declining but still remaining above pre-2020 levels. Imports of stone products also showed volatility, while NTFP imports increased until 2022 and then stabilized.

Overall, imports far exceed exports across all product categories, especially wood products, highlighting Korea's dependence on international markets. At the same time, gradual growth in exports of wood products and NTFPs suggests strengthening domestic processing capacity and emerging competitiveness in specific forest-product segments.

Table 3-22 Exports and imports of forest products

Unit: 1000 USD

		2020	2021	2022	2023	2024
Export	Wood Products	164,244	202,920	178,263	180,666	195,023
	Stone Products	129,615	155,375	211,893	127,508	124,666
	Non-timber Forest Product	86,458	92,593	93,073	97,963	108,613
Import	Wood Products	4,208,967	5,489,886	5,829,182	4,664,356	4,530,540
	Stone Products	825,986	945,129	978,968	823,484	733,452
	Non-timber Forest Product	756,935	854,178	907,266	845,859	873,619

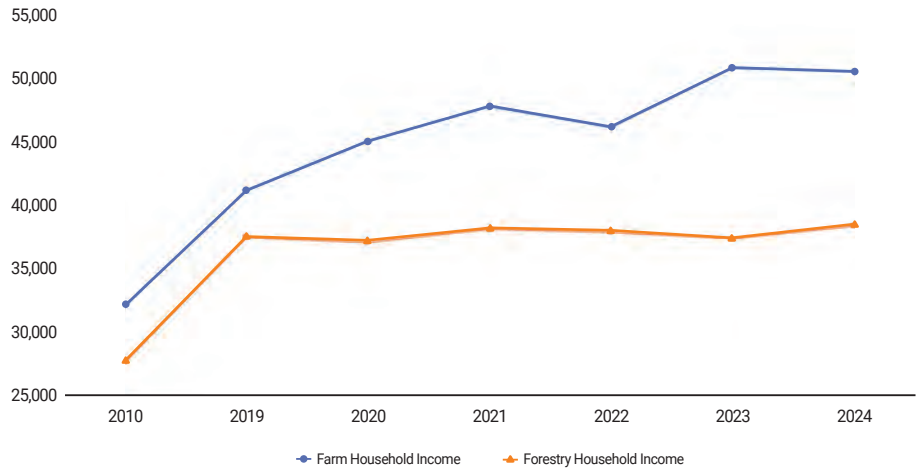
Source: Korea Forest Service, various years, *Forest Products Trade Statistics.*

Socioeconomic Conditions of Forest Communities

<Figure 3-43> shows a clear and consistent income gap between the two groups, with farm households earning substantially more than forest households throughout the entire period. The income level of forest households fluctuates only slightly and does not show the upward trend seen in farm households. This pattern suggests structural constraints in forest-based livelihoods, including reliance on small-scale forest operations, lower market returns, and limited opportunities for diversification.

Figure 3-43 Household income: Farm vs. forest

Unit: 1000 USD



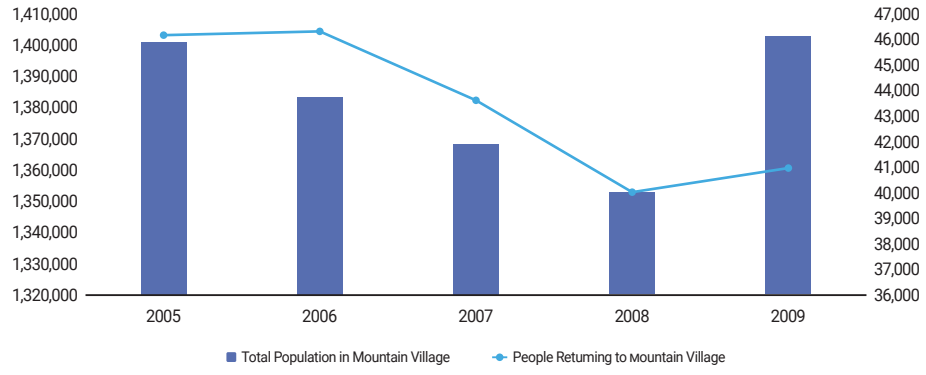
Source: Korea Forest Service, 2020b, *Economic Survey of Forest Households.*

<Figure 3-44> shows that the population of mountain villages steadily decreased from 2020 to 2023, starting at approximately 1.40 million in 2020 and reaching its lowest point in 2023. This decline reflects ongoing demographic challenges, including aging populations, youth outmigration, and limited economic opportunities in remote areas. In 2024, the population increased, which suggests that policy efforts or improved local conditions may be beginning to slow or partially reverse the previous decline.

The number of people returning to mountain villages remained nearly constant from 2020 to 2021, then declined sharply in 2022 and 2023. In 2024, the number increased slightly but did not reach previous levels. Overall, both the total population and return migration to mountain villages continue to decline, although the small increase in 2024 suggests possible stabilization. This trend may result from rural support policies or new employment opportunities related to forests and nature. Additional data in future years will be necessary to determine whether this increase is temporary or sustained.

Figure 3-44 Population trends in mountain villages and return migration (2020–2024)

Unit: Person

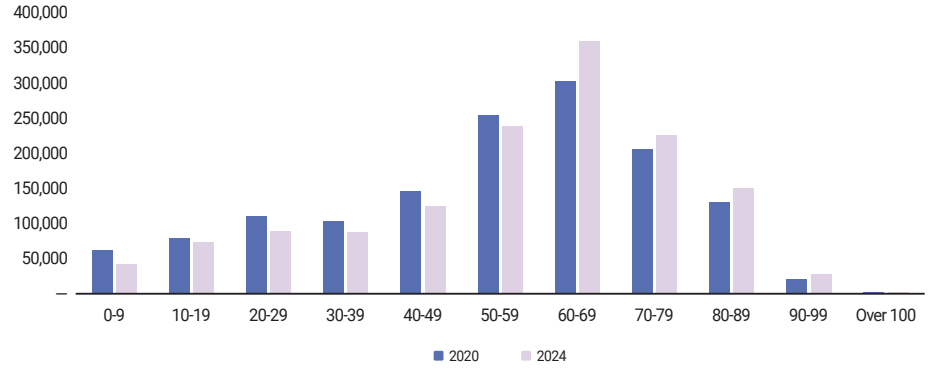


Source: Korea Forest Service, various years, *Statistical yearbook of forestry.*

<Figure 3-45> shows that the population age structure for both years has relatively small younger age groups (0–29), with a slight decline in their numbers in 2024. This trend suggests continued outmigration of children, students, and young adults to urban areas for education and employment opportunities.

Figure 3-45 Population age structure in mountain villages (2020–2024)

Unit: person



Source: Korea Forest Service, various years, *Statistical yearbook of forestry.*

The working-age population (30–49) demonstrates moderate levels but declines slightly over the four-year period. This trend indicates challenges in retaining economically active households, which may reduce the local labor supply and economic activity.

In contrast, the largest population increase is among older adults. The 50–69 age groups expand significantly in 2024, and the 60–69 age group becomes the largest cohort. This trend reflects national aging patterns and the limited inflow of younger residents into mountain areas.

Populations in the 70–89 age groups also increase, indicating greater longevity and higher demand for healthcare, mobility support, and social services in mountain communities.

Overall, the comparison shows a demographic imbalance, with declining numbers of young and working-age residents and rapid growth in older age groups. These trends indicate the need for targeted revitalization policies, improved living conditions, and support programs to maintain the long-term viability of mountain villages.

Forest Ecosystem Health and Forest Service

Forest Ecosystem Health

The greenhouse gas removals in forests data confirm that Korea's forests provide substantial net carbon removals but remain sensitive to natural disturbances. Ongoing forest management, fire prevention, and long-term monitoring are essential to maintain and strengthen the forest sector's role in national climate mitigation under the UNFCCC framework <Table 3-23> and <Figure 3-46>.

Table 3-23 Greenhouse gas removals in the forests

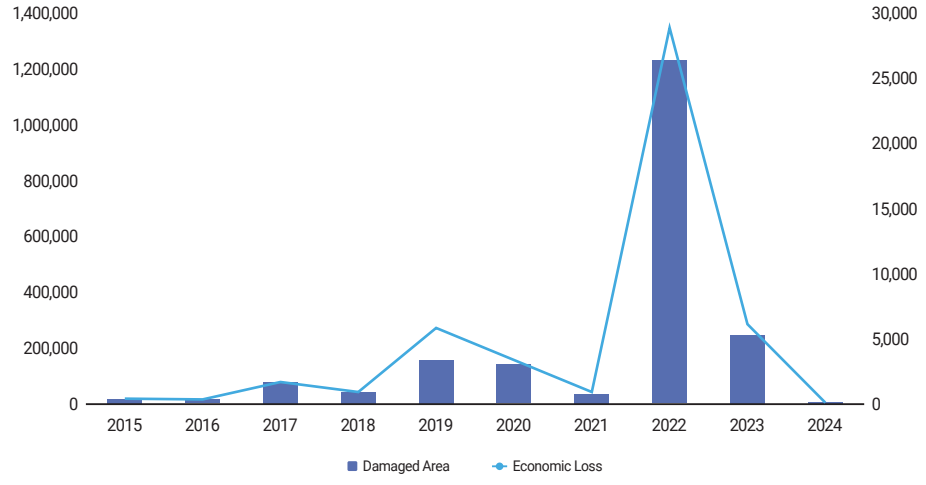
Unit: Gg CO2eq

Year	Total	Living Biomass	Harvested wood products	Forest fire
2019	-40,447	-40,262	-509	324
2020	-40,699	-40,522	-490	313
2021	-41,069	-40,389	-684	4
2022	-39,869	-41,207	-543	1,880

Note: GHG removals (-), emissions (+), in line with international guidelines under the UNFCCC.
Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry.*

Figure 3-46 Forest fire damage: Burned area and economic loss

Unit: Million WON, ha



Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry.*

The Forest Fire Damage data <Table 3-24> show significant variability in forest fire impacts and indicate the need for effective fire prevention, preparedness, and early response systems. The extreme event in 2022 illustrates how rapidly fire conditions can deteriorate and emphasizes the importance of maintaining responsive forest management and climate adaptation strategies to address increasing fire risks.

Table 3-24 Outbreak of forest diseases and pests

Unit: Tree, ha

Year	Pine wilt disease (trees)		Other forest Pests	
	Affected trees	Controlled trees	Affected area	Controlled area
2020	406,362	406,362	63,446	69,793
2021	307,919	307,919	60,966	72,317
2022	378,079	378,079	58,451	65,529
2023	1,065,967	784,903	57,865	64,228
2024	899,017	788,311	55,217	64,097

Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry.*

From 2020 to 2024, pine wilt disease remained the most serious forest health threat in Korea, with cases affecting 300,000–400,000 trees annually until a significant increase to over 1 million trees in 2023. Although the number of affected trees declined in 2024, it remained much higher than in earlier years. Other forest pest outbreaks followed a similar trend, remaining stable until 2022, then rising sharply in 2023 and 2024.

Despite rising outbreaks, control efforts remain steady. The number of treated trees and controlled areas shows little year-to-year variation, indicating consistent management programs. Overall, the data suggest increasing stress on forest ecosystems, likely influenced by climate factors, while highlighting the need to strengthen monitoring and pest management strategies to maintain forest health.

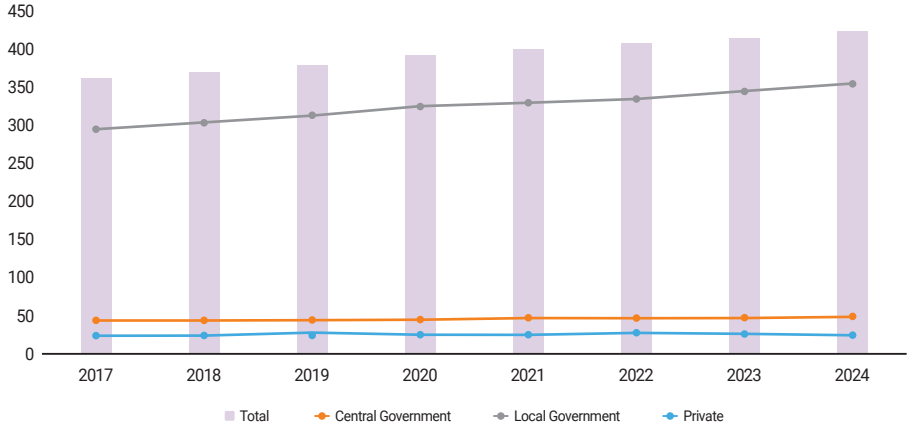
Forest Service

The total number of forest recreation facilities increased steadily from 2017 to 2024, indicating ongoing expansion of recreational infrastructure in forest areas. Facilities operated by local governments grew consistently and represented the largest share of new additions, which suggests that municipalities actively invested in improving public access and forest-based recreation services. Central government facilities remained relatively stable, reflecting a fixed supply of national-level sites. Privately operated facilities showed only minor annual changes, maintaining a small but steady share of the total sites.

Overall, <Figure 3-47> shows a clear trend: Korea is gradually increasing the availability of forest recreation facilities, with local governments leading the expansion and management of these resources. This growth supports broader goals of improving public well-being, promoting forest welfare services, and increasing access to nature-based recreation throughout the country.

Figure 3-47 Overview of forest recreation facilities by ownership

Unit: Number of Sites



Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry.*

The total number of visitors increases over time, particularly after 2020, indicating growing public demand for nature-based recreation. Local government facilities consistently receive the largest share of visitors and show the strongest growth, reflecting their broad geographic coverage and accessibility for local communities. Central government facilities maintain a stable visitor base each year, contributing a steady portion of total visits. Private facilities attract fewer visitors but have experienced modest increases in recent years.

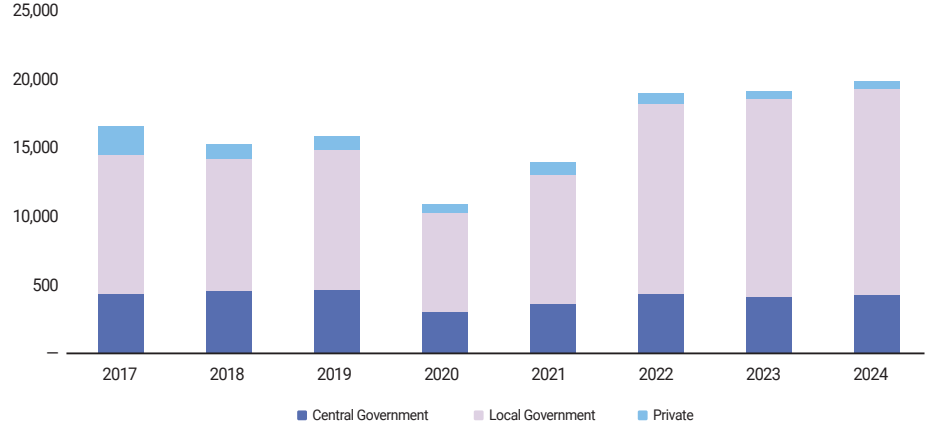
The overall trend shows increasing public interest in forest recreation and emphasizes the important role of local governments in providing and managing forest-based leisure services. This growth also indicates greater recognition of forests

as essential spaces for health, well-being, and outdoor activities.

<Figure 3-48> presents Urban Forest Area per Person and Urban Living Forest Area per Person. The results indicate a slight decline in overall urban forest area per person, while the more accessible urban living forest area per person shows a small increase. Urban Forest Area per Person decreased moderately from 2021 to 2023. This trend may result from population growth, land-use changes, or slower expansion of large-scale urban forest spaces.

Figure 3-48 Number of visitors to forest recreation facilities by ownership

Unit: 1000 people



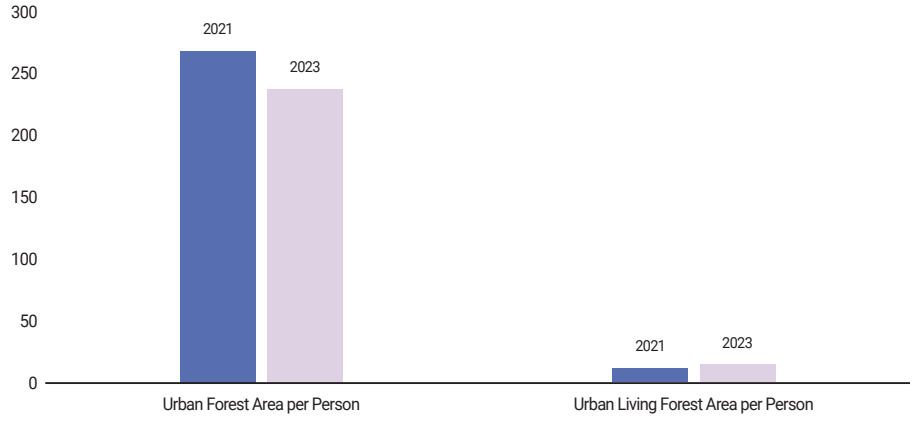
Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry.*

In contrast, Urban Living Forest Area per Person (forests located within everyday living zones) shows a modest improvement over the same period. This trend indicates that cities are investing in more small-scale, accessible green spaces, such as street trees, neighborhood forests, and community-level green infrastructure.

Overall, the graph shows two main trends: first, large urban forest areas per person have slightly decreased; second, accessible forest spaces near residential areas have increased. This shift suggests a greater focus on improving daily access to green spaces, which supports urban well-being and climate resilience <Figure 3-49>.

Figure 3-49 Status of urban forest development

Unit: ㎡/ person



Note: A living forest allows citizens to access it in their daily lives without requiring extra time or financial cost.
Source: Korea Forest Service, various years, *Statistical Yearbook of Forestry.*

From Policy Change to Policy Futures

Evolution of Forest Policy

Korea's forest policy has shifted from emergency restoration to sustainable, multi-purpose management. In the 1950s, forests were severely degraded. Traditional fuelwood use for heating, colonial over-exploitation, war damage, post-war reconstruction, shifting cultivation, and illegal logging left about half of the forest area with almost no standing trees. As a result, forests could not protect soil or regulate water, leading to frequent floods, erosion, and drought, while agricultural productivity remained low. During this period, the state had almost no effective forest administration, and forest policy did not exist in practice.

From the early 1960s, Korea shifted from a period of forest destruction to rebuilding basic forest governance. The government created core forest laws, introduced strict controls on illegal logging and shifting cultivation, and built the institutional foundation for national reforestation. This era established the legal and administrative

system needed for large-scale forest recovery.

During the 1970s and 1980s, forest policy in the country entered a nationwide reforestation phase. The government mobilized citizens to quickly plant trees on barren mountains, integrated afforestation with national rural development campaigns, and expanded large economic forest plantations. Strong state-led enforcement and widespread public participation resulted in one of the world's most successful reforestation efforts.

Since the late 1980s, policy direction in Korea shifted from "greening" to using forest resources. The focus moved to developing forest income sources, improving forest management, supporting non-timber forest products, and expanding recreational forests. Policy tools changed from strict regulation to more incentive-based and support-oriented approaches. However, private forest management remained structurally limited.

In the late 1990s and 2000s, the focus shifted from resource use to building a foundation for sustainable forest management. Policies prioritized higher-value forest resources, competitive forest industries, improved ecological services, and stronger institutional frameworks. New laws on mountain conservation, forest culture, and recreation indicated increased attention to environmental quality and multifunctional forest use.

The current Sixth Forest Master Plan (2018–2037) builds on these trends and outlines future directions. It sets out a vision of "economic forests, welfare forests, and ecological forests," with specific targets for wood self-sufficiency, employment in the forest sector, and universal access to forest welfare services. The plan's main policy directions include advanced management of forest resources and land, development of forest industries and employment opportunities, income stability for forest households, revitalization of mountain villages, integration of forest welfare into daily life, maintenance of forest ecosystem health, and enhanced disaster prevention and international forest cooperation.

The long-term trajectory of Korea's forest policy consists of five major shifts: emergency rehabilitation of degraded land, nationwide reforestation, resource use

and income generation, building a sustainable management base, and adopting a multi-functional model that integrates economy, welfare, ecology, climate mitigation, and global responsibility. The state's role has shifted from strict control and mobilization to a more balanced approach that includes regulation, incentives, service provision, and partnership with various stakeholders. This historical evolution provides context for examining how future forest policy should address new challenges, such as climate change, aging forests, rural depopulation, and increasing demand for ecosystem services.

Future Directions for Korea's Forest Policy

Recent trends indicate that Korea's forests are undergoing significant changes. Forests are becoming older and denser, the forest sector is gaining economic importance, forest communities are shrinking and aging, and climate risks and ecosystem pressures are increasing. Meanwhile, public demand for forest welfare, recreation, and urban green space is rising. Therefore, future forest policy should shift from prioritizing "more forests" to emphasizing "smarter, fairer, and more resilient forests."

First, policy should aim to rebalance forest age structure and increase ecological resilience. Many forests are concentrated in middle- and older-age classes, while young forests are relatively scarce. This pattern creates risks for future wood supply, carbon sequestration, and ecosystem health. Future policy should promote active regeneration, close-to-nature silviculture, and more diverse forest structures. This approach requires greater attention to tending, thinning, and under-planting, in addition to planting new trees. The objective is to achieve a more balanced mix of young, middle-aged, and older stands that can support continuous carbon uptake, stable timber supply, and healthy habitats in a changing climate.

Second, Korea's forests should be managed as a central component of climate and risk management. Forests currently serve as a significant carbon sink; however, this role is at risk due to fires, pests, and extreme weather events. Future policy should integrate forest carbon, forest fire management, and pest control into a unified climate adaptation and mitigation strategy. This approach includes improved early warning systems, risk

mapping, fuel management, and long-term monitoring. Forest carbon accounting should be more closely aligned with national climate targets, ensuring that investments in forest resilience are recognized as part of Korea's response to climate change.

Third, forest policy should support a more self-reliant and value-added forest economy. Although the share of forestry in gross domestic product has increased, Korea continues to rely heavily on imported wood, and domestic timber production remains unstable. Policy should aim to increase harvests and improve quality, efficiency, and value addition. This includes promoting domestic wood use in construction, encouraging innovation in wood-based materials, and expanding niche industries based on non-timber forest products. International trade in wood and forest products should comply with legality and sustainability standards. The long-term goal is to reduce vulnerability to global market shocks while strengthening domestic value chains and green jobs in rural and mountain regions.

Fourth, future policy should prioritize forest communities and forest households. Current data indicate that forest households have lower incomes, a persistent gap compared to farm households, and face rapid aging and depopulation in mountain villages. Sustainable forest management depends on maintaining local populations. Therefore, forest policy should coordinate with rural, social, and regional policies to support livelihoods in forest areas. Measures include diversifying income sources through forest-based tourism, forest healing, education, non-timber products, and small-scale processing, as well as improving access to services, housing, and digital infrastructure. The strategic goal is to make mountain villages not only centers of production, but also attractive places to live, work, and age with dignity.

Fifth, future policy should further expand forest welfare and urban green services. The increase in forest recreation facilities, visitor numbers, and urban living forests indicates that citizens now view forests as everyday spaces for health and well-being, rather than only as sources of timber. Policy should continue to develop forest welfare services that are inclusive, affordable, and accessible to children, older adults, and vulnerable groups. In cities, the focus should shift from simply increasing green area to ensuring that each person has convenient access to quality green spaces near

home, school, and workplace. Forest policy therefore becomes part of public health, education, and climate-resilient urban planning.

These directions require stronger and more integrated forest governance. Forest issues now intersect with climate, energy, biodiversity, rural development, trade, and welfare. Future forest policy should improve coordination among ministries, strengthen science-based decision-making, and increase participation by local governments, forest owners, communities, and the private sector. Improved data, regular assessment of forest trends, and flexible policy tools are essential to respond to rapidly changing conditions.

In summary, Korea's future forest policy should shift from its previous emphasis on restoration and expansion toward a model that balances resource use, ecosystem health, community viability, and welfare services. Effective management of this balance will enable Korea's forests to support the national economy, provide climate and ecological stability, and improve the quality of life for rural and urban citizens in the coming decades.

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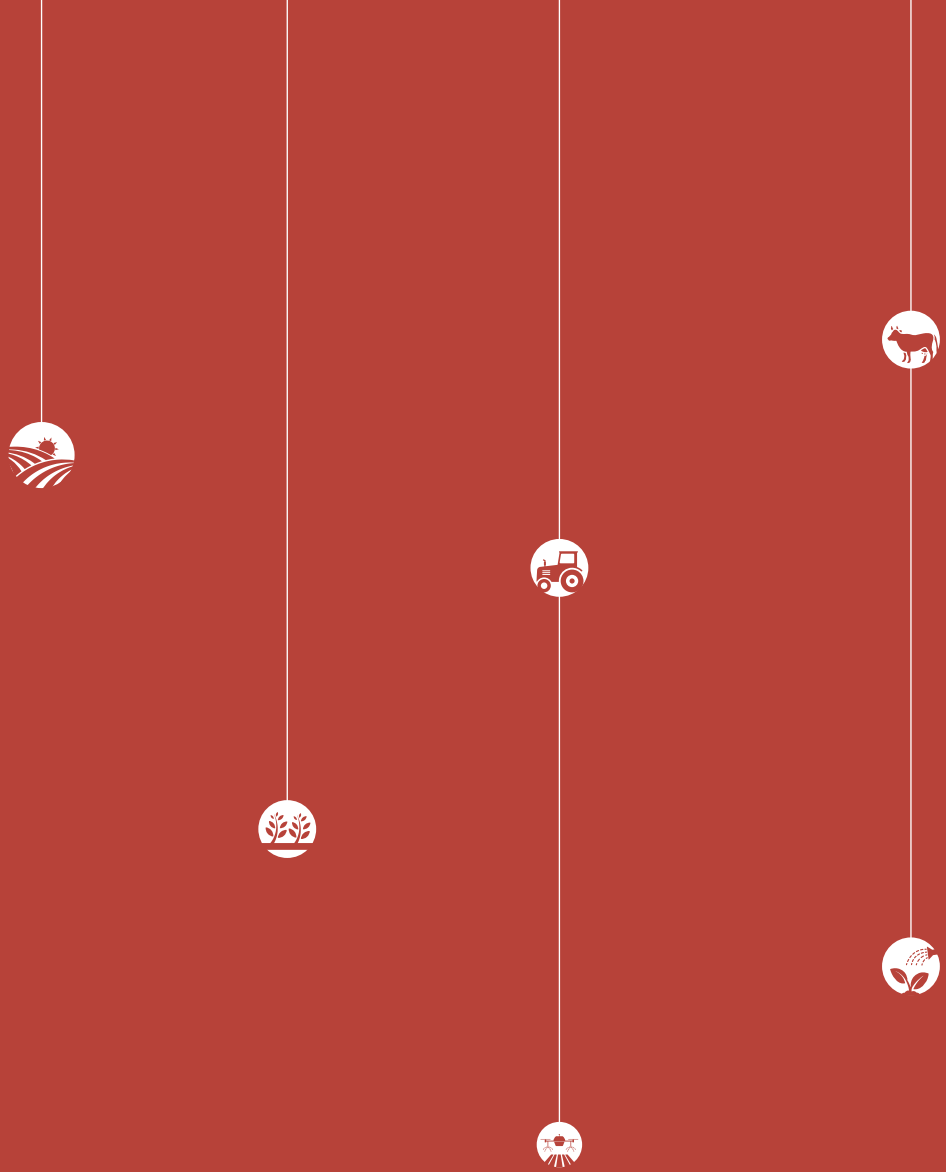


Agriculture in Korea 2025

CHAPTER

04

Agriculture-related Industries

1. Agro-Food Marketing
2. Food Industry
3. Agricultural Input Industry
4. Food Consumption and Related Policy
5. Trade Liberalization and Agricultural Trade

CHAPTER 04

Agriculture-related Industries

1. Agro-Food Marketing

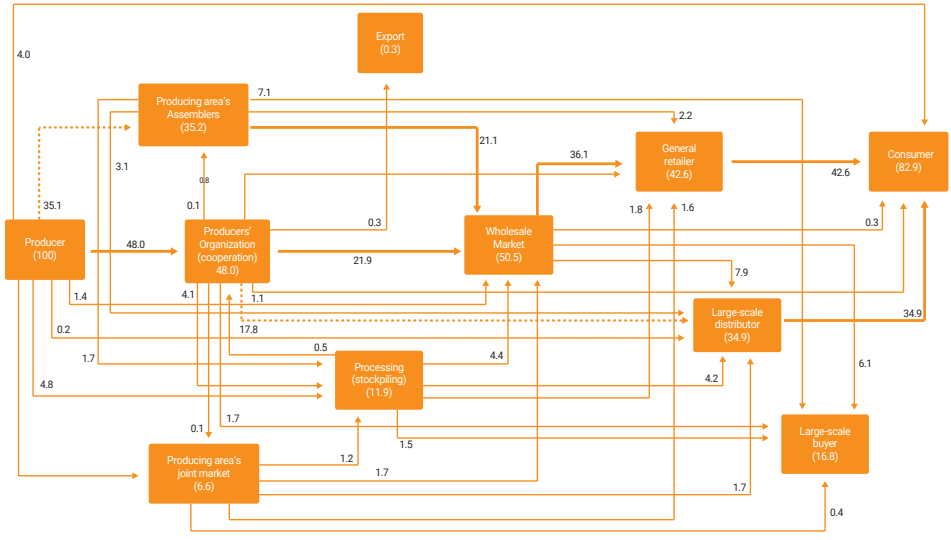
Korea's Agro-food Marketing Channel and Margin Structure

The distribution structure of agricultural products in Korea is highly complex. According to data from the Korea Agro-Fisheries and Food Trade Corporation (aT), the domestic distribution channels for fruits and vegetables can be categorized into 85 distinct types, involving a wide range of players throughout the distribution process. These include producers and producers' groups, local distributors, joint markets, processing and storage companies, wholesalers, intermediate wholesalers, large-scale retailers, general retailers, exporters, and consumers. In general, the distribution of fruits and vegetables in Korea follows a four- to six-stage pathway, which can be broadly described as follows: producers or producers' groups → local distributor and processing/storage companies → wholesalers → general retailers → consumers.

According to the 2024 data from the Korea Agro-Fisheries and Food Trade Corporation (aT), among the fruits and vegetables produced by farm households, 48.0% are sold to producers' groups, 35.2% to local distributor, 6.5% to joint market, 4.8% to processing and storage companies, and 4.0% directly to consumers. Producers' groups, which serve as the primary sales channel for farms, resell the purchased fruits and vegetables primarily to wholesalers (45.6%), followed by large-scale retailers (37.1%), and processing or storage companies (8.8%). Wholesalers

largely procure fruits and vegetables from producer organizations (43.4%) and local assemblers (41.8%) and then distribute them to general retailers (71.7%), large-scale retailers (15.6%), and large buyers (12.1%). General retailers primarily source fruits and vegetables from wholesalers (85.0%) and sell them to final consumers.

Figure 4-1 Distribution route of horticulture produce in Korea (2023)



Note: The thick solid arrow indicates the first shipping destination. The bold dotted arrow indicates the path with a distribution ratio of 10% or more. The thin arrow indicates a route with a distribution ratio of less than 10%.

Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *The State of Major Agricultural Product Distribution in 2023.*

According to data from the Korea Agro-Fisheries and Food Trade Corporation (aT), the distribution cost ratio for domestic agricultural products in 2023 was 49.2%. In other words, out of a consumer purchase price of KRW 1,000, farm households receive KRW 508, while distribution costs account for KRW 492. When distribution costs are classified by cost category, direct costs, which largely comprise fixed expenses such as packaging (packing work and materials), shipping, services, and loss, represent 17.1% of the consumer purchase price and 34.8% of total distribution costs. Indirect costs, including labor expenses, shop rentals, maintenance fees, utility bills and depreciation

costs, constitute 17.5% of the consumer purchase price and 35.6% of distribution costs. Together, direct and indirect costs account for 70.3% of total distribution costs. Profit margins represent 14.6% of the consumer purchase price and 29.7% of total distribution costs.

By the distribution stage, the retail stage accounts for 25.2% of the consumer purchase price and 51.2% of total distribution costs, representing the largest share. This is primarily because of substantial expenditures on labor, shop rental fees, consumer-friendly repackaging, product losses, and depletion costs (Korea Rural Economic Institute, 2020). Costs incurred at the shipping (farm-gate) stage account for 9.5% of the consumer purchase price and 19.3% of distribution costs, while wholesale-stage costs represent 14.5% of the consumer purchase price and 29.5% of distribution costs.

In summary, the structure of distribution margins for domestic agricultural products indicates that, based on the consumer purchase price, the producer's share and total distribution margins are approximately at a 1:1 ratio. Within total distribution costs, the proportion of direct and indirect costs relative to profits is roughly 7:3, and the retail stage accounts for more than half of overall distribution costs.

Table 4-1 Korea's agro-food marketing margin (2023)

Unit: %

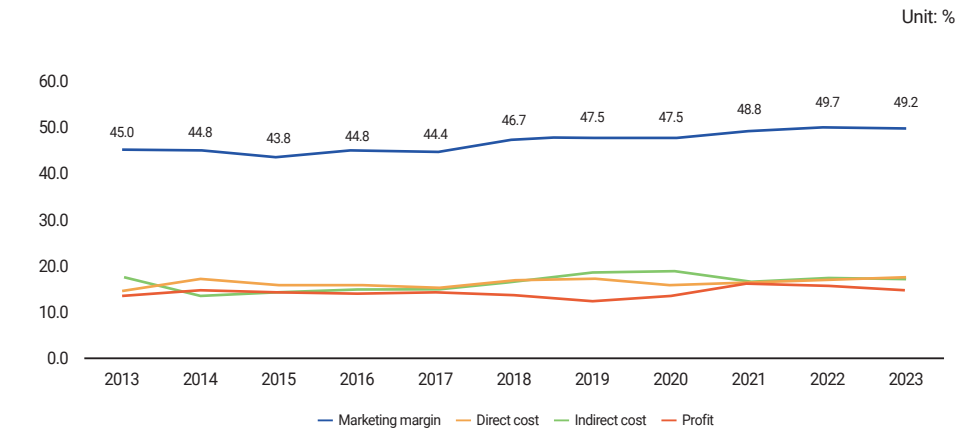
Consumer Price (100.0)	
Producer Price (50.8)	Marketing margin (49.2)

Category	Distribution Costs (100.0)		
Cost	Direct Costs (34.8)	Indirect Costs (35.6)	Profit Margin (29.7)
Stage	Shipping (19.3)	Wholesale (29.5)	Retail (51.2)

Note 1) Weighted average of 35 items in surveyed areas (excluding 13 imported items from the total of 48 items surveyed)
2) Marketing margin = Consumer price - produce price.

Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *The State of Major Agricultural Product Distribution in 2023.*

Figure 4-2 Changes in distribution cost ratios by category



Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *The State of Major Agricultural Product Distribution in 2023.*

An examination of distribution cost ratios over the past decade shows a slight upward trend, with the ratio increasing from 45.0% in 2013 to 49.2% in 2023. Direct costs rose modestly from 14.3% in 2013 to 17.1% in 2023, while indirect costs increased from 17.3% to 17.5% over the same period. Profit margins also recorded a slight increase, from 13.4% in 2013 to 14.6% in 2023.

Table 4-2 Marketing margin rate by agro-food type (2023)

Category	Marketing margin rate	Item
Food crops	35.8%	Rice, beans, potatoes, sweet potatoes
Leafy and root vegetables	64.3%	Kimchi Cabbage, radish
Fruit vegetables	51.0%	Watermelon, Korean melon, cucumber, cherry tomato, strawberry
Condiment vegetables	60.8%	Dried pepper, garlic, onion
Fruits	48.1%	Apple, pear, persimmon, grape, peach, tangerine
Flowers	53.3%	Rose, chrysanthemum
Livestock	50.1%	Beef, pork, chicken, egg

Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *The State of Major Agricultural Product Distribution in 2023.*

By product category, distribution cost ratios were highest for leafy and root vegetables (64.3%), followed by condiment vegetables (60.8%), flowers (53.3%), fruit vegetables (51.0%), livestock (50.1%), fruits (48.1%), and food crops (35.8%). Food crops, fruit vegetables, and livestock tend to exhibit relatively low distribution cost ratios, as they are more storable, and their consumption levels remain relatively stable throughout the year. In contrast, leafy and root vegetables—which are susceptible to short-term supply instability and have limited substitute products—and condiment vegetables—which are vulnerable to speculative capital inflows driven by expectations of price increases—show comparatively high distribution cost ratios (Korea Agro-Fisheries and Food Trade Corporation, 2024).

Distribution Structure in the Shipping Stage

At the shipping stage in the production area, agricultural products are distributed through several channels: producers may ship products directly, entrust transactions to cooperatives, local distributors, or agricultural corporations (farming associations or corporations) or utilize other transaction methods such as transactions with local distributor in lump sum at fields in advance (forward contract). According to the data from Korea Agro-Fisheries and Food Trade Corporation (aT), the shipment of agricultural products from production areas in 2023, based on total transaction volume, comprised 43.5% through the National Agricultural Cooperative Federation (NACF) channels, 28.2% through individual producer shipments, 12.3% through collective producer shipments, and 4.6% through local distributors at the production area. Compared with five years earlier, the share of individual producer shipments and cooperative (NACF) channel shipments has slightly decreased, while the shares of collective producer shipments and shipments by local distributors have shown a modest increase.

Table 4-3 Transaction performance of fruits and vegetables by distribution channels

Unit: ton, %

Category	2019	2020	2021	2022	2023
Individual producer shipment	2,193,017 (33.1)	2,163,075 (34.2)	2,011,248 (32.4)	1,973,437 (32.1)	1,678,951 (28.2)
Collective shipment by producers	709,268 (10.7)	698,623 (11.0)	746,104 (12.0)	758,123 (12.3)	732,494 (12.3)
Cooperative channel shipment (NACF)	2,932,398 (44.3)	2,708,108 (42.8)	2,703,004 (43.6)	2,689,166 (43.7)	2,586,731 (43.5)
Shipment by local distributors	141,121 (2.1)	201,147 (3.2)	156,566 (2.5)	137,376 (2.2)	272,739 (4.6)
Others	647,342 (9.8)	560,859 (8.9)	586,995 (9.5)	595,846 (9.7)	681,187 (11.4)
Total	6,623,146 (100.0)	6,331,812 (100.0)	6,203,917 (100.0)	6,153,948 (100.0)	5,952,102 (100.0)

Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *2023 Statistical Yearbook of Agricultural and Fishery Wholesale Markets.*

One of the major distribution actors in production areas is the local distributor. Under the Act on Distribution and Price Stabilization of Agricultural and Fishery Products, a local distributor is defined as "a person registered with the operators of agricultural and fishery wholesale markets, agricultural and fishery public wholesale markets, or private agricultural and fishery wholesale markets, who engages in the business of collecting agricultural and fishery products and shipping them to such markets." In all, 35.1% of fruits and vegetables distributed domestically in 2023 were shipped by local distributors to processing and storage companies, wholesalers, large-scale distributors, general retailers, and large buyers. The number of local distributors, which exceeded 10,000 at the introduction of the assembler registration system in 1995, has steadily declined over time. As of 2023, 6,873 local distributors were registered, representing a slight increase compared with 5 years earlier (2018).

Table 4-4 Wholesale market suppliers for fruits and vegetables

Unit: persons

Category	Producers and producer groups			Local distributor		
	Individual	Group/ corp.	Sub-total	Individual	Corp.	Sub-total
2018 (A)	647,487	183,704	831,191	4,864	593	5,457
2023 (B)	548,067	201,980	750,047	6,183	690	6,873
Change (B-A)	-99,420	18,276	-81,144	1,319	97	1,416

Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *2023 Statistical Yearbook of Agricultural and Fishery Wholesale Markets.*

Local distributors serve as key actors in the production-area distribution stage, performing collection and shipping functions on behalf of small-scale farm households (Jeon et al., 2011). They participate in field transactions, purchasing agricultural products from farms prior to harvest and subsequently shipping them to consumer markets (Korea Rural Economic Institute, 2020). According to the data from the Korea Agro-Fisheries and Food Trade Corporation (aT), 35.2% of fruits and vegetables shipped by farm households in 2023 were sold to local distributors. By entering into forward contracts after a certain growth period—often purchasing entire fields of crops in bulk—and managing cultivation thereafter while employing specialized labor for harvesting, local distributors effectively assume the responsibilities of crop management and harvesting on behalf of farm households. Through these forward contracts, they also bear a portion of the price risk that would otherwise fall on the producers. The rate of pre-harvest transactions by local distributors is particularly high for leafy and root vegetables, which tend to exhibit considerable price volatility. As of 2023, the pre-harvest transaction ratio for leafy and root vegetables exceeded 78.1%.

Table 4-5 Share of forward contraction field by major crops

Unit: %, 2023

Item		Pre-harvest transaction (%)
Food crops	Bean	26.0
	Spring potato	33.0
	Average	29.5
Leafy and root vegetable	Spring cabbage	100.0
	Highland cabbage	71.0
	Fall cabbage	85.0
	Winter cabbage	89.0
	Spring radish	90.0
	Highland radish	61.0
	Fall radish	82.0
	Winter radish	47.0
	Average	78.1
Fruit vegetable	Watermelon	79.0
	Average	79.0
Condiment vegetable	Garlic	10.0
	Onion	35.0
	Dried red pepper	58.0
	Green onion	87.0
	Average	47.5
Fruits	Apple	7.0
	Pear	25.0
	Tangerine	44.0
	Average	25.3

Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *The State of Major Agricultural Product Distribution in 2023.*

Another major distribution actor in production areas is the cooperative. As of January 2025, a total of 1,110 cooperatives operate across agricultural production regions nationwide, comprising 915 local primary cooperatives, 116 local livestock cooperatives, 45 special commodity agricultural cooperatives, 23 special cooperatives for livestock, and 11 ginseng cooperatives. These cooperatives conduct a wide range of activities aimed at increasing farm household income and expanding market access, including educational and extension services, as well as agricultural and economic support programs. In production areas, cooperatives play a significant role by receiving agricultural products from member farms on a consignment or purchase basis and enhancing bargaining power in markets through scaled and coordinated collective shipments (Korea Rural Economic Institute, 2020).

The government has promoted organized, large-scale, and specialized production-area distribution organizations to improve the efficiency of agricultural distribution and raise farm household income. As part of these efforts, the government introduced

the concept of integrated marketing in 2011 and shifted its support policy toward fostering integrated marketing organizations. Beginning in 2023, these organizations have been restructured into production–distribution integration organizations, designed to strengthen market competitiveness by integrating producer organizations with distribution organizations. A production–distribution integration organization refers to an integrated entity established to enhance competitiveness by consolidating production-side organizations and distribution entities. On the production side, producers form and operate producer organizations to engage in cooperative farming and integrated shipments, while adhering to the quality standards, shipment procedures, and sales channels specified by the distribution organization—functions central to marketing decision-making. On the distribution side, the organizations engage in product grading and packaging, sales and marketing activities, and provide technical and managerial guidance to farm households in close cooperation with producer organizations[1]. Cooperatives serve as key participants in the production–distribution integration program. As of 2025, 56 production–distribution integration organizations specializing in various commodities—such as radish, Kimchi cabbage, potatoes, apples, tomatoes, onions, and garlic—are in operation nationwide. Of them, 39 are operated by cooperatives and 17 by agricultural corporations[2].

In addition to cooperatives and local distributors, farmer's associations and agricultural corporations also function as major actors in the distribution of agricultural products at the production area. According to the Agricultural Corporation Survey conducted by the Ministry of Data and Statistics, 10,132 farmer's associations and 16,387 agricultural corporations were operating nationwide as of 2023. These corporations engage not only in crop cultivation and livestock production but also in a wide range of non-production activities, including agricultural and livestock product processing, agricultural and livestock product distribution, and agricultural service businesses.

1 Korea Agro-Fisheries and Food Trade Corporation, 2024, *Guidelines for the 2024 Production–Distribution Integration Organization Program.*

2 MAFRA, 2025, *Status of Selection for Production-Distribution Integration Organizations in 2025.*

Table 4-6 Number of farmer's associations and agricultural corporations by business type

Category	Production			Non-production activities						Total
	Crop Cultivation	Livestock Production	Sub-total	Processing	Distribution	Agricultural services	Rural tourism	Others	Sub-total	
Farmer's associations	3,239	681	3,920	1,980	2,627	319	616	670	6,212	10,132
Agricultural corporations	4,213	837	5,049	4,210	5,412	268	486	962	11,338	16,387
Total	8,969	7,452	1,517	6,190	8,038	587	1,102	1,632	17,550	26,519

Note: As of 2023.
Source: MODS, 2023, *Agricultural Corporation Survey.*

Major distribution facilities in production areas include Agricultural Products Processing Centers (APCs), Rice Processing Complexes (RPCs), and other facilities such as shipping-point joint markets, shipping-point collection centers, and low-temperature warehouses. APCs perform key functions in the distribution of agricultural products, including collection, grading, packaging, storage, and shipment, and are operated by local agricultural cooperatives as well as some agricultural corporations. As of 2024, 577 horticultural product distribution facilities were in operation nationwide. Horticultural products include fruits, vegetables, fruit vegetables, and floricultural products.[3] Among these facilities, 456 are operated by cooperatives and 121 by agricultural corporations. By region, Gyeongsangbuk-do has the largest number with 133 facilities, followed by Gyeongsangnam-do (89), Jeollanam-do (81), Chungcheongnam-do (73), and Jeonbuk Special Self-Governing Province (58). The government has promoted the scaling-up of production-area distribution facilities to enhance marketing integration and competitiveness among small and medium-sized distribution organizations. Consequently, although the total number of facilities has decreased since 2011, their scale has expanded and their functions have

3 aT & MAFRA, 2024, *2024 Status Report on Horticultural Agricultural Product Distribution Facilities.*

diversified (aT & Ministry of Agriculture, Food and Rural Affairs, 2024). As of 2024, the total transaction value handled by APCs nationwide amounted to approximately 6.02 trillion KRW, with the average transaction value per APC recorded at roughly 10.4 billion KRW.

RPCs perform key functions in rice distribution, including drying, storage, milling, grading, packaging, and shipment. They are operated by local agricultural cooperatives as well as specialized RPCs. As of 2023, 186 RPCs were in operation nationwide, and as of 2022, approximately 62.2% of total rice distribution volume was handled through RPCs.4 Shipping-point joint markets facilitate the rapid distribution of agricultural products through auctions and are mostly operated by cooperatives. Nationwide, 43 fruit and vegetable shipping-point joint markets are in operation, with annual transaction volumes reaching up to 30,000 tons and KRW 85 billion.5 Only 6.5% of the fruits and vegetables shipped by producers are distributed through shipping-point joint markets. This limited utilization is attributed to producers' preference for shipping to major consumer-area markets—such as the Garak Market—that establish benchmark prices, as well as the aging of infrastructure: more than 80% of the fruit and vegetable shipping-point joint markets have been in operation for over 20 years, resulting in significant deterioration (Korea Rural Economic Institute, 2020). Shipping-point collection centers serve as small-scale collection hubs in production areas, while low-temperature facilities maintain product quality and allow producers to adjust shipment timing. Shipping-point collection centers are operated by cooperatives and producer groups, whereas low-temperature facilities are operated by cooperatives, agricultural corporations, and private storage companies (Korea Rural Economic Institute, 2020).

4 MAFRA Press Release, Jun. 7, 2023, "Completion of the Nation's Largest Rice Processing Complex (RPC) and Continued Implementation of Proactive Rice Supply Stabilization Measures".

5 Korea Agro-Fisheries and Food Trade Corporation, 2024, *2023 Agricultural and Fishery Wholesale Market Statistical Yearbook*.

Wholesale Distribution Structure

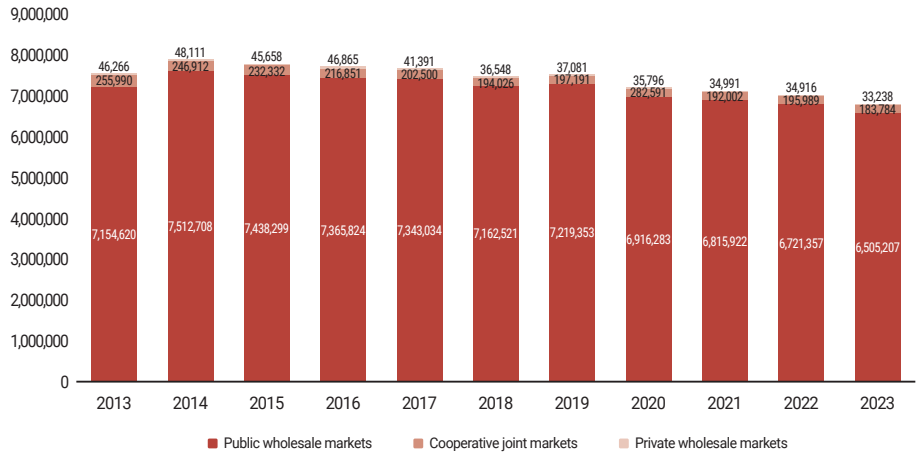
The majority of wholesale distribution of agricultural products in Korea is conducted through agricultural and fishery wholesale markets. The establishment and operation of these markets are legally supported by the Act on Distribution and Price Stabilization of Agricultural and Fishery Products. The Act defines agricultural and fishery wholesale markets as "markets established by a metropolitan city, special self-governing city, special self-governing province, or city government within its jurisdiction to conduct wholesale transactions of grains, fruits and vegetables, floricultural products, and other items designated by Presidential Decree." A total of 49 agricultural and fishery wholesale markets operate nationwide, including 33 public wholesale markets, 13 cooperative joint markets, and 3 private wholesale markets. As of 2023, these 49 markets handled over 6.7 million tons of agricultural and fishery products, with a transaction value exceeding KRW 17 trillion. Fruits and vegetables accounted for 93.7% of the total transaction volume and 87.0% of the total transaction value.

Table 4-7 Transaction performance by product category in wholesale markets

Category	Volume (ton)		Value (KRW 100 millions)	
		Share (%)		Share (%)
Fruit & Vegetables	6,297,648	93.7	149,328	87.0
Fishery	298,805	4.4	16,150	9.4
Livestock	96,098	1.4	5,333	3.1
Grain	29,347	0.4	738	0.4
Medicinal Crop	331	0.0	43	0.0
Total	6,722,229	100.0	171,593	100.0

Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *2023 Statistical Yearbook of Agricultural and Fishery Wholesale Markets.*

Figure 4-3 Trends in transaction performance by type of wholesale market



Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *2023 Statistical Yearbook of Agricultural and Fishery Wholesale Markets*.

Agricultural and fishery wholesale markets can be classified into public wholesale markets, cooperative joint markets, and private wholesale markets, depending on the type of investment involved. Public wholesale markets are established by local governments using public investment from central or local authorities. Cooperative joint markets are established by local governments but financed through private investment. Private wholesale markets are those established by private entities with approval from the relevant provincial governor. Public wholesale markets account for the majority of agricultural and fishery wholesale market distribution. As of 2023, 96.8% of the total transaction volume and 93.7% of the total transaction value across all wholesale markets were handled by public wholesale markets. Cooperative joint markets accounted for 2.7% of the volume and 4.0% of the value, while private wholesale markets accounted for only 0.5% of the volume and 2.3% of the value.[6]

6 Korea Agro-Fisheries and Food Trade Corporation, 2024, *2023 Agricultural and Fishery Wholesale Market Statistical Yearbook*.

A wide variety of fruits and vegetables are traded in agricultural and fishery wholesale markets. Based on the transaction volume in 2023, the top ten items traded were led by onions (9.37%), followed by radishes (9.28%), Kimchi cabbage (8.48%), apples (4.98%), and green onions (4.65%), among others.

Table 4-8 Transaction volume of fruits and vegetables in public wholesale markets in 2023

Rank	Item	Volume (ton)	Share(%)	Rank	Item	Volume (ton)	Share (%)
1	Onion	586,699	9.37	6	Cabbage	264,625	4.23
2	Radish	580,777	9.28	7	Cucumber	239,088	3.82
3	Kimchi Cabbage	530,963	8.48	8	Potato	221,592	3.54
4	Apple	311,950	4.98	9	Watermelon	220,620	3.52
5	Green onion	291,076	4.65	10	tangerine	219,442	3.51

Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *2023 Statistical Yearbook of Agricultural and Fishery Wholesale Markets.*

In public wholesale markets, agricultural product transactions are conducted through two major systems: auctions and the market wholesaler system. Within the auction system, transactions are further classified into listed and non-listed transactions. A listed transaction refers to a process in which the shipper consigns agricultural products to a wholesale market corporation, and the products are officially listed in the auction hall, where sales occur through formal auction procedures. A non-listed transaction refers to a method permitted only for designated items, whereby licensed intermediate wholesalers directly procure products and conduct sales through negotiated transactions.[7]

7 The designation of non-listed items is based on Article 27 of the Enforcement Rules of the Act on Distribution and Price Stabilization of Agricultural and Fishery Products. At the Garak Wholesale Market in Seoul, 145 items, including pineapple and garlic, are designated as non-listed items, while the Gangseo Wholesale Market has 122 such items, including dried red pepper and lemons.

Since 2012, regular-priced private transactions have also been recognized as official transaction methods alongside auctions (Korea Rural Economic Institute, 2020). Transaction systems in public wholesale markets are legally supported by the Act on Distribution and Price Stabilization of Agricultural and Fishery Products. Article 32 of the Act stipulates that "wholesale market corporations shall conduct the sale of agricultural and fishery products in wholesale markets through auction, bidding, and regular-priced private transactions." As of 2023, 87.0% of the transaction volume in public wholesale markets was conducted through listed transactions, and when non-listed transactions (7.4%) are included, a total of 94.5% of the products were traded through the auction system. Only 5.5% of the transaction volume and 6.5% of the transaction value were traded through the market wholesaler system. In terms of transaction methods, 78% of the total volume and value were traded via auction and bidding, while the remaining 22% were handled through regular-priced private transactions. Korea's agricultural and fishery wholesale markets operate predominantly on an auction- and bidding-based transaction structure.

Table 4-9 Transactions in public wholesale markets by each trading method (2023)

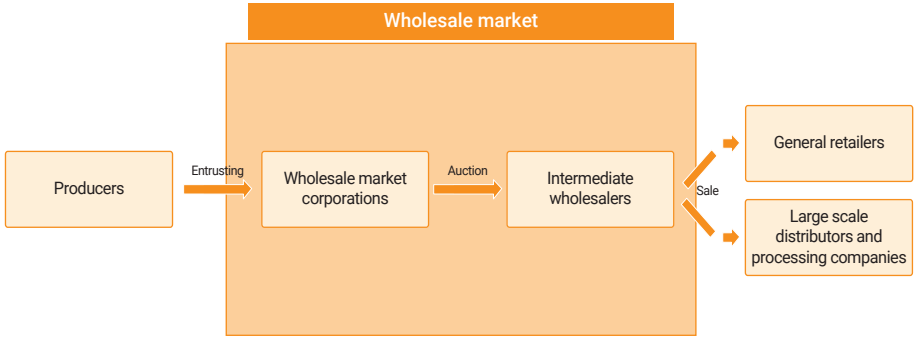
Unit: thousands tons, KRW 100 million, %

Category		Fruits and vegetables		Fisheries		Total	
		Quantity	Amount	Quantity	Amount	Quantity	Amount
Auction	Listed	5,459 (87.2)	129,833 (87.6)	203 (82.8)	8,856 (70.6)	5,663 (87.0)	138,689 (86.3)
	Non-listed	455 (7.3)	9,290 (6.3)	27 (11.2)	2,294 (18.3)	482 (7.4)	11,583 (7.2)
	Sub-total	5,914 (94.5)	139,123 (93.9)	231 (93.9)	11,150 (88.8)	6,145 (94.5)	150,273 (93.5)
Market wholesaler		346 (5.5)	9,023 (6.1)	15 (6.1)	1,402 (11.2)	360 (5.5)	10,425 (6.5)
Total		6,260 (100.0)	148,146 (100.0)	246 (100.0)	12,552 (100.0)	6,505 (100.0)	160,698 (100.0)

Source: Korea Agro-Fisheries and Food Trade Corporation, 2024, *2023 Statistical Yearbook of Agricultural and Fishery Wholesale Markets.*

Based on the transaction systems, the structure of transactions in Korea's agricultural and fishery wholesale markets can be summarized as illustrated below. In wholesale markets where only wholesale market corporations operate, shippers consign their agricultural products to the wholesale market corporation, which then sells the products to intermediate wholesalers through auctions. Intermediate wholesalers subsequently distribute the products to retailers, large-scale retailers, and processing companies. The Garak-dong Agricultural and Fishery Wholesale Market in Seoul is a representative example of this structure.

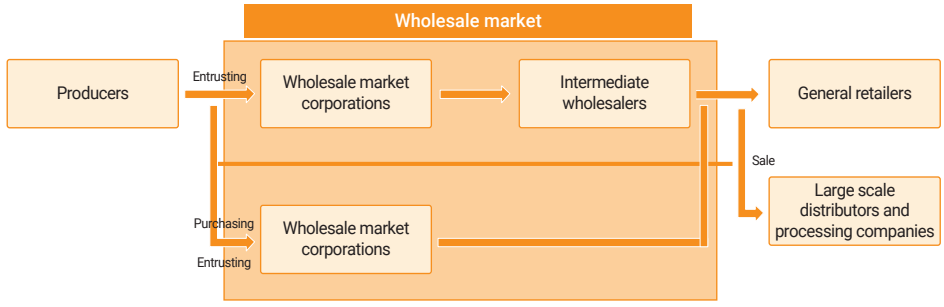
Figure 4-4 Wholesale market transaction structure (Case 1: Only wholesale market corporations operate)



Source: aT wholesale market homepage (Search date: Nov. 13, 2025).

In wholesale markets where both wholesale market corporations and market wholesalers operate, shippers may consign their products to the wholesale market corporation, which then sells to intermediate wholesalers who distribute to retailers, large-scale retail distributors, and processing companies. Alternatively, shippers may sell or consign their products to market wholesalers, who then sell directly to retailers and large-retail distributors without passing through intermediate wholesalers. The Gangseo Agricultural and Fishery Wholesale Market in Seoul exemplifies this dual-structure model.

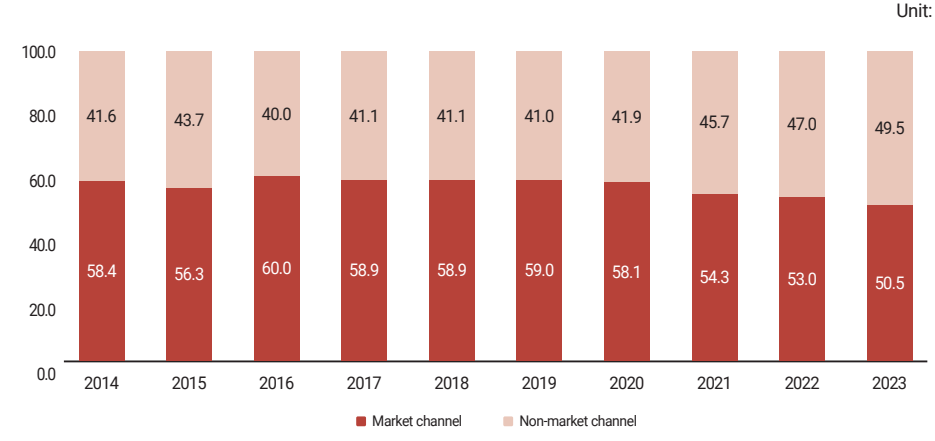
Figure 4-5 Wholesale market transaction structure
(Case 2: Both wholesale market corporations and market wholesalers coexist)



Source: aT wholesale market homepage (Search date: Nov. 13, 2025).

Although wholesale markets continue to play a significant role in the distribution of fruits and vegetables in Korea, the share of products distributed through these markets has been declining. Over the past decade, the wholesale market utilization rate for fruits and vegetables decreased from 56.3% in 2015 to 58.1% in 2020 and further down to 50.5% in 2023.

Figure 4-6 Trends in the wholesale market utilization rate for fruits and vegetables



Source: Korea Agro-Fisheries and Food Trade Corporation, various years, *The State of Major Agricultural Product Distribution.*

A major recent development in Korea's wholesale distribution system for agricultural products is the introduction and operation of the Online Wholesale Market for Agricultural and Fishery Products. In November 2023, the Ministry of Agriculture, Food and Rural Affairs (MAFRA) launched the world's first online wholesale trading platform with the aim of diversifying distribution channels, reducing transaction steps, improving logistics efficiency by minimizing relay transactions, lowering logistics and distribution costs through channel simplification, increasing sellers' receipt prices, reducing buyers' purchase prices, and decreasing distribution costs through reduced commission fees. This initiative represents part of the government's broader effort to address structural challenges in traditional wholesale markets and enhance overall distribution efficiency.

The Online Wholesale Market for Agricultural and Fishery Products operates under a pre-trade, post-logistics model in which products are shipped directly from production areas to buyers. As of 2024, the platform recorded a transaction value of KRW 673.7 billion. Of the total transaction amount, fruits and vegetables accounted for 40.0%, livestock products for 22.8%, grains for 36.3%, and fishery products for 0.9% (Han et al., 2025).

The introduction and expansion of the Online Wholesale Market for Agricultural and Fishery Products is expected to contribute to the diversification of distribution channels. Whereas the traditional wholesale market distribution pathway typically involves three stages—from production areas to wholesale market corporations, from corporations to intermediate wholesalers, and from intermediate wholesalers to consumer-area buyers—the new online wholesale market enables a reduction in distribution stages to as few as two. In practice, several new transaction patterns have emerged: direct transactions between production areas and consumer-area buyers, sales by wholesale market corporations directly to consumer-area buyers without passing through intermediate wholesalers, and cases in which intermediate wholesalers directly procure products from production areas without going through wholesale market corporations.

The stable operation of the online wholesale market, however, remains challenging

because no clear legal framework exists, which limits the ability to secure adequate budgets and staffing. In addition, several issues remain to be addressed, including the need to overcome structural constraints of existing public wholesale markets, expand participation in the online market, and consider appropriate approaches to handling imported agricultural products. For the sustainable development of the online wholesale market, not only quantitative growth but also the establishment of a systematic operational foundation, improved reliability of traded products, enhanced logistics infrastructure, and mutually beneficial coordination with offline wholesale markets will be essential (Han et al., 2025).

Retail Distribution Channels

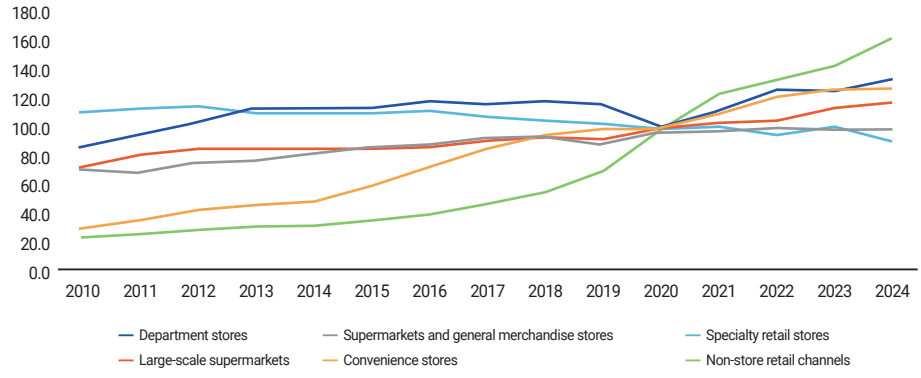
According to the Service Industry Survey conducted by the Ministry of Data and Statistics, the size of Korea's food retail sector amounts to approximately KRW 35.3 trillion. As of 2023, there were about 1.2 million food retail businesses nationwide, employing roughly 1.93 million workers. Over the past three years, the number of establishments, employees, and the total sales in the food retail industry have all shown a slight decline. When comparing retail sales by industry category, the largest share was accounted for by meat products (36.6%), followed by vegetables, fruits, and root crops (18.1%), fresh, frozen, and other fishery products (13.0%), and health supplements (11.8%) (Han et al., 2025).

Korea's retail distribution structure for agricultural products primarily comprises department stores, large-scale supermarkets, supermarkets and general merchandise stores, convenience stores, specialty retail stores, and non-store retail channels. According to the Service Industry Trend Survey of the Ministry of Data and Statistics, as of 2024, retail sales were highest in specialty retail stores, followed by non-store retail, supermarkets and general merchandise stores, department stores, and large-scale supermarkets.[8]

8 It is based on total sales across all product categories, including food and beverage items.

A comparison of retail sales index trends for food and beverage products by retail format since 2010 shows a decline or stagnation in sales through traditional specialty retail stores and supermarkets/general merchandise stores, while sales through large-scale supermarkets, convenience stores, and non-store retail channels have increased. In particular, food and beverage sales through non-store retail—such as internet shopping and home shopping, which operate without physical storefronts—have risen sharply.

Figure 4-7 Trends in the food and beverage retail sales index by store type

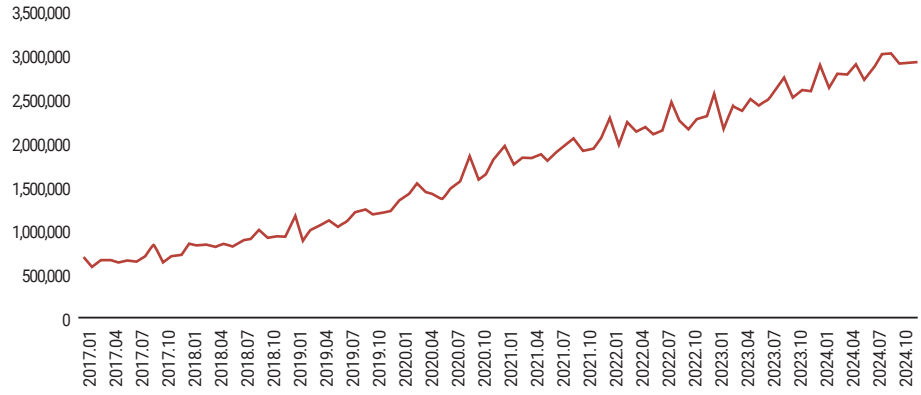


Source: MODS, various years, *Service Industry Trend Survey.*

The increase in food and beverage sales through non-store retail channels can also be confirmed through another dataset. According to the Online Shopping Trend Survey by the Ministry of Data and Statistics, online transaction values for food and beverage products and for agricultural, livestock, and fishery products have steadily increased over the past seven years. As of December 2024, the online transaction value for food and beverage products reached approximately KRW 2.9 trillion, while that for agricultural, livestock, and fishery products amounted to about KRW 1.1 trillion. These Figures represent increases of 334.8% and 332.5%, respectively, compared with 2017. The share of food and beverage products and agricultural, livestock, and fishery

products in total online transactions has also grown, reaching 12.9% and 4.9% in December 2024, up from 9.2% and 3.5%, respectively, in January 2017.

Figure 4-8 Trends in online transaction values for food, beverages, and agricultural-livestock-fishery products (in KRW million)



Source: MODS, various years, *Online Shopping Trend Survey; Han et al. (2025).*

The increase in online distribution of agricultural products has been driven by multiple factors, including consumers' growing preference for convenience and shifts in purchasing patterns following the COVID-19 pandemic. The share of households purchasing food products online rose sharply after the pandemic. According to the "2024 Food Consumption Information Analysis Report" by the Korea Rural Economic Institute, the proportion of households reporting online channels as their primary place of food purchase increased from 0.3% in 2017 to 9.7% in 2024 (Han et al., 2025).

Direct Transactions of Agricultural Produce

According to the Act on Promoting the Use of Local Agricultural Products and Revitalizing Direct Transactions, "direct transactions of agricultural products" are defined as "transactions in which producers and consumers trade directly or in

which the transaction involves only a single intermediary distribution stage." The Act specifies the following five examples as forms of direct transactions.

Examples of Direct Transactions of Agricultural Products under the Act on Promoting the Use of Local Agricultural Products and Revitalizing Direct Transactions

a. The act of a producer directly selling agricultural products that he or she has produced to consumers;
b. The act of selling agricultural products to consumers on consignment from the producer;
c. The act of a person who has purchased agricultural products from a producer directly selling those products to consumers;
d. The act of procuring agricultural products directly from a producer on consignment from a consumer;
e. Other types of agricultural product transactions prescribed by Presidential Decree.

The government has continued to implement policy measures aimed at promoting direct transactions of agricultural products, with the objectives of reducing distribution costs and encouraging the use of locally produced agricultural products. In accordance with Article 5 of the Act on Promoting the Use of Local Agricultural Products and Revitalizing Direct Transactions, a master plan is established every five years. As part of this framework, the government announced the "Second Master Plan for Promoting the Use of Local Agricultural Products and Revitalizing Direct Transactions" in December 2022. According to this plan, the scale of direct transactions of agricultural products has steadily expanded. The size of the direct transactions market increased from approximately KRW 4.2 trillion in 2017 to around KRW 8.8 trillion in 2021, more than doubling over the period. Notably, direct transactions through online shopping platforms and local food outlets have shown particularly strong growth.

Table 4-10 Trends in the scale of direct transactions of agricultural products

Unit: KRW 100 millions

Category	2017	2018	2019	2020	2021
Local food outlets	3,565	4,348	5,206	7,143	8,970
Local direct markets	2,440	2,212	1,779	1,259	601
Local produce box	242	210	189	792	139
Other direct markets	216	180	183	914	920
Online shopping	20,100	24,444	28,991	48,981	59,767
Eco-friendly specialty stores and consumer cooperatives	15,384	16,048	17,591	16,421	17,844
Total	41,947	47,442	53,939	75,510	88,241

Source: MAFRA, 2022, *The Second Master Plan for Promoting the Use of Local Agricultural Products and Revitalizing Direct Transactions.*

Local food outlets play an important role in the system of direct transactions for agricultural products. The government supports these outlets and local direct markets as key channels through which small-scale and older adult farmers—who often produce small quantities of diverse items and may be unable to participate in large-scale distribution—can sell their products. Local food outlets function as a representative distribution channel that directly connects local producers and consumers, offering significant benefits such as securing marketing opportunities for producers, enabling consumers to purchase fresh agricultural products, strengthening trust between urban and rural communities, and ensuring a stable supply of locally sourced ingredients (Han et al., 2025).

Since the Korea Agro-Fisheries and Food Trade Corporation emphasized the expansion of local food systems in its "2013 Comprehensive Measures for Improving Agricultural Product Distribution Structures," the number of local food outlets nationwide has steadily increased. As of June 2024, 935 outlets were in operation across the country. By operating entity, 733 outlets (80.8%) were managed by agricultural and livestock cooperatives, while 174 outlets (19.2%) were operated by foundations funded by local governments, producer organizations, and other entities.

Regionally, Honam had 197 outlets, followed by Yeongnam (185), Gyeonggi (163), and Chungcheong (144) (Han et al., 2025).

Table 4-11 Status of local food outlets

Year	Number of outlets		Sales (KRW 100 million)	
		Year-on-year Growth rate (%)		Year-on-year Growth rate (%)
2013	32		340	
2014	71	122	938	176
2015	103	45	1,662	77
2016	154	50	2,574	55
2017	188	22	3,490	36
2018	229	22	4,323	24
2019	469	105	5,206	20
2020	554	18	7,143	37
2021	778	40	8,970	26
2022	866	11	9,772	9
2023	907	5	10,032	3
2024	935	3	11,000	10

Source: Internal data of Korea Agro-Fisheries and Food Trade Corporation, various years.

Recent Government Policies in the Agricultural Product Distribution Sector

The government has identified several structural challenges in Korea's agricultural product distribution system, including high price volatility, excessively complex and inefficient distribution channels and logistics, and a lack of trust in distribution processes among both producers and consumers. In response, recent government policies in the agricultural distribution sector have focused on reducing price volatility in wholesale and retail markets for major products and lowering distribution costs. The government aims to transition the value chain—from production and wholesale

markets to logistics and consumption—toward a digitally driven distribution system to enhance price stability.

Specific policy targets have been set as follows: reducing the volatility of daily wholesale auction prices from 42% in 2020–2024 to below 21% in 2025–2030, reducing annual consumer-price volatility from 20% in 2020–2024 to below 10% in 2025–2030, and lowering agricultural distribution costs by 10% by 2030. According to the "Measures to Improve the Agricultural Distribution Structure" announced in September 2025, the government presented a vision of building a "resilient and smart agricultural product distribution system for the Republic of Korea that serves the interests of both producers and consumers, even under climate-crisis conditions." Under this vision, it emphasized four strategic pillars: digital innovation of the agricultural distribution structure, enhancing competition and public interest in wholesale markets, supporting rational consumer choices, and establishing stable foundations for agricultural production and distribution.

Meanwhile, to address risk factors surrounding agricultural product distribution—such as climate change—the government has continued to implement policies aimed at strengthening the nation's capacity to manage supply and demand for agricultural products. The MAFRA has focused its efforts on developing agricultural distribution and price information systems, supporting public wholesale markets, providing price-stabilization measures, and promoting direct transactions between producers and consumers.

To improve the availability of distribution and price information, the government operates the "Agricultural Outlook Program" and the "Agricultural Product Distribution and Consumption Information Survey." To support public wholesale markets, it implements the "Wholesale Distribution Activation Support Program" and the "Public Wholesale Market Facility Modernization Program." Price-stabilization efforts include the "Agricultural Production and Distribution Adjustment Support Program," while the "Promotion of Direct Transactions Program" is being pursued to expand direct marketing between producers and consumers (Han et al., 2025).

Future Outlook and Tasks

Climate change is expected to exacerbate instability in the supply of agricultural products, lead to further deterioration in product quality, and increase price volatility. Consequently, the importance and role of agricultural product distribution will grow even further. Distribution functions as a buffer that absorbs uncertainties arising from production fluctuations and price movements. Whereas the production stage is directly exposed to climate risks and, thus, has limited capacity to mitigate volatility, the distribution stage possesses various mechanisms and tools that can help stabilize supply and prices.

In particular, the importance of storage and stockpiling is projected to increase. As fluctuations in production timing and volume intensify, the ability to maintain appropriate inventory levels and store products effectively will become essential for stabilizing agricultural prices. Expanding storage infrastructure is likely to emerge as a key strategy for food security, and investments in long-term storage technologies—such as controlled-atmosphere (CA) storage—will become increasingly important. Strengthening the storage and stockpiling capacities of producer organizations and other upstream distribution actors will be critical.

The importance of forecasting supply and demand using data and information is also expected to grow. As climate change increases uncertainty in production-related information, supply–demand forecasting based on data collection and analysis in the distribution stage will become a central tool for ensuring supply stability. The development and application of digital technologies such as artificial intelligence, as well as data-driven decision-making, are expected to become increasingly significant.

Meanwhile, the diversification of distribution channels—including the rapid expansion of online agri-food distribution—is likely to accelerate. Continued efforts will be required to institutionalize and strengthen new distribution channels such as the Online Wholesale Market for Agricultural and Fishery Products. In light of the evolving distribution environment, the roles and functions of existing agricultural and fishery wholesale markets should also be reassessed and refined.

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2. Food Industry

With the rise in national income, consumption of processed foods and spending on food-away-from-home have continued to increase. In turn, efforts to strengthen linkages between the food industry and domestic agriculture have become more active. The food industry is gaining political importance not only because it enhances the value-added of agricultural products but also because it expands the market volume for agricultural output.

In general, the food industry includes the food processing, food marketing, and food service industries. In a broader sense, the food industry encompasses food manufacturing, the collection and brokerage of raw agricultural products, transportation and storage services, food machinery and packaging material manufacturing, the restaurant and food service sector, and food retail and wholesale businesses.

Korea enacted the Food Industry Promotion Act in 2008 and has since pursued various relevant policies, including the promotion of traditional food industries, globalization of Korean cuisine, support for food industry R&D, and assistance for small and medium-sized food enterprises. Since 2008, the Ministry of Agriculture, Food and Rural Affairs (MAFRA) has also announced a Food Industry Promotion Master Plan every five years. Korea released its first master plan in 2008, followed by the second in 2013, the third in 2018, and the fourth in 2023.

State of the Food Industry

Food Manufacturing

The share of agriculture in the national economy has continued to decline each year, but the relative importance of the food industry within agriculture-related sectors has steadily increased. An examination of value-added by industry shows that the share of the primary sector, namely, agricultural and forestry production, fell consistently from 3.2% in 2000 to 1.6% in 2024. In contrast, the share of the food industry within agriculture-related industries rose from 64.4% to 70.6% over the same period <Table 4-12>.

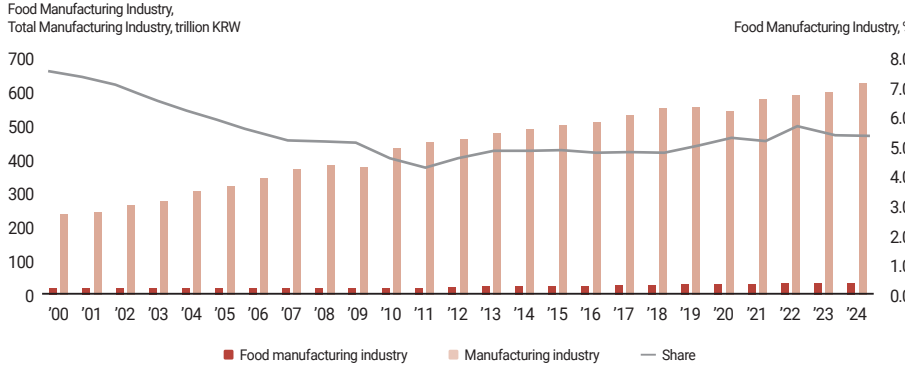
Table 4-12 Ratio of agriculture and food-related industries

Categories	2000			2014			2024		
	Added value (KRW billions)	Ratio		Added value (KRW billions)	Ratio		Added value (KRW billions)	Ratio (%)	
		to (A)	to (B)		to (A)	to (B)		to (B)	to (B)
Total added value (A)	819,508	100.0		1,641,589	100.0		2,124,455	100.0	
Agri.-related industries (B)	73,103	8.9	100.0	103,578	6.3	100.0	113,766	5.4	100.0
Agri. production	27,070	3.3	37.0	36,128	2.2	34.9	33,453	1.6	29.4
Food industry	46,033	5.6	63.0	67,450	4.1	65.1	80,313	3.8	70.6
- Food manufacturing	16,094	(2.0)	22.0	22,713	1.4	21.9	31,815	1.5	28.0
- Food service	29,939	(3.7)	41.0	44,737	2.7	43.2	48,498	2.3	42.6

Note 1) The Table uses raw data by economic activity in 2020.
2) The food service sector includes lodging and restaurant establishments.
Source: Bank of Korea, various years, *National Accounts*.

The share of the food manufacturing industry in real GDP and total manufacturing value-added has been declining. Although the industry's production value and value-added have continued to grow, its relative growth has been slower than that of other manufacturing sectors owing to structural changes in the overall industrial composition. The value added of the food manufacturing industry increased from

Figure 4-9 Changes in food manufacturing's ratio in added value (real) to total manufacturing



Note: The data used are GDP and GNI (raw data of each year) by economic activity in national accounts of the Bank of Korea.
Source: Bank of Korea, various years, *National Accounts*.

KRW 16.8 trillion in 2000 to KRW 31.8 trillion in 2024; however, its share of total manufacturing value added decreased from 7.4% in 2000 to 5.2% in 2024 <Figure 4-9>.

The number of firms and total production value in the food manufacturing industry have shown a steady upward trend since 2000. Sales per firm increased from KRW 1.83 billion in 2016 to KRW 2.53 billion in 2023, recording an average annual growth rate of 4.7% over the period. As of 2023, firms with ten or more employees account for 9.8% of all food manufacturing businesses, yet they generate 76.9% of the industry's total sales <Table 4-13>.

Table 4-13 Number of food manufacturers and sales volume

Year		Mining and Manufacturing Survey			Census on Establishments		
		No. of firms (Number)	Sales (in KRW 100 millions)	Sales per firm (in KRW 100 millions)	No. of firms (Number)	Sales (in KRW 100 millions)	Sales per firm (in KRW 100 millions)
Survey Based	2000	3,431	340,716	99.3	-	-	-
	2005	3,932	436,682	111.1	-	-	-
	2010	4,261	637,250	149.6	54,050	-	-
	2015	5,124	839,372	163.8	57,954	-	-
	2016	5,274	866,112	164.2	59,171	1,085,606	18.3
	2020	5,976	1,022,468	171.1	64,365	1,229,541	19.1
Register Based	2020	6,079	1,028,378	169.2	71,965	1,258,856	17.5
	2023	6,842	1,358,019	198.5	69,918	1,766,343	25.3
AAGR (%)	2000-2020	2.8	5.6	2.8	-	-	-
	2020-2023	4.0	9.7	5.5	-1.0	12.0	13.0
	2016-2023	3.8	6.6	2.7	2.4	7.2	4.7

Note: For the Mining and Manufacturing Survey, data from 2000 to 2006 cover establishments with five or more employees, whereas data from 2007 to 2023 cover establishments with 10 or more employees.

Source: MODS, various years, *the Mining and Manufacturing Survey.*

The food manufacturing industry is characterized by a predominantly small-scale structure, as firms with 50 or fewer employees account for 84.5% of firms with 10 or more employees <Table 4-14>.

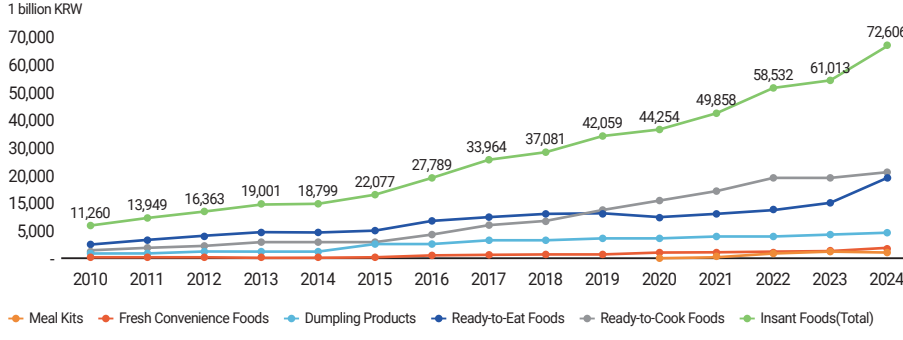
Table 4-14 Food manufactures' employment size and sales (2023)

Sector	Grocery manufacturing		Beverage manufacturing		Entire food manufacturing	
Employment size	No. of firms	Sales (KRW 100 millions)	No. of firms	Sales (KRW 100 millions)	No. of firms	Sales (KRW 100 millions)
10–19	3,339	151,631	110	-	3,449	-
20–49	2,210	286,080	80	13,378	2,290	299,457
50–99	598	230,366	44	20,599	642	250,965
100–199	287	233,332	25	37,405	312	270,736
200–299	69	131,127	11	34,681	80	165,808
300–499	36	92,063	7	30,525	43	122,588
500 or more	25	89,807	1	-	26	-
Total	5,345	801,187	271	118,945	5,616	920,132

Source: MODS, various years, *the Mining and Manufacturing Survey.*

Driven by the shift from dining out to at-home consumption during the COVID-19 pandemic, as well as the rise in single-person and dual-income households, the market for convenience foods, such as ready-to-eat foods, ready-to-cook foods, fresh-cut produce, meal kits, and dumpling products, has expanded rapidly. The share of convenience-type processed foods within the food manufacturing industry increased from 4.8% in 2018 to 6.5% in 2021.

Figure 4-10 Trends in Domestic Sales of Convenience Foods



Source: Ministry of Food and Drug Safety, various years, *Food Production Statistics.*

Food-Away-From-Home Industry

The food-away-from-home industry has expanded rapidly owing to shifts in dietary habits and food culture, driven by changes such as the adoption of the five-day workweek, increasing participation of women in the labor force, growing interest in health and leisure, and progression of nuclearization and population aging. This development of the food service sector has also influenced consumption patterns for agri-food products, shifting demand from fresh agricultural products toward processed foods and food-away-from-home. In addition, the structure of the food service industry has become significantly more diversified. It was once centered on Korean, Chinese, Japanese, and Western cuisine. At present, rapid growth in family restaurants, fast-food chains, pizza franchises, fusion restaurants, franchise brands, and institutional food service providers has broadened the industry landscape.

Among households with one or more members, including agricultural, forestry, and fishery households, the share of food-at-home spending within total food spending declined from 52.3% in 2019 to 50.5% in 2024. Over the same period, the share of food-away-from-home spending increased from 47.7% to 49.5% <Table 4-15>.

Table 4-15 Changes in households' food purchase and dine-out spending (2020 Base)

Unit: KRW, %

Year	Real terms based on 2020 data					Nominal				
	Total spending (A)	Food expense (B)	B/A	Dine-out expense (C)	C/A	Total spending (A)	Food expense (B)	B/A	Dine-out expense (C)	C/A
2006	734,368	410,920	56.0	323,448	44.0	489,554	258,567	52.8	230,987	47.2
2007	733,000	402,628	54.9	330,372	45.1	499,436	259,051	51.9	240,385	48.1
2008	729,725	404,357	55.4	325,368	44.6	520,392	272,286	52.3	248,106	47.7
2009	684,053	380,009	55.6	304,044	44.4	515,143	274,386	53.3	240,757	46.7
2010	689,435	381,144	55.3	308,291	44.7	543,100	293,378	54.0	249,722	46.0
2011	685,882	380,391	55.5	305,491	44.5	573,283	315,253	55.0	258,030	45.0
2012	687,922	375,167	54.5	312,755	45.5	589,938	322,839	54.7	267,099	45.3

Year	Real terms based on 2020 data					Nominal				
	Total spending (A)	Food expense (B)	B/A	Dine-out expense (C)	C/A	Total spending (A)	Food expense (B)	B/A	Dine-out expense (C)	C/A
2013	682,799	369,482	54.1	313,317	45.9	592,880	321,206	54.2	271,674	45.8
2014	686,784	367,868	53.6	318,916	46.4	601,683	321,171	53.4	280,512	46.6
2015	672,488	361,002	53.7	311,486	46.3	600,630	320,249	53.3	280,381	46.7
2016	652,320	347,211	53.2	305,109	46.8	596,427	314,806	52.8	281,621	47.2
2017	764,800	404,066	52.8	360,734	47.2	719,168	378,166	52.6	341,002	47.4
2018	748,275	403,205	53.9	345,070	46.1	723,040	386,907	53.5	336,133	46.5
2019	704,448	368,284	52.3	336,164	47.7	687,009	353,457	51.4	333,552	48.6
2020	716,017	407,025	56.8	308,992	43.2	716,017	407,025	56.8	308,992	43.2
2021	719,258	403,622	56.1	315,636	43.9	750,205	425,700	56.7	324,505	43.3
2022	717,458	375,787	52.4	341,671	47.6	796,816	418,552	52.5	378,264	47.5
2023	710,599	363,180	51.1	347,419	48.9	833,301	425,501	51.1	407,800	48.9
2024	716,947	362,298	50.5	354,649	49.5	869,679	440,518	50.7	429,161	49.3
Avg. change per year (2019 to 2024)	0.4	-0.3	-	1.1	-	4.8	4.5	-	5.2	-

Note: Prior to 2019, the survey focused on urban households only; from 2019 onward, agricultural, forestry, and fishery households were included.

Source: MODS, various years, *the Household Income and Expenditure Survey.*

With the expansion of the food service and institutional catering sectors, the market for fresh-cut produce and other ingredient-oriented food products has also continued to grow. This trend reflects changes in lifestyle and advances in distribution technologies, which have shifted the distribution pattern of agricultural products from whole, unprocessed forms toward more convenient, ready-to-use formats. In 2024, the domestic sales of fresh convenience foods reached KRW 368.7 billion. The market has grown at an average annual rate of 16.5% since 2008, expanding 8.5-fold over the past 14 years. Notably, sales increased by 27.7% between 2023 and 2024 alone, indicating a sharp acceleration in recent years <Table 4-16>.

Table 4-16 Fresh-cut food production and sales

Unit: KRW millions, %

Year	Production	Sales
2010	44,283	43,216
2011	61,052	60,071
2012	69,204	65,256
2013	83,219	78,340
2014	76,297	83,439
2015	82,115	95,566
2016	96,263	109,959
2017	137,160	163,041
2018	156,965	181,734
2019	165,455	184,531
2020	205,851	224,640
2021	213,439	229,656
2022	250,721	285,051
2023	268,785	288,604
2024	342,525	368,777
Avg. change per year (2010-2024)	15.7	16.5

Source: Ministry of Food and Drug Safety, various years, *the Production of Food and Food Additives*.

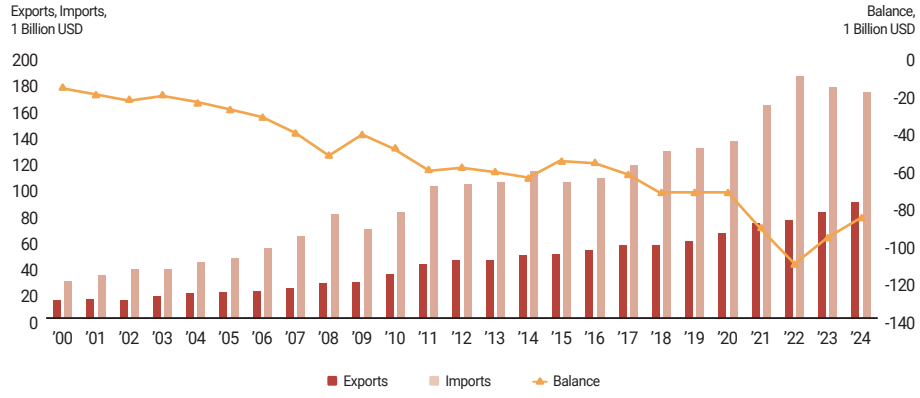
Food Export and Import

Exports increased from USD 1.29 billion in 2000 to USD 8.90 billion in 2024, recording an average annual growth rate of 7.8%. However, imports also rose from USD 2.87 billion to USD 17.38 billion over the same period, growing at an average annual rate of 8.4%. Consequently, the trade deficit widened sharply from USD 1.58 billion in 2000 to USD 8.49 billion in 2024. Korea's food exports remain concentrated in a limited number of products and destination countries, indicating insufficient diversification. As of 2024, instant noodles, dried seaweed (gim), tuna, beverages, and coffee preparations were exported to key markets, including the United States, China, Japan, Vietnam, and Thailand.

Driven by the global popularity of Korean culture and rising awareness of K-food,

Korea's food exports have grown at an average annual rate of 7.3% over the past five years, surpassing the national export growth rate of 4.7%. Mass-consumption products, such as instant noodles, snacks, and beverages, have led this upward trend. Sauces (including kimchi and traditional fermented pastes), as well as poultry and grapes, have also shown stable growth <Figure 4-11>.

Figure 4-11 Food import and export trends



Note: Food item codes are defined as HS Codes 04, 11, and 15–24.
Source: Trade Statistics.

Use of Domestic Ingredients in the Food Industry

Agriculture contributes to the development of the food industry and to public health by providing a stable supply of high-quality raw materials. In turn, the food industry supports agricultural development by utilizing as many domestically produced agricultural products as possible, thereby increasing the value-added of agricultural goods and raising farm household income. This mutually beneficial relation forms a structure of co-prosperity between the two sectors.

Accordingly, the food industry can play an important role in expanding demand for domestic agricultural products as a stable and sizeable consumer base. Indeed,

cooperation between agriculture and the food industry reinforces recognition of agriculture's broader societal roles and contributes to the preservation and transmission of food-related cultural heritage. The expansion of overseas Korean restaurants and exports of traditional food products enhances the global reach of Korean cuisine, promotes Korean food culture, and ultimately elevates national prestige.

As of 2018, food manufacturers in Korea used 17.87 million tons of agricultural and livestock raw materials for production annually, of which 31.3% were domestically sourced. The total volume of raw materials used in food manufacturing has continued to grow, from 15.04 million tons in 2012 to 16.34 million tons in 2015, 18.55 million tons in 2020, and 18.81 million tons in 2023. The use of domestically produced raw agricultural materials has also generally increased each year. The use of domestically sourced raw materials has also shown a steady upward trend, with the share of domestic raw materials in total raw material consumption rising from 31.3% in 2018 to 31.9% in 2023, an increase of 0.6 percentage points <Table 4-17>.

Table 4-17 Food manufacturers' use of local ingredients

Unit: 10,000 tons, %

Year	Total ingredients used (A)	Local ingredients used (B)	Local's share (B / A × 100)
2012	1,504	448	29.8
2013	1,508	470	31.2
2014	1,565	489	31.3
2015	1,634	515	31.5
2016	1,651	519	31.4
2017	1,715	538	31.4
2018	1,787	560	31.3
2019	1,858	585	31.5
2020	1,855	592	31.9
2021	1,872	594	31.7
2022	1,877	597	31.8
2023	1,881	600	31.9

Source: MAFRA, various years, *Survey on the food industry's ingredient consumption.*

Korea's agricultural policy should shift its focus from agricultural products' supply to consumption or consumers' markets. Therefore, promoting the food industry's use of local ingredients has significance in increasing agriculture's value. Based on this thought, the government plans to nurture agro-processing firms for local produce, increase demand for processed local products, promote the production and consumption of traditional food products, identify traditional food items, and globalize Korean food.

Major Policies for the Food Industry

Promoting Growth in the Food Industry Adopting Advanced Technologies

The enactment of the Food Industry Promotion Act in 2007 established the legal basis for government-led food technology development. Government support for food technology development was initially limited to high-value-added food technology projects. Specific areas of support included developing technologies to enhance the functional properties of agricultural raw materials and traditional foods; improving food quality and distribution technologies to ensure a safe food supply; developing new food ingredients and alternative materials using domestic agricultural products; and supporting research on food machinery, packaging, and facility equipment. Since 2019, the program has been restructured to focus on developing new products that apply emerging technologies and target newly expanding markets driven by evolving consumer trends, as well as supporting the development of food ingredients derived from natural animal and plant sources.

The government has laid the foundation for integrating advanced technologies in the food sector and promoting growth in the food industry by introducing a series of FoodTech-related policies. Following the announcement of the FoodTech Industry Development Plan on December 14, 2022, the government enacted the Green Bio Industry Promotion Act (which includes alternative foods) on January 2, 2024, with enforcement scheduled for January 3, 2025. In addition, the FoodTech Industry Promotion Act was enacted on December 20, 2024, and will take effect on December 21, 2025.

Since 2020, the government has worked to establish a comprehensive ecosystem for the FoodTech industry by fostering specialized human resources, building FoodTech R&D support centers, and developing industrial foundations, such as food standards, specifications, and Korea Industrial Standards for FoodTech technologies. First, MAFRA is nurturing specialized talent by operating FoodTech contract departments at nine universities: Seoul National University, Korea University (Sejong), Hanyang University, Kyung Hee University, Chonnam National University, Jeonbuk National University, Jeonju University, POSTECH, and Kyungpook National University.

Second, the government is establishing FoodTech R&D support centers in seven local governments. These centers are comprehensive facilities equipped with specialized equipment and infrastructure to support prototype development and technology verification. In 2024, Iksan (alternative foods), Naju (upcycled foods), and Pohang (food robotics) were selected. In 2025, Gwacheon and Chuncheon (personalized foods), Uiseong in North Gyeongsang Province (cell culture), Gumi (smart manufacturing), and Jeju (convenience foods) were designated, with full completion scheduled by 2027.

Third, on August 31, 2023, the government announced the standards and specifications for foods labeled as "alternative foods" (which came into effect on January 1, 2024) and subsequently published labeling guidelines on November 27, 2023. In addition, the Enforcement Rules of the Food Sanitation Act were partially amended on May 19, 2023, to include cell- and microorganism-cultured materials as permissible food ingredients, although such products have not been commercialized.

To accelerate the development of core FoodTech technologies, MAFRA has analyzed domestic and international standards, technological trends, and products since 2023, and has collected feedback from stakeholders. Based on this process, MAFRA newly established four Korea Industrial Standards for the FoodTech sector on December 30, 2024:

- General requirements for plant-based alternative foods
- Plant-based alternative foods
- General requirements for upcycled foods

• Food 3D printing technology

These standards define terminology, classification criteria, required specifications, manufacturing processes, performance indicators, and labeling requirements related to plant-based alternative foods, upcycled foods, and food 3D printing technologies. They are expected to improve food quality and enhance consumer protection.

The food ingredient and material sector falls under the Green Bio Industry Promotion Act. Digital breeding, smart farming, smart livestock and distribution systems, and precision agriculture fall under the Smart Agriculture Promotion and Support Act. The government aims to use advanced technologies to produce agri-food materials and ingredients and promote growth in the food industry by linking upstream and downstream agri-food sectors through FoodTech innovation.

In terms of the budget and technology level, Korea's political contribution still has a long way to go. R&D investment in the food sector accounts for only around 1% of total national R&D expenditure. Of the KRW 26.5 trillion invested in national R&D in 2024, MAFRA was responsible for only KRW 0.2 trillion. According to the Agriculture, Forestry, and Food Technology Level Assessment (IPET, 2018), Korea's food technology level is estimated at 86.8% of that of advanced countries, reflecting a technology gap of approximately 2.5 years. This indicates a need to strengthen the technological foundation, including specialized human resources and technical infrastructure.

Fostering the Functional and Older Adult-Friendly Food Industries

With rising consumer incomes and increasing interest in healthy living, the market for health functional foods has continued to grow both domestically and globally. Although regulations have been eased to allow functional claims on general foods when supported by scientific evidence, the functional food segment within the general food category has room for full development. To support industry growth, the National Food Cluster completed a Functional Ingredient Bank in February 2024. The facility is expected to provide food companies with functional and natural ingredients, offer information on domestic functional raw materials, facilitate distribution, and support commercialization.

As the proportion of the population aged 65 years and older continues to increase, the market for older adult-friendly foods and customized foods for patients (utilizing diverse ingredients) is projected to expand. The government plans to strengthen regional demonstration projects for verifying the efficacy of older adult-friendly foods and promoting market development, as well as to expand the designation program for certified older adult-friendly food products.

In line with improvements to the food functionality labeling system, efforts are underway to strengthen the infrastructure for promoting the use of domestic agricultural products in functional foods. Key initiatives include a national survey of functional agri-food resources to identify domestic ingredients that can replace imported raw materials and research projects aimed at scientifically verifying the functional properties of these domestic ingredients.

Promoting the Traditional Food Industry

Traditional Korean foods encompass local and regional dishes, as well as foods historically consumed across generations, including traditional Korean cuisine, foods for weddings and ancestral rites, seasonal festival foods, and royal court cuisine. These dishes are typically prepared using agricultural products produced in specific regions. Local cuisine, a concept more regionally distinct than traditional foods, refers to foods prepared with ingredients produced in a particular area, using local cooking methods, and consumed by residents from past to present. Because local cuisines are rooted in regionally produced ingredients, they align closely with concepts such as "food from one's native land," "local production and local consumption," slow food, and local food. These ideas emphasize seasonal eating and sustainable, healthy lifestyles.

Major categories of traditional Korean foods include traditional alcoholic beverages, fermented sauces, kimchi, rice cakes, vinegar, tea, and tofu. The government seeks to strengthen the competitiveness of the kimchi industry to reinforce Korea's status as the origin, foster the traditional liquor industry, and promote fermented sauces as part of a broader sauce industry. Additional initiatives aim to preserve and promote the value of Korea's traditional foods and food culture by identifying and supporting

masters of traditional food craftsmanship, expanding the industrial base for traditional foods, and promoting consumption through various public campaigns.

To preserve traditional alcoholic beverage culture and enhance the value-added of domestic agricultural products, the government provides comprehensive support, including selecting exemplary traditional liquors, strengthening linkages between alcohol production and tourism, and expanding domestic and international consumer bases. A representative initiative is the Visiting Breweries program, which designates outstanding regional breweries, develops them into tourism resources, and appoints popular entertainers as ambassadors to raise awareness and broaden consumption of traditional alcoholic beverages.

In addition, to preserve the heritage of traditional Korean foods, the government operates the Korea Food Grand Master designation system. Since its introduction in 1994, 81 masters have been designated. These masters specialize in a wide range of fields, including alcoholic beverages, kimchi, traditional confectionery, fermented sauces, grain syrups, and rice cakes.

Promotion of Korean Cuisine

Since 2008, MAFRA has pursued policies to globalize Korean cuisine, aiming to raise international awareness of Korean cuisine (Hansik) and generate economic value. A wide range of initiatives has been implemented to build the foundation for the globalization of Korean cuisine, strengthen the competitiveness of Korean restaurants abroad, and enhance the promotion of Korean food and food culture. The enactment of the Korean Food Promotion Act in August 2019 established an institutional basis for the promotion and global dissemination of Korean cuisine. Recently, the global popularity of K-pop and the broader Korean Wave (Hallyu) has further expanded opportunities for overseas promotion and experiential programs related to Hansik. The government is also strengthening the human resource base for Hansik globalization through training programs for culinary professionals and overseas internship opportunities.

Since 2020, the government has organized Hansik-related events in conjunction

with large-scale national events and has promoted the digital dissemination of Hansik content. In collaboration with local governments, efforts are being made to identify outstanding regional food tourism resources and foster themed culinary tourism products. In addition, the Hansik Culture Center plans to contribute to the overseas expansion of Hansik by offering humanities-focused lectures on Korean cuisine and diversifying experiential programs for foreign visitors.

Strengthening the Infrastructure of the Food Industry

Strengthening the foundational infrastructure of the food industry requires support for the development of specialized human resources, provision of information, activation of technology transfer, and promotion of linkages with the agricultural sector. To enhance consumer confidence and ensure standardization, the government has implemented policies related to the establishment and revision of domestic and international food standards, as well as the operation of country-of-origin certification systems. The government is also encouraging youth employment in the food and food service industries by offering tailored education programs designed for young people. In addition, statistical information on the food and food service sectors is collected, processed, and analyzed to provide necessary data to industry stakeholders and serve as a basis for policy formulation.

Strengthening linkages between agriculture and food companies is a key task for generating greater value-added in the agricultural sector. The government is promoting contract farming between producer organizations and food companies, supporting credit transactions, and expanding the consumption base for domestic agricultural and livestock products to facilitate mutual growth between agriculture and the food industry. Infrastructure is also being developed to promote the transfer of outstanding food-related technologies, along with support for technology transactions and the overall transfer process. As HACCP(Hazard Analysis and Critical Control Point) requirements have been expanded to small-scale food enterprises, policies have been introduced to support these businesses, such as providing loans for facility modernization, to improve product quality and enhance hygiene and safety standards.

Expanding the Functions of the National Food Cluster Industrial Complex

As part of domestic support measures following the conclusion of the Korea–U.S. FTA negotiations in 2007, the government began developing the National Food Cluster industrial complex in Iksan, Jeollabuk-do in 2009. The project aims to strengthen the infrastructure of the food industry and promote the development of agriculture and fisheries. The National Food Cluster hosts food companies, food research institutes, and various support facilities designed to enhance corporate competitiveness.

As of 2024, the cluster has attracted 129 companies. To provide technological support, the government has constructed and initiated the operation of 12 specialized support facilities, including the Functional Evaluation Center, Quality and Safety Center, Packaging Center, Pilot Plant, Sauce Industrialization Center, Functional Ingredient Bank, Functional Food Formulation Center, and HMR Technology Support Center. To address operational challenges faced by tenant companies, the cluster has also established a domestic online platform and supports market entry into major international e-commerce platforms, such as Alibaba and Amazon. Looking ahead, the government plans to build a Digital Food Information Platform to swiftly connect the tenant companies with experts who can address their technical, analytical, and consulting needs, while also strengthening cooperation among related institutions.

3. Agricultural Input Industry

The stable provision of high-quality and low-cost agricultural input is a critical factor not only for advanced agricultural countries but also for Korea; it contributes to increasing agricultural productivity, reducing production costs, enhancing farm household income, and ultimately strengthening food security. Globally, a significant portion of agricultural development has been achieved through the production and distribution of superior agricultural input enabled by cooperation among governments, research institutes and universities, and the agricultural input industry.

In recent years, the application of advanced technologies, such as AI, to the agricultural sector has accelerated attempts to implement precision agriculture. Consequently, research, development, and the supply of advanced agricultural input are expected to become increasingly important. Achieving sustainable agriculture in harmony with the environment will require a reliable supply of high-quality agricultural input. Furthermore, to meet domestic demand and expand exports, the government needs to develop agricultural input with enhanced quality and price competitiveness, which calls for a close collaboration with industry partners, the academe, and research institutions.

Agricultural Machinery Industry

Trends in the Agricultural Machinery Market

Mechanization in Korean agriculture expanded most rapidly and extensively during the 1990s. During this period, various types of agricultural machinery were supplied to stakeholders under government support. With more than 300,000 units supplied annually, the total number of machines in operation reached approximately 3.4 million units.

Since the 2000s, domestic and international demand for high-performance and large-scale machinery, particularly tractors, has increased, leading to growth in production volumes <Table 4-18>. The total annual supply of major machinery types

remained below 70,000 units until around 2015. After 2015, production levels rose, driven largely by increased output of tractors and power tillers. Tractor production grew substantially after 2015, reaching about 66,000 units in 2020, increasing further to 101,000 units in 2022, and then declining to approximately 81,000 units in 2023. Power tillers were produced at around 20,000 units annually, and production exceeded 23,000 units in 2021 and 2022 before declining to 16,000 units in 2023. In contrast, production of power cultivators, rice transplanters, and combines has declined markedly since 2000.

Table 4-18 Production Status of Major Agricultural Machinery

Unit: Each

Year	2000	2005	2010	2015	2020	2021	2022	2023
Power Cultivator	7,005	4,793	3,877	3,081	-	849	954	425
Tractor	23,315	31,594	30,343	48,850	65,909	92,041	101,449	80,656
Rice Transplanter	20,854	5,640	7,312	3,856	2,049	1,702	2,564	1,000
Combine	11,714	4,136	4,665	2,231	1,873	1,927	1,822	735
Power Tiller	9,890	17,837	18,551	20,369	18,156	23,600	23,402	16,307
Total	72,778	64,000	64,748	78,387	87,987	120,119	130,191	99,123

Source: Korea Agricultural Machinery Industry Cooperative, various years, *Korean Society for Agricultural Machinery, Agricultural Machinery Yearbook.*

The reduction in the number of farm households and total cultivated area, together with the shift toward larger and higher-performance agricultural machinery, has led to the replacement of small and outdated machines with larger and newer models. The overall number of agricultural machines declined from approximately 2.066 million units in 2000 to around 1.6 million units after 2020.

By machinery type, ownership of tractors and power tillers has continued to increase. In the case of grain dryers, the number of units in use has grown steadily since 2000 and has remained at approximately 80,000 units after 2020. In contrast, the number of power cultivators has decreased consistently since 2000, remaining at

about 520,000 to 530,000 units after 2020. This trend indicates that farmers' primary power source for field operations has shifted from cultivators to tractors. For rice transplanters, the transition from walk-behind to riding types has contributed to the continuous decline in the number of units held. Combines have also undergone a size shift, marked by a decrease in machines with fewer than three rows and an increase in five-row or larger models, resulting in an overall decline in farm-level ownership <Table 4-19>.

Table 4-19 Number of Major Agricultural Machines in Use

Unit: Each

Year	2000	2005	2010	2015	2020	2021	2022	2023
Cultivator	939,219	819,684	698,145	598,315	539,241	534,378	527,705	523,158
Tractor	191,631	227,873	264,834	282,829	302,570	306,109	308,789	312,040
Rice Transplanter	341,978	332,393	276,310	213,346	180,940	177,331	173,029	171,449
Binder	72,315	60,008	-	-	-	-	-	-
Combine	86,982	86,825	80,973	78,961	74,346	73,761	73,064	72,846
Power Tiller	378,814	392,505	407,706	407,163	422,217	432,256	440,127	454,443
Grain Dryer	55,573	70,363	77,830	78,381	79,286	79,255	79,328	79,635
Total	2,066,512	1,989,651	1,805,798	1,658,995	1,598,600	1,603,090	1,602,042	1,613,571

Source: MAFRA, various years, *Major Statistics of Agriculture, Forestry and Fisheries.*

Agricultural Machinery Exports and Imports

As agricultural machinery in Korea has increasingly shifted toward high-performance and precision models, the overall number of machines in use has declined. This reduction in the domestic machinery stock has led to a contraction in domestic demand, whereas exports of agricultural machinery have continued to increase. The decrease in domestic ownership effectively signals a weakening domestic market, underscoring the need for Korean agricultural machinery manufacturers to target global markets rather than relying on domestic sales.

Korea's agricultural machinery exports have shown an overall upward trend since 2000. After surpassing USD 1 billion in 2018, export values continued to rise, reaching USD 1.74246 billion in 2022, followed by a slight decline in 2023. Imports of agricultural machinery have also trended upward. The import value, which stood at USD 418.42 million in 2015, gradually increased to USD 700.93 million in 2023 <Table 4-20>. The export–import gap indicates that the increase in exports has outpaced that of imports, leading to a widening difference between the two. The export–import gap, which was USD 418.42 million in 2015, steadily expanded to USD 1.12293 billion in 2022, before declining again to USD 828.45 million.

Table 4-20 Trends in Agricultural Machinery Exports and Imports

Unit: USD Thousands

Year	2000	2005	2010	2015	2020	2021	2022	2023
Export (a)	134,804	341,022	433,577	894,364	1,027,168	1,474,151	1,742,461	1,529,376
Import (b)	131,806	282,314	419,125	475,922	560,510	617,565	619,529	700,925
Trade Balance (a - b)	2,998	58,708	14,452	418,422	466,658	856,586	1,122,932	828,451

Source: Korea Agricultural Machinery Industry Cooperative, various years, *Korean Society for Agricultural Machinery, Agricultural Machinery Yearbook.*

The principal category of agricultural machinery exported from Korea is tractors. Tractor export values increased from USD 45.14 million in 2000 to USD 1.349 billion in 2022, followed by a decline to USD 1.09386 billion in 2023. Consequently, the share of tractors in total agricultural machinery exports rose from approximately 33.5% in 2000 to over 70% from 2021 onward. Following tractors, rice milling machines, other machinery categories, and parts account for substantial proportions of exports. In contrast, exports of small agricultural tools have significantly decreased since 2010 compared with the early to mid-2000s <Table 4-21>.

Table 4-21 Trends in Export Values by Major Machinery Type

Unit: USD Thousands

Year	2000	2005	2010	2015	2020	2021	2022	2023
Tractor	45,143	203,724	222,693	556,093	665,369	1,046,135	1,349,902	1,093,861
Power Cultivator	2,225	-	-	-	-	-	-	-
Engine	1,211	8,517	1,546	8,337	10,334	18,682	6,269	11,853
Water Pump 16,260	16,260	-	-	-	-	-	-	-
Rice Milling Machine and Others	29,292	8,699	160,041	204,818	253,497	273,684	255,582	259,942
Small Agricultural Tools	16,236	8,699	2,149	1,430	1,678	2,259	1,589	2,388
Parts	24,437	46,779	47,128	140,304	96,290	133,391	129,119	161,332
Total	134,804	341,022	433,577	120,686	1,027,168	1,474,151	1,742,461	1,529,376

Source: Korea Agricultural Machinery Industry Cooperative, various years, *Korean Society for Agricultural Machinery, Agricultural Machinery Yearbook.*

The United States has consistently been the largest export destination for Korean agricultural machinery. Exports to the country amounted to USD 42.23 million in 2015, accounting for 47.4% of total exports. This value increased to USD 1.0787 billion (67.1%) in 2020 and further to USD 1.3408 billion (76.9%) in 2022, before declining to USD 1.1016 billion (72.0%) in 2023. Australia and Canada represent the next most significant export destinations. Although China accounted for a relatively large share of exports after the United States in 2015, exports to Australia and Canada have subsequently taken on greater importance. Since 2020, Korea's agricultural machinery exports have continued to be concentrated in the United States, Australia, and Canada <Table 4-22>.

Table 4-22 Trends in Export Performance by Major Countries

Unit: USD Thousands

Year	2015	2020	2021	2022	2023
United States	422,306	688,940	1,078,673	1,340,789	1,101,565
Australia	25,601	35,962	53,485	57,527	64,382
Canada	-	27,908	46,855	55,527	65,897
Germany	-	21,065	28,320	8,401	13,837
Japan	25,046	27,953	27,397	26,779	25,519
Portugal	-	10,614	16,019	21,499	13,461
Vietnam	9,559	-	-	-	-
Uzbekistan	-	69,038	45,408	-	-
Netherlands	-	9,626	13,471	12,441	23,630
China	38,171	15,195	11,274	-	-
Indonesia	-	-	-	23,444	25,846
Mexico	-	-	-	11,305	12,090
Other	370,681	120,869	153,249	184,749	183,151
Total	891,364	1,027,168	1,474,151	1,742,461	1,529,376

Source: Korea Agricultural Machinery Industry Cooperative, various years, *Korean Society for Agricultural Machinery, Agricultural Machinery Yearbook.*

Agricultural Machinery Shared-Use Policies

The government has implemented a range of policies to promote agricultural mechanization for small-scale farmers. In the 1970s, the government introduced Agricultural Machinery Cooperatives, and during the 1980s and 1990s, established various pilot complexes, along with mechanized farming groups and contract farming companies, to advance mechanization. Joint ownership and shared use of agricultural machinery facilitated the progress and diffusion of mechanized farming, which in turn contributed to reducing production costs and increasing agricultural income.

The government formulated the Five-Year Plan for Agricultural Mechanization (2002–2006), which included an agricultural machinery rental program as a policy instrument to promote shared use of farm machinery. Based on the assessment that mechanization in rice farming had reached a stable level, the government aimed to

expand mechanization to upland crops by adopting shared-use approaches. The main components of the rental program were as follows: ① mechanization of rice farming through RPC-based joint farming operations and outsourcing of farm work via agricultural corporations; ② agricultural machinery rental services led by agricultural organizations and local governments, along with support for the development of self-sustaining agricultural machinery banks to promote leasing and rental services; ③ shared use of agricultural machinery for upland crops, centered on major production zones by crop type.

Since 2005, the central and local governments have jointly funded the establishment of Agricultural Machinery Rental Centers on a 50–50 basis. Meanwhile, local governments have taken full responsibility for the installation and operation of the centers. As of 2024, a total of 148 basic local governments nationwide operate rental centers, managing more than 100,000 agricultural machines. Through the agricultural machinery rental program, which has focused on upland crops that require substantial labor and are difficult to mechanize, the mechanization rate in upland farming has increased. The program has been evaluated as contributing to reductions in labor demand and farm production costs.

Outlook for the Agricultural Machinery Industry

The domestic market for agricultural machinery in Korea has shown stagnation or decline. Nevertheless, as farm management continues to scale up, demand for larger, high-performance, and precision agricultural machinery is expected to grow. Since the mid-2020s, the global agricultural machinery market has exhibited a common trend of rising demand for precision, advanced, and smart agricultural equipment. Representative examples include agricultural drones and unmanned autonomous tractors. Based on precision GPS and GIS data, these technologies integrate advanced systems and are expected to show rapid growth as key components of smart agriculture. In addition, sustained R&D efforts are being directed toward agricultural robots incorporating IoT and AI technologies. Attempts to introduce early-stage farming robots for harvesting, weeding, and related operations are also ongoing.

The development and future direction of Korea's agricultural machinery industry can be summarized as follows. First, ensuring stability in the domestic market remains essential. As farmers increasingly prefer durable, high-performance precision machinery and larger equipment, supply systems must be tailored to user needs. Second, strategies are needed to expand exports to major global markets and diversify export destinations. In particular, customized machinery development and sustained, reliable supply and maintenance systems will be necessary for the Asia-Pacific region, where the market is expected to grow substantially. Third, the industry faces the need to expand R&D and commercialize smart agricultural machinery incorporating AI technologies to meet rapidly rising demand and to open new markets.

Fertilizer Industry

Domestic Fertilizer Market

Since the 1960s, the government has long pursued agricultural production expansion policies, particularly those centered on increasing rice production. Substantial efforts have been directed toward the production and supply of inorganic (chemical) fertilizers, which are essential for boosting yields. As production and supply expanded, consumption of inorganic fertilizers increased rapidly. However, since the 1990s, consumption has shown a consistent decline owing to the introduction and policy reinforcement of environmentally friendly agriculture, abolition of fertilizer subsidies, and reduction in farmland area.

Based on nutrient content, domestic fertilizer production decreased from 1.546 million tons in 2000 to 1.006 million tons in 2010, and further to 795,000 tons in 2020. The value in 2023, at 669,000 tons, represents a 56.7% decrease compared with 2000. Sales volumes followed a similar trend, declining from 801,000 tons in 2000 to 423,000 tons in 2010, 431,000 tons in 2020, and 388,000 tons in 2023, a 51.6% decrease relative to 2000.

Fertilizer consumption per unit of cultivated area has also declined. Until the 1990s, nutrient-based consumption per 10 acres approached 50 kilograms. By 2000, this Figure had fallen to 38.1 kilograms per 10 acres, decreasing further to 27.3 kilograms

per 10 acres by 2015. Since the 2020s, consumption has stabilized at approximately 25 kilograms per 10 acres. The decline in consumption per unit area has slowed since the 2010s, maintaining levels in the mid-20-kilogram range during the 2020s <Table 4-23>.

Table 4-23 Annual Fertilizer Supply and Demand

Unit: Thousand Tons (Nutrient Content), kg/10 a

Year	Production	Sales	Self-sufficiency Rate	Consumption per 10a of Cultivated Land
2000	1,546	801	211	38.1
2005	1,461	722	202	37.6
2010	1,006	423	238	23.2
2015	775	439	177	27.3
2020	795	431	184	27.1
2021	739	461	160	29.0
2022	762	410	186	25.5
2023	669	388	172	24.2

Source: MAFRA, 2024, *Major Statistics of Agriculture, Forestry and Fisheries 2024;* Korea Fertilizer Industry Association, 2024, *Fertilizer Yearbook 2010.*

Meanwhile, Korea's fertilizer consumption per unit area is relatively high compared with other countries, except for China. Among EU member states, Spain used 160.4 kg/ha in 2000 but reduced its usage to 115.1 kg/ha by 2023, recording the lowest fertilizer application per hectare. The United States, which had the lowest usage in 2000, increased its application to 127.8 kg/ha in 2023. In the Netherlands, fertilizer use exceeded 400 kg/ha in 2000 (408 kg/ha) but declined to 238.0 kg/ha by 2023. In Asia, Japan's fertilizer consumption decreased from 324.6 kg/ha in 2000 to 202.8 kg/ha in 2023. In contrast, China increased its fertilizer use from 287.4 kg/ha in 2000 to 394.0 kg/ha in 2023.

An examination of changes in fertilizer consumption shows that Korea's usage declined at an average annual rate of 2.38% over the past 23 years, representing one of the fastest reductions following Belgium (3.01%) and Germany (2.54%). France and the Netherlands also exhibited declines of 2.33% and 2.32% per year, respectively, whereas Japan recorded an average annual decrease of 2.02%. In contrast, China's fertilizer

consumption increased at an average annual rate of 1.38%. Although fertilizer use in the United States rose by 0.71% per year, this increase appears to be attributable to the relatively low baseline level of fertilizer consumption in 2000 <Table 4-24>.

Because crops, cultivation systems, natural environments, and farming practices differ across countries, fertilizer consumption levels are difficult to compare directly. Although Korea has experienced a relatively rapid decline in fertilizer use, the absolute level remains high, warranting attention to concerns that such usage may lead to issues, including the discharge of harmful substances.

Table 4-24 Fertilizer Use in Major Countries

Unit: kg/ha

Year	Korea	Japan	China	Netherlands	France	Germany	Belgium	Spain	U.S.
2000	456.0	324.6	287.4	408.7	225.8	232.4	-	160.4	108.7
2005	478.2	296.8	375.1	337.8	192.5	208.8	332.4	142.1	115.9
2010	330.3	255.1	425.2	293.3	150.5	211.96	324.9	130.7	124.7
2015	337.8	225.3	465.6	266.8	170.4	202.3	305.5	151.5	129.2
2020	304.8	216.0	414.5	276.6	179.5	163.2	257.6	167.1	134.6
2021	281.5	209.8	406.2	273.3	171.7	130.1	252.8	158.0	130.6
2022	325.4	201.7	395.1	240.3	130.6	116.9	198.3	110.6	127.8
2023	262.3	202.8	394.0	238.0	131.3	128.6	191.7	115.1	127.8

Note: Korea's fertilizer consumption per hectare is based on World Bank estimates and may differ from domestic statistics.
Source: World Bank (Search date: Dec. 5, 2025), *World Development Indicators Online*.

Fertilizer Exports and Imports

A distinctive feature of Korea's fertilizer trade structure is that exports mostly consist of finished products. Meanwhile, nearly all imports consist of raw materials. The reason is that virtually all raw materials required for domestic production of inorganic fertilizers are sourced from abroad. Notably, since 2012, key nitrogen fertilizer raw materials, such as urea and ammonia, have not been produced domestically. The near-total dependence on imported raw materials, alongside the export of finished fertilizers, represents a structural characteristic that illustrates the

challenges faced by the Korean fertilizer industry.

Annual fertilizer export volumes remained around 1.5 million tons until 2010, and then declined to 691,000 tons in 2015, increased again to over 1 million tons in both 2000 and 2021, and subsequently decreased to the upper 700,000-ton range in 2022 and 2023. In value terms, exports amounted to approximately USD 190 million in 2000, rose to USD 1.315 billion in 2005, and then stabilized at around USD 600 to 700 million, before declining to USD 50 million in 2023 <Table 4-25>.

Table 4-25 Annual Fertilizer Export and Import Performance

Unit: Thousand tons, USD Millions

Year			2000	2005	2010	2015	2000	2021	2022	2023
Export	Volume		1,342	1,479	1,529	691	1,028	1,274	776	794
		Urea	109	44	-	-	-	-	-	-
		Ammonium Sulphate	367	567	694	89	372	588	228	151
		Fused Magnesium Phosphate	1	15	26	-	-	-	-	-
		Complex Fertilizer	843	853	809	602	656	686	547	643
	Value		190	292	399	250	229	380	506	303
Import	Value		952	1,315	714	670	774	676	603	508

Note: Import figures represent the combined import quantities of fertilizer raw materials, specifically urea and potassium chloride.
Source: MAFRA, 2024, *Major Statistics of Agriculture, Forestry and Fisheries 2024.*

Fertilizer Supply System

The Korean government has actively intervened in fertilizer production and supply to ensure food security and the provision of safe agricultural products. Government policies in this sector have been implemented primarily through the National Agricultural Cooperative Federation (Nonghyup). Fertilizers previously supplied and managed by the government shifted to a liberalized sales system after 1988. Subsidies that had been provided for fertilizer purchase prices were also fully abolished. Although temporary support was offered at times to offset sudden

increases in raw material prices, the government's basic policy stance has remained subsidy-free. However, tariff reductions have been implemented to stabilize domestic prices of inorganic fertilizers, and interest-rate differentials have been supported for manufacturers' raw material purchases. These measures are understood as efforts to alleviate farm management costs associated with rising fertilizer prices <Table 4-26>.

Subsidies for customized fertilizers were provided between 2010 and 2012 to promote precision agriculture and environmentally friendly farming. These were discontinued in line with chemical fertilizer reduction policies and the shift away from subsidies. At present, fertilizer supply and demand operate autonomously according to market mechanisms. Since 2022, in response to sharp increases in fertilizer raw material prices driven by international geopolitical developments, the government has implemented policies to partially compensate for the rise in fertilizer sales prices to mitigate the financial burden on farmers.

Table 4-26 Major Changes in the Supply and Support System for Inorganic Fertilizers

Period: Policy	Major Details
1988–1990: Liberalization of Fertilizer Sales	Abolition of the government-run fertilizer account and delegated supply system through agricultural cooperatives, allowing cooperatives to autonomously purchase fertilizers and set prices
1988–present: Tariff Reductions and Application of Quota Tariffs on Raw Materials	Reduction of tariffs and application of quota tariffs to lower import prices for fertilizer raw materials
1991–June 2005: Compensation for Price Differences	Government support to offset cost increases resulting from sharp rises in international fertilizer raw material prices
June 2008–2009: Compensation for Price Differences	Partial compensation for price increases triggered by spikes in oil and fertilizer raw material prices to mitigate farm management cost burdens
2010–2012: Supply and Government Support for Customized Fertilizers	Government support for customized fertilizers tailored to soil nutrient characteristics
2013–present: Abolition of Fertilizer Subsidies and Full Liberalization	Elimination of all subsidies for standard fertilizers (excluding soil conditioners)
2016–present: Support for Raw Material Purchasing Funds	Interest support for raw material purchasing funds for inorganic fertilizer manufacturers
2022–2025: Compensation for Price Differences	Partial support for fertilizer price increases caused by raw material price surges driven by the Russia–Ukraine war and export restrictions in major supplying countries

Source: Korea Fertilizer Industry Association, 2024, *Fertilizer Yearbook*.

Outlook and Tasks for the Fertilizer Industry

The stagnation of growth in the domestic fertilizer market has led to a decline in operating rates within the inorganic fertilizer industry. Although the overall market size for inorganic fertilizers is decreasing, farmer demand for certain fertilizer types, such as controlled-release and functional fertilizers, appears to be increasing. Consequently, for future industry growth, markets for biofertilizers, micronutrient fertilizers, and controlled-release products are becoming increasingly important, requiring a more proactive response from the domestic fertilizer industry.

In the long term, strengthening competitiveness in Korea's fertilizer industry will require identifying new avenues for advancement, including improvements in technological capability. First, the development and supply of controlled-release and water-soluble fertilizers will be essential. Demand is relatively increasing for these categories. To address labor shortages, an aging farm population, and the expansion of precision agriculture, the government must address the needs in research, development, and supply of these fertilizer types. Moreover, the controlled-release fertilizer market is expanding more rapidly than the overall inorganic fertilizer market in the international arena. Accordingly, the government needs to pursue export expansion by developing fertilizers suited to the climate, soil, and crop characteristics of foreign markets. Additionally, securing stable access to raw materials will require careful monitoring and assessment of international raw material markets. Finally, strategies should be developed to increase fertilizer exports in connection with agricultural official development assistance programs.

Pesticide Industry

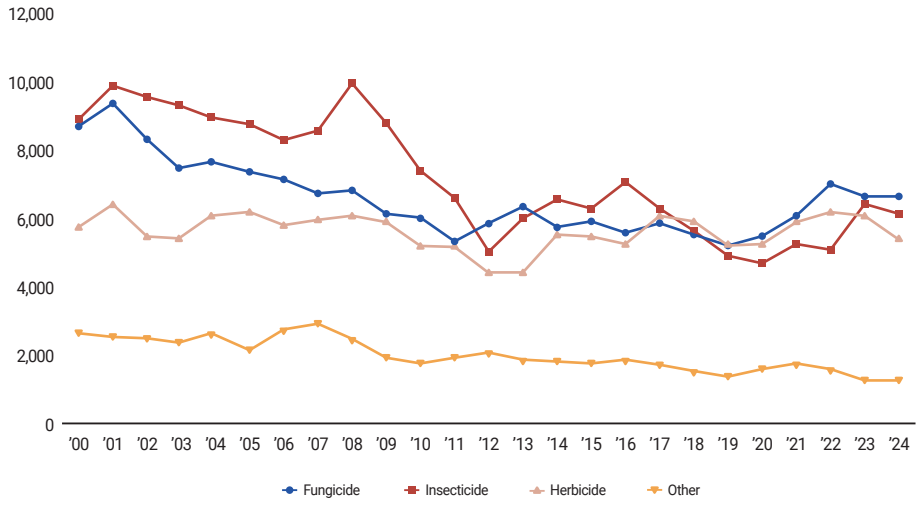
Domestic Pesticide Market and Trade

The size of the Korean pesticide market, measured in shipment volume, decreased from 26,087 M/T in 2000 to 17,438 M/T in 2012, after which it began to rise again and has since remained in the range of 18,000 to 20,000 M/T. By pesticide type, insecticides accounted for the largest share of total shipments until 2012. However,

since then, shipment volumes of insecticides and fungicides have become comparable. Herbicides recorded shipment volumes similar to fungicides beginning in 2015, but declined in 2023 and 2024 <Figure 4-12>.

Figure 4-12 Trends in Pesticide Supply

Unit: M/T



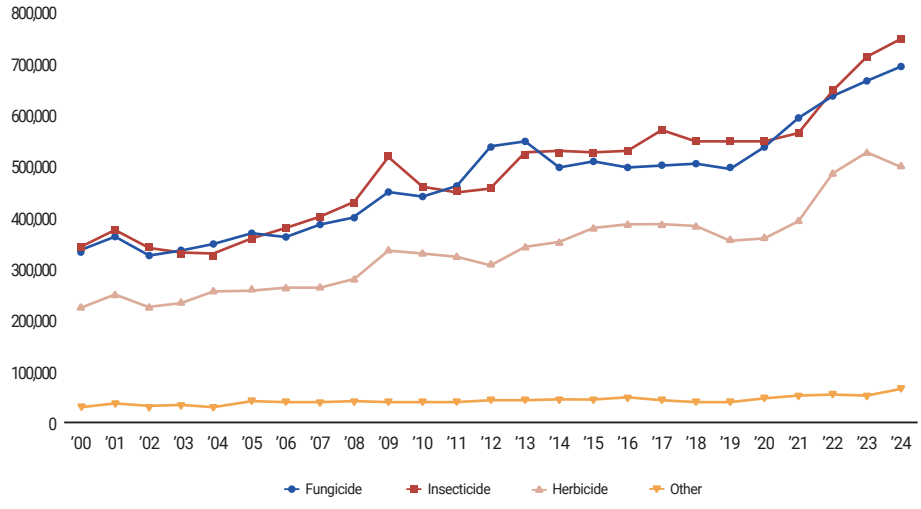
Source: Korea Crop Protection Association, various years, *Pesticide Yearbook*.

Korea's pesticide shipment value has shown a gradual increase since 2000. Total shipment value exceeded KRW 940.9 billion in 2000 and surpassed KRW 1 trillion in 2001. After a temporary decline, the value began to rise steadily again after 2005, reaching approximately KRW 2.01 trillion in 2024. In other words, while shipment volume has remained relatively stable, shipment value has continued to increase.

By pesticide category, shipment values for fungicides and insecticides have been similar in scale. Herbicides follow, showing a relatively large share of total shipment value <Figure 4-13>.

Figure 4-13 Trends in Pesticide Supply Value

Unit: Million Won



Source: Korea Crop Protection Association, various years, *Pesticide Yearbook*.

Pesticide consumption in Korea is relatively high compared with other countries. Korea's pesticide use per hectare declined from 13.4 kilograms in 2000 but began to rise again after 2020, returning to a level similar to that of 2000 by 2023. Japan recorded the highest usage among the compared countries at 16.5 kilograms per hectare in 2000, but its usage declined to 10.6 kilograms per hectare by 2023. China has maintained approximately 2.0 kilograms per hectare over time. Among EU member states, Belgium, the Netherlands, and France have shown gradual declines in pesticide use since 2000. By contrast, Germany and Spain recorded slight increases. The United States has maintained pesticide use at roughly 2.5 kilograms per hectare from 2000 to 2023 <Table 4-27>.

Table 4-27 Pesticide Use per Hectare in Selected Countries

Unit: kg/ha

Year	Korea	Japan	China	Belgium	Netherlands	France	Germany	Sapin	U.S.
2000	13.4	16.5	1.9	10.8	10.8	5.0	2.9	1.9	2.4
2005	13.4	13.6	2.1	11.3	9.4	4.0	3.0	2.3	2.4
2010	11.9	12.1	2.5	5.4	9.1	3.2	3.4	2.3	2.3
2015	11.6	12.1	2.6	7.6	9.2	3.4	4.0	4.5	2.7
2020	11.0	11.2	2.0	6.4	9.5	3.6	4.0	4.6	2.8
2021	12.3	11.2	1.9	6.6	9.0	3.9	4.1	4.6	2.8
2022	13.0	11.6	1.8	5.9	8.4	3.8	4.1	3.4	2.8
2023	13.5	10.6	1.8	5.4	7.0	3.7	3.4	3.2	2.8

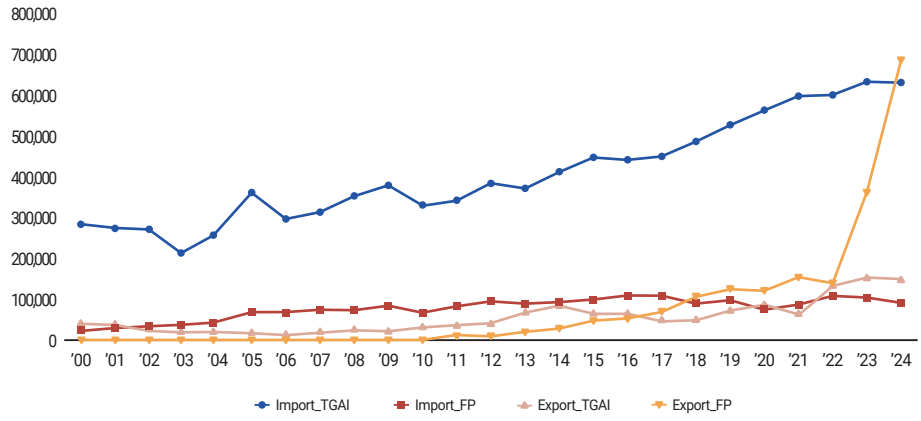
Note: FAO data; values may differ from domestic statistics.
Source: FAOSTAT (Search date: Dec. 5, 2025).

Except for 2024, Korea's pesticide import value has generally exceeded its export value. Imports were valued at USD 309.273 million in 2000; this value continued to rise, surpassing USD 700 million after 2022. The majority of imports consist of technical-grade active ingredients (TGAIs). Specifically, imports of TGAIs rose from USD 282.751 million in 2000 and to about USD 630 million after 2023. Imports of formulated products (FPs) amounted to USD 26.522 million in 2000, increased to USD 106.672 million in 2022, and then declined to approximately USD 90 million in 2024. In value terms, TGAIs have consistently accounted for at least 80% of total pesticide imports.

Regarding changes in pesticide export values, exports declined from USD 42.756 million in 2000 to USD 12.982 million in 2006, then began to rise again, surpassing USD 200 million in 2020 and reaching USD 832.957 million in 2024, exceeding import values for the first time. Until 2015, technical-grade pesticide exports accounted for a relatively large share of total export value. However, beginning in 2015, the share of formulated products increased, and by 2024, formulated pesticides accounted for 82.1% of total exports. The structure of pesticide trade indicates that Korea imports TGAIs, manufactures formulated products domestically, and then exports these finished products <Figure 4-14>.

Figure 4-14 Export and Import Volumes of Pesticides

Unit: USD Thousands



Note: TGAI refers to Technical-Grade Active Ingredient, and FP refers to Formulated Product.
Source: Korea Crop Protection Association, various years, *Pesticide Yearbook*.

Strengthening of the Pesticide Management System

Since 2019, Korea has implemented the Positive List System (PLS) for pesticide residue management. The government announced the introduction of the PLS in October 2011 to prevent the misuse of pesticides domestically and to strengthen pesticide safety management amid increasing imports of agricultural products. The legal and institutional basis for implementation was subsequently established through amendments to the Food Sanitation Act and its enforcement regulations, as well as WTO notifications. Beginning on January 1, 2017, the PLS was applied first to nuts, seeds, and tropical fruits. As of January 1, 2019, full implementation of the PLS began, with the exception of 110 agro-medicinal crops regulated under pharmacopoeial standards; 31 agro-medicinal crops governed by food standards were included. The PLS strengthens the pesticide safety management system by restricting pesticide use to those registered for each specific crop and used within established safety and maximum residue limits. For pesticides without established residue limits or approval for a given crop, a uniform limit of 0.01 ppm is applied.

Under the previous system, and as shown in <Table 4-28>, pesticides without established maximum residue limits (MRLs) could still be used on certain products by applying Codex standards, the lowest standard among similar crops, or the lowest standard for the pesticide (0.05 mg/kg). Under the newly implemented PLS, only pesticides with MRLs established for each individual crop may be used. Similar systems have been adopted by large agricultural importers, such as Japan (2006), the EU (2008), and Taiwan (2006). The United States, Australia, and Canada apply even stricter non-detection criteria than Korea's uniform limit of 0.01 mg/kg.

Table 4-28 Changes in Maximum Residue Limits Following the Introduction of the PLS

Category			Previous	Revised
Pesticide Use Standards			Substances not designated as regulated could, in principle, be used without restriction	Substances not included on the positive list are, in principle, prohibited
Standards for Pesticide Residue Testing	Establishment of MRLs		Application of established MRLs	Same as previous
	No MRL	Agro-product	(Provisional Standard Principle) 1) Application of Codex standards for the crop 2) Application of the lowest standard among similar crops 3) Application of the lowest standard for the pesticide (0.05 mg/kg)	(Uniform Standard Principle) Application of a 0.01 mg/kg standard
		Processed product	1) Codex standards applied preferentially 2) Residues allowed within the limits applied to the raw agricultural product; standards based on raw product composition; moisture adjustments applied for dried products	1) Deleted 2) Same as previous

Note 1) Among agro-medicinal crops, 110 items regulated under pharmacopoeial standards were excluded from PLS.
2) The following multipliers were applied for residue limits: dried red pepper (including powdered and shredded forms) = 7× that of fresh pepper; green tea extract = 6× that of tea leaves; dried and red ginseng = 4× that of fresh ginseng; ginseng and red ginseng concentrate = 8× that of fresh ginseng.

Source: Korea Rural Economic Institute, 2020, *Agriculture in Korea 2020.*

Outlook and Tasks for the Pesticide Industry

Although pesticide consumption in Korea has been declining in volume, the market size has continued to expand, reaching more than KRW 2 trillion. In terms of

production structure, the industry relies almost on imports for technical-grade active ingredients and intermediate synthetic materials required for the manufacture of formulated products.

From the perspective of volume, the domestic pesticide market appears to have entered a period of stagnation, and firms seem to be focusing on expanding exports. However, the share of original TGAIs that domestic companies have independently developed and commercialized remains very low, and overcoming this limitation is a prerequisite for further growth. Recently, several domestically developed active ingredients have begun to be exported to countries such as the United States and Brazil, accompanied by an increase in the export value of technical-grade pesticides. The development of active ingredients entails numerous failures during the discovery and commercialization stages and requires substantial R&D costs over an extended period. Accordingly, sustained R&D support will likely be necessary to promote the development of new active ingredients.

Seed Industry

Size of the Domestic Seed Market

The number of seed companies in Korea increased from 415 in 2000 to 5,142 in 2024, representing an average annual growth rate of 11.1%. By crop category, the number of registered seed companies for food crops grew from 7 in 2000 to 192 in 2024, an average annual increase of 14.8%. For fruit crops, the number rose from 174 in 2000 to 1,036 in 2024 (7.7% annual growth), whereas the number of vegetable seed companies increased from 72 to 837 (10.8% annual growth). The number of floriculture seed companies expanded from 42 in 2000 to 708 in 2024, with an average annual increase of 12.5%. Seed companies categorized as “other” increased from 14 in 2000 to 1,971 in 2024, growing at an average annual rate of 22.9%. As of 2024, excluding “other” seed enterprises, fruit-crop seed companies accounted for the largest share at 20.1%, followed by vegetable seeds at 16.3%, floriculture at 13.8%, and mushrooms at 6.7% <Table 4-29>.

Table 4-29 Number of Registered Seed Enterprises

Unit: Each

Year	Food Crop	Fruit	Vegetable	Flower	Mushroom	Mulberry	Other	Total
2000	7	174	72	42	89	17	14	415
2006	18	235	163	110	115	26	69	736
2010	32	283	181	149	121	29	129	924
2015	69	494	277	231	130	35	463	1,699
2020	159	793	480	381	275	46	1,181	3,315
2021	174	868	572	465	313	47	1,341	3,780
2022	186	929	642	538	328	47	1,555	4,225
2023	186	984	744	638	339	50	1,786	4,727
2024	192	1,036	837	708	347	51	1,971	5,142

Source: Korea Seed & Variety Service (Search date: Dec. 5, 2025).

Trends in Seed Supply

The supply of certified seeds for food crops (produced and distributed under national initiative) increased to 38,066 tons in 2010 but subsequently declined, stabilizing at around 30,000 tons during the early 2020s. The decline in certified seed supply is attributable to reduced supply of rice, barley, maize, and potato seeds, with wheat being the only crop showing an increase <Table 4-30>.

Table 4-30 Supply of Certified Food Crop Seeds

Unit: tons

Year	2000	2005	2010	2015	2020	2021	2022	2023
Rice	12,982	15,732	26,252	23,983	18,738	17,737	18,734	18,825
Barley	2,177	1,664	2,580	1,755	1,565	1,295	1,258	1,028
Wheat	-	-	504	614	383	1,475	2,296	2,249
Soybean	500	1,058	1,019	977	1,164	1,248	1,104	1,081
Corn	215	77	83	24	-	-	-	-
Potato	8,176	8,264	7,628	9,289	7,537	6,637	6,153	5,871

Source: MAFRA, 2024, *Major Statistics of Agriculture, Forestry and Fisheries 2024.*

Sales by domestic seed companies have shown a gradual increase. Specifically, sales rose from KRW 540.76 billion in 2016 to KRW 675.66 billion in 2022, equivalent to an average annual growth rate of 3.8%. By crop category, vegetable seed sales accounted for the largest share at 61.7% of the total in 2022, followed by fruit crops (10.7%), floriculture (7.8%), mushrooms (7.7%), forestry seeds (5.2%), food crops (4.3%), and special-purpose, forage, and other seeds (3.0%).

Vegetable seed sales increased from KRW 337.09 billion in 2016 to KRW 416.94 billion in 2022, representing an average annual growth rate of 3.6%. Sales of fruit crop seeds increased from KRW 57.12 billion to KRW 69.37 billion over the same period (10.3% annually), and floriculture seed sales rose from KRW 40.40 billion to KRW 52.76 billion (7.8% annually). For food crops, sales increased from KRW 5.80 billion in 2016 to KRW 28.93 billion in 2022, showcasing an average annual growth rate of 30.7%. The high average growth rate reflects a base effect owing to the relatively small sales volume in 2016 <Table 4-31>.

Table 4-31 Sales of Seed Companies by Crop Category

Unit: KRW 100 million

Year	Food Crop	Vegetable	Fruit	Flower	Mushroom	Forestry	Other	Total
2016	58.0	3,370.9	571.2	404.0	605.1	177.5	220.9	5,407.6
2017	70.7	3,764.7	618.1	419.9	553.7	211.0	280.5	5,918.7
2020	84.0	4,068.9	697.9	471.3	652.6	229.5	301.0	6,505.2
2022	289.3	4,169.4	693.7	527.6	518.4	352.2	206.0	6,756.6

Source: KOSIS (Search date: Dec. 5, 2025).

Most of Korea's seed exports consist of vegetable seeds. Vegetable seed exports, which were below USD 10 million in the 1990s, exceeded USD 20 million in the 2010s and increased to USD 58.016 million in 2020. Between 2000 and 2024, vegetable seed export values grew at an average annual rate of 4.7%. Net seed imports also increased at an average annual rate of 2.7%, reaching approximately USD 22 million from 2020 onward. Because the growth in vegetable seed exports outpaced the rise in imports,

net exports (as export value minus net import value) exceeded USD 30 million beginning in 2015 and reached USD 37.352 million in 2021 <Table 4-32>.

Table 4-32 Trends in Vegetable Seed Exports and Imports

Unit: USD Thousands

Year	Export (A)	Net Import (B)	A - B
2000	18,002	11,521	6,481
2005	15,277	5,710	9,567
2010	23,042	9,729	13,313
2015	45,510	14,561	30,949
2020	58,016	22,001	36,015
2021	58,820	21,468	37,352
2022	53,949	21,227	32,722
2023	54,767	21,952	32,815
2024	54,609	22,039	32,570

Note: Net import value equals total imports minus overseas seed production costs.
Source: Korean Seed Association (Search date: Dec. 5, 2025).

Outlook and Tasks for the Seed Industry

The capital capacity and technological capabilities of Korea's seed industry remain low compared with those of leading global seed companies, and investment in R&D for new varieties is also relatively limited. Strengthening competitiveness through the advancement of domestic seed companies and fostering the sector as a promising future export industry are necessary. To promote the development and export expansion of domestic seed varieties, the government must pursue targeted R&D investment based on strategic prioritization and consider nurturing large-scale seed companies.

Key priorities for the development of Korea's seed industry may be summarized as follows. First, careful consideration is required regarding private-sector participation in the development and supply of food crop seeds. Second, the cultivation of private-sector specialists is essential, including policies to strengthen the capabilities of

professional breeders and individual plant breeders. Third, the development of new varieties must be accompanied by protection mechanisms and a defined period of support, which will serve as incentives for R&D. Beyond these measures, strategies must be established and implemented to expand the domestic foundation for seed development and production and foster the seed sector as an export-oriented industry.

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4. Food Consumption and Related Policy

Since the late 1980s, food consumption in Korea has shifted from quantitative growth to qualitative improvement. As per-capita food consumption reached saturation, consumers began to prioritize food quality, safety, and nutrition over quantity. Recently, demographic changes, including population aging, a prolonged economic downturn, evolving distribution environments, and climate change, have influenced consumer attitudes and perceptions toward food, affecting food consumption patterns.

Food consumption policy includes the stages of food choice, food consumption, and nutrient intake within the broader context of food policy. It partially covers food distribution and price policies, and is closely related to food safety and quality policies, food and nutrition support policies, and dietary education policies. Before the 1980s, Korea's food consumption policies mainly aimed to ensure a stable food supply, as consumers were primarily concerned with "what to eat," focusing on food distribution and pricing.

Since the 1980s, consumer interest has shifted toward "how to eat," which has expanded the role of food safety and quality policies within food consumption policy. In recent years, the westernization of dietary habits, such as increased meat consumption, and growing concerns about the rising prevalence of lifestyle-related diseases have increased the importance of dietary and nutrition policies.

Changes in the Agri-Food Consumption Environment

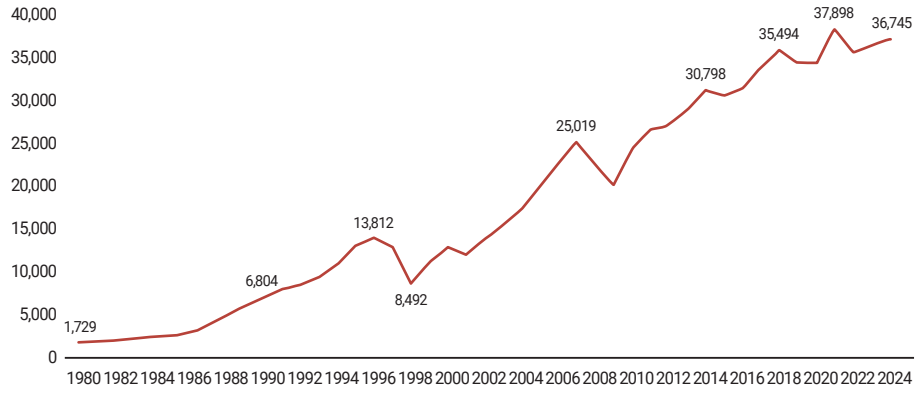
Economic Factors

Korea's per capita national income has increased with ongoing economic development. In 1980, per capita national income (nominal) was USD 1,729; it rose to USD 12,632 in 2000, USD 30,247 in 2015, and USD 36,745 in 2024, more than tripling since 2000. Despite economic development and rising income levels, the problems of income polarization and inequality have yet to be effectively resolved. The relative

poverty rate among the retirement-age population has gradually declined but remains critically high at 39.8% as of 2023, which is significantly higher than in other age groups (see <Figures 4-15, 4-16>).

Figure 4-15 Changes in per capita gross national income (nominal prices)

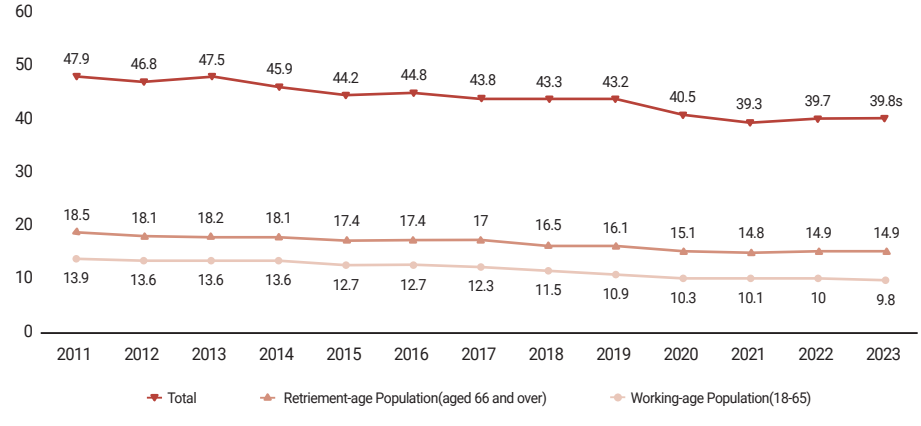
Unit: USD



Source: KOSIS, various years, *Survey of Household Finances and Living Conditions.*

Figure 4-16 Relative poverty rate (based on disposable income)

Unit: %



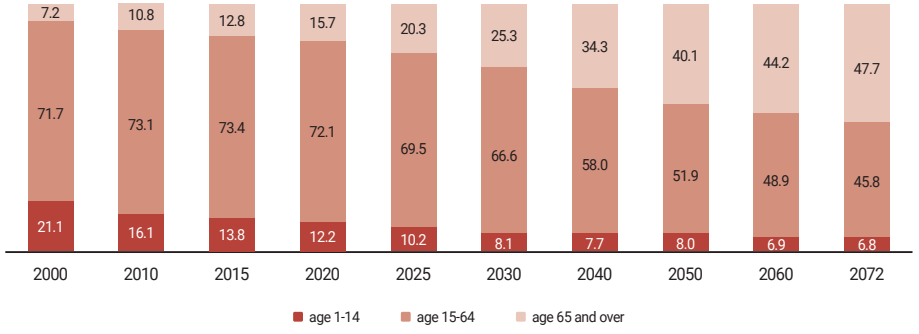
Source: KOSIS, various years, *Survey of Household Finances and Living Conditions.*

Demographic and Sociological Factors

Korea is experiencing rapid population aging because of declining fertility rates and increasing life expectancy. The proportion of individuals aged 65 and over was 3.1% in 1970 and increased to 7.2% in 2000, marking Korea's entry into an aging society <Figure 4-17>.

Figure 4-17 Population structure changes and future projections

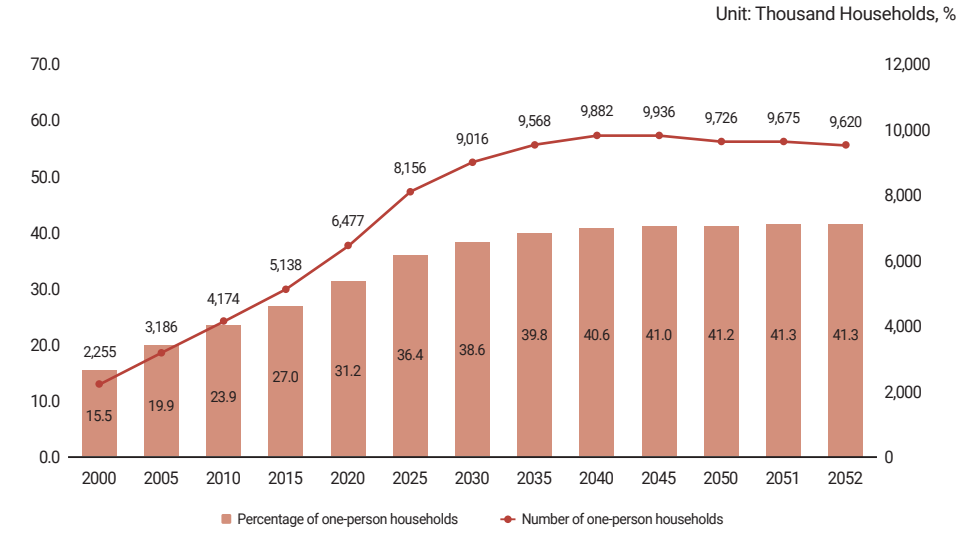
Unit: %



Source: KOSIS, various years, *Population Projections*.

With the rapid expansion of the older adult population, the share increased to 15.7% in 2020, placing Korea in the category of an aged society. By 2025, the proportion is expected to reach 20.3%, transitioning the country into a post-aged (super-aged) society. Population aging is projected to continue, with the share of older adults forecasted to reach 25.3% in 2030 and 40.1% by 2050. As the older adult population grows, the proportions of both the 0–14 age group and the 15–64 working-age population are declining rapidly. The share of the 0–14 age group dropped from 21.1% in 2000 to 12.2% in 2020, and is expected to fall to 8.0% by 2050. The working-age population (15–64) remained in the 70% range from 2000 to 2020, but is projected to decrease to the 60% range by 2025 and further to 51.9% by 2050, representing about half of the total population <Figure 4-18>.

Figure 4-18 Size and outlook of one-person households



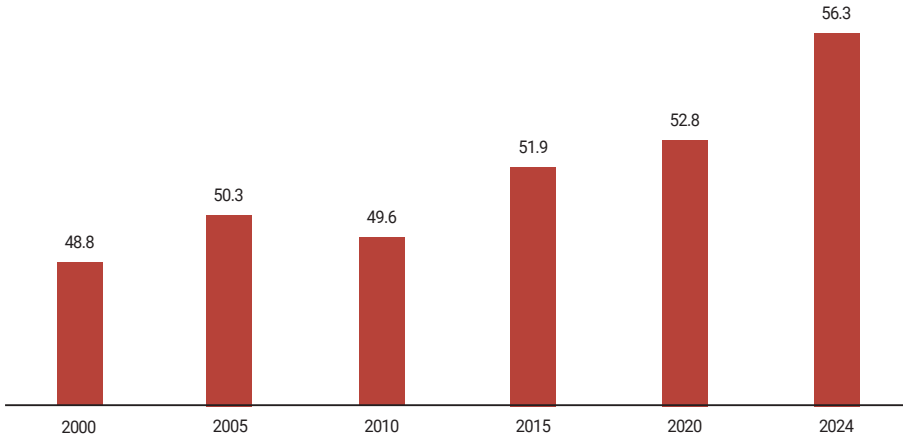
Source: KOSIS, various years, *Population Projections*.

Rising incomes, population aging, increasing age at first marriage, and the spread of individualism have led to a significant increase in the number of one-person households, raising their importance in the consumer market. The share of one-person households increased from 9.0% (1.01 million households) in 1990 to 15.5% (2.26 million) in 2000, more than doubling during this period. This share continued to rise, reaching 31.2% (6.48 million) in 2020, and is projected to reach 31.0% (9.94 million) by 2045.

Women's labor force participation has gradually increased because of declining fertility rates and higher educational attainment, along with a rise in the number of female-headed households. The female labor force participation rate was 42.8% in 1980, 48.8% in 2000, 51.9% in 2015, and 56.3% in 2024. The proportion of female household heads was 18.5% in 2000, increased to 32.4% in 2020, and is projected to reach 40.5% by 2045 <Figures 4-19, 4-20>.

Figure 4-19 Female labor force participation rate

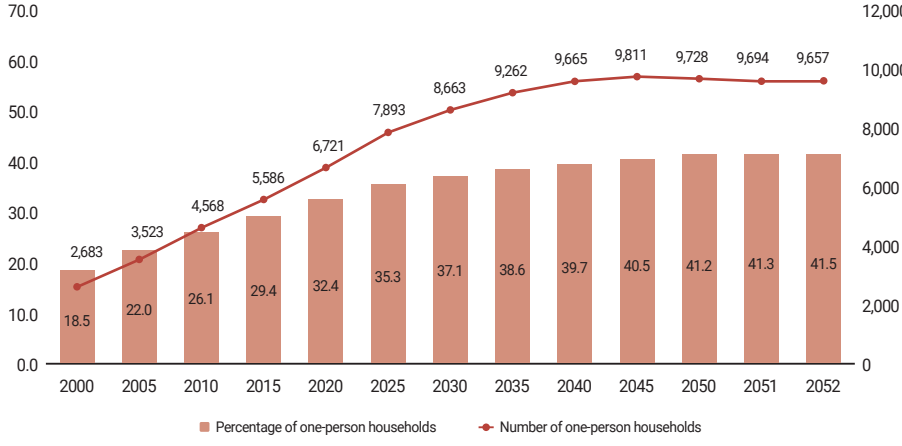
Unit: %



Source: KOSIS, various years, *Economically Active Population Survey.*

Figure 4-20 Size and outlook of female-headed households

Unit: Thousand Households, %

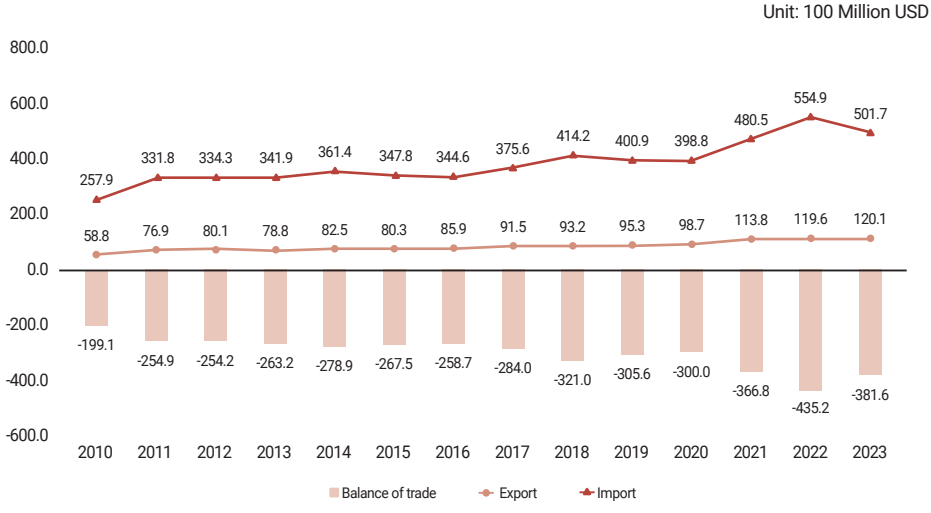


Source: KOSIS, various years, *Household Projections.*

Distribution Environment Factors

With rising national income levels, the spread of Western dietary patterns, and the expansion of trade liberalization, Korea's agri-food imports have steadily increased. Agri-food imports grew from USD 25.8 billion in 2010 to USD 50.2 billion in 2023, an increase of approximately 1.9 times (USD 24.4 billion). Because agri-food imports have risen more rapidly than exports, the agri-food trade deficit has also continued to widen. The trade deficit increased from USD 19.9 billion in 2010 to USD 38.2 billion in 2023, an increase of about 1.9 times (USD 18.3 billion); see <Figure 4-21>.

Figure 4-21 Status of agri-food trade



Source: MAFRA, various years, *Statistics of Agriculture, Food and Rural Affairs.*

Driven by higher incomes and increased demand for shopping convenience and one-stop purchasing, large retail formats such as hypermarkets, department stores, and convenience stores expanded rapidly beginning in the 1990s. From 2010 to 2014, annual retail sales for convenience stores grew by 13.0%, while hypermarkets and department stores also achieved strong average annual growth rates of about 5%. In recent years, however, growth in department stores and hypermarkets has slowed,

while duty-free shops, convenience stores, and non-store retail channels have contributed to overall retail expansion. Between 2015 and 2024, non-store retail sales increased significantly, with an average annual growth rate of 12.7%, and convenience stores grew by 7.6%. Duty-free shops, supermarkets, and general merchandise stores also recorded relatively high growth, averaging 5.1% annually <Table 4-33>.

Table 4-33 Retail sales by type of store

Unit: Billion KRW, %

Categories	2015	2017	2018	2019	2020	2021	2022	2023	2024	Average annual rate of change
Department Stores	29,029	29,324	29,968	30,386	27,417	33,690	37,768	40,492	40,619	3.8
Hypermarkets	32,778	33,798	33,454	32,425	33,778	34,571	34,774	36,690	37,096	1.4
Duty-free Shops	9,198	14,466	18,960	24,859	15,506	17,833	17,816	13,759	14,339	5.1
Supermarkets and General Merchandise Stores	43,481	45,593	46,457	44,178	65,359	63,969	64,738	67,599	68,077	5.1
Convenience Stores	16,456	22,238	24,407	25,692	26,523	28,424	31,195	30,969	31,740	7.6
Passenger Vehicle and Fuel Retailers	91,304	94,508	101,552	100,646	104,712	115,990	131,517	130,250	125,846	3.6
Specialty Retail Stores	139,283	139,120	139,884	135,393	170,033	179,108	183,522	189,754	185,137	3.2
Non-Store Retail	46,789	61,241	70,323	79,582	104,599	118,792	124,222	131,444	137,693	12.7
Total	408,317	440,288	465,005	473,162	547,926	592,378	625,552	640,958	640,546	5.1

Source: KOSIS, various years, *Service Industry Survey.*

Recent advances in information technology and the expansion of internet-based services have improved access to both domestic and international product information and increased shopping convenience, contributing to the rapid growth of online retail. Online transactions for agri-food products grew from KRW 13 trillion in 2017 to KRW 84 trillion in 2024, representing a 6.4-fold increase. As purchases of food and food services online increased, online agri-food and food service transactions made up 32.5% of total online shopping volume in 2024.

Mobile-based agri-food shopping has grown significantly. The proportion of mobile shopping in total online shopping increased from 67% in 2017 to 86.6% in 2024, representing a rise of 19.6 percentage points <Table 4-34>, <Figure 4-22>.

Table 4-34 Trends in online agri-food shopping transactions

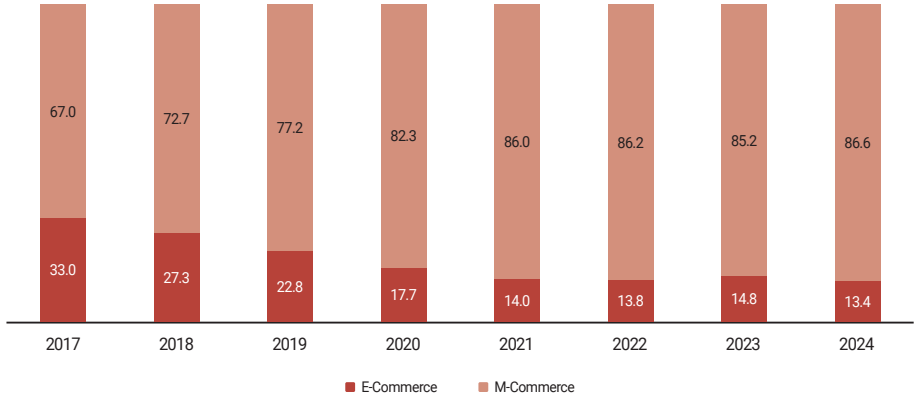
Unit: Billion KRW, %

Categories	2017	2018	2019	2020	2021	2022	2023	2024
Total (A)	94,186	113,314	135,264	158,284	192,724	216,175	242,207	259,432
Food and Beverages	7,997	10,494	13,429	18,556	22,914	26,661	30,227	34,527
Agriculture, Livestock, and Fishery Products	2,425	2,941	3,534	6,561	8,333	9,479	10,944	12,829
Food Services	2,733	5,263	9,733	17,337	28,661	31,637	32,372	36,989
Total Agri-Food and Food Services (B)	13,154	18,698	26,696	42,454	59,908	67,778	73,543	84,345
Ratio (B/A)	14.0	16.5	19.7	26.8	31.1	31.4	30.4	32.5

Source: KOSIS, various years, *Online Shopping Survey.*

Figure 4-22 Agri-food online shopping transactions by sales channel

Unit: %



Source: KOSIS, various years, *Online Shopping Survey.*

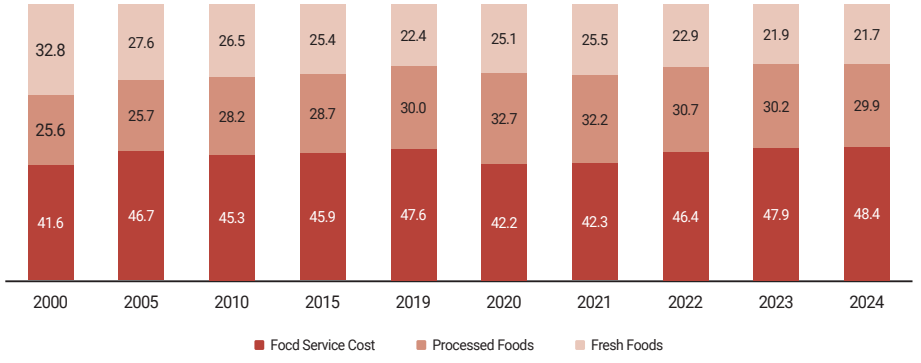
Changes in Agri-Food Consumption Structure and Behavior

Food Consumption Expenditure

As food consumption has increasingly shifted toward externalized eating, such as dining out, household spending on food-away-from-home has risen significantly. In 1990, dining-out expenditures accounted for 22.7% of total household food spending. This share increased to 41.6% in 2020 and reached 48.4% in 2024, approaching half of all food-related expenditures. The expenditure share for processed foods remained relatively stable at around 30% of total food spending between 1990 and 2020. In contrast, the share of fresh foods declined sharply. Fresh food expenditure fell from 47.9% in 1990 to 27.6% by 2005, further decreasing to 25.1% in 2020 and reaching 21.7% in 2024 (see <Figure 4-23>).

Figure 4-23 Share of consumption expenditure by food category

Unit: %



Source: KOSIS, various years, *Household Income and Expenditure*.

Between 2015 and 2024, the average annual growth rate of real expenditure on food-at-home (excluding dining out) was 4.5%, indicating a strong upward trend. In 2024, households spent the largest share of their food budget on meat (14.2%), followed by fruits and fruit products (10.9%), vegetables and vegetable products (9.9%), sugars and confectionery (7.0%), and bread and rice cakes (6.8%).

Examining changes in consumption expenditure between 2015 and 2024, the most notable increases were observed in oils and fats (10.9%) and processed meat products (7.7%), while food processing services (-5.3%) and grains (-2.9%) recorded substantial declines <Table 4-35>.

Table 4-35 Changes in monthly average consumption expenditure by agri-food item

Unit: Thousand KRW, %

Categories	2015	2019	2020	2021	2022	2023	2024	CAGR ('15-'24)
Consumption Expenditure	2193.0	2456.7	2400.1	2494.9	2640.0	2792.0	2890.5	3.3
Food	597.9 (100.0)	353.5 (100.0)	407.0 (100.0)	425.7 (100.0)	418.6 (100.0)	425.5 (100.0)	440.5 (100.0)	4.5
Cereals	32.2	18.5 (5.2)	19.3 (4.8)	20.2 (4.7)	16.9 (4.0)	15.9 (3.7)	16.0 (3.6)	-2.9
Processed Grain Products	(5.2)	15.8 (4.5)	18.7 (4.6)	18.6 (4.4)	19.3 (4.6)	20.1 (4.7)	21.0 (4.8)	5.8
Bread and Rice Cakes	19.2 (3.1)	22.4 (6.3)	24.6 (6.0)	26.4 (6.2)	28.1 (6.7)	28.8 (6.8)	29.9 (6.8)	6.0
Meat	57.3	48.7 (13.8)	60.3 (14.8)	65.2 (15.3)	63.2 (15.1)	62.8 (14.8)	62.4 (14.2)	5.1
Processed Meat Products	(9.2)	12.2 (3.4)	14.5 (3.6)	14.9 (3.5)	15.2 (3.6)	16.5 (3.9)	17.6 (4.0)	7.7
Fresh Aquatic Animals		18.7 (5.3)	22.1 (5.4)	23.6 (5.5)	21.9 (5.2)	20.5 (4.8)	19.8 (4.5)	1.1
Salted and Dried Aquatic Products	31.5 (5.1)	6.2 (1.7)	6.7 (1.6)	6.5 (1.5)	6.3 (1.5)	6.1 (1.4)	5.7 (1.3)	-1.5
Other Processed Aquatic Products		7.0 (2.0)	8.3 (2.0)	8.1 (1.9)	7.9 (1.9)	8.6 (2.0)	8.8 (2.0)	4.9
Dairy and Eggs	25.8 (4.1)	25.7 (7.3)	28.0 (6.9)	30.0 (7.0)	28.6 (6.8)	29.5 (6.9)	31.2 (7.1)	4.0
Oils and Fats	2.7 (0.4)	2.6 (0.7)	3.3 (0.8)	3.6 (0.9)	3.7 (0.9)	3.9 (0.9)	4.3 (1.0)	10.9
Fruits and Fruit Products	37.6 (6.0)	37.8 (10.7)	40.0 (9.8)	43.0 (10.1)	42.5 (10.2)	44.8 (10.5)	48.2 (10.9)	5.0

Categories	2015	2019	2020	2021	2022	2023	2024	CAGR ('15-'24)
Vegetables and Vegetable Products	33.3 (5.4)	33.6 (9.5)	41.4 (10.2)	41.7 (9.8)	39.5 (9.4)	40.6 (9.5)	43.7 (9.9)	5.4
Seaweeds and Seaweed Products	3.7 (0.6)	3.7 (1.0)	3.9 (1.0)	3.7 (0.9)	3.7 (0.9)	3.7 (0.9)	4.0 (0.9)	1.8
Sugars and Confectionery	23.9 (3.8)	25.2 (7.1)	27.4 (6.7)	27.0 (6.3)	28.2 (6.7)	29.4 (6.9)	31.0 (7.0)	4.2
Seasonings and condiments	11.2 (1.8)	12.8 (3.6)	15.6 (3.8)	15.8 (3.7)	14.5 (3.5)	15.6 (3.7)	15.5 (3.5)	3.9
Other Foods	11.1 (1.8)	20.0 (5.6)	23.5 (5.8)	25.2 (5.9)	25.7 (6.1)	26.1 (6.1)	27.4 (6.2)	6.6
Tea, Beverages, and Alcoholic Drinks	28.1	8.2 (2.3)	9.1 (2.2)	9.4 (2.2)	9.5 (2.3)	9.6 (2.2)	9.7 (2.2)	3.4
Juices and Other Beverages	(4.5)	13.7 (3.9)	14.4 (3.5)	14.3 (3.4)	14.8 (3.5)	14.5 (3.4)	15.8 (3.6)	2.9
Health Supplements	-	20.1 (5.7)	25.3 (6.2)	27.9 (6.5)	28.4 (6.8)	27.9 (6.6)	27.7 (6.3)	6.6
Food Processing Services	-	0.8 (0.2)	0.6 (0.2)	0.7 (0.2)	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	-5.3

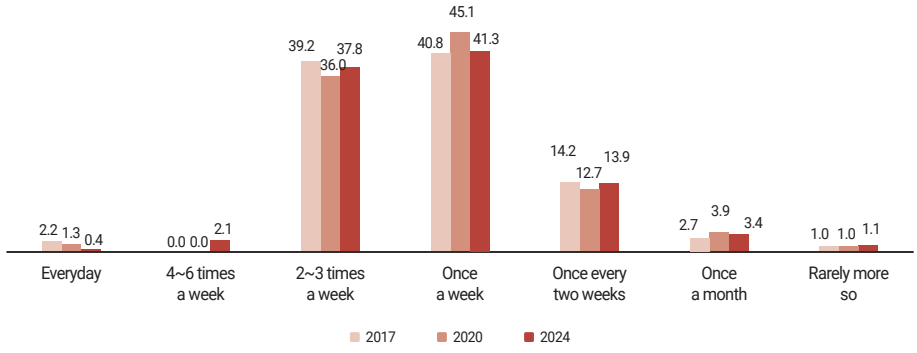
Note: Real food expenditure, excluding dining-out.
Source: KOSIS, various years, *Household Income and Expenditure.*

Food Consumption Behavior

Korean consumers usually buy groceries once a week or two to three times a week at large discount stores or neighborhood supermarkets. In contrast, the proportion of consumers purchasing food at traditional markets has continued to decline. The share of consumers buying food at traditional markets decreased from 21.7% in 2017 to 10.9% in 2024, a reduction of 10.8 percentage points <Figures 4-24 and 4-25>.

Figure 4-24 Frequency of grocery purchases

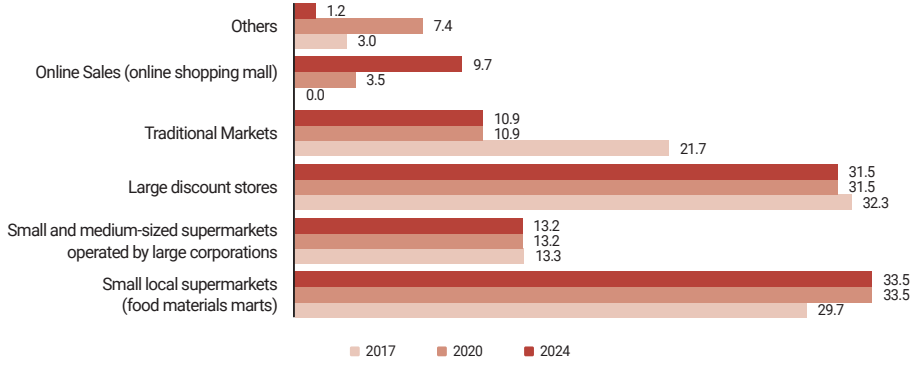
Unit: %



Source: KREI, various years, *Consumer Behavior Survey for Foods*.

Figure 4-25 Grocery purchase locations

Unit: %



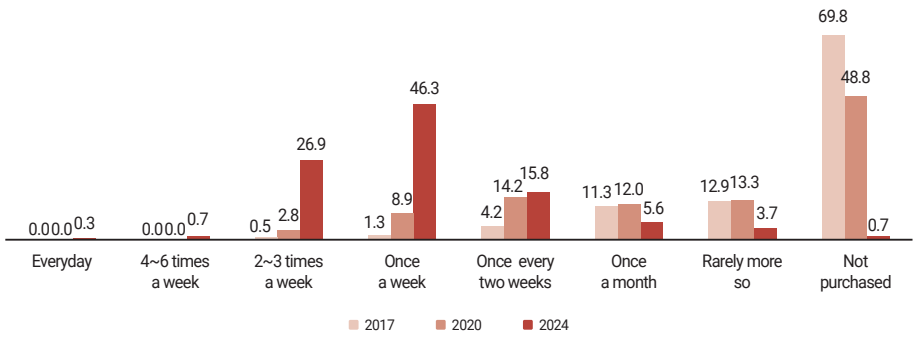
Source: KREI, various years, *Consumer Behavior Survey for Foods*.

As consumers increasingly prefer convenience, the use of online and mobile channels for food purchases has risen, driven by factors such as price competitiveness, delivery services, and time savings. In 2017, 69.8% of consumers reported not purchasing food online. This proportion declined to 48.8% in 2020 and further dropped to 0.7% in 2024. In 2024, 31.6% of consumers reported an increase in online

food purchases compared to the previous year, while only 3.5% reported a decrease <Figures 4-26, 4-27>.

Figure 4-26 Frequency of online food purchases

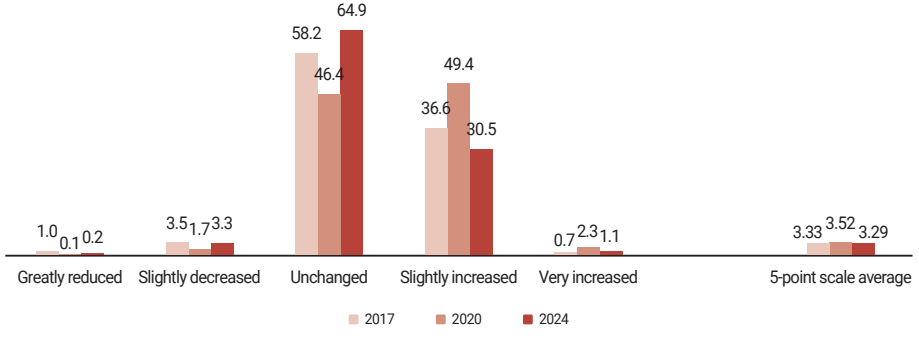
Unit: %



Source: KREI, various years, *Consumer Behavior Survey for Foods.*

Figure 4-27 Year-on-year changes in the frequency of online food purchases

Unit: %



Source: KREI, various years, *Consumer Behavior Survey for Foods.*

Growing interest in convenience, ethical consumption, and health has contributed to increased purchases of home meal replacements (HMRs), eco-friendly foods, and functional foods. The proportion of consumers who usually purchase eco-friendly foods

rose from 52.3% in 2017 to 55.6% in 2020, and to 57.6% in 2024. Purchases of HMRs increased from 77.1% in 2017 to 83.3% in 2020, but declined to 74.9% in 2024, representing an 8.4 percentage point decrease compared with 2020. The proportion of consumers purchasing functional foods also increased, with 69.0% reporting that they personally purchase all or part of the functional foods they consume <Figures 4-28~4-30>.

Figure 4-28 Purchase of eco-friendly foods

Unit: %

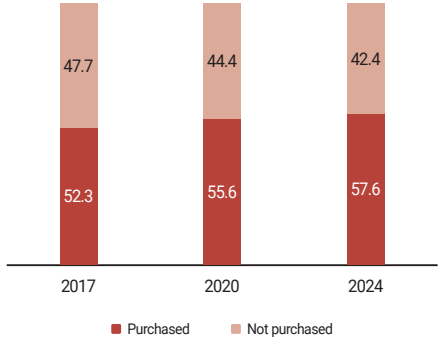
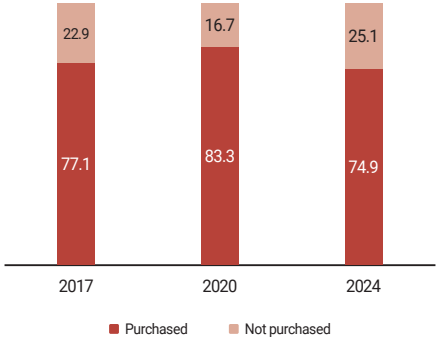


Figure 4-29 Purchase of home meal replacements (HMRs)

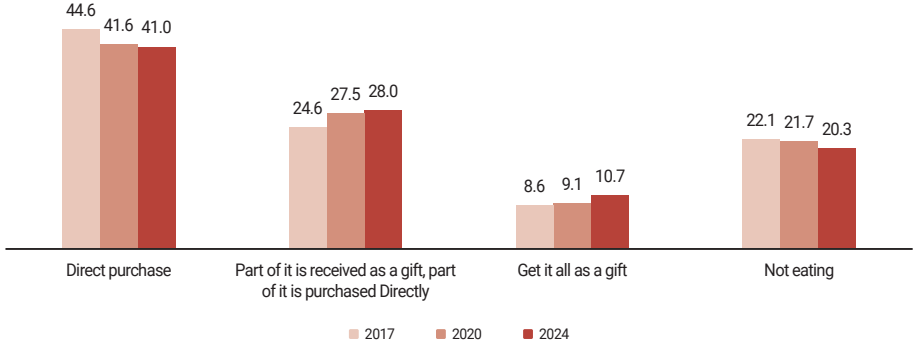
Unit: %



Source: KREI, various years, *Consumer Behavior Survey for Foods.*

Figure 4-30 Purchase of functional foods

Unit: %



Source: KREI, various years, *Consumer Behavior Survey for Foods.*

Nutrient Intake and Dietary Patterns

<Table 4-36> shows that, although rice consumption, the main staple food, has continued to decline, cereals still accounted for a large share of total food intake by food group, representing 17.7% in 2023. Other major categories were vegetables (18.5%), beverages (17.7%), fruits (9.1%), meat (8.2%), milk and dairy products (7.6%), and alcoholic beverages (5.1%).

Compared with 2019, intake levels in 2024 decreased for fish and shellfish (−56.4 g), alcoholic beverages (−30.2 g), seaweeds (−22.4 g), cereals (−19.9 g), fruits (−17.4 g), and vegetables (−13.7 g). Intake increased for beverages (+42.1 g), legumes (+9.8 g), and eggs (+3.4 g).

Table 4-36 Food intake by food group

Unit: g, %

Categories	2019(A)		2023(B)		Magnitude of Change (B-A)	
	Amount of Intake	Proportion	Amount of Intake	Proportion	Amount of Intake	Proportion
Cereals	269.8	17.8	249.9	17.7	-19.9	-0.1
Potatoes and Starches	33.8	2.2	34.8	2.5	1.0	0.3
Sugars	10.3	0.7	9.7	0.7	-0.6	0.0
Pulses	33.8	2.2	43.6	3.1	9.8	0.9
Nuts and Seeds	5.6	0.4	5.8	0.4	0.2	0.0
Vegetables	274.0	18.1	260.3	18.5	-13.7	0.4
Mushrooms	6.6	0.4	5.9	0.4	-0.7	0.0
Fruits	145.0	9.6	127.6	9.1	-17.4	-0.5
Seaweeds	26.0	1.7	3.6	0.3	-22.4	-1.4
Beverages	206.6	13.6	248.7	17.7	42.1	4.1
Alcoholic Beverages	102.2	6.7	72.0	5.1	-30.2	-1.6
Seasonings and Condiments	36.6	2.4	37.1	2.6	0.5	0.2
Meat	126.2	8.3	115.4	8.2	-10.8	-0.1
Eggs	34.0	2.2	37.4	2.7	3.4	0.5
Fish and Shellfish	98.2	6.5	41.8	3.0	-56.4	-3.5

Categories	2019(A)		2023(B)		Magnitude of Change (B-A)	
	Amount of Intake	Proportion	Amount of Intake	Proportion	Amount of Intake	Proportion
Milk and Dairy Products	100.5	6.6	107.5	7.6	7.0	1.0
Oils and Fats	6.8	0.4	7.0	0.5	0.2	0.1
Others	0.9	0.1	0.7	0.0	-0.2	-0.1

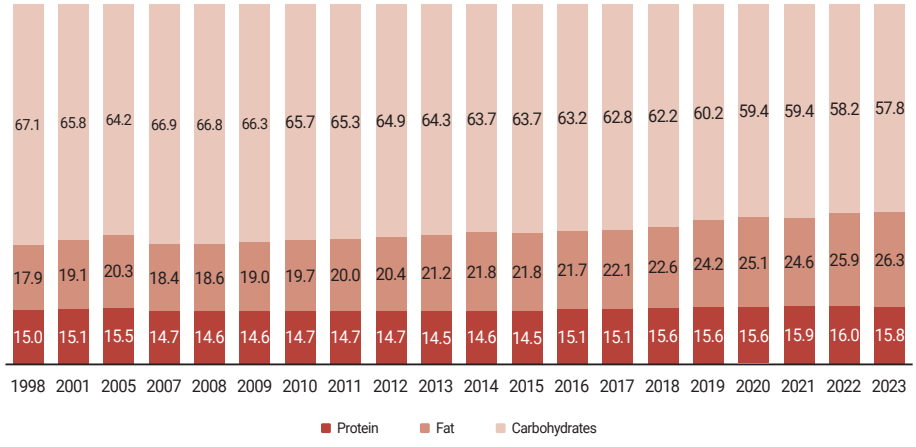
Note: Results are based on a survey of the population aged 1 year and older, and age-standardized using the 2005 estimated population.

Source: KDCA, various years, Korea National Health & Nutrition Examination Survey.

Despite increased interest in health and nutrition, the prevalence of Westernized dietary habits and more frequent dining out have led to a rapid rise in the consumption of animal-based foods. Consequently, the proportion of energy intake from fat increased from 7.2% in 1971 to 14.1% in 1990, nearly doubling, and continued to rise to 26.3% by 2023. In contrast, the proportion of energy intake from carbohydrates declined from 80.8% in 1970 to 68.7% in 1990, a decrease of 12.1 percentage points, and further dropped to 57.8% in 2023, a reduction of 10.9 percentage points <Figure 4-31>.

Figure 4-31 Trends in the share of energy intake by nutrient

Unit: %



Source: KDCA, various years, Korea National Health & Nutrition Examination Survey.

Evolution of Korea's Food Consumption Policies

Food Safety and Quality Policies

The Ministry of Agriculture, Food and Rural Affairs (MAFRA), the Ministry of Food and Drug Safety (MFDS), and the Ministry of Oceans and Fisheries (MOF) oversee food-related policies from production to consumption. Since the Korea Food and Drug Administration was reorganized into the Ministry of Food and Drug Safety in 2013, the MFDS has held comprehensive responsibility for food safety management. However, MAFRA and MOF manage the safety of agricultural, livestock, and fishery products at the production stage and perform related practical tasks. As a result, these three ministries have implemented various policies to ensure the safety and improve the quality of agri-food products.

A key component of food safety and quality policy is the system of food labeling and certification. Major labeling and certification programs include Good Agricultural Practices (GAP), Organic Certification, Hazard Analysis Critical Control Points (HACCP), and Country of Origin Labeling. GAP and HACCP were introduced as preventive management tools to ensure food safety and hygiene by controlling potential hazards during production. MAFRA administers GAP, while HACCP oversight is divided among ministries: MFDS manages overall HACCP operations, MAFRA oversees HACCP for livestock farms, slaughterhouses, and milk collection centers, and MOF is responsible for HACCP for fishery products. MAFRA also manages the organic certification system, which covers organic agricultural products, pesticide-free products, organic livestock products, organic processed foods, pesticide-free processed foods, and non-food organic products (such as organic feed).

The Country of Origin Labeling System was introduced to increase consumer trust and support a high-quality market structure. It began in 1991 for agricultural products, expanded to processed foods in 1993, and in 2007, was selectively applied to grilled beef dishes in restaurants. Currently, origin labeling is mandatory for 222 domestically produced agricultural items, 161 imported agricultural products and their processed goods, and 280 categories of processed agricultural foods. Restaurant

origin labeling regulations cover general restaurants, cafes, contract meal service providers, institutional foodservice operations, and 29 specified items. Additional quality certification and labeling systems exist for agricultural, livestock, and fishery products.

To enable a rapid response to food safety incidents, Korea operates a traceability system that identifies contamination sources and supports timely corrective actions. The system was piloted among GAP farms from 2003 to 2005. For livestock products, traceability expanded from beef in 2009 to pork in 2014, and to chicken, duck, and eggs in 2020. Participation is voluntary for other agricultural and fishery products. For processed foods, traceability is mandatory for infant foods, maternity and nursing foods, and special medical-purpose foods. The MFDS supervises food traceability, while MAFRA and MOF oversee traceability for agricultural/livestock and fishery products, respectively.

Dietary and Nutrition Policies

With the westernization of diets and increased public interest in health due to economic growth and higher income levels, dietary and nutrition policies have become more important. These policies combine food production and supply, public health, and education to support citizens in maintaining optimal nutritional status. The primary aim is to protect public health and support national development.

Before the 1980s, dietary and nutrition policies primarily aimed to improve the nutritional status of vulnerable populations, and government involvement was limited. Since the mid-1990s, rapid changes in economic and sociodemographic consumption environments have led to significant changes in the dietary behavior and an increased prevalence of diet-related chronic diseases. This, in turn, has contributed to a growing recognition of the importance of dietary and nutrition policies in safeguarding public health.

In 1995, the government enacted the National Health Promotion Act, which required national and local governments to implement nutrition improvement programs. The Act also established the National Health Promotion Fund, providing a

legal and financial foundation for policy development, implementation, and research. Since the 2000s, the importance of dietary and nutrition policies has increased, with greater emphasis on educational approaches that help individuals identify and address dietary problems.

Major policy advancements in the 2000s included the enactment of the Special Act on Safety Management of Children's Dietary Life (MFDS, 2008), the Dietary Education Support Act (MAFRA, 2009), and the National Nutrition Management Act (Ministry of Health and Welfare, 2010). These laws supported initiatives such as defining high-calorie, low-nutrient foods subject to advertising restrictions, establishing and operating Children's Foodservice Management Support Centers, developing basic plans for dietary education, and implementing national nutrition management plans.

Although dietary and nutrition policies were traditionally led by the Ministry of Health and Welfare and the MFDS, the importance of interlinking food production and consumption has increased the role of MAFRA. Since 2010, MAFRA has formulated and implemented five-year national dietary education plans under the Dietary Education Support Act, most recently releasing the 4th Basic Plan for Dietary Education (2025–2029) in 2025.

Since 2020, MAFRA has operated a food voucher pilot program to support vulnerable populations in purchasing fresh agricultural products, aiming to promote balanced diets and strengthen sustainable food consumption. In 2025, the program expanded nationwide to include households receiving livelihood benefits that have pregnant women, infants, or children under 18.

5. Trade Liberalization and Agricultural Trade

Since the launch of the multilateral trading system under the World Trade Organization (WTO), South Korea's agri-food trade structure has developed over a long period under a defensive policy stance centered on import management. In international trade negotiations, the Korean government has generally maintained a reactive strategy based on the perspective of a net importing country. This approach has been influenced by the structural characteristics of the domestic agricultural sector and surrounding trade environment.

Up until the 1950s, primary products including agricultural goods were essential resources for earning foreign currency, and agriculture played a central role in the country's economic growth. However, starting in the 1960s, South Korea's national development strategy rapidly shifted toward industrialization and an export-driven economic system focused on manufactured goods. In this process, the economic weight and policy importance of agriculture gradually diminished. This shift is clearly reflected in statistics: in the early 1960s, agricultural products accounted for over 40% of total exports, but this Figure declined rapidly over time, plunging to less than 1% by 2014. Behind this drastic change in status was a government-led agricultural trade policy.

During the 1960s and 1970s, the government implemented strong export-oriented economic policies and introduced various support measures to boost agricultural exports. In the 1990s, amid the global trend toward trade liberalization, efforts to further expand agricultural exports were pursued. However, alongside these export expansion efforts, the surge in imported agricultural products owing to greater market openness became a new policy challenge. Especially following the conclusion of the Uruguay Round (UR) negotiations and the launch of the WTO system, Korea's agricultural trade policy was required to undergo structural adjustments in line with international norms and market liberalization principles. Consequently, the government has pursued a dual policy approach of embracing the trend of trade liberalization while seeking institutional mechanisms to protect domestic agriculture.

This section aims to comprehensively examine the historical transformation of Korea's agricultural trade structure and how the government's related policies have evolved in response to these changes.

Agricultural Market Opening

Before the UR Negotiations

In the 1960s, as it implemented Five-Year Economic Development Plans, South Korea pursued trade liberalization and a shift toward an export-oriented industrial structure as key strategies for economic growth. Amid this economic transformation, the Korean government determined that active participation in the multilateral trading system was essential to respond effectively to the international trade environment. Accordingly, in 1967, Korea joined the General Agreement on Tariffs and Trade (GATT) as a developing country.

By the late 1970s, Korea had reached USD 10 billion in export volume, and its foreign exchange reserves had increased significantly, thereby enhancing the stability of economic management. During this period, international pressure for market liberalization intensified, and domestically, industries outside of agriculture began to call for easing restrictions on agricultural imports. In response to these trends, the government prepared a set of agricultural import liberalization measures in 1978. These were then implemented in phases.

However, despite these liberalization steps, major trading partners, including the U.S., continued to criticize Korea's agricultural market as being excessively protected and repeatedly demanded further opening. Following the conclusion of the 1988 Korea–U.S. trade negotiations, Korea implemented follow-up measures from 1989 to 1991, easing import barriers on 243 agricultural, forestry, and fishery products.

Meanwhile, in the late 1980s, the GATT questioned whether Korea should continue to benefit from Article 18(b) of the agreement, which allows developing countries to impose quantitative import restrictions owing to balance-of-payments difficulties. This was based on Korea's continued trade surplus. After consultations, Korea

voluntarily decided to give up the application of this provision as of October 1989. This marked a major turning point in Korea's trade policy, signaling a structural shift toward a market-opening system.

Subsequently, the government moved in step with global trade liberalization by gradually easing import restrictions on a total of 273 items in two phases from 1992 to 1997. Particularly during the first phase (1992–1994), the conclusion of the UR negotiations prompted the government to readjust the list of items subject to the second phase of liberalization to align with UR agreements and detailed liberalization schedules. This marked the full-fledged transition of Korea's agricultural trade policy from a domestically protectionist structure to a liberalization system based on international norms.

Result of the UR Negotiations (1986–1994)

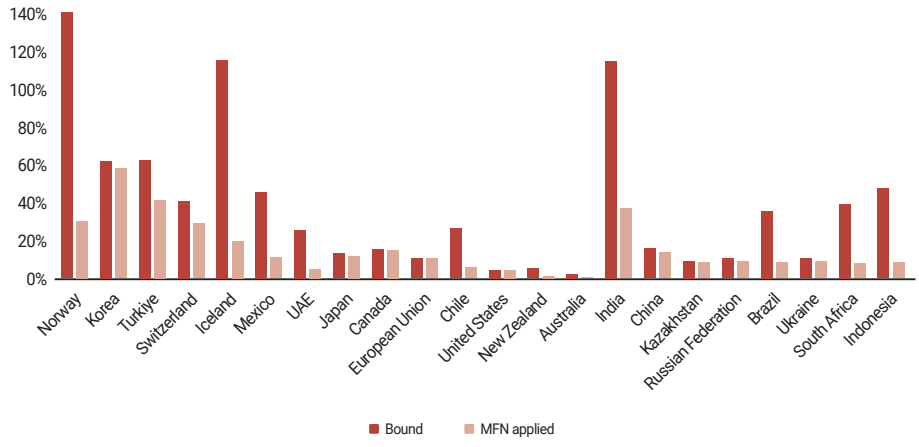
The conclusion of the UR negotiations in 1994 served as a major turning point that accelerated both domestic and international agricultural reform and market liberalization. Under the UR Agreement on Agriculture, WTO member countries were required to eliminate all forms of import restrictions, such as quantitative limits (upper ceilings), discretionary import licensing systems, and various non-tariff measures. These were to be replaced with tariffs through a process known as tariffication.

However, Annex 5 of the UR Agreement on Agriculture allowed for special and differential treatment (S&DT) for certain products, and Korea utilized this provision to postpone the tariffication of rice for 10 years, from 1995 to 2004. In exchange, Korea agreed to allow imports of rice under a low tariff-rate quota (TRQ) system equivalent to approximately 1–4% of domestic consumption (51,307 to 205,228 tons) during the same period.

Since Korea maintained its developing country status during the implementation of the UR Agreement, it was allowed to apply an average tariff reduction rate of 24% over a 10-year period starting in 1995. Nevertheless, as of 2024, Korea's average bound tariff rate for agricultural products remains at 61%, and the applied most-favored-nation tariff rate is approximately 57%. These Figures are relatively high compared

with major trading partners, indicating that despite Korea's gradual opening of its agricultural market, significant protective measures remain in place owing to the structural vulnerabilities of domestic agriculture and policy considerations related to food security <Figure 4-32>.

Figure 4-32 Bound and Most-favored-nation Applied Tariffs on Agricultural Products, 2024



Source: WTO, 2025, *World Tariff Profiles 2025.*

The expansion of market access was reinforced as a core principle in the UR Agreement on Agriculture. Korea responded by gradually increasing TRQ volumes for 63 key agricultural products, including rice, barley, potatoes, soybeans, corn, and peanuts. This was a policy measure intended to promote the gradual opening of the agricultural market within an institutional framework.

Korea's bound tariff rates for agricultural products vary widely by item and remain high overall. For grains, the bound tariffs are extremely high: rice at 513%, soybeans at 487%, corn at 328%, and barley at 300%. For vegetables and fruits, the rates include the following: chili peppers at 270%, onions at 135%, and tomatoes, apples, and grapes at 45% each. In contrast, tariffs on livestock products are relatively lower, with beef at 40%, pork at 25%, and chicken at 18% <Table 4-37>.

Table 4-37 Key items tariff rates and tariff-rate quotas (TRQs)

Items	Tariff concession (%)		TRQ (tons)		
	Benchmark rate	Concession rate	Initial TRQ (%)	Final TRQ (%)	Duration
Pepper	300	270	4,311 (50%)	7,185 (50%)	1995–2004
Garlic	400	360	8,680 (50%)	14,467 (50%)	
Onion	150	135	12,369 (50%)	20,645 (50%)	
Sesame	700	630	6,731 (40%)	6,731 (40%)	
Beef	44.5	40	123,000 (43,6)	225,000 (41,6%)	1995–2000
Pork	37	25	21,930 (25%)	18,275 (25%)	1996–1997.6.
Chicken meat	35	20	7,700 (20%)	6,500 (20%)	
Powered skim milk	220	176	621 (20%)	1,034 (20%)	1995–2004
Orange	90	50	15,000 (50%)	57,017 (50%)	
Rice	-	-	51,307 (5%)	102,614 (5%)	1995–1999
	-	-	102,614 (5%)	205,228 (5%)	2000–2004
	-	-	225,575 (5%)	408,700 (%)	2005–2014
	571	513	408,700 (5%)	–	2015–
Barley	333	299.7	14,150 (20%)	23,582 (20%)	1995–2004
Bean	541	487	1,032,152 (5%)	1,032,152 (5%)	
Maize	365	328	6,102,100 (3%)	6,102,100 (1.8%)	
Potato	338	304	11,286 (30%)	18,810 (30%)	
Sweet potato	428	385	11,121 (20%)	18,535 (20%)	

Source: MAFRA, 1994, *UR Negotiation Results on Key Items Worksheets.*

Although the tariff rates themselves are high, in actual import practices, many key agricultural items have been subject to low TRQs, meaning that the in-quota tariff rates were applied. As such, the effective tariff rates remained low. This can be interpreted as a policy choice aimed at simultaneously maintaining the protection of domestic agriculture while opening the market in a manner consistent with international trade rules.

Rice Market Opening

In the UR agricultural negotiations, South Korea officially requested a special treatment to postpone the tariffication of rice, based on Article 4.2 of the Agreement on Agriculture. Although the fundamental principle of the UR negotiations was to eliminate non-tariff barriers and convert them into tariffs to open agricultural markets, countries such as Korea and Japan strongly argued that staple crops in their countries should be granted a grace period. As this request was accepted, a special provision for rice was included in Annex 5 of the Agreement, allowing Korea to postpone the tariffication of rice for 10 years, from 1995 to 2004.

Annex 5(B) of the UR Agreement on Agriculture later became a key legal basis for Korea's rice-related negotiations. Other countries like Japan and Taiwan eventually shifted to tariffication under the TRQ system after receiving similar special treatment. Meanwhile, the Korean government decided to extend the special treatment for an additional 10 years (2005–2014), taking into account the structural weaknesses of the domestic rice industry and international negotiation climate. This decision was also driven by a strategic assessment that the Doha Development Agenda (DDA) negotiations might lead to significant tariff cuts on agricultural products, including rice. Accordingly, on January 21, 2004, the Korean government officially notified the WTO of its intention to begin renegotiations on rice.

Following Korea's notification, a total of nine WTO member countries expressed their intention to participate in the negotiations: the U.S., China, Thailand, Australia, India, Pakistan, Argentina, Egypt, and Canada. Starting with the U.S. on May 6, 2004, Korea engaged in both bilateral and multilateral negotiations with the relevant countries. After approximately 50 rounds of talks, Korea reached agreements with all participating countries. The key outcome of the negotiations was that Korea would retain special treatment from 2005 to 2014, in exchange for gradually increasing its minimum market access volume from 225,575 tons in 2005 (4.4% of average domestic consumption from 1988–1990) to 408,700 tons in 2014 (7.96%).

In 2008, discussions were held on possibly ending the special treatment early and transitioning to tariffication, but no final agreement was reached owing to internal

disagreements within the government and among negotiating countries. After the special treatment ended in 2014, Korea notified the WTO that starting in 2015, it would apply a tariff rate of 513% on rice imports exceeding the quota. In response, five major rice-exporting countries, namely the U.S., China, Thailand, Australia, and Vietnam, raised concerns that the proposed tariff level was excessively high, prompting further negotiations.

These subsequent talks led to the adoption of a country-specific quota system, under which rice import quotas were allocated by country in proportion to their export shares and market access demands. The negotiations were successfully concluded in 2019, and on January 24, 2020, the WTO issued an official certification, formally finalizing the agreement.

WTO and DDA Negotiations

The UR Agreement, which redefined multilateral trade rules including those for agriculture, established different implementation periods for developed and developing countries. Developed countries were required to complete implementation within six years by 2000, whereas developing countries were granted a longer, ten-year period until 2004. This differentiated implementation framework reflected the varying economic and agricultural conditions of each country and became a foundational reference point for future multilateral negotiations.

Based on the UR implementation schedule, the WTO officially launched the DDA during its Fourth Ministerial Conference held in Doha, Qatar, in November 2001. The DDA was envisioned as a comprehensive negotiation program aimed at fostering the growth of developing countries and achieving balanced development in the global economy. The original goal was to conclude the negotiations by the end of 2004.

However, the DDA negotiations have so far made little substantive progress owing to far greater-than-expected differences in positions between developed and developing countries. The most difficult issues have centered on agricultural tariff reductions and subsidy cuts, which are core elements of the agricultural agenda. A particularly contentious topic has been the extent to which S&D treatment should be

granted to developing countries, including China. Another sensitive issue was whether the public stockholding programs for food security purposes, advocated by India and some other developing countries, could be recognized as Green Box subsidies under WTO rules. This raised fundamental questions about the interpretation of the WTO's subsidy classification system and significantly intensified the conflict of interests between developed and developing countries.

Amid this complex international trade environment, the Korean government has actively participated in multilateral negotiations, explaining the structural characteristics and policy constraints of its own agricultural sector to the international community. It has also implemented domestic measures to both respond to market liberalization and enhance the competitiveness of Korean agriculture. These measures have included increased support for farmers, investments in structural improvements, and the strengthening of safety nets. Such efforts are considered part of a strategic policy direction aimed at proactively responding to changes in the global trade environment while ensuring the sustainability of agriculture and rural communities.

Korea's Status Change as a Developing Country

Since joining the GATT in 1967 as a developing country, South Korea maintained this status in agricultural sector for an extended period even after the establishment of the WTO. This status served as the basis for various benefits during the UR negotiations, such as more lenient tariff reduction commitments, longer implementation periods, and relaxed subsidy reduction obligations.

However, as Korea achieved rapid economic growth from the mid-1990s and emerged as an advanced economy, particularly after joining the Organisation for Economic Co-operation and Development (OECD) in 1997, the international community began to question the appropriateness of Korea retaining its developing country status. The WTO does not have a clear legal definition to distinguish between developed and developing countries. Instead, it operates under a self-declaration system, allowing each member to determine its own status. Because of this, some countries raised objections to mid-sized economies like Korea continuing to receive

developing country benefits, making it a long-standing point of contention within the WTO.

In particular, in 2019, the U.S. proposed stricter criteria for determining developing country status at the WTO. It suggested using benchmarks such as G20 membership, OECD membership, and a share of at least 0.5% in global trade. Under this proposal, countries meeting these thresholds—including Korea—should no longer be eligible for S&D treatment benefits. This proposal had the potential to directly affect the status and obligations of several emerging economies, including South Korea.

Under growing international pressure, the Korean government announced on October 25, 2019, that it would no longer seek S&D treatment in future WTO negotiations. This decision came despite strong concern and opposition from the domestic agricultural sector. The government clarified that this was not a formal renunciation of developing country status, but rather a policy choice not to claim special treatment in future multilateral negotiations. It also emphasized that this decision would not result in immediate increased obligations or direct harm to the agricultural sector, and pledged to continue protecting sensitive products, like rice, through negotiation strategies. This policy shift reflects Korea's rising international stature and economic maturity, and can be seen as a strategic adjustment aimed at playing a more responsible role as a mid-sized trading power in the future multilateral trade environment.

Negotiations for Free Trade Agreements

After experiencing the financial crisis in the late 1990s, South Korea shifted its policy stance toward greater trade liberalization to facilitate economic recovery and structural reform. As part of this transition, the government actively pursued a strategy centered on bilateral and regional agreements, especially Free Trade Agreements (FTAs), to attract foreign investment and open new export markets. This marked a turning point in Korea's trade and diplomatic strategy, transitioning from a multilateralism-centered trade order to a broader network of bilateral and regional agreements.

Following its first FTA with Chile in 2004, Korea went on to sign and implement 22 FTAs with a total of 59 countries <Figure 4-33>, including Singapore, the European Free Trade Association (EFTA), the Association of Southeast Asian Nations (ASEAN), India, the European Union (EU), Peru, the U.S., Turkey, Australia, Canada, China, Vietnam, New Zealand, Colombia, five Central American countries (Panama, Costa Rica, Honduras, El Salvador, and Nicaragua), the United Kingdom, Indonesia, Israel, the Philippines, and the Regional Comprehensive Economic Partnership (RCEP). In addition, Korea has concluded FTAs with Guatemala, the United Arab Emirates, Ecuador, the Gulf Cooperation Council (GCC), Georgia, and Malaysia, which are currently in the process of being ratified.

The RCEP, signed on November 15, 2020, is considered one of the world's largest free trade agreements, forming a mega-regional economic community involving 15 Asia-Pacific countries, including Korea, Australia, China, Japan, Singapore, and Vietnam. India withdrew during the negotiation process, whereas the ASEAN has maintained a flexible position, allowing India to rejoin when it is ready. The agreement also allows for the accession of new countries or customs territories 18 months after its entry into force, signaling strong potential for future expansion.

Korea is currently engaged in ongoing FTA negotiations with China and Japan (for a trilateral FTA), the Southern Common Market (MERCOSUR), and countries such as Uzbekistan, Mongolia, Thailand, and Bangladesh. Through FTAs with China, Japan, and RCEP members, Korea aims to strengthen the foundation for economic integration in Northeast and East Asia. Agreements with MERCOSUR and other Latin American nations are expected to facilitate access to resource-rich, high-growth markets.

Alongside the expansion of FTAs, Korea has gradually opened its agricultural market. However, in each negotiation, the government strategically adjusted sensitive items to mitigate the impact on domestic agriculture. In its first FTA with Chile, most agricultural products were excluded from liberalization to minimize shocks, with only a few items, such as grapes, kiwis, and pork, subject to long-term, phased tariff elimination.

In the ASEAN FTA, Korea continued to protect sensitive agricultural products,

maintaining its general protectionist stance. During negotiations with the U.S. (KORUS FTA), Korea focused on excluding rice and rice-processed products from liberalization and introduced seasonal tariffs on certain fruits, like grapes and oranges, to protect local farmers. Nevertheless, since the agreement included phased or immediate tariff eliminations on U.S. beef, pork, and poultry (excluding rice), it drew criticism domestically, with some claiming Korea made the biggest concessions.

After concluding its FTA with the EU, Korea eliminated significant trade barriers for agricultural products, such as dairy products, pork, and other farm goods, but excluding rice. In the FTA with China, despite concerns over potential damage to agriculture, the government maintained a firm stance on protecting rice, successfully excluding it from the scope of liberalization, which helped ease domestic agricultural sector concerns to some extent.

Figure 4-33 Korea's free trade agreements (as of November 2024)

Source: KOTRA, *Invest Korea website*.

Agricultural Exports

Exports by Item

South Korea's total exports have grown dramatically, rising from USD 33 million in 1960 to USD 721 billion in 2019, establishing the country as a major global trading nation. However, the relative share of agricultural exports has consistently declined owing to structural changes in the economy and advancing industrialization. Agricultural exports, which peaked at 43.1% of total exports in 1962, fell sharply to 16.2% in 1970, 6.7% in 1980, and 2.2% in 1990. Since 2012, they have remained at around 1%, reflecting the reduced economic role of agriculture in Korea's industrial and export-driven growth model.

The composition of Korea's agricultural exports has diversified significantly over time. In the 1950s and 1960s, when agriculture was the backbone of the national economy, traditional crops dominated exports: such as rice, raw silk (silkworm cocoons), ginseng, and tobacco. These were primarily food and primary agricultural products. With rapid industrialization in the 1970s, rice exports declined sharply, but new export items emerged as new drivers: mostly simple-processed or natural resource-based products like canned mushrooms, chestnuts, other mushrooms, arrowroot, and medicinal herbs.

From the 1980s, with Korea's economic maturation and rising living standards, the agricultural export structure diversified significantly. Fruits (apples, pears, tangerines), vegetables (kimchi, paprika, cherry tomatoes, eggplant), livestock products (pork), processed foods, and flowers (roses, lilies, chrysanthemums) gained traction. Traditional export items like ginseng, tobacco, and chestnuts also re-emerged. This period marked a shift from simple primary agricultural products to higher value-added exports, such as fresh produce, processed foods, and floriculture.

Since the 1990s, the government has promoted a high-value-added export strategy for agriculture, focusing on competitive items, such as fruits, vegetables, flowers, and pork. Traditional fermented foods like kimchi and doenjang, fresh vegetables like cherry tomatoes, cucumbers, onions, and carrots, and flowers such as roses, lilies,

chrysanthemums, cacti, and orchids significantly contributed to farm income and became core items in Korea's diversified agri-food export portfolio.

Korea's exports of agricultural, forestry, and livestock products increased from USD 1.533 billion in 2010 to USD 9.826 billion in 2024, growing at an average annual rate of 8%. In 2024, a number of agricultural and processed food items surpassed USD 100 million in export value, indicating a shift in the agri-food export market toward high value-added and processed goods.

Items that exceeded USD 100 million in exports included the following: Instant noodles (ramyeon) (USD 1.248 billion), tobacco (USD 742 million), prepared food products (USD 680 million), beverages (USD 449 million), sauces (USD 222 million), bakery products (USD 173 million), kimchi (USD 164 million), coffee extracts (USD 156 million), biscuits (USD 117 million), coffee creamer (USD 113 million), soju (USD 104 million). These items, particularly instant noodles, tobacco, processed foods, and beverages, are representative of the ongoing sophistication and high-value orientation of Korea's agri-food export industry <Table 4-38>.

Table 4-38 Agricultural export of Korea

Unit: USD millions

Year	Agricultural products (A)	Vegetables products	Fruits products	Livestock products (B)	Forest products (C')	Total (A+B+C)
2000	1,134	186	45	121	255	1,509
2010	3,722	277	195	146	214	4,082
2015	5,221	310	250	497	387	6,105
2020	6,681	462	349	496	393	7,570
2021	7,545	486	409	551	464	8,560
2022	7,716	434	390	602	508	8,825
2023	7,994	449	386	621	407	9,022
2024	8,728	427	384	680	417	9,826

Source: MAFRA, various years, *Major Statistics on Agriculture, Forestry, Livestock and Food*; The Korea Agro-Fisheries & Food Trade Corp. (Search date: Nov. 28, 2025).

Exports by Country

South Korea's major export markets for agricultural products are Japan, China, the U.S., Hong Kong, and Vietnam <Table 4-39>. These five countries have long served as Korea's core agri-food export destinations. In 2000, their combined share accounted for 72% of Korea's total agricultural exports. Notably, by 2024, this Figure had declined to 56.3%, indicating a relative decrease in dependence on these markets and a diversification of Korea's export portfolio.

Japan remains Korea's largest export market for agricultural goods, but its share fell significantly from 45.5% in 2000 to 14.0% in 2024. This decline reflects limitations in Japan's market growth, structural changes in its domestic production, and increasing competition from other countries. Major Korean exports to Japan include chestnuts, matsutake mushrooms, kimchi, cucumbers, tomatoes, paprika, and flowers. These are mainly high-quality fresh and traditional Korean food products where Korean producers maintain strong competitiveness.

China is Korea's second-largest export market for agri-foods, accounting for USD 1.512 billion, or 15.4% of total exports in 2024. Key Korean exports to China include processed and functional foods, such as sugar, candy, gum, ginseng, and alcoholic beverages. These products have seen growing demand as a result of China's evolving consumption patterns and rising income levels.

The U.S. has seen a rise in its share of Korean agricultural imports, increasing from 9.5% in 2000 to 16.2% in 2024. It has now emerged as the largest single-country export destination for Korean agri-foods, with a stable upward trend. Major Korean exports include noodles, candy, doenjang (fermented soybean paste), and fresh pears. The spread of the Korean Wave (Hallyu) and growing global interest in Korean food culture (K-food) have positively influenced demand in the U.S. market.

Vietnam is one of Korea's fastest-growing agricultural export markets. Its share surged from only 0.6% in 2000 to 6.5% in 2024. Key imports from Korea include chicken and mushrooms. Rapid income growth and the modernization of Vietnam's food service and food processing industries have contributed to rising demand.

Hong Kong continues to serve as a traditional gateway for re-export and

distribution of Korean agricultural products. Although specific Figures are not provided, Hong Kong remains an important hub for the export of fresh and premium agricultural goods, particularly high-end food items and floricultural products.

In summary, while Korea's traditional export markets remain significant, their relative share has decreased as Korea has successfully diversified its agricultural export destinations. At the same time, consumer trends, economic growth, and evolving food cultures in each country have played a crucial role in shaping Korea's agri-food export strategies.

Table 4-39 Agricultural Export of Korea by Country

Unit: USD millions, %

Year	U.S.	China	Japan	Vietnam	Hong Kong	Others
2000	146 (9.6)	118 (7.8)	697 (46.2)	8 (0.5)	134 (8.9)	407 (27.0)
2010	377 (9.2)	556 (13.6)	1,023 (25.1)	121 (3.0)	216 (5.3)	1,789 (43.8)
2015	627 (10.3)	1,047 (17.2)	1,168 (19.1)	371 (6.1)	347 (5.7)	2,545 (41.7)
2020	1,206 (15.9)	1,138 (15.0)	1,336 (17.7)	501 (6.6)	373 (4.9)	3,015 (39.8)
2021	1,264 (14.8)	1,340 (15.6)	1,422 (16.6)	576 (6.7)	399 (4.7)	3,560 (41.6)
2022	1,208 (13.7)	1,296 (14.7)	1,537 (17.4)	664 (7.5)	377 (4.3)	3,743 (42.4)
2023	1,314 (14.6)	1,401 (15.5)	1,435 (15.9)	620 (6.9)	431 (4.8)	3,820 (42.3)
2024	1,593 (16.2)	1,512 (15.4)	1,374 (14.0)	635 (6.5)	415 (4.2)	4,298 (43.7)

Note: Figures in parentheses refer to percentages of the total.

Source: MAFRA, various years, *Major Statistics on Agriculture, Forestry, Livestock and Food*; The Korea Agro-Fisheries & Food Trade Corp. (Search date: Nov. 28, 2025).

Agricultural Imports

Imports by Item

South Korea's imports of agricultural, forestry, and livestock products have steadily increased in response to economic growth, dietary changes, and market liberalization. The import volume grew from USD 82 million in 1960 to USD 42.9 billion in 2024. Over the same period, the share of agricultural products in total imports fell from 24% in 1960 to 4.6% in 2005. However, following the implementation of multiple FTAs from the 2000s onward, this share began to rise again, reaching 5.3% in 2010 and 6.8% in 2024. By 2024, agricultural imports had increased more than fivefold compared with the early 2000s <Table 4-40>.

Among imported items, the largest share is made up of basic agricultural commodities, such as grains, legumes, and potatoes. The increase in imports of these staples reflects a weakening domestic production base and rising demand for animal feed. Grain imports surged from 2 million tons in 1970 to 16.7 million tons in 2024, resulting in a sharp decline in grain self-sufficiency: from 80.5% in 1970 to 22.2% in 2023.

Major imported grains include corn, wheat, and soybeans. Corn imports expanded dramatically, especially from the mid-1970s, owing to increased feed demand driven by rising meat consumption. Korea now imports over 10 million tons annually, mainly from the U.S., Brazil, Ukraine, and Russia. Wheat is imported for both feed and food use. In 2024, Korea imported 4.1 million tons from the U.S., Australia, Ukraine, Canada, and Bulgaria, accounting for 88.1% of total wheat imports. Soybeans, once domestically self-sufficient until the 1960s, saw imports rise to 1.16 million tons by 2024 owing to growing consumption. Key suppliers include the U.S., Brazil, Canada, China, and Russia. Rice imports have also steadily increased following the implementation of the UR agreement, reaching 408,700 tons in 2024.

Livestock imports have significantly expanded owing to rising consumption and trade liberalization. In 2003, the discovery of BSE (mad cow disease) in U.S. beef led to a drop in imports to 370,000 tons in 2004. However, following the resumption of U.S.

beef imports in 2007, volumes recovered, with total beef imports reaching 494,963 tons in 2024, growing at an average annual rate of 3.9% since 2010. Fruit imports surged following market liberalization in the late 1980s. From USD 36 million in 1990, they increased to USD 350 million in 2000, and further to USD 1.3 billion in 2024, boosted by FTAs with countries like Chile and the U.S. Initially, bananas, oranges, pineapples, and grapes dominated imports, but the range has since diversified to include cherries, kiwis, mangoes, lemons, cashew nuts, grapefruits, and cranberries. Vegetable imports have also shown significant growth, rising from USD 300,000 in 1970 to USD 2.4 billion in 2024. Key items include chili peppers, garlic, and onions from China, driven by changes in consumer preferences, the food processing industry, and the food service sector. Overall, Korea's agricultural imports have increased both in volume and diversity, reflecting changes in domestic consumption patterns, global trade dynamics, and the growing reliance on external food sources.

Table 4-40 Agricultural Imports of Korea

Unit: USD millions

Year	Agricultural Products (A)	Vegetables Products	Fruits Products	Livestock Products (B)	Forest Products (C')	Total (A+B+C)
2000	5,105	187	349	1,676	1,663	8,434
2010	13,988	720	945	3,123	5,219	22,330
2015	17,902	922	1,736	5,729	6,592	30,222
2020	20,669.4	1,015.2	1,944.6	7,626.9	5,982.6	34,279
2021	25,288.5	1,115.8	2,150.1	9,177.0	7,439.2	41,905
2022	29,763.6	1,220.7	2,042.4	10,996.6	7,810.7	48,571
2023	27,287.7	2,051.6	1,253.0	10,150.4	6,377.8	43,816
2024	26,629.6	2,432.1	1,335.6	9,973.9	6,250.7	42,854

Source: MAFRA, various years, *Major Statistics on Agriculture, Forestry, Livestock and Food.*

Imports by Country

Compared with its agricultural export markets, South Korea's import markets are much more widely diversified by country. While Korean agricultural exports are heavily concentrated in a few key markets, imports are sourced from a broad range of countries, resulting in a more diversified and resilient supply base. South Korea's top five agricultural import partners are the U.S., China, Australia, Brazil, and Indonesia. Vietnam has also recently emerged as a top import partner. The combined share of the top five countries in Korea's total agricultural imports declined from 61.7% in 2000 to 53.2% in 2024, indicating that although these countries remain important, Korea's agricultural sourcing has broadened to include many more countries. Beyond the top five, countries such as New Zealand, Canada, Thailand, Chile, Malaysia, and Vietnam each export over USD 100 million in agricultural products to Korea annually, reflecting the wide geographic spread of Korea's agri-food supply chains.

As of 2024, the U.S. remains Korea's largest agricultural supplier, exporting USD 9.6 billion worth of goods and holding a 22.4% market share. Key U.S. exports include corn, beef, wheat, pork, soybeans, oranges, and cherries, showing Korea's high dependence on U.S. products for both staple grains and feed, meat, and fresh fruits. China is the second-largest source, with USD 5.5 billion in exports to Korea and a 12.9% share. China's main export items include soybeans, rice, chili peppers, and kimchi, spanning both raw agricultural commodities and processed foods. Australia, a major global agricultural producer, ranks as Korea's third-largest supplier. Its exports have steadily increased, reaching USD 3.3 billion in 2024, more than 4.2 times its export volume in 2000. Major exports include beef, noodles, sugarcane, wheat, and barley. Brazil has seen dramatic growth in exports to Korea, rising from USD 218 million in 2000 to USD 3.1 billion in 2024, an increase of over 14 times. Key products include corn, soybeans, and coffee. Chile, since the implementation of the Korea–Chile FTA in 2004, has benefited from increased Korean demand for grapes, pork, and wine. Imports from Chile grew from USD 41 million in 2000 to USD 792 million in 2024, a nearly 19-fold increase.

In summary, South Korea's agricultural import landscape reflects a highly

diversified sourcing strategy <Table 4-41>. While a few countries maintain a dominant position, the overall reliance is spread across a wider set of trade partners than in exports. This distribution helps enhance Korea's food security and market stability by reducing dependency on any single country.

Table 4-41 Korea's Agricultural Import by Country

Unit: USD millions

Year	U.S.	China	Australia	Brazil	Indonesia	Others
2000	2,434 (28.8)	1,405 (16.6)	776 (9.2)	218 (2.6)	382 (4.5)	3,236 (38.3)
2010	4,468 (20.0)	2,822 (12.6)	1,601 (7.2)	1,466 (6.6)	593 (2.7)	11,380 (51.0)
2015	7,000 (23.2)	4,438 (14.7)	2,422 (8.0)	2,201 (7.3)	1,082 (3.6)	13,080 (43.3)
2020	8,860 (25.8)	4,541 (13.2)	2,450 (7.1)	1,988 (5.8)	1,198 (3.5)	15,242 (44.5)
2021	10,317 (24.6)	5,195 (12.4)	3,142 (7.5)	2,511 (6.0)	1,557 (3.7)	19,182 (45.8)
2022	10,770 (22.2)	5,720 (11.8)	3,925 (8.1)	3,209 (6.6)	1,901 (3.9)	23,046 (47.4)
2023	9,132 (20.8)	5,316 (12.1)	3,813 (8.7)	3,398 (7.8)	1,490 (3.4)	20,667 (47.2)
2024	9,599 (22.4)	5,526 (12.9)	3,289 (7.7)	3,089 (7.2)	1,310 (3.1)	20,041 (46.8)

Note: Figures in parentheses refer to percentages of the total.

Source: MAFRA, various years, *Major Statistics on Agriculture, Forestry, Livestock and Food*; The Korea Agro-Fisheries & Food Trade Corp. (Search date: Nov. 26, 2025).

Outlook and Tasks

As market liberalization has expanded, South Korea's agricultural policies have increasingly come under the constraints of WTO regulations. Consequently, policy directions have shifted toward minimizing market distortions. In response, the

government has introduced new policy tools, such as direct payment systems, strengthened links with other industries (e.g., food processing and storage), expanded marketing programs for agri-food branding and distribution, and enhanced farmer education. Most import restrictions (excluding quarantine measures) are likely to be eliminated or eased. Tariffs must be gradually reduced in accordance with international trade norms.

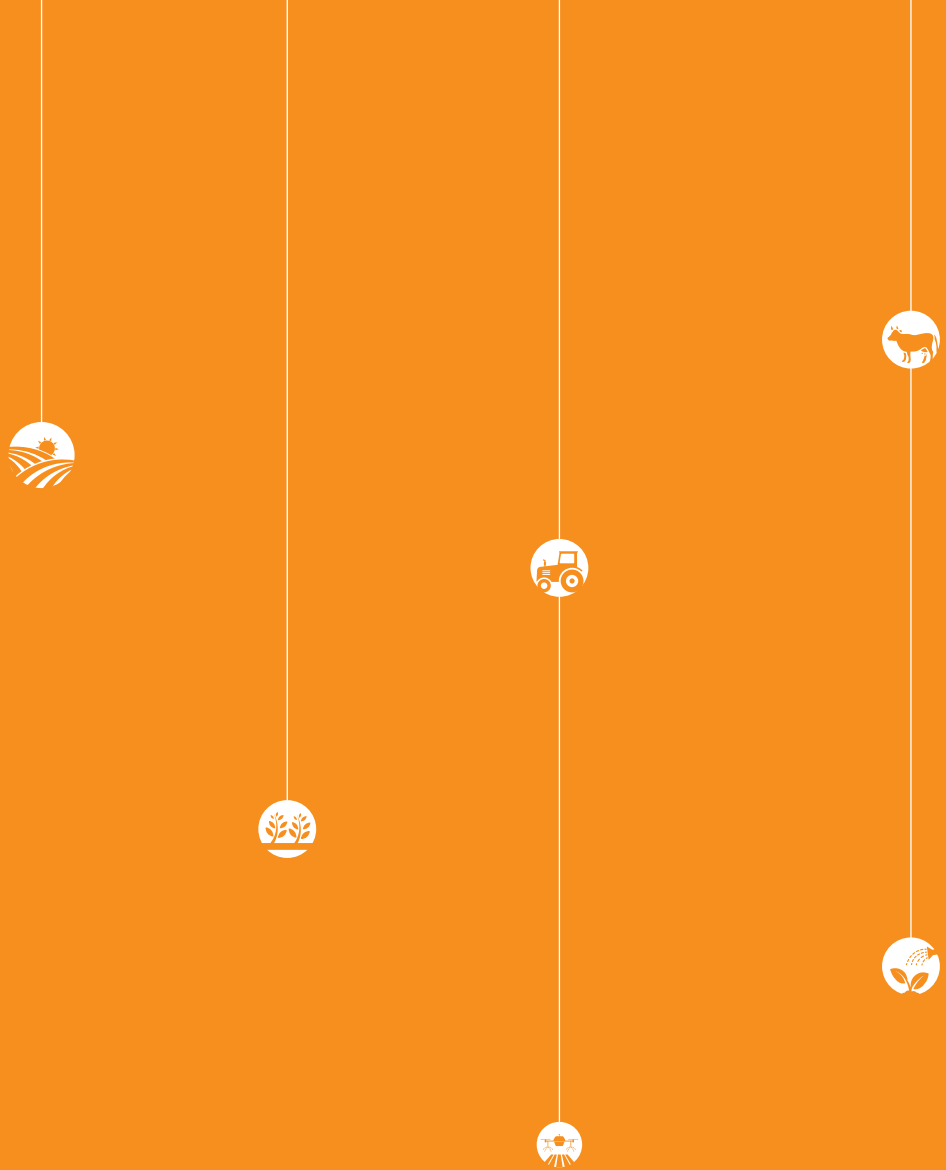
Although global demand for Korean food (K-food) continues to rise, owing to the global spread of K-culture, agri-food trade is still expected to expand more on the import side than on the export side. Driven by economic growth and demographic changes, demand for diverse, high-quality agricultural products is rising, particularly in the categories of feed grains and meat. Trade partners and product categories are expected to diversify further. However, increased market openness also raises the risk of importing harmful pests and hazardous food products. As such, strengthening quarantine and food safety systems to protect public health and the environment has become a core task for Korea's agri-trade policy.

While the economic role of domestic agriculture is declining owing to liberalization, societal demand for the multifunctional roles of agriculture, such as environmental conservation, balanced regional development, preservation of traditional culture, and food security, is increasing. One of the key challenges facing Korea's agri-trade policy is in striking a balance between responding to changes in the global trade environment and addressing the growing social demand for agriculture's public-good functions.

On the global stage, the international trade order is being shaken by tensions such as the U.S.–China trade war, Brexit, and South Korea–Japan trade disputes. The rise of mega-FTAs, like Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), United States-Mexico-Canada Agreement (USMCA), and Regional Comprehensive Economic Partnership (RCEP), along with the impacts of the COVID-19 pandemic, have significantly weakened the free trade trend that had been maintained since World War II. The DDA, once the centerpiece of the WTO system, effectively lost momentum after the 2015 Nairobi Ministerial Conference, making the

emergence of a new multilateral trade order unlikely.

Despite this uncertainty, Korea's economy—heavily reliant on exports—must continue expanding its trade. However, the rise of protectionism based on national interest, particularly led by the U.S., poses challenges to maintaining and advancing Korea's existing trade policy framework. Furthermore, Korean agriculture faces a dual challenge: enhancing competitiveness in the face of growing market openness, and realizing its public value. What is needed is a comprehensive policy package that includes ① strengthened risk management in response to increased imports, ② transition toward market-neutral policy instruments, ③ promotion of agriculture's public functions, and ④ strategic response to global trade changes. Ultimately, Korea's agricultural and trade policy should seek a balanced strategy that both responds to changes in international norms and fully realizes the public value of agriculture. Securing the sustainability and competitiveness of Korean agriculture should become the key goal of future policies.



Agriculture in Korea 2025

CHAPTER

05

Rural Communities and Sustainable Development

1. Current Status of Changes in Rural Communities and Policy Tasks
2. Rural Well-being and Welfare
3. Rural Development Policy

CHAPTER 05

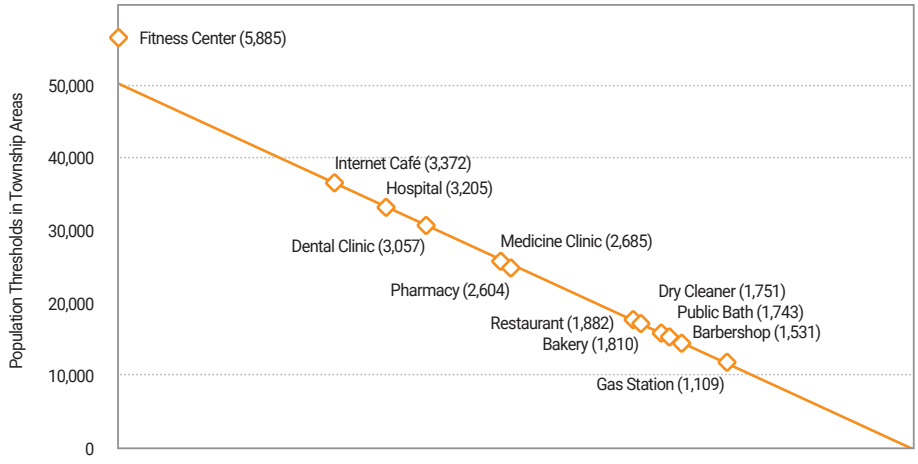
Rural Communities and Sustainable Development

1. Current Status of Changes in Rural Communities and Policy Tasks

Introduction

Recently, rural areas have been experiencing rapid changes in their demographic structures due to low birth rates and population aging. This is perceived not merely as a population decline but as a "rural extinction crisis" that threatens the very existence of rural communities. The decline in the rural population depletes the human capital necessary for the community to maintain its functions and reproduce itself, leading to the collapse of the supply chain for essential goods and services that support residents' daily lives. As the purchasing power of the community decreases, the "population thresholds"—the minimum population scale re quired to maintain basic living service facilities such as shops, hospitals, and pharmacies—are collapsing, causing a vicious cycle that degrades the quality of life for rural residents. <Figure 5-1> illustrates how industries providing basic living services are disappearing as the population in rural township (myeon) areas decreases (Han et al., 2022).

Figure 5-1 Population thresholds for rural living services in township areas of Korea



Source: Han et al., 2022, *Calculated as the median population of township areas (myeon) at the time of the closure of basic living facilities in 612 depopulating rural areas (2010–2020).*

However, diagnosing changes in rural communities solely as a process of decline or extinction may overlook the diverse transformations occurring within these areas. Statistically, the total rural population has exhibited a stable trend since the 2000s, main taining a certain level or rebounding slightly, while the annual migration of over 30,000 people from cities to rural areas continues. In particular, the influx of the "young retiree generation," equipped with experience and capital alongside the retirement of the baby boomer generation, provides an opportunity that injects new vitality into rural areas. While subsistence-type farming migration was dominant in the past, there is now a stronger tendency to perceive rural areas as a "foundation for new opportunities and activities." This trend suggests that, while rural communities are declining, they are simultaneously experiencing an inflow of new resources and a qualitative diversification of their populations.

Changes in rural communities occur across multiple dimensions, including social characteristics—such as perceptions, networks, and identities among community members—as well as demographic characteristics and spatial scope. Due to

developments in transportation and communication, the scope of residents' activities is expanding, and the influence of fluid actors, such as "relationship population" and "living population," in addition to the settled population, is growing within communities. Conversely, existing dominant perceptions define rural communities solely as objects of "decline" and "extinction," with decreasing population and vitality.

In this section, we attempt to understand the changing patterns occurring in rural communities in terms of population, organization, and space, and to derive practical tasks accordingly. Specifically, we analyze the following: the qualitative diversification of population composition and the rise of the "relationship population" amidst population decline in rural communities; the changing patterns of community organizations that are newly forming in contrast to the weakening of traditional village communities; and the spatial changes of rural communities. Subsequently, we aim to provide policy and practical directions to secure the sustainability of rural communities.

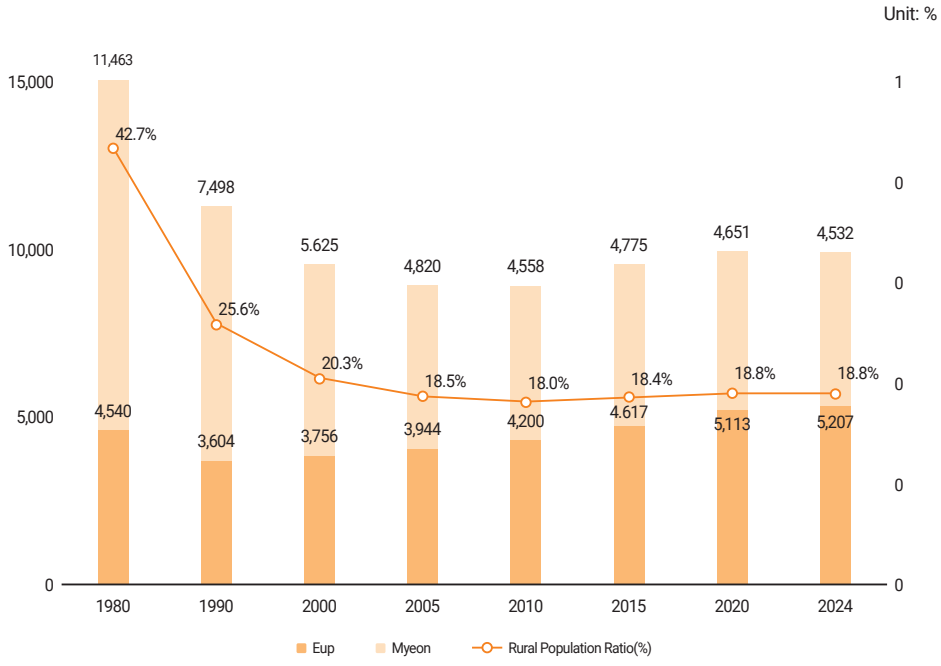
Changes in Rural Communities

Changes in Population Structure

- **Entry into a Super-Aged Society and Deepening Crisis of Population Structure in Rural Areas**

Over the past half century, demographic characteristics have changed significantly as Korea has undergone a period of rapid economic growth. According to the Population and Housing Census, the rural population in 1980 was 16 million, accounting for 42.7% of the total population; however, by 2000, it had decreased to 8.76 million, accounting for 20.3% of the total population. Compared with the late 20th century, when rural population decline and urbanization were dramatic, since 2000—after the transition to an industrial society had progressed to some extent—the ratio of the rural population has maintained a stable trend, standing at 18.8% as of 2024. The rural population, which fell to 8.76 million in 2010, has since increased slightly, reaching approximately 9.74 million by 2024.

Figure 5-2 Rural population in Korea (1980–2024)

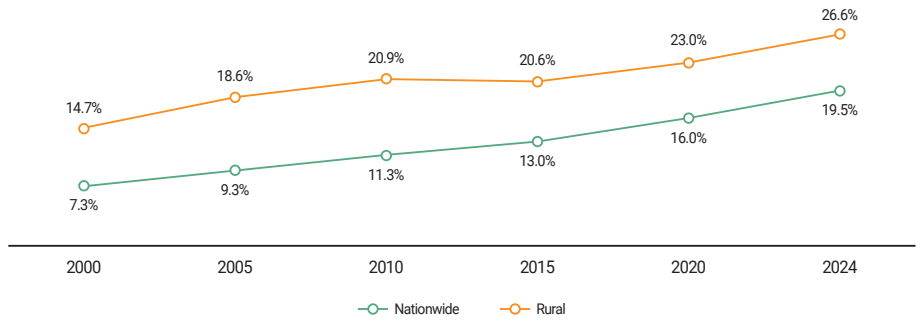


Source: MODS, various years, *Population and Housing Census.*

Korea is rapidly transforming into an aged society. The national aging rate increased from 7.3% in 2000 to 19.5% as of 2024. The rural aging trend is more pronounced than in regions. The rural aging rate rose from 14.7% in 2000 to 20.9% in 2010, already entering a super-aged society. As of 2024, it has increased to 26.6%, progressing about 15 years earlier than the point at which South Korean society as a whole is expected to enter a super-aged society. Among rural areas, the aging rate in myeon (township) areas reached 34.1% as of 2024, nearly doubling from 18.1% in 2000. This is significantly higher than the national rate (19.5%) in 2024. In particular, the average age of the population in myeon areas increased significantly from 41 years in 2000 to 53 years in 2024.

Figure 5-3 Trends in the Agine Rate: Nationwide vs. Rural Areas

Unit: %



Source: MODS, various years, Population and Housing Census.

Additionally, the proportion of the population under 15 years of age (the future generation of rural areas) is exhibiting a significant downward trend. Including both eup (town) and myeon (township) areas, the proportion of the rural population under 15 years of age dropped from 18.6% in 2000 to 9.1% as of 2024. In particular, the proportion of the population under 15 in myeon areas was only 6.5% in 2024. The rapid decline of the youth population in rural areas has quickly weakened the foundation of the local community. According to Kim et al. (2024), out of the 431 elementary schools closed nationwide since 2010, 85.6% were in rural areas, and among them, schools located in myeon areas accounted for 70.8%, showing a concentrated rate of closure.

Table 5-1 Status of school closures in rural and urban areas (2010–2024)

Ratio: %

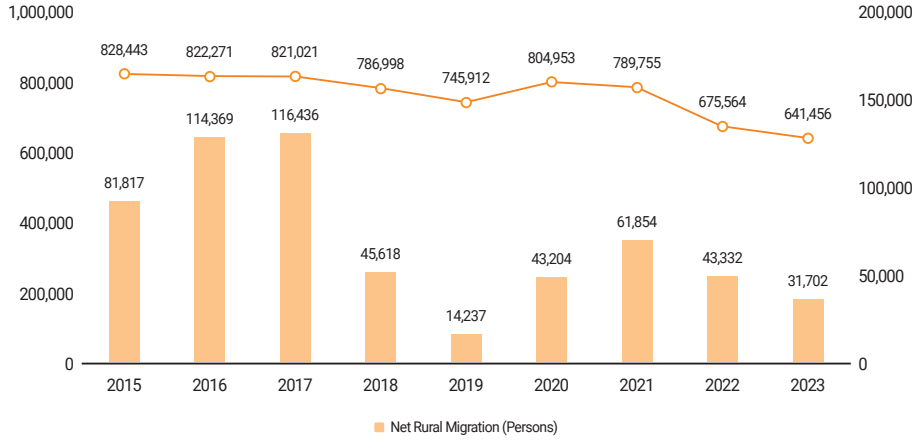
Region	Period			Total	Ratio(%)
	2010–2014	2015–2019	2020–2024		
Dong Areas (Urban)	4	33	25	62	14.4%
Eup Areas (Rural Town)	12	20	32	64	14.8%
Myeon Areas (Rural Township)	42	99	164	305	70.8%
Total	58	152	221	431	100.0%

Source: Kim et al., 2024; Reanalysis of School Info, various years, Elementary School Basic Information (2010–2024).

• Diversification of Population Composition

While the rural population is projected to decrease in the long term due to natural decline caused by super-aging, dynamic internal population changes are occurring, including active social inflows and outflows and an increase in the floating population (Song et al., 2023). An analysis of inter-regional population movements from 2015 to 2023 shows that a steady flow of migrants from cities to rural areas is a key characteristic of this change. Except for 2019, over 30,000 people have moved from cities to rural areas annually over the past 10 years (Sim et al., 2024).

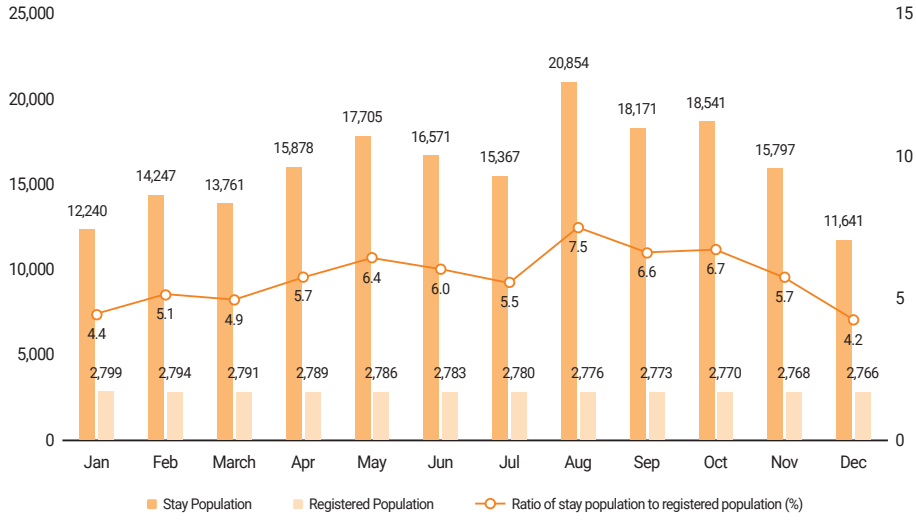
Figure 5-4 Annual trends in urban-to-rural migration (2015–2023)



Source: MODS, various years, *National Migration Statistics*; re-cited in Sim et al., 2024.

The role of new inflows, such as the living population and relationship population, is increasingly recognized as diversifying the population composition of rural communities. In other words, the "short-term stay (living population)" and "relationship-based exchange (relationship population)" are viewed as alternative population concepts and are attracting attention as factors that enhance sustainability by functioning as a preliminary stage for rural economic revitalization, social solidarity recovery, and the transition to settlement (Park et al., 2025).

Figure 5-5 Monthly trends in stay population as a multiple of registered population in rural areas (2024)



Source: MODS, various years, *Living Population Statistics.*

Table 5-2 Ratio of relationship population activities by village

Ratio: %

Relationship Population Type	Activity Characteristics	Ratio (%)
Urban-Rural Exchange	Regular experiential activities, temporary residence, weekend farms, rural study abroad, participation in educational programs, artistic creation activities	18.6
Former Residents (Out-migrants)	Hometown associations, donations, regular visits	37.3
External Support Orgs, etc.	Exchange with support groups/researchers, talent donation, village project management, employment/startups within the village, etc.	12.7
Family and Relatives	Visits by family and relatives for household affairs/socializing	32.3
Total		54.9

Source: Song et al, 2023, *Survey of Village Heads (conducted in 102 villages).*

According to a survey of rural village heads (Song et al., 2023), among the relationship population active at the village level, people originally from the village (out-migrants)

were the most numerous at 37.3%, and family members or relatives of village residents who visited periodically accounted for 32.3%. Populations visiting continuously for regular experiential activities, weekend farms, and rural study-abroad programs accounted for 18.6%, and activists such as external support organizations involved in support and consulting for village community activities and business operations accounted for 12.7% (Song et al., 2023).

Social Changes in Rural Communities

• Changes in Rural Village Organizations

Communal economic activities that previously took place within villages are also weakening. According to Han et al. (2025), the proportion of villages reporting "no" joint economic activities as of 2025 is 56.3%, a significant increase from 36.3% in 2020, indicating that villages with joint economic activities have declined to less than half. This is interpreted as resulting from a decrease in young people leading communal economic activities due to the aging of rural and fishing villages, the decline in the youth population, and a reduction in traditional agriculture-centered communal economic activities.

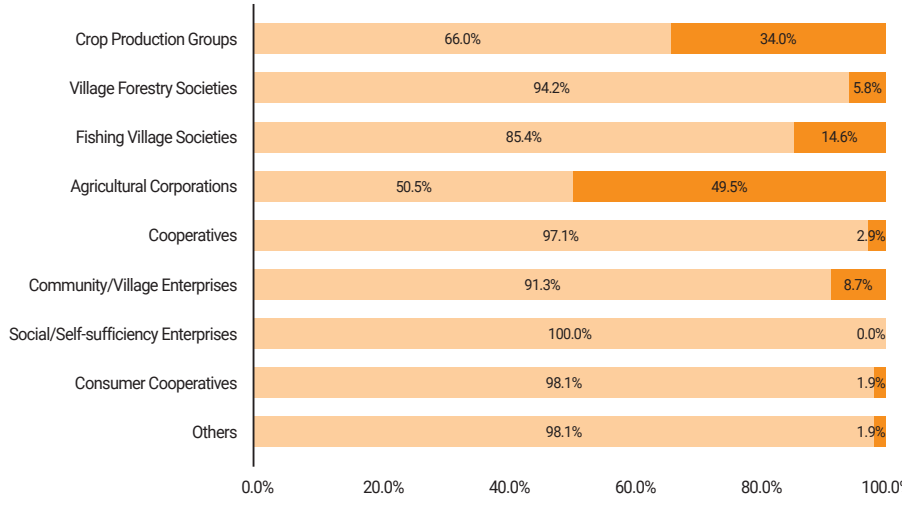
Table 5-3 Status of joint economic activities within villages by year

Ratio: %

Category		2020	2021	2022	2023	2024	2025
Collective Agricultural Activities	Cooperative Agricultural Activities	39.2	25.5	21.6	24.5	17.5	20.4
	Village Farming			10.8	15.7	12.6	13.6
Joint Fishing		3.9	7.8	4.9	6.9	4.9	5.8
Village Food Processing/Sales		11.8	9.8	4.9	6.9	4.9	4.9
Village Experience Tourism Program Operation		26.5	16.7	13.7	15.7	12.6	12.6
Village Facility Operation		20.6	12.7	12.7	11.8	16.5	18.4
Village Farm Machinery Use		14.7	16.7	19.6	10.8	10.7	8.7
Healing Agriculture/Social Farming							1.9
No Collective Economic Activity		36.3	46.1	52.9	52.0	56.3	56.3

Source: Han et al., 2025, *Survey of Village Heads (conducted in 103 villages).*

Figure 5-6 Presence or absence of economic organizations within rural villages



Source: Han et al., 2025, *Survey of Village Heads (conducted in 103 villages).*

As traditional village functions weaken, the need for communication and cooperation among diverse residents is increasing. According to Park et al. (2025), village residents view outsider visits and stays positively. A resident survey conducted by Park et al. (2025) found that 77.8% responded positively to outsider visits and stays, 19.5% were neutral, and only 2.7% responded negatively.

Table 5-4 Evaluation of outsider visits and stays by rural village residents

Unit: %, Points

Category		Case Count	Very Negative	Negative	Neutral	Positive	Very Positive	Total	5-Point Avg
Total		735	0.5	2.2	19.5	46.8	31.0	100.0	4.06
Exp. interacting w/ outsiders	None	497	0.6	2.4	21.9	48.1	27.0	100.0	3.98
	Yes	238	0.4	1.7	14.3	44.1	39.5	100.0	4.21
Exp. staying in other regions	None	597	0.7	2.2	22.4	49.7	25.0	100.0	3.96
	Yes	138	0.0	2.2	6.5	34.1	57.2	100.0	4.46

Source: Park et al., 2025.

Recently, in rural communities, the number of organizations that emphasize profit generation and role performance—such as farming associations and cooperatives mediated by government subsidies and economic activities—are increasing. According to the Village Head Survey from 2020 to 2024 (Han et al., 2024, 2025), among economic organizations in rural villages, organizations for joint agricultural and fishing activities, such as crop groups, water users' associations, and fishing village fraternities, are the most numerous, followed by companies in agricultural and fishery corporations, including farming and fishery associations.

Table 5-5 Ratio of villages possessing economic organizations by year

Unit: %

Rural Village Economic Activity Org	2020	2021	2022	2023	2024
Crop Group (Jakmokban)	44.1	35.3	34.0	30.4	31.1
Crop Group 2	21.6	16.7	11.7	10.8	10.7
Crop Group 3	5.9	5.9	4.9	2.9	2.9
Water Users' Association (Surigye)	5.9	8.8	9.7	10.8	10.7
Fishing Village Fraternity (Eochongye)	12.7	12.7	11.7	13.7	12.6
Farming Assoc. Corp / Ag. Company Corp	39.2	35.3	38.8	39.2	42.7
Fishery Assoc. Corp / Fishery Co. Corp	6.9	5.9	9.7	9.8	8.7
Cooperative	5.9	2.9	5.8	3.9	5.8
Village Enterprise / Rural Community Co.	12.7	5.9	4.9	6.9	7.8
Social Enterprise / Self-sufficiency Enterprise	2.0	2.0	1.9	1.0	1.0
Consumer Cooperative	0.0	0.0	1.0	1.0	1.0
No Economic Organization	28.4	23.5	23.3	26.5	25.2

Source: Han et al., 2025, *Village Head Survey Results.*

Collective economic activities in rural villages are gradually decreasing. According to the Village Head Survey conducted by Han et al. (2025), the proportion of villages reporting "no" collective economic activities in 2025 was 56.3%, a significant increase from 36.3% in 2020, indicating that villages with collective economic activities have declined to less than half. Thus, while collective agricultural and fishing practices based on solidarity and cooperation among farmers and fishermen are decreasing, the

increase in agricultural and fishery corporate organizations pursuing individual profit can be seen as a characteristic of this change.

• Changes in Rural Community Organizations

Beyond rural villages, the structures of rural community organizations at the eup and myeon (town and township) levels are also changing. According to Lee et al. (2024), the number of community organizations increased significantly across all rural areas between 2015 and 2020. In particular, the marked increase in social economy organizations, such as social enterprises, cooperatives, and village enterprises, in 2020 compared to 2015 represents a major change. Lee et al. (2024) interpret this as reflecting a growing tendency for community members to cooperate and address problems such as population decline and economic weakening.

Table 5-6 Changes in community organizations at the eup/myeon levels (2015–2020)

Unit: count

Category			Rural Total	Eup/Myeon Div.		Rural Region Type		
				Eup	Myeon	Suburban	General	Remote
No. of eup/myeon (2020)			1,403	232	1,171	138	589	676
No. of Villages per eup/myeon (2020)			27	41	24	38	29	23
Production Orgs (Farming Assoc., Ag. Corp., Crop Groups)	Total Count	2015	23,429	4,161	19,268	1,908	10,301	11,220
		2020	27,243	5,577	21,666	2,673	11,971	12,599
		Change	3,814	1,416	2,398	765	1,670	1,379
	Avg per eup/ myeon	2015	16.7	18.0	16.5	13.9	17.5	16.6
		2020	19.4	24.0	18.5	19.4	20.3	18.6
		Change	2.7	6.0	2.0	5.4	2.8	2.0
Social Economy Orgs (Social Enterprise, Co-op, etc.)	Total Count	2015	1,071	174	897	72	470	529
		2020	9,549	3,944	5,605	1,770	4,187	3,592
		Change	8,478	3,770	4,708	1,698	3,717	3,063
	Avg per eup/ myeon	2015	0.8	0.8	0.8	0.5	0.8	0.8
		2020	6.8	17.0	4.8	12.8	7.1	5.3
		Change	6.0	16.2	4.0	12.3	6.3	4.5

Source: Lee et al., 2024; MODS, various years, *Census of Agriculture, Forestry and Fisheries (Local Survey)*.

An analysis of the detailed status of rural social economy organizations presented by Lee et al. (2024) shows that there are approximately 9,500 such organizations in rural areas. Among them, cooperatives are the most numerous, with 7,259 (76.0%), followed by village enterprises (10.9%) and social enterprises (10.3%). Among rural cooperatives, 80.1% are general cooperatives and 19.4% are social cooperatives.

Table 5-7 Population thresholds for rural living services in township areas of Korea

Unit: count, %

Category	Total	Eup/Myeon		Rural Region Type		
		Eup	Myeon	Suburban	General	Remote
Cooperatives	7,259 (76.0)	3,120 (79.1)	4,139 (73.8)	1,399 (79.0)	3,200 (76.4)	2,660 (74.1)
Social Ent.	982 (10.3)	431 (10.9)	551 (9.8)	231 (13.1)	440 (10.5)	311 (8.7)
Village Ent.	1,039 (10.9)	196 (5.0)	843 (15.0)	104 (5.9)	414 (9.9)	521 (14.5)
Self-suff. Ent.	269 (2.8)	197 (5.0)	72 (1.3)	36 (2.0)	133 (3.2)	100 (2.8)
Subtotal	9,549	3,944	5,605	1,770	4,187	3,592

Source: Lee et al., 2024; Korea Social Enterprise Promotion Agency, Ministry of the Interior and Safety & Korea Development Institute for Self-Sufficiency and Welfare, Cooperative Portal.

These changes indicate that, in the organizational principles of rural communities, the character of village communities based on traditional local and kinship ties is gradually weakening, while a shift toward purpose-oriented organizations centered on specific economic interests and functions is occurring. As the binding force of the "village association" (maeul-hoe)—which previously oversaw village affairs or collective agricultural activities through residents' cooperation—is weakening, the importance of functional organizations directly linked to actual income, such as farming associations or crop groups, or those responding to government support projects, is growing. Furthermore, within rural communities, village-level functions are gradually declining, and solidarity and cooperative practices that exceed the scope of individual villages

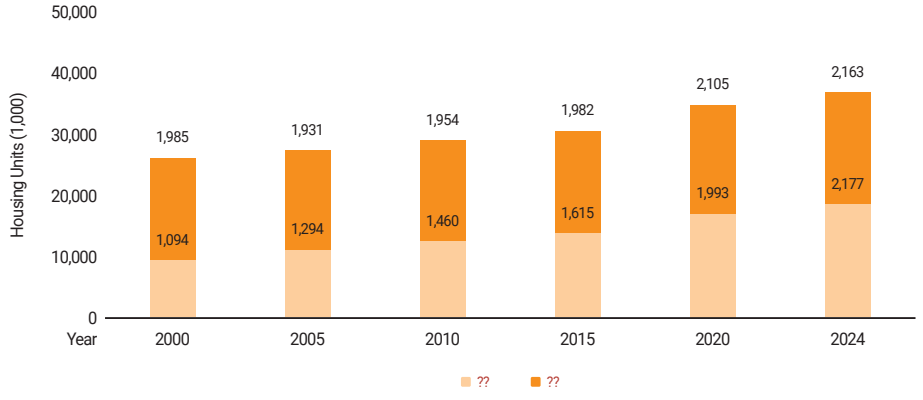
and eup and myeon areas are becoming increasingly important. Lee et al. (2024) and Kim et al. (2024, 2025) confirm that the role of associations in the autonomous management of common resources or community autonomy is becoming more important in rural communities.

Spatial Changes in Rural Communities

• Changes in Rural Housing Styles

Although the rural population is gradually decreasing, the total number of housing units in rural areas increased from 3.08 million in 2000 to 4.34 million in 2024. In other words, while the population is declining, housing is increasing. Alongside this trend, the number of old houses aged 30 years or more increased from 1.1 million in the 1980s to 1.24 million as of 2022 (Sim et al., 2024). As of 2022, the proportion of houses aged 30 years or older in rural areas had increased to 29.8%. In particular, houses built between the 1980s and 1990s, during Korea's period of economic development, are problematic because many were constructed without considering housing functions such as heating and insulation performance, making them highly likely to become substandard as they age.

Figure 5-7 Trends in housing units in rural areas (1,000 units)



Source: MODS, various years, *Population and Housing Census.*

The types of housing in which rural residents primarily live have also changed significantly. An analysis of the Population and Housing Census (various years) indicates that rural housing styles are rapidly transforming from detached houses to apartments. In 2000, most housing in rural areas were detached houses. However, as of 2024, detached houses (49.2%) and apartments (41.4%) exist at similar levels. As of 2024, 61.0% of housing in rural eup areas are apartments, and when the 12.0% ratio of row houses and multi-household houses is included, more than 70% of eup residents live in collective housing rather than detached houses. In rural areas, at least in eup areas, apartments have already assumed a central role in residential life.

Table 5-8 Changes in rural housing types by period (2000–2024)

Category	Eup Area (Town)				Myeon Area (Township)			
	2000	2010	2020	2024	2000	2010	2020	2024
Detached House	48.7%	37.3%	29.1%	26.9%	81.0%	78.7%	73.1%	71.6%
Apartment	36.9%	52.4%	57.4%	61.0%	11.6%	16.5%	20.3%	21.6%
Row/Multi-household	9.3%	9.0%	12.0%	10.6%	3.5%	3.5%	5.0%	5.2%

Source: MODS, various years, *Population and Housing Census.*

• Changes in the Spatial Structure of Rural Communities

An analysis of changes in the spatial structure of rural communities shows that the traditional vertical central place hierarchy of "village–eup and myeon–county" is loosening. In the past, eup and myeon areas functioned as primary centers supplying daily necessities and basic services to residents of surrounding villages. However, as shops and service functions in eup and myeon seats weaken due to their inability to meet population thresholds caused by population decline, the proportion of residents moving to other eup and myeon areas, or even to other cities and counties (si and gun), to access living services is gradually increasing.

Han et al. (2025) analysis of rural residents' movement patterns for living services between 2020 and 2024 shows that activities related to daily life, such as culture, leisure, hobbies, and social gatherings, primarily occur within the same eup and

myeon areas. However, there is a tendency for residents to travel to other areas when accessing services located in centralized hub spaces, including public services such as administration, finance, and medical care.

Table 5-9 Changes in the proportion of residents using living services in other rural communities

Unit: %

Category	Using Services in Other *eup/myeon*		Using Services in Other cities/counties (Si/Gun)	
	2020	2024	2020	2024
Basic Necessities & Food	11.1%	13.6%	1.1%	6.1%
Living Amenities	19.8%	18.9%	3.0%	7.9%
Admin & Financial Svcs (Gov offices, banks, post offices)	16.7%	22.0%	0.9%	6.2%
Basic Medical Services (Public health centers, clinics)	30.5%	29.6%	3.8%	9.0%
Culture, Leisure, Hobbies	19.2%	15.9%	4.7%	5.8%
Social Gatherings	12.9%	12.8%	4.1%	6.5%

Source: Han et al., 2025; Aggregation of Village Panel Resident Survey Results, 2020, 2024.

Regarding this trend, Han et al. (2025) conclude that only limited functions, such as basic administration and finance, remain in myeon seats, while the concentration of other living services in upper-level centers is accelerating. In this context, they argue that, as wide-area movement patterns for commuting to work and school gradually increase, the direct connection between urban hubs and surrounding rural areas is further strengthened.

Conclusion

As examined thus far, the changes in rural communities are unfolding in a multidimensional manner that is difficult to grasp simply as a crisis of rural extinction.

First, synthesizing the characteristics of rural population change, the total rural population appears to be stable or slightly rebounding; however, internally, human capacity and socioeconomic vitality are declining. In particular, the deepening aging

trend and sharp decrease in the youth population indicate that communities' ability to reproduce their own populations has already reached its limit. The extreme imbalance between the aging rate (34.1%) and youth ratio (6.5%) in myeon areas in 2024 indicates that the crisis in rural communities is ongoing. However, at the same time, the emergence of fluid population groups, known as the "relationship population" and "living population," as new sources of vitality and potential resources for rural areas is an important opportunity factor.

Second, from a social perspective, traditional village communities are weakening, while business-type organizations performing specific functions, such as executing government competition projects and economic profit activities, are increasing. Additionally, community organizations based on voluntary cooperation and the collective practices of community members are also increasing significantly. The scope of activities of these community organizations is also expanding beyond individual villages to eup and myeon areas or to wide-area networks that exceed the boundaries of individual eup and myeon areas.

Third, from a spatial perspective, the traditional settlement hierarchy structure is weakening, while living zones are becoming regionalized (wide-area). As transportation systems and road networks develop, the lower-level central functions of myeon seats are declining, and service use is increasingly concentrated in nearby urban hubs. This implies that gaps in quality of life among rural residents—based on differences in accessibility within rural areas—are deepening. Along with this, the "apartment-ization" of rural housing styles is also altering the rural landscape and lifestyle in more urban direction.

Synthesizing these changes, the characteristics of rural communities are fundamentally shifting from closed spaces of settlement and production centered on agriculture to open, connected spaces. For rural communities to secure sustainability, it is necessary to move beyond a quantitative approach centered on population and instead expand human and social networks based on trust and inclusion among community members, while also shifting policy and practice toward a community-led approach for rural space regeneration. In other words, securing a sustainable future for

rural communities requires a focus on creative and innovative strategies that connect people, expand the scope of practice, and reconstruct living spaces in three dimensions.

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2. Rural Well-being and Welfare

The well-being of rural residents depends on economic stability, social relationships, cultural fulfillment, and environmental quality. Rural welfare serves as a fundamental pillar by offering institutional and practical support that enables rural residents to lead dignified lives.

Rural welfare refers to institutions, programs, and practices that support all residents living in rural areas, enabling them to maintain a decent standard of living (Choi, 2009, p. 282). This concept emerged because, although rural residents are formally included as beneficiaries of national welfare policies, the delivery of welfare services has often been uneven due to regional disparities.

In practice, rural areas often experience welfare blind spots because they face more challenges than urban areas, such as insufficient welfare infrastructure, limited accessibility due to distance and transportation constraints, fiscal limitations, and relatively weak political influence.

Evolution of Rural Welfare Policy

The integration of rural welfare into Korea's agricultural policy began after the conclusion of the Uruguay Round in 1986 and the establishment of the World Trade Organization (WTO) system in 1994. In early 1994, the government established the Presidential Committee on Agriculture and Rural Community Development to assess the potential impacts of the WTO regime and to develop appropriate countermeasures. The committee included three subcommittees, with the Subcommittee on Farmers' Welfare and Well-being dedicated to rural welfare. This subcommittee played a key role in organizing previously fragmented welfare initiatives for rural areas. As a result, the Ministry of Agriculture, Forestry and Fisheries (now the Ministry of Agriculture, Food and Rural Affairs) created a dedicated rural welfare unit. This unit has changed over time, from the Rural Welfare Team to the Rural Society Division, Rural Welfare and Women's Affairs Division, and Rural Social Welfare

Division, and currently operates as the Rural Social Services Division.

Government-led initiatives to improve the quality of life for farmers and rural residents developed more fully beginning in 2004. During this period, the expansion of free trade agreements (FTAs) and progress in WTO agricultural negotiations raised concerns about increasing income and living-standard gaps between urban and rural areas. These concerns demonstrated the need for a comprehensive, government-wide response, which resulted in the enactment of two major laws: the Special Act on the Improvement of Quality of Life for Farmers and Fishers and Promotion of Rural Development (hereafter, the Rural Quality of Life Act), and the Special Act on the Promotion of Health and Welfare in Rural Areas (the Rural Health and Welfare Act).

The Rural Quality of Life Act aims to establish an integrated inter-ministerial coordination framework that covers a wide range of policy areas affecting rural communities, including health, welfare, environment, culture, education, and regional development. The Rural Health and Welfare Act provides a complementary legal basis for expanding health and social welfare facilities in rural areas. Under this act, the Ministry of Health and Welfare is implementing the 5th Basic Plan for Rural Health and Welfare as of 2025.

Of the two laws, the Rural Quality of Life Act serves as the overarching framework, addressing both rural welfare and broader aspects of rural well-being. As a result, Korea's rural welfare policies have been implemented as part of a comprehensive quality of life policy for rural residents, including farmers and fishers.

Integrated Implementation of Rural Welfare Policy: The Policy for Improving the Rural Quality of Life

Since the enactment of the Rural Quality of Life Act, the Korean government has implemented rural welfare policies in a comprehensive and systematic way through the Basic Plan for Improving the Quality of Life of Farmers and Fishers, which is established every five years. In the early phases, the plan focused on stabilizing farm household income and improving basic living conditions in rural areas. Over time, its

scope expanded to include a wide range of domains that shape overall quality of life, such as health, welfare, education, culture, and the environment. The institutional foundations for implementation have also strengthened through improved coordination among central government ministries, local governments, and the private sector.

The development of this integrated policy framework resulted from the ongoing decline in economic and social conditions in rural areas and the increasing demand for an institutional response. The next section analyzes the main policy and socioeconomic contexts that contributed to the enactment of the Rural Quality of Life Act.

Background and Rationale

When the Rural Quality of Life Act was enacted, structural reforms in the agricultural sector, such as farm consolidation, had improved basic agricultural infrastructure and productivity. However, farm households continued to experience stagnant real income because agricultural prices fell while input costs increased. Consequently, the income ratio of farm households compared to urban wage earners decreased from 89.1% in 1992 to 76.1% in 2003.

Poor rural living conditions also represented a significant concern. In 2003, the water supply coverage rate in rural areas was 52.9%, compared with 98.0% in cities. Road paving rates were similarly unequal, with 51.5% in rural areas and 89.5% in urban areas. Regional disparities in medical resources were marked: 93.6% of general hospitals, 89.5% of hospital beds, and 88% of medical professionals were located in urban regions. In education, 2,420 of 5,149 schools (47%) in 2004 were classified as small schools at risk of closure.

Demographic decline increased rural vulnerabilities. The proportion of farm and fishery households in the national population decreased from 16.7% in 1990 to 7.5% in 2004, and the rural population share fell from 25.6% to 20.0% during the same period. Population decline contributed to a cycle of worsening living conditions.

Despite these structural challenges, policies related to health, welfare, education, and regional development were implemented in a fragmented manner across different

ministries. Individual programs often did not consider the unique conditions of rural areas, and no coordinated national mechanism existed to integrate these efforts. In response, the government enacted The Rural Quality of Life Act in 2004 to establish a comprehensive and systematic support framework aimed at improving welfare, education, living conditions, and regional development for farmers and rural residents.

Under this act, the government must establish a five-year Basic Plan for Improving the Quality of Life of Farmers and Fishers, and each participating ministry is required to develop and implement its own annual action plan. The first Basic Plan began in 2005, and as of 2025, the fifth Basic Plan is in progress.

Implementation and Governance Structure

The Rural Quality of Life Policy is implemented using a whole-of-government approach that involves various central government ministries and agencies. When the first Basic Plan for Improving the Quality of Life of Farmers and Fishers was launched, 15 ministries, including the Ministry of Agriculture, Food and Rural Affairs (MAFRA), participated. By the fifth Basic Plan, 21 ministries and agencies were involved, reflecting the policy's increasingly comprehensive scope.

The Rural Quality of Life Act establishes the Committee for the Improvement of Quality of Life for Farmers and Fishers and for Rural Development (hereafter, the Rural Quality of Life Committee) to ensure effective coordination across ministries. The Rural Quality of Life Committee oversees, harmonizes, and coordinates policies related to the welfare of farmers and fishers, the improvement of educational conditions in rural areas, and regional development. The committee is also responsible for deliberating on the Basic Plan and for reviewing and evaluating its implementation progress.

The committee, chaired by the Prime Minister, consists of up to 25 members, including ministers from participating ministries and appointed external experts from academia and the field. MAFRA serves as the secretariat and supports the committee's operations.

Since 2012, a designated expert support institution has assisted the committee in

improving the systematic implementation of its functions. The Korea Rural Economic Institute (KREI), through its Center for Quality of Rural Life Policy, has served as the primary supporting institution. Since 2015, the Korea Maritime Institute (KMI) has provided supplementary support for tasks related specifically to fishing communities and fishers.

These expert support institutions review and evaluate the outcomes of government rural quality-of-life policies and conduct timely research to identify emerging needs in rural areas. They support the preparation of agenda items for annual committee deliberation or reporting, including annual implementation results, assessments of compliance with the National Minimum Service Standards for Rural Areas, and Rural Proofing. In addition, they identify and share exemplary cases of rural quality-of-life improvement and facilitate policy networks that involve academic experts, practitioners, and local stakeholders.

Master Plans for Rural Quality of Life

Since the enactment of the Rural Quality of Life Act, a new five-year Master Plan for Improving the Quality of Life of Farmers and Fishers has been established every five years, beginning with the first plan in 2005. Over the past two decades, the cumulative public investment under these plans has reached 178 trillion KRW. As of 2025, the fifth Master Plan is in progress. The major features of each plan are summarized below (see <Figure 5-8>).

• First Master Plan (2005–2009)

The first plan presented a vision of "rural communities as integrated living spaces harmonizing residence, leisure, and industry." A total of 133 projects were implemented in four major sectors: improvement of rural welfare conditions, expansion of educational infrastructure, promotion of regional development, and revitalization of diversified rural industries. Fourteen ministries participated, and total investment reached 22.8 trillion KRW, which exceeded the original target of 20.3 trillion KRW, resulting in a 112% implementation rate.

• Second Master Plan (2010–2014)

The second plan adopted the vision of "creating happy rural communities where living, working, and leisure spaces coexist in harmony." It expanded the scope of policy areas to seven major sectors: health and welfare, education, basic infrastructure, economic activity, culture and leisure, environment and landscape, and regional capacity. Fourteen ministries participated, implementing 133 projects with an investment plan of 34.5 trillion KRW, a 151% increase compared with the investment scale of the first plan.

• Third Master Plan (2015–2019)

Formulated in 2014 and implemented beginning in 2015, the third plan presented a vision of "vibrant communities where anyone would want to live." It included 184 projects across seven sectors: health and welfare, education, living and settlement infrastructure, economic activity and employment, culture and leisure, environment and landscape, and safety. Fifteen ministries participated, and the planned investment totaled 46.5 trillion KRW, representing a 35% increase over the second plan and averaging 9.3 trillion KRW annually.

Figure 5-8 Overview of the Master Plans for improving the quality of life of farmers and fishers

1st plan(2005~2009)	2nd plan(2010~2014)	3rd plan(2015~2019)	4th plan(2020~2024)
• improvement of welfare conditions • expansion of educational infrastructure • promotion of regional development • revitalization of diversified rural industries	• health and welfare • education • basic infrastructure • economic activity • culture and leisure • environment and landscape • regional capacity building	• health and welfare • education • settlement and living infrastructure • economic activity and job creation • culture and leisure • environment and landscape • safety	• economic activity and jobs • settlement and living infrastructure • health and welfare • education and culture
Projects: 133 Investment: 22.8 trillion KRW	Projects: 133 Investment: 34.5 trillion KRW	Projects: 184 Investment: 46.5 trillion KRW	Projects: 175 Investment: 51.1 trillion KRW

• Fourth Master Plan (2020–2024)

The fourth plan presented the vision of "attractive rural areas where quality of life is guaranteed nationwide and people return to live." It introduced four strategic pillars: providing life-cycle–based welfare services and developing inclusive communities, ensuring equitable access to educational and cultural opportunities, building rural living environments that preserve rural identity, and diversifying economic activities while establishing a circular local economy. A total of 175 projects were implemented with the participation of 21 ministries, and total investment reached 51.1 trillion KRW, representing a 9.9% increase compared with the third Master Plan.

• Fifth Master Plan (2025–2029)

The fifth Master Plan, implemented from 2025, presents the vision of "creating future-oriented rural areas where everyone can enjoy a happy life and new values are generated." This phase, unlike previous plans, prioritizes rural economic revitalization and job creation. The plan redefines rural areas as open spaces of opportunity for all citizens, rather than solely as places of residence, and emphasizes expanding the De Facto Population (individuals who engage with rural areas through work, education, tourism, or other activities) beyond the traditional focus on permanent residents. These efforts aim to reduce quality-of-life disparities between urban and rural areas and to establish a mutually reinforcing cycle of development.

The fifth plan is structured around three strategic pillars: revitalizing the rural economy and creating jobs by using agricultural and rural resources; improving rural housing conditions and increasing the daily population; and reducing gaps in public and essential services. To achieve these objectives, the plan identifies 12 priority tasks and 180 detailed initiatives (see <Table 5-10>).

Table 5-10 Overview of the Fifth Master Plan for improving the quality of life of farmers and fishers (2025–2029)

Vision	
Happy Rural Communities for All, a Future Growth Space Creating New Values	
Three Strategic Pillars and Key Initiatives	
Economic Revitalization and Job Creation through the Utilization of Agricultural and Rural Resources	① Promoting the development of region-specific specialized industries ② Revitalizing service industries based on rural amenities ③ Cultivating human resources to drive innovation in rural areas
Improving Rural Living Conditions and Expanding De Facto Population	① Improving rural living conditions ② Establishing a Foundation for Expanding De Facto Population and Relational Population ③ Ensuring a safer, more comfortable living environment
Minimizing Gaps in Public and Essential Services	① Expanding essential welfare and healthcare services ② Strengthening community-based development initiatives ③ Promoting educational equality and enhancing access to digital services ④ Providing housing and residential infrastructure support ⑤ Expanding environmental and safety services ⑥ Minimizing food deserts and transportation service gaps

Monitoring and Evaluation of Implementation Plans and the Policy Corrective Action Review

Based on Article 9 of the Rural Quality of Life Act, the Rural Quality of Life Committee conducts an annual review and evaluation of implementation plans by central government ministries under the Master Plan for Improving the Quality of Life of Farmers and Fishers. The designated expert support institution assists with monitoring and evaluation, which assess both the content and performance of each ministry's annual plan. The Committee deliberates on the results and submits them to the National Assembly each June. Ministries receive formal notification of their evaluation results (e.g., Excellent, Good, Needs Improvement) and must take follow-up actions as required.

The Committee periodically revises or supplements specific evaluation methods to reflect the characteristics and priorities of each five-year Master Plan.

During the first Master Plan, a panel of external experts ("Expert Evaluation Panel") evaluated all projects using 11 criteria and 22 detailed indicators. In the second Master Plan, the evaluation approach shifted to an annual focus on two highly relevant policy clusters. Under the third Master Plan, evaluators assessed one-third of all projects each year. The number of evaluation indicators was reduced to 8 criteria and 8 detailed indicators, and monitoring of performance across the seven major policy sectors was strengthened. In the fourth Master Plan, all projects were evaluated annually through both external expert evaluation and policy case monitoring by the expert support institution (KREI). The evaluation indicators were further reduced to five, and the "Rural Quality of Life Impact Indicator" was introduced to improve the timeliness and relevance of policy feedback.

The most recent monitoring and evaluation of the 2024 implementation plans used a two-track system in preparation for the fifth Master Plan, which places greater emphasis on policy evaluation and feedback. The expert support institution (KREI) conducted a basic quantitative evaluation of all projects. The Expert Evaluation Panel conducted a qualitative in-depth evaluation of key tasks, focusing on those directly linked to major sectoral performance indicators under the Master Plan.

The Policy Corrective Action Review, established through the 2021 amendment to the Rural Quality of Life Act, offers a mechanism for more effective follow-up when evaluation results show insufficient policy performance. Although the legal basis was introduced in 2021, formal implementation began in 2024. Under this system, projects designated for pre-consultation must complete a formal corrective process: the implementing ministry or agency prepares an action plan, the Rural Quality of Life Committee reviews the plan for feasibility and adequacy, and the ministry or agency then reports the results of corrective actions. Before the system's full launch, four projects were designated on a preparatory basis in 2023, followed by two official designations in 2024.

National Minimum Service Standards for Rural Areas

The National Minimum Service Standards for Rural Areas specify the minimum level of essential services that rural residents require to maintain their daily lives, regardless of whether these services are provided by the public or private sector. These standards were first introduced in the second Master Plan for Improving the Quality of Life of Farmers and Fishers in 2010, based on Article 44 of the Rural Quality of Life Act, and have been officially implemented since 2011. To support this system, the expert support institution (KREI) conducts an annual assessment of the achievement level of the standards. This assessment uses official government statistics, data from relevant ministries, administrative survey data from local governments, and supplementary information from private service providers. The results are reported to the Rural Quality of Life Committee.

The structure of the service standards has been revised several times to reflect changes in the Master Plan, evolving policy priorities, and needs identified in rural communities. Initially, the standards included 31 items across eight sectors: housing, transportation, education, healthcare, social welfare, emergency services, culture and leisure, and information and communications. Subsequent revisions occurred as follows: in 2013, the standards comprised nine sectors and 32 items; in 2015, seven sectors and 17 items; and in 2021, four sectors and 19 items.

In 2025, the standards were reorganized into 21 items across three sectors to align with the structure of the fifth Master Plan, which is based on three strategic pillars. The number of indicators assessing access to basic living infrastructure increased from six to nine. New indicators were introduced to evaluate access to grocery stores and essential private services, such as hairdressing, bathing facilities, laundry, pharmacies, and fuel stations, which more directly reflect the everyday needs of rural residents <Figure 5-9>.

Figure 5-9 Composition of the national minimum service standards for rural areas (revised under the Fifth Master Plan)

Economic Activity (1 item)	Housing and Living conditions (10 items)	Public and Basic Living Services (10 items)
• Employment Support	• Slate Roof Removal • Access to Essential Private Services(barbar/hair salon, public bath, laundry, pharmacy, gas station) • Access to Grocery Stores • Potable Water Supply • Sewage Services • Heating System • Public Transportation • Agricultural Waste • Community Safety(police partrol) • Fire Emergency Response	• Medical Care • Emergency Medical Services • Childcare and Early Childhood Education • Welfare Sercives for Older Adults • Primary Education • Secondary Education (Middle Schools) • Lifelong Learning • Cultural Services • Libraries • Sports and Physical Activity Facilities

The Rural Service Standards Council is an advisory body consisting of representatives from relevant ministries and agencies, sector specialists, and farmers and fishers. The council reviews proposed revisions, sets targets, and provides guidance on the overall operation of the system.

During the implementation period of the fifth Master Plan, additional procedures will be introduced to encourage improvement efforts in rural local governments with low achievement levels. These procedures include identifying service-vulnerable areas, providing specialized consulting, and offering targeted support to address service deficiencies.

Rural Proofing

When central or local governments design and implement policies or projects without considering the structural conditions of rural areas, such as limited transportation access, inadequate infrastructure, and weaker service delivery systems, these policies may unintentionally disadvantage rural communities compared to urban areas. To address this issue, Article 45 of the Rural Quality of Life Act requires the implementation of Rural Proofing. This policy coordination mechanism identifies

and reduces potential negative effects of government plans, policies, or programs on rural regions. The Act also states that both central and local governments should incorporate the results of these assessments into relevant policy formulation and implementation.

Subjects for Rural Proofing are selected according to rural needs, policy relevance, and the potential impact on the quality of life of rural residents. The selection process also includes expert opinions from relevant fields. Each year, the designated supporting agencies, KREI and KMI, assess at least two policies or programs and report their findings to the Rural Quality of Life Committee.

Beginning in 2025, the feedback function of Rural Proofing will be strengthened, requiring implementing agencies to report to the Committee on the corrective actions taken in response to the previous year's assessment findings. In 2024, Rural Impact Assessments addressed the themes of "Repurposing Underutilized Community Facilities" and "Digital Literacy Gap between Rural and Urban Areas."

Achievements and Limitations in Rural Welfare Policies

Progress in Meeting the National Minimum Service Standards for Rural Areas

Since the implementation of the policy to improve the quality of life for farmers and fishers, various indicators show that living conditions in rural areas have improved. Analysis of progress toward the National Minimum Service Standards for Rural Areas under the fourth Master Plan for Improving the Quality of Life of Farmers and Fishers (2020–2024) indicates that, in recent years, key aspects of living conditions (e.g., housing, water supply and sewage systems, heating, transportation, and safety) have generally improved.

Additionally, major service conditions in sectors such as healthcare and welfare, education and culture, and employment support have improved (see <Table 5-11>). In 2020, the first year of the Fourth Master Plan, there were eight unmet items among the 19 National Minimum Service Standards for Rural Areas: one in Education/Culture, six in Living Conditions, and one in Economic Activities. By 2024, the final year, this

number had decreased to four items, all within the Living Conditions category.

In the Employment Support category (consulting and training for job-seeking and entrepreneurship) and the Education/Culture category (library services), several items that did not meet their targets in the first year reached the achievement level by 2024.

In the Living Conditions category, although the number of unmet items decreased, four items (water supply coverage, public transportation availability, agricultural waste collection and disposal, and police patrol services) remained below target in the final year.

These items have also improved compared to previous years; however, additional efforts are needed to achieve the target levels set by the National Minimum Service Standards for Rural Areas.

Table 5-11 Progress in meeting the National Minimum Service Standards for Rural Areas (2020–2024)

Category	Indicator[1]	Target level (min, %)	Achievement Status by Year				
			2020	2021	2022	2023	2024
Living conditions	Removal Rate of Asbestos-Slate Roof Houses in Rural Areas	23%	7.8%	30.7%	34.8%	38.4%	41.6% (3.2%p▲)
	Access Rate to Public Water Supply in Myeon Areas	85%	77.0%	80.6%	81.6%	82.8%	83.5% (0.7%p▲)
	Access Rate to Sewage System in Gun Areas	76%	73.3%	74.6%	75.6%	76.6%	77.5% (0.9%p▲)
	City Gas Housing Supply Rate in Eup Areas	68%	68.1%	69.4%	70.0%	72.7%	73.3% (0.6%p▲)
	Access to Public Transportation at Least Three Times per Day within Ri	100%	87.1%	87.3%	89.1%	89.2%	89.2% (-)

1 South Korea's local administrative system consists of several tiers. Within a county ("Gun"), there are two types of township-level units: Eup and Myeon, as well as a village-level unit, Ri.
① **Eup** is a township-level unit that is more urbanized, with higher population density, larger service centers, and more developed infrastructure. ② **Myeon** is a township-level unit that is predominantly rural, characterized by lower population density and more limited access to public services. ③ **Ri** is the village-level unit within Eup or Myeon, generally consisting of small settlements that form the basic community unit in rural areas.

Category	Indicator[1]	Target level (min, %)	Achievement Status by Year				
			2020	2021	2022	2023	2024
Living conditions	Collection and Disposal of Agricultural Waste Available within Ri	100%	66.4%	75.2%	76.9%	80.7%	80.9% (0.2%p▲)
	Installation Rate of Surveillance CCTV at Key Points in Ri	60%	64.9%	71.3%	75.9%	75.4%	82.2% (6.8%p▲)
	At Least One Flexible Patrol per Day in Response to Residents' Requests	100%	62.9%	90.8%	95.4%	98.2%	97.1% (1.1%p▽)
	Arrival Within Target Time by Area After Receiving an Emergency Fire Call	70%	72.1%	65.0%	69.1%	58.4%	73.7% (15.3%p▲)
Health & welfare	Travel Time Using Vehicle to Access Medical Care	70%	72.1%	65.0%	69.1%	58.4%	73.7% (15.3%p▲)
	Ambulance Response Travel Time for Emergency Patients	30min	20.5min	14.6min	13.8min	12.1min	11.6min (0.5min ↓)
	Travel Time by Vehicle to Childcare Centers or Kindergartens	20min	5.8min	9.0min	9.1min	9.1min	9.2min (0.1min ↑)
	Proportion of Elderly Residents Able to Receive Care Services, Meeting 80% or Higher	80%	99.3%	100%	100%	100%	100% (-)
Education & Culture	Travel Time by Vehicle to Elementary and Middle Schools	10min	7.5min	7.3min	7.4min	7.3min	7.5min (0.2min ↑)
	Proportion of Residents Able to Access Lifelong Education within Eup or Myeon Areas	70%	88.2%	79.1%	84.6%	85.6%	85.8% (0.2%p▲)
	Travel Time by Vehicle to Access Cultural Programs	40min	24.7min	24.0min	24.1min	24.0min	23.9min (0.1min ↓)
	Travel Time by Vehicle to Access Library	10min	10.3min	9.9min	10.0min	9.7min	9.6min (0.1min ↓)
	Travel Time by Vehicle to Access Sports Facilities	30min	18.8min	17.0min	16.6min	15.8min	15.6min (0.2min ↓)
Employment Support	(Consulting and Training) Use of Professional Employment/ Entrepreneurship Consulting or Training Services Provided by the National or Local Government at Least Once per Year	86%	65.5%	68.8%	77.5%	87.1%	95.0% (7.9%p▲)

Note 1) Shading indicates items not achieved in each year.
2) For accessibility items, an ↑ indicates an increase in travel time compared to the previous year, while a ↓ indicates a decrease in travel time.
3) For the remaining items, an ▲ indicates an improvement in achievement rate compared to the previous year, while a ▽ indicates a decline in achievement rate.

Source: Korea Rural Economic Institute, 2025, *2024 Assessment and Monitoring of the National Minimum Service Standards for Rural Areas.*

Economic Activities and Employment Conditions in Rural Areas

Economic diversification in rural areas continues, as shown by increases in the number of businesses and newly established enterprises. These changes have resulted in indirect gains in both the economic and employment sectors. Although COVID-19 caused many business closures between 2019 and 2022, the growth rate of businesses and employment in rural areas was higher than in urban areas (see <Table 5-12>).

Social economy initiatives have been active in rural areas, with a significant increase in the number of social economy organizations. Cooperatives, in particular, have been established steadily, with approximately 700 to 800 new cooperatives founded each year since 2022. Many of these organizations are estimated to be actively involved in improving the quality of life for rural residents across various sectors.

Table 5-12 Key achievements in the economic activities and employment sector in rural areas

Number of Businesses per 1,000 Population	• Rural Areas: (2010) 71 → (2022) 140, an increase of approximately 97% • Urban Areas: 69 → 114, an increase of 66%
Number of Employees per 1,000 Population	• Rural Areas: (2010) 345 → (2022) 1,538, an increase of approximately 56% • Urban Areas: 350 → 465, an increase of 33%
Number of Startups per 1,000 Population	• Rural Areas: (2010) 8 → (2022) 17, an increase of approximately 116% • Urban Areas: 10→16, an increase of 54%
Activation of Social Economy (Cumulative by Year)	• social enterprises: (2012) 204 → (2023) 1,038 • village enterprises: (2012) 104 → (2023) 982 • cooperatives: (2012) 10 → (2023) 7,038

Source: Kim et al. (2025) Reconstructed.

Improvements in Rural Residents' Life Satisfaction and Perceived Happiness

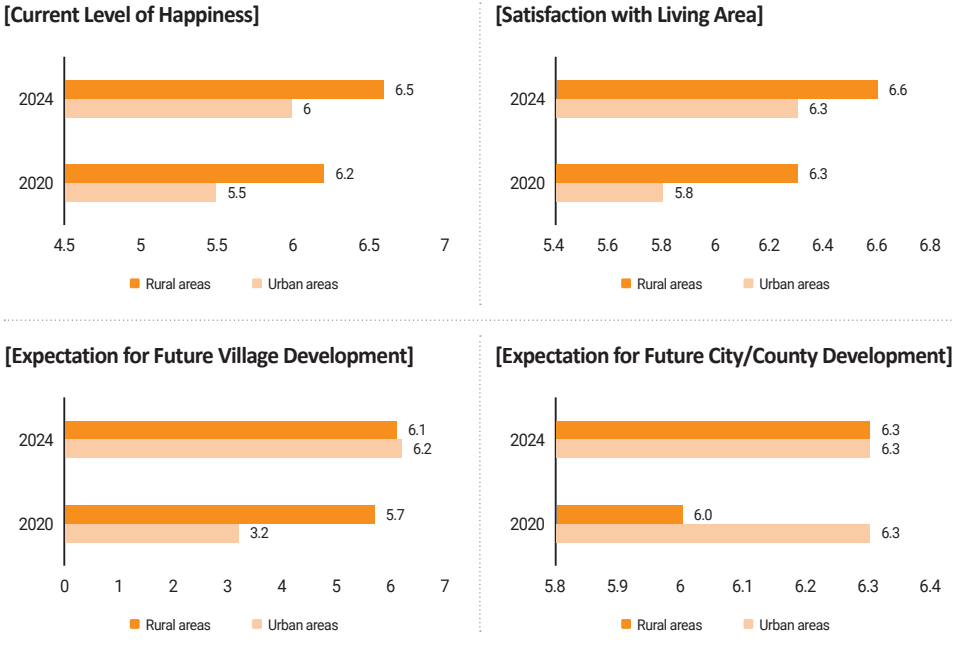
Improvements have also been observed in rural residents' subjective evaluations of life satisfaction (see <Figure 5-10>). When assessing changes in life satisfaction, including perceived happiness, satisfaction with the living environment, and expectations for future development of their town or county, rural residents' life satisfaction scores in 2024 increased slightly compared to five years ago, based on a 10-point scale.

In 2024, rural residents reported higher perceived happiness and satisfaction with their living area than urban residents, consistent with findings from 2020. Optimism

about the development prospects of their town or county increased more among rural residents than among urban residents during this period. Several factors likely contributed to this change. The ongoing implementation of rural welfare policies by the government, including an increase in the number of achieved targets in the National Minimum Service Standards for Rural Areas, appears to have improved the quality of life for rural residents.

Figure 5-10 Trends in residential satisfaction among rural and urban residents (2020–2024)

Unit: Points



Note 1) The residential satisfaction survey results for rural and urban residents in each year (2020: 3,012 participants / 2024: 3,650 participants).
2) Both surveys were measured using an 11-point scale (0–10 points).

Source: Korea Rural Economic Institute, various years, *the annual report on Residential Satisfaction of Rural Residents* reconstructed.

Satisfaction Gaps Between Rural and Urban Residents Across Quality-of-Life Domains

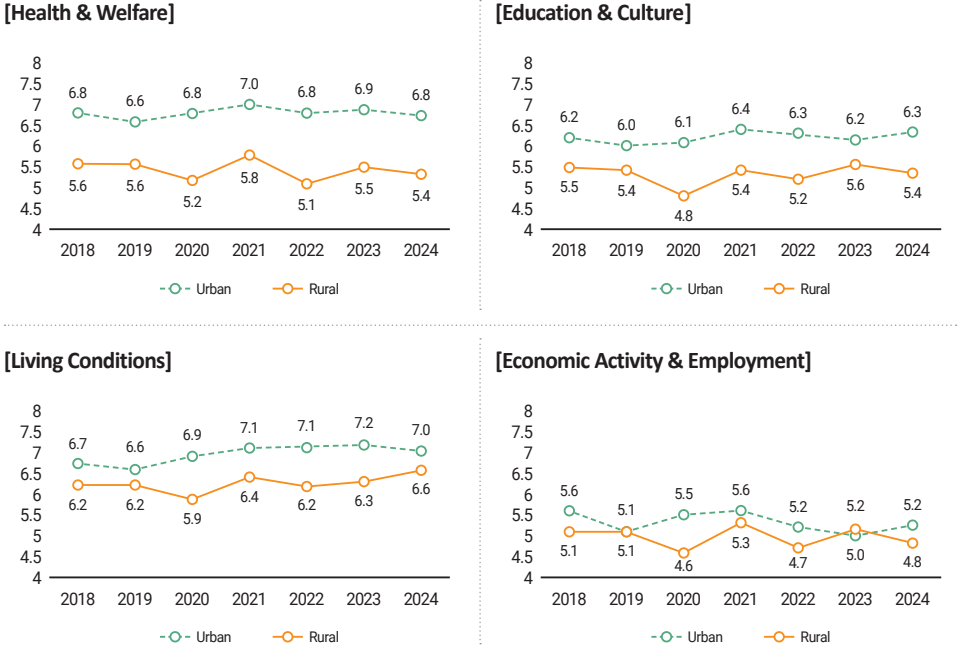
Despite these achievements, concerns persist that rural areas continue to lag

behind urban areas in several aspects of quality of life. <Figure 5-11> shows trends in satisfaction levels, measured on a 10-point scale, as reported by rural and urban residents across the four major quality-of-life domains defined in the Master Plan: Health and Welfare, Education and Culture, Living Conditions, and Economic Activity and Employment.

In contrast to earlier findings that rural residents reported higher levels of happiness and satisfaction with their living area than urban residents, current data show that rural residents generally report lower satisfaction levels across quality-of-life domains compared to urban residents. Residents of Myeon areas consistently report lower satisfaction scores than those in Eup areas across all domains <Figure 5-11>.

Figure 5-11 Trends in satisfaction across quality-of-life domains among rural and urban residents

Unit: Points



Note: Red Line(Rural areas), Blue Line(Urban areas).

Source: Korea Rural Economic Institute, various years, *the annual report on Residential Satisfaction of Rural Residents* reconstructed.

As of 2024, the gap between rural and urban areas in the Health and Welfare sector was the largest at 1.4 points. This pattern appeared in all subcategories of the sector (see <Table 5-13>). Rural satisfaction with health and welfare conditions was lower than in urban areas across all subcategories except for agricultural work safety.

Among the subcategories, the average gap in healthcare-related items was 1.9 points. This gap was calculated by summing the differences between rural and urban areas in five healthcare-related items: "access to healthcare services," "scope of healthcare services," "quality of healthcare services," "maternal healthcare services," and "timely emergency medical services." The satisfaction gap for "maternal healthcare services" was 2.1 points, indicating that rural residents experience significantly poorer conditions for maternal care.

When examining the gap in health services between Eup and Myeon areas within rural regions, disparities in healthcare-related conditions were particularly notable. The satisfaction gap between Eup and Myeon areas was largest in "access to healthcare services" and "scope of healthcare services," with a difference of 1.1 points in each category. These findings indicate that residents in Myeon areas experience poorer health and welfare conditions compared to those in Eup areas.

Table 5-13 Rural–urban differences in satisfaction with health and welfare subcategories (2024)

Unit: Points

Category	Healthcare Services			Maternal Healthcare Services	Emergency Medical Response Speed	Convenience of Welfare Services	Childcare Support	Welfare Support for Vulnerable Populations	Overall Average
	Access	Variety	Quality						
Urban areas(a)	7.5	7.2	7.1	6.6	6.8	6.4	6.3	6.2	6.8
Rural areas(b)	6.0	5.2	5.2	4.5	4.9	5.6	5.5	5.7	5.4
Eup(c)	6.6	5.8	5.8	5.0	5.4	6.0	5.9	5.9	5.8
Myeon(d)	5.5	4.7	4.8	4.1	4.5	5.3	5.2	5.6	5.0
c-d	1.1	1.1	1.0	0.9	0.8	0.6	0.7	0.4	0.8
b-a	-1.5	-2.0	-1.9	-2.1	-1.8	-0.7	-0.8	-0.4	-1.4

Note: All figures are rounded to two decimal places.
Source: Korea Rural Economic Institute, various years, *the annual report on Residential Satisfaction of Rural Residents* reconstructed.

The gap in the Education and Culture sector was the second largest after the Health and Welfare sector <Table 5-14>. Rural residents reported satisfaction with "cultural and leisure facilities" and "cultural and leisure programs" that was 1.3 points lower than that of urban residents, indicating a significant difference compared to other items. Among education-related subcategories, satisfaction with "public education level," "after-school education opportunities" for school-age children and adolescents, and "lifelong education opportunities" available to all citizens also showed clear urban–rural disparities.

Table 5-14 Rural–urban differences in satisfaction with education and culture subcategories (2024)

Unit: Points

Category	Quality of Public Education	After-School Education Opportunities	Lifelong Education Opportunities	Cultural and Leisure Facilities	Cultural and Leisure Programs	Cultural Community Activities	Opportunities for Local Cultural Activities	Overall Average
Urban areas(a)	6.7	6.7	6.3	6.5	6.3	5.8	6.0	6.3
Rural areas(b)	5.7	5.6	5.3	5.2	5.0	5.1	5.5	5.4
Eup(c)	6.1	6.1	5.6	5.7	5.6	5.4	5.8	5.7
Myeon(d)	5.4	5.3	5.0	4.7	4.6	4.8	5.2	5.0
c-d	0.7	0.8	0.7	1.0	1.0	0.6	0.6	0.7
b-a	-1.0	-1.1	-1.0	-1.3	-1.3	-0.7	-0.4	-1.0

Note: All figures are rounded to two decimal places.
Source: Korea Rural Economic Institute, various years, *the annual report on Residential Satisfaction of Rural Residents* reconstructed.

In the Education and Culture sector, residents of Myeon areas reported lower satisfaction levels than those in Eup areas (Eup: 5.7 points, Myeon: 5.0 points). Satisfaction with "cultural and leisure facilities" and "cultural and leisure programs" was the lowest, with a gap of 1.0 points. These results indicate that residents of Myeon areas face especially limited opportunities to participate in cultural and leisure activities; see <Table 5-15>.

In the Living Conditions sector, rural residents reported higher satisfaction than urban residents with the natural environment and safety. However, rural residents expressed

lower satisfaction in several key areas compared to urban residents: satisfaction with public transportation was 1.6 points lower, food purchasing options 1.5 points lower, and both daily living services and variety of dining options were 1.4 points lower.

Rural residents in Myeon areas reported poorer conditions regarding living infrastructure compared to those in Eup areas (Eup: 6.8 points; Myeon: 6.3 points). The differences were especially notable for food purchasing options, variety of dining options, and daily living services, which indicates that residents in Myeon areas have particularly limited access to essential amenities.

Table 5-15 Rural–urban differences in satisfaction with living condition subcategories (2024)

Unit: Points

Category	Public Transportation	Telecommunication Facilities	Basic Living Infrastructure	Heating Infrastructure	Daily Living Services	Food Purchasing Options	Variety of Dining Options	Housing Conditions	Overall Average
Urban areas(a)	7.2	7.8	7.5	7.6	7.3	7.7	7.4	6.9	7.0
Rural areas(b)	5.6	7.2	6.8	6.3	5.8	6.2	6.0	6.5	6.6
Eup(c)	5.9	7.5	7.1	6.8	6.5	6.9	6.6	6.7	6.8
Myeon(d)	5.3	7.0	6.5	5.9	5.3	5.6	5.4	6.3	6.3
c-d	0.6	0.5	0.5	0.9	1.2	1.4	1.3	0.4	0.5
b-a	-1.6	-0.6	-0.7	-1.3	-1.4	-1.5	-1.4	-0.4	-0.5

Category	Traffic Safety	Spacious Surroundings	Quiet Surroundings	Natural Disaster Safety	Crime Safety	Low Environmental Pollution	Neat Surroundings	Beautiful Natural Scenery and Landscape	Overall Average
Urban areas(a)	6.6	6.6	6.2	7.0	6.7	6.5	6.7	6.6	7.0
Rural areas(b)	6.5	7.0	6.9	6.8	6.9	6.7	6.8	7.0	6.6
Eup(c)	6.6	7.0	6.8	6.9	7.0	6.7	6.9	7.1	6.8
Myeon(d)	6.5	7.0	6.9	6.7	6.9	6.6	6.7	6.8	6.3
c-d	0.2	0.0	-0.1	0.3	0.1	0.1	0.2	0.3	0.5
b-a	-0.1	0.5	0.7	-0.2	0.2	0.2	0.0	0.4	-0.5

Note: All figures are rounded to two decimal places.

Source: Korea Rural Economic Institute, various years, *the annual report on Residential Satisfaction of Rural Residents* reconstructed.

Rural residents reported the smallest satisfaction gap with urban residents in the Economic Activity and Employment sector compared to all other sectors. Among the subcategories, "job availability" showed the largest satisfaction gap at 0.7 points, while "sufficient income" and "employment support" each had a gap of 0.6 points.

When comparing satisfaction between Eup and Myeon areas, Eup areas reported lower satisfaction levels than Myeon areas (Eup: 5.1 points, Myeon: 4.7 points); however, this gap was the smallest among all sectors. Residents of Myeon areas reported the lowest satisfaction with "job availability" and "ease of job searching" <Table 5-16>.

Table 5-16 Rural–urban differences in satisfaction with economic activity and employment subcategories (2024)

Unit: Points

Category	Ease of Job Search	Job Availability	Sufficiency of Income	Cost of Living	Employment Support	Local Food Transactions	Tourism Development	Support for the Economic Activities of Multicultural Residents	Overall Average
Urban areas(a)	5.0	5.0	5.3	5.1	5.4	5.5	5.2	5.5	5.2
Rural areas(b)	4.5	4.3	4.7	4.9	4.8	5.4	4.9	5.1	4.8
Eup(c)	4.7	4.5	4.9	5.1	4.9	5.7	5.2	5.4	5.1
Myeon(d)	4.4	4.2	4.5	4.8	4.6	5.1	4.7	4.9	4.7
c-d	0.3	0.4	0.4	0.3	0.3	0.6	0.5	0.5	0.4
b-a	-0.5	-0.7	-0.6	-0.2	-0.6	-0.1	-0.2	-0.3	-0.4

Note: All figures are rounded to two decimal places.
Source: Korea Rural Economic Institute, various years, *the annual report on Residential Satisfaction of Rural Residents* reconstructed.

Future Directions of Rural Welfare Policies

General Direction for Rural Welfare Policy

In rural areas, common constraints, including resource shortages, labor shortages, and transportation challenges, also affect the welfare sector. Although various policies have been developed and implemented to reduce the quality-of-life gap between

urban and rural areas, rural residents continue to experience inadequate services and limited access in key areas such as income, health and medical care, and welfare for children and older adults. Therefore, future rural welfare policies should aim to ensure that all individuals, regardless of region, can live without inconvenience. To achieve this, the following points must be considered.

Rural Aging and Population Decline: Rural areas are expected to continue experiencing aging and population decline. In response, welfare measures should be developed that are tailored to the demographic and living conditions of these areas.

Emphasis on "Software" Rather than "Hardware": Emphasis should shift from physical infrastructure ("hardware") to human-centered services ("software"). In rural areas with low population density, ensuring adequate staffing and improving accessibility are key priorities. Efficient use of available resources and active adoption of advanced technologies, such as information and communication technology (ICT), are also important.

Precise Diagnosis of Welfare Gaps: Precise diagnosis of welfare gaps requires accurate analysis of their causes and identification of appropriate solutions. In rural areas, residents may not use available welfare programs because of limited information or restricted access to transportation. Detailed analysis of these factors is essential for developing effective measures. Furthermore, current statistics do not differentiate between urban and rural areas or capture disparities within rural areas, such as those between Eup and Myeon areas. This limitation should be addressed.

Rural Areas as a Distinct Lifestyle: Rural areas are changing to support a lifestyle that differs from that of urban areas, rather than to compete with them. As a result, rural welfare should be designed to allow rural residents to live comfortably within their communities and experience a high quality of life in multiple aspects.

Improvement Tasks for the Rural Quality-of-Life Policy

Rural-sensitive policy design should be strengthened during the planning and design stages of rural welfare policy. Although various ministries implement detailed projects to improve quality of life, planning processes often apply urban-centric

standards and service models. For areas with high demand for services, such as health and medical care, education and culture, living conditions, and economic activities, policymakers should develop rural-specific service delivery models that consider rural living environments and available resources.

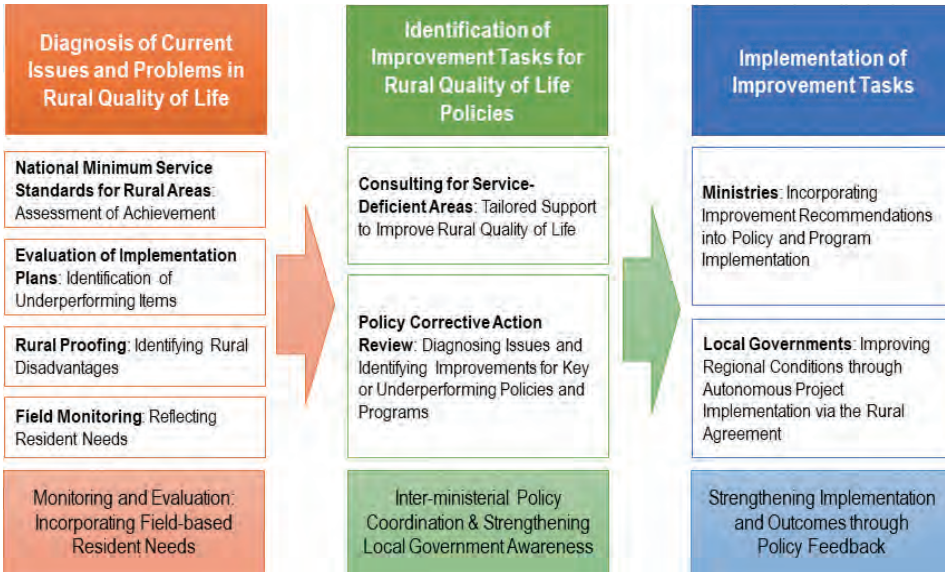
To achieve this, policymakers should develop and expand rural-specific service delivery models, and formally recognize and support community-based service innovations during policy planning. Community-driven service examples should be included as practical models in the Master Plan for Improving the Quality of Life of Farmers and Fishers.

Building effective governance for policy implementation requires a comprehensive structure that covers the entire process, including diagnosis, task identification, feedback, and implementation. To ensure the effectiveness of the Rural Welfare Policy, the policy improvement process should proceed as follows: first, diagnose the current status of rural life and related issues; second, identify improvement tasks; and third, provide feedback on policies and propose performance improvements (see <Figure 5-12>).

A more advanced diagnostic system must be developed to achieve this goal. Rural welfare service standards, social indicators, and rural impact assessments should be used to identify gaps and vulnerabilities within regions. Stronger field monitoring is needed to systematically reflect the needs of rural residents.

Strengthening policy coordination through the Rural Quality of Life Committee is essential to minimize duplication and omissions, and to ensure that improvement tasks align with budget allocation and institutional reforms. Local governments should establish administrative frameworks that support the integrated promotion of rural welfare tasks.

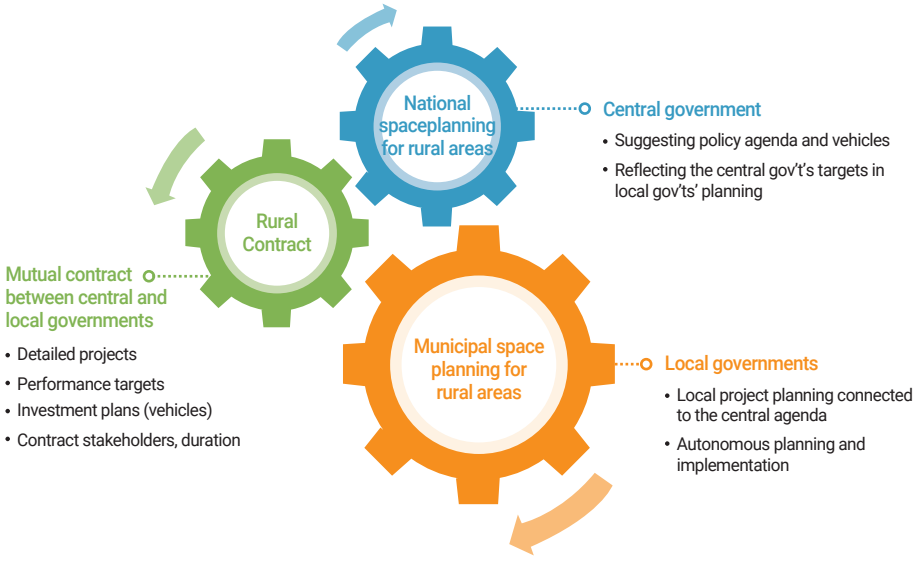
Figure 5-12 Diagnosis-task identification-feedback system for rural quality-of-life policies



A policy feedback system is necessary to institutionalize a joint approach between central and local governments. The Rural Agreement is a core tool that links the national rural space plan, developed by the central government, with local rural space plans, developed by local governments, to ensure effective implementation (see <Figure 5-13>). The central government provides policy agendas and investment directions, while local governments prepare project proposals that reflect regional characteristics and needs. The agreement defines the goals, investment plans, and roles of both parties, which supports stable project implementation. Active use of this system enables effective plan development based on regional diagnosis, strengthens local governments' capacity to implement integrated policies, and expands the role of private and community actors.

Additionally, research institutions should offer objective diagnostic and evaluation methods and strengthen the policy feedback system's knowledge base through field-based policy monitoring.

Figure 5-13 Contract-based approach for rural quality-of-life policy implementation



Source: Korea Rural Economic Institute, 2020, *Agriculture in Korea 2020.*

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3. Rural Development Policy

Korea is evaluated as a country that achieved rapid development across politics, economy, and society in an extremely short period, from the level of one of the world's poorest countries in the 1950s. After per capita GNI surpassed $10,000 in 1994, it exceeded $20,000 in 2006 and $30,000 in 2017, reaching approximately $35,000 as of 2024. This economic growth also served as the backdrop for the unanimous passage in July 2021 at the 68th Trade and Development Board of the United Nations Conference on Trade and Development (UNCTAD) to reclassify Korea from the developing country group (List A) to the group mainly comprising advanced countries (List B). Korea has grown from an agricultural nation to a world-class manufacturing powerhouse and is expanding its global influence through cultural contents such as K-Pop, K-Drama, and K-Beauty.

This industrialization process was accompanied by accelerated urbanization. The urbanization rate, which was only about 21% in the 1950s, rose to approximately 81.5% as of 2024. Urbanization led to concentration in the capital region and large-city-centered development, causing national territory imbalance and problems of low birth rates and aging. In particular, rural areas have been facing structural crises such as labor shortages and community weakening because of ongoing population outflow since 1968, driven by urban–rural growth gaps and living environment disparities. In response to these changing Korean society and rural conditions, the government has pursued various rural development policies, shifting paradigms from resolving growth gaps to improving quality of life (QoL) and enhancing sustainability.

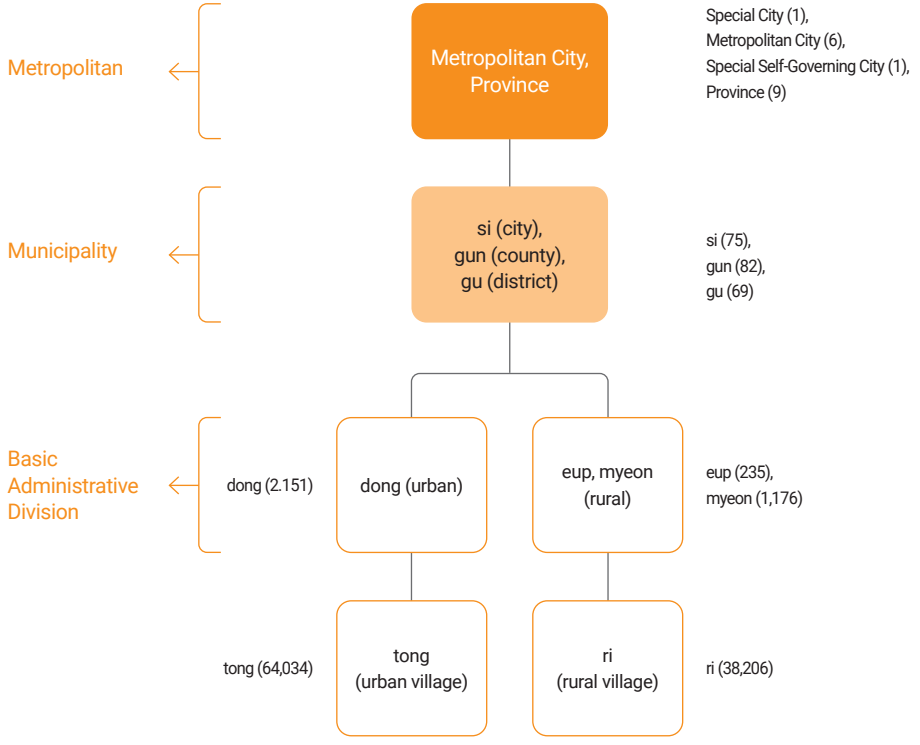
Changes in Rural Conditions

To understand Korea's rural development policy, it is necessary first to examine changes in rural population, spatial, and economic structures, as well as the governance system.

Korea's land area is 100,449 km², with a total population of approximately 51.81 million

as per the 2024 population census, exhibiting one of the world's highest population densities. With approximately 64% of the national territory being mountainous, the population density on actual usable land is even higher. Korea classifies dong (동, urban districts forming city centers) as urban areas and eup/myeon (읍/면) as rural areas based on administrative divisions. In the past, cities (si) were classified as urban and counties (gun) as rural; however, as typical rural areas are distributed around city centers even within cities administratively, the current classification uses eup/myeon as the criterion.

Figure 5-14 Korea's administrative district system and urban/rural division



Source: Ministry of the Interior and Safety, 2024.

According to this criterion, the rural population decreased from 18.17 million (58.8% of the total) in 1970 to 8.76 million (18.0%) in 2010. However, with an increase in migration from urban to rural areas, it slightly rose to 9.74 million (18.8% of the national population) in 2024. Regardless of this quantitative decrease, the rural population structure is rapidly aging. As of 2024, the proportion of those aged 65 and over in the rural population reaches 26.6%, with 1,275 eup/myeon exceeding 20%—accounting for 90.9% of all eup/myeon. In particular, the average aging rate in myeon areas is 34.1%, classifying most rural regions as "super-aged societies."

While the total rural population is stable or slightly increasing recently, spatial distribution is highly imbalanced. As of 2024, among 1,403 eup/myeon nationwide, about half of the rural population is concentrated in the top 10% (140) most populous ones, while the bottom 10% house only 1.6% of the rural population. Along with this imbalance, the number of undersized eup/myeon with populations under 2,000 increased from 167 in 2000 to 396 in 2024, with an average aging rate of 50% in these areas, collapsing the minimum population base needed to sustain local communities.

Table 5-17 Trends in rural population by year

unit: thousand persons, %

Category	1990yr	2000yr	2010yr	2015yr	2020yr	2024yr
National	43,411	46,136	48,580	51,069	51,829	51,806
dong(urban)	32,309	36,755	39,823	41,678	42,065	42,067
eup·myeon (rural)	11,102	9,381	8,758	9,392	9,764	9,739
- eup	3,604	3,756	4,200	4,617	5,113	5,207
- myeon	7,498	5,625	4,558	4,775	4,651	4,532
rural rate (%)	25.6	20.3	18.0	18.4	18.8	18.8

Source: KOSIS, various years, *Population and Housing Census.*

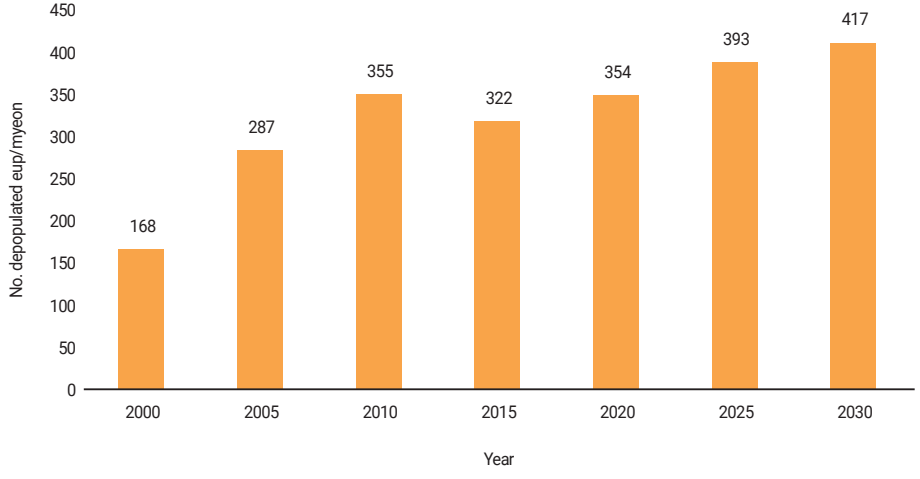
Table 5-18 Trends in the rural aging rate by year

unit: %

Category	2000yr	2005yr	2010yr	2015yr	2020yr	2024yr
National	7.3	9.3	11.3	13.0	16.0	19.5
eup·myeon(rural)	14.7	18.6	20.9	20.6	23.0	26.6
- eup	9.6	11.8	13.5	14.4	16.8	20.1
- myeon	18.1	24.2	27.8	26.7	29.9	34.1

Source: KOSIS, various years, *Population and Housing Census.*

Figure 5-15 Number of depopulated eup/myeon by year



Source: KOSIS, various years, *Population and Housing Census.*

These changes are not merely issues of population size but directly impact the maintenance of daily living services. As populations decline and aging intensifies, essential services such as shops, pharmacies, clinics, barbershops, and restaurants are disappearing in increasing numbers of eup/myeon, accelerating youth outflow

and creating a vicious cycle that drains rural vitality. Declining youth populations weaken village-level joint economic activities and community functions, diminishing local problem-solving capacities. Consequently, maintaining and managing traditional culture, landscapes, and heritage scattered throughout rural areas is becoming increasingly difficult.

Meanwhile, the occupational structure of rural residents has diversified significantly. While the number of agricultural, forestry, and fisheries workers has decreased, non-agricultural occupations such as professionals and office workers have continuously increased. According to the National Business Survey, the proportion of businesses located in rural areas rose from 18.6% in 2010 to 22.5% in 2023, and that of rural workers rose from 16.9% to 20.5% over the same period. In this process, the share of primary industry (agriculture, forestry, fisheries) declined, while tertiary industry (services) surged significantly.

Table 5-19 Trends in the share of rural businesses by year

unit: %

Category	Primary Industry (Agriculture, Forestry, and Fisheries)	Secondary Industry (Mining and Manufacturing)	Tertiary Industry (Services)	total
2010yr	0.1	2.9	15.6	18.6
2015yr	0.1	3.6	16.1	19.8
2020yr	0.2	3.4	17.8	21.4
2022yr	0.2	3.5	18.3	21.9
2023yr	0.2	3.2	19.2	22.5

Source: KOSIS, various years, *Census on Establishments*.

From a governance perspective, Korea was traditionally a centralized state; however, it has implemented local autonomy since 1995. Currently, residents directly elect the heads of 17 metropolitan and 234 basic local governments, along with local council members. Politically, this marks a transition from a centralized to a

decentralized state, but low fiscal self-reliance of local governments allows the central government to exert a strong influence through financial support. For example, the MAFRA guides local policy directions through various agricultural and rural development subsidy programs, significantly shaping rural forms and functions.

These changes in population and industrial structures, along with the central-local fiscal and administrative systems, provide a crucial context for understanding the direction and effects of Korea's rural development policies. The next section examines how these policies have evolved by period amid such conditions.

Changes in Rural Development Policies

Community Development Movements of the 1960s and the Saemaul Undong (New Village Movement) of the 1970s

This period can be regarded as the initial stage of rural modernization, in which rural living-environment improvement was combined with resident mobilization and participation under post-war reconstruction and state-led economic development strategies.

After liberation from Japanese colonial rule, the establishment of the government, and the Korean War, society gradually stabilized, making it possible to implement rural development projects in earnest. The community development movement, which began in the late 1950s and was carried out in the 1960s, applied to Korea a rural development model promoted by the UN and the International Cooperation Administration (ICA) for developing countries in the post-Second World War period. Under this movement, the government provided budgetary and technical support so that project plans prepared by village residents and extension workers at the village level could be implemented. Projects prepared with the support of extension workers were classified as self-help projects, implemented primarily with local labor and finance, and assisted projects, implemented with external support. This experience served as an important model for the implementation methods and strategies of the Saemaul Undong in the 1970s.

The first five-year economic development plan, launched in 1962, adopted an export-oriented industrialization strategy centered on manufacturing, which intensified rural out-migration and widened urban–rural gaps. From 1968 onwards, the agricultural population began to decline, and rural residents' dissatisfaction with the growth disparity between urban and rural areas grew. Simultaneously, cities faced problems related to traffic, housing, water and sewerage, and education as rural migrants flowed in. In this context, it became a major policy task to increase farm household income, improve living environments and production bases in lagging rural villages—such as roads, houses, water and sewerage, farm roads, land consolidation, and river improvement—and build social overhead capital to create rural living conditions comparable to those in urban areas.

In the late 1960s, when the global economic downturn made export-oriented growth more difficult, large-scale public investment to stimulate domestic demand and boost the economy became necessary. Against this backdrop, the Saemaul Undong, launched in 1971, was implemented as a representative rural development program that simultaneously pursued rural living-environment improvement, changes in residents' mindsets, and income growth. The Saemaul Undong was a strategy that combined the historical asset of village communities inherited from a traditional society with the experience of the 1960s community development movement; it could be described as a model in which strong government leadership (top-down) was combined with the self-help efforts of village communities (bottom-up). It encompassed a package of projects, including improvement of village roads, bridges, and internal alleys, introduction of income crops, establishment of Saemaul factories, and civic-mindedness education for residents. It also adopted an incentive system that provided more support to high-performing villages to encourage other villages to follow.

Between 1971 and 1982, a total of KRW 5,258.3 billion was invested in the Saemaul Undong, of which the government contributed 51% and residents 49%. The residents' contribution primarily comprised in-kind provisions such as labor and land, illustrating that the Saemaul Undong was a large-scale participatory rural development program.

Consequently, traditional thatched-roof houses, which had long been the dominant type in rural Korea, were quickly replaced with modern roofing materials such as slate. Bridges were built across streams at the entrance of villages, and access roads and internal village roads were widened and paved. Village halls were constructed in almost every village. Within roughly a decade, rural Korea, which had maintained a relatively unchanged physical appearance for a long time, underwent a drastic transformation in its external landscape and living environment. This experience is still frequently cited in discussions of rural development in many developing countries.

Central Government-led Rural Development in the 1980s–1990s

The 1980s and 1990s were a period in which large-scale central government investments raised rural infrastructure and public service levels to standards comparable to those in urban areas but simultaneously revealed the limitations of a highly centralized, top-down approach.

As industrialization progressed in the 1980s, the share of agriculture in the national economy declined. The share of agriculture, forestry, and fisheries in total production fell from 13.5% in 1980 to 7.6% in 1990, and their share in total employment decreased from 32.3% to 17.1% over the same period. The farm household population also declined from 10.827 million (28.4%) in 1980 to 6.661 million (15.5%) in 1990. As rural economic difficulties deepened, the reduction of price support measures, such as government grain purchases, and the phase-out of preferential interest rates on agricultural loans led to a rapid increase in farm household debt and a rise in anxiety over livelihood security.

In this context, the government introduced a series of policies such as the Comprehensive Measures for Rural and Fishing Villages (1986), Measures to Reduce the Burden on Farm and Fishing Households (1987), Special Measures to Reduce Debt (1989), and the Comprehensive Measures for the Development of Rural and Fishing Villages (1989). When investments in the agricultural sector did not yield the expected improvements in productivity and farm income, budget allocations for rural development increased and the scope of programs diversified. The primary objective

of rural development policy during this period was to improve living conditions through physical upgrading and to expand non-farm income opportunities. The government implemented projects to improve rural housing environments by expanding and upgrading roads, telecommunications, rivers, and other infrastructure in rural areas and by expanding educational, medical, and welfare facilities. Simultaneously, it established agro-industrial complexes in rural regions to promote agricultural product processing, create rural employment opportunities, and develop local specialties.

To secure stable funding, the Special Tax for Rural Development was introduced, which raised about KRW 15 trillion dedicated to investments in rural areas. In addition, laws such as the Special Act on the Development of Rural and Fishing Villages, the Rural Improvement Act, the Act on the Promotion of the Development of Remote Islands and Remote Areas, and the Rural Road Improvement Act were enacted to provide a legal basis for rural development programs. With these central government-led investments, electricity was supplied to every village by the late 1980s. By 2000, approximately 29% of farmhouses had been fully renovated, and about 25% had undergone partial improvements (e.g. kitchens and bathrooms). Paving rates for village access roads and connecting roads between villages increased, allowing automobile access to most villages nationwide, and piped water supply coverage exceeded 40%. Social and cultural infrastructure such as village halls and senior citizens' centers also expanded significantly.

Public health infrastructure, including health centers, sub-health centers, and health clinics, was upgraded, and modern medical equipment was introduced, significantly improving access to medical services in rural areas. From the late 1990s, social security measures for rural residents were introduced, including partial government subsidies for national pension contributions and reductions in health insurance premiums. Through the agro-industrial complex policy, 295 agro-industrial complexes were established nationwide by 2000, creating approximately 86,000 jobs, about 24% of which were held by farm household members, thereby contributing to the expansion of non-farm income.

However, the central government-led rural development model of this period also had clear limitations. As projects were implemented as budgetary programs within a limited time frame, they tended to be driven by administrative hierarchies, which weakened resident participation and autonomy while increasing dependency on the government. Implementing all projects with public funds reduced cost-effectiveness compared to self-help models. Moreover, standardized project guidelines prepared by the central government led to similar development patterns across the country, diluting local distinctiveness and "rurality" and contributing to the homogenization of rural spaces. These experiences later prompted a stronger emphasis on resident participation, regional characteristics, and local autonomy in rural development policies.

Rural Development in the 2000s Focused on QoL and Urban–Rural Exchange

The 2000s marked a period in which, as the economic significance of agriculture further declined, rural development policy shifted toward a multi-functional approach that emphasized the public functions of agriculture and rural areas, the QoL of residents, and urban–rural exchange.

The share of agriculture, forestry, and fisheries in total production income fell from 7.6% in 1990 to 4.6% in 2000 and 2.9% in 2005, while that in total employment declined from 17.1% in 1990 to 10.9% in 2000 and 7.9% in 2005. The share of the farm household population over the same period dropped from 15.5% to 7.1%. Rural population decline and aging generated various challenges, including under-utilization of public facilities, the weakening of rural service centers, the closure and consolidation of primary schools, and the retreat of private medical facilities from rural areas.

Under these structural conditions, the basic orientation of agricultural policy gradually shifted. While agricultural structural adjustment remained an important policy goal, growing public concern over food safety, quality, and environmental issues elevated agendas such as environmental-friendly agriculture, safe food, and distribution system improvements. Increasing attention was also paid to the income,

welfare, and regional development of rural residents. Policy implementation methods began to move away from government-dominated approaches toward collaborative governance involving producers, local residents, consumers, and government.

The most notable feature of the rural development policy in the 2000s was the emphasis on the public-interest functions of agriculture and rural areas. Policy objectives explicitly incorporated the amenity functions of rural landscapes, environmental conservation, and the land stewardship function of agriculture. Programs such as landscape conservation direct payments were introduced to enhance the environmental and amenity value of rural areas. Simultaneously, the target of rural development policy expanded from traditional farmers and rural residents to include urban citizens. For example, in cultural village development projects, outsiders (non-locals) began to be granted the same priority as rural residents when selecting new residents from around 2000, whereas they had previously been excluded or given low priority. A variety of projects were implemented to promote urban–rural exchange, including "one company–one village" and "one school–one village" partnerships, rural tourism at the village level, and the creation of second-home or countryside housing developments geared to urban residents. Tax exemptions on capital gains for urban residents who sold rural houses and the easing of regulations on the acquisition of small plots for weekend farming were also introduced.

Another important change was the introduction of project-bidding (competition-based) systems that emphasized resident participation. Considering the lesson that development projects in areas with low local capacity often produced limited effects, the government adopted a strategy of selective concentration to improve budget efficiency. Under these bidding systems, the central government no longer designated project sites unilaterally; instead, local governments and communities designed project proposals that were then evaluated and selected. Comprehensive Rural Village Development, Green Rural Experience Village Development, Small Town Development, Rural Service Center Development, and New Vitalization (Sin-Hwalryeok) projects are representative examples.

During this period, numerous programs were conducted in areas such as village-level rural tourism, urban–rural exchange, local resource development, and expansion of rural welfare. In the education sector, scholarships for children of farmers, special university admission tracks for students from rural areas, and student loan schemes were expanded. In health care, support for health centers, sub-health centers, and rural health facilities was strengthened. Social security measures such as subsidies for national pension contributions for farmers and fishers, payment of special old-age pensions, reductions in health insurance premiums, expansion of the National Basic Livelihood Security System, farm household helper programs, and initiatives for rural women and older persons were introduced.

The "Special Act on the Improvement of the Quality of Life of Farmers and Fishers and the Promotion of Development in Rural Areas" (commonly referred to as the "Quality of Life Act"), enacted in 2004, provided a comprehensive legal basis for medium- to long-term rural policy by specifying government responsibilities and policy instruments in four major areas: rural welfare infrastructure, educational conditions, regional development, and the promotion of multi-functional industries. In the same year, a mid- to long-term plan for agriculture and rural communities and a ten-year investment plan were established, ensuring continuity in rural development programs.

The experience of this period is regarded as a paradigm shift toward an advanced-economy rural policy model that would redefine rural areas as multi-functional spaces—not only for production but also for environment, leisure, and exchange—and seek the future of rural regions in the context of their relationships with urban populations.

Rural Vitalization through 6th-Industry Development and Return Migration in the 2010s

The 2010s were characterized by efforts to revitalize rural areas by strengthening local autonomy and adopting a "living-area" approach while promoting sixth-industry development and return migration (return-to-farming and return-to-rural programs).

Inaugurated in 2013, the Park Geun-hye administration introduced the concept of "Regional Happiness Living Spheres (jihyeong bogeun saenghwal-gwon)" as the overarching framework for regional development policy. Moving away from a focus on physical growth, the new approach aimed to enhance residents' QoL by establishing integrated living spheres in which core cities, rural service centers (eup and myeon seats), and rural villages are functionally interconnected. Recognizing that everyday living spheres already transcend administrative boundaries, the policy sought to provide combined access to basic infrastructure, jobs, education, culture, and welfare services based on actual living areas. These living spheres were categorized into three types—core city living spheres, urban–rural linkage living spheres, and rural and fishing village living spheres. Under the leadership of the Presidential Committee on Regional Development, guidelines were prepared, locally defined living spheres were established, pilot projects were initiated, and programs such as the "Vulnerable Areas Living Conditions Improvement Project" were implemented.

The Moon Jae-in administration, inaugurated in 2017, focused on institutional reforms aimed at reducing central government intervention and expanding the authority of local governments. Approximately KRW 3.5 trillion from the budget items under the Special Account for Regional Balanced Development was transferred to local governments from 2020, enabling local governments to design and implement their own village development and basic living infrastructure projects, while the central government concentrated on revitalizing rural centers and strengthening local capacities.

In the agricultural sector, the policy goal was to create "rural areas to which people return." Strategic directions included making rural areas more beautiful and pleasant, improving the QoL for rural residents, and promoting regional circular economies and community revitalization. To this end, projects such as the "3-6-5 Living-Area Initiative" were implemented to upgrade physical environments and improve service levels, while the "New Vitalization Plus (Sin-Hwalryeok Plus)" program—building on the earlier New Vitalization projects—was introduced to strengthen local capacities and autonomous development. In parallel, policies to promote sixth-industry development

that combines agriculture, processing, tourism, and services, as well as programs to encourage return-to-farming and return-to-rural migration and to revitalize rural centers, were expanded. These initiatives collectively sought to reposition rural areas as new places to live and work.

Spatial Reorganization and Integrated Rural Policy in the 2020s

Since the 2020s, Korea's rural policy has been shifting from fragmented, project-based support toward an integrated rural policy framework that combines spatial planning with fiscal agreements. The core instruments of this new approach are the Rural Spatial Plan and the Rural Agreement.

The Rural Spatial Plan is a medium- to long-term statutory spatial plan at the si–gun (city–county) level that comprehensively coordinates land use, settlement structure, living services, industry, environment, and landscape across rural territories. Its primary aim is to maintain minimum levels of living services and settlement infrastructure in the context of population decline and aging by delineating rural living areas and reassigning the functions of villages, eups, myeons, and rural centers. It also seeks to balance development and conservation and prevent haphazard development by designating various types of "Rural Specialization Zones," such as agriculture, livestock, renewable energy, tourism, and conservation zones.

The Rural Agreement is a contractual mechanism through which the central and local governments agree in advance on medium-term investment directions, fiscal support levels, and performance targets based on the Rural Spatial Plan and living-area development strategies. Local governments autonomously prepare comprehensive plans and project packages and receive financial support from the central government in an integrated manner covering multiple sectoral programs. Through the agreement, the central government can clarify policy objectives and performance indicators, while local governments gain greater flexibility in designing and prioritizing project combinations suited to local conditions. The system is, thus, regarded as a partnership-based model of rural development between central and local governments.

Inaugurated in 2022, the Yoon Suk-yeol administration viewed agriculture as a strategic industry and pursued rural policy centered on nurturing young farmers, expanding smart agriculture, and improving rural living conditions. Young farmers have been supported with packages combining start-up settlement grants, management funds, and housing and welfare services, while the dissemination of smart farming and digital technologies has been promoted to enhance productivity and employment in rural areas. Internationally, the government has sought to strengthen food security and expand agricultural ODA while promoting the global diffusion of the "K-Agriculture" model.

The Lee Jae-myung administration, inaugurated in 2025, has defined agriculture as a national strategic industry and rural areas as a key foundation for building an inclusive state. It has identified the introduction of basic income schemes for rural and fishing communities and the expansion of public-interest direct payments as core directions of agricultural policy. In particular, the budget for pilot programs on basic income in rural and fishing areas has been significantly increased to support experiments in multiple regions in order to strengthen the settlement and consumption base in rural areas through area-based income support encompassing both farmers and non-farm residents. Simultaneously, the government has emphasized integrated rural development policies that link living services, transport and welfare infrastructure, and youth settlement support through the Rural Agreement and Rural Spatial Plan frameworks.

Taken together, the Rural Spatial Plan and Rural Agreement systems show that, after a period of rapid industrialization and urbanization, Korea is redefining rural areas not merely as recipients of subsidies but as strategic territorial spaces that must be managed through planning and invested in strategically. The combination of "spatial planning + fiscal agreements" provides a model for linking long-term visions for rural regions with concrete programs and budgets, offering useful policy lessons for other countries seeking sustainable rural development.

Future Directions of Rural Development Policy

Korea's rural areas have long faced structural crises such as population out-migration, aging, and the relative decline of agriculture under rapid industrialization and urbanization. In particular, the concentration of population in the metropolitan area and the weakening of rural settlement bases will continue to pose a risk of rural hollowing and even extinction for some time. Nonetheless, the advancement of information technologies, the expansion of high-speed transport networks, the increasing number of retirees who are relatively free from constraints related to work and children's education, rising social recognition of the intrinsic value of rural areas, and growth in return-to-farming and return-to-rural migration provide opportunities for a new transition in rural Korea.

In the future, rural areas have the potential to transform from spaces devoted primarily to food production into new types of spaces that serve simultaneously as places of residence and rest for citizens and as locations for diverse jobs and entrepreneurial activities. Diverse population groups are expected to live in and relate to rural areas, including commuters who travel daily between rural living spaces and urban workplaces, young people who start businesses in rural areas, and "relationship-based residents" who stay in rural communities on weekends or during certain seasons. The further spread of sixth-industry development will also help to continuously create new types of economic activities and occupations beyond conventional agriculture.

In this changing context, Korea's rural policy must focus on securing sustainable settlement conditions in response to a situation where opportunities and threats coexist. The increase in vacant houses, unplanned development, and declining access to services can undermine the landscape and environmental value of rural areas, making the expansion of basic living infrastructure (SOC) and the improvement of spatial management systems urgent tasks. It will be essential to expand employment, welfare, and cultural services to levels comparable to those in cities, especially in light of the settlement needs of diverse groups such as youth and women, and to

combine these with the upgrading of services based on digital technologies, including telemedicine, distance education, and smart agriculture. Mitigating the constraints associated with living in rural areas through such measures will help attract new residents and strengthen the settlement base.

Simultaneously, climate change and growing demand for well-being and leisure among citizens are increasing the importance of rural areas, which are becoming key spaces for ecosystem conservation and carbon neutrality, as well as places of rest and healing that cannot easily be provided in cities. Local communities in rural areas will be expected to play an active role in biodiversity conservation, renewable energy production, and the implementation of nature-based solutions (NbS).

As population decline and community weakening intensify, self-help community activities based on local residents' participation will become indispensable for sustaining rural communities. Traditional forms of community organization need to be inherited and renewed into more open models that include new participants such as urban migrants and other newcomers. Various types of community-based organizations—such as social economy entities, village enterprises, and cooperatives—have the potential to become key actors that simultaneously pursue the preservation of "rurality," the resolution of local problems, and residents' self-realization.

Ultimately, future rural policies in Korea need to be driven along four main axes: (1) securing stable settlement foundations, (2) revitalizing region-specific rural economies, (3) strengthening responses to climate and environmental challenges, and (4) regenerating communities and expanding resident participation. By integrating information and communication technologies with rural resources, policy should enrich the lives of residents, generate economic value while preserving rural character, and recon Figure rural areas as spaces where diverse groups can live with pride. Rural Korea is expected to establish itself as a new strategic territorial space that offers opportunities for a good life to all citizens, and policy efforts to support this transition are likely to become more concrete and robust in the years ahead.

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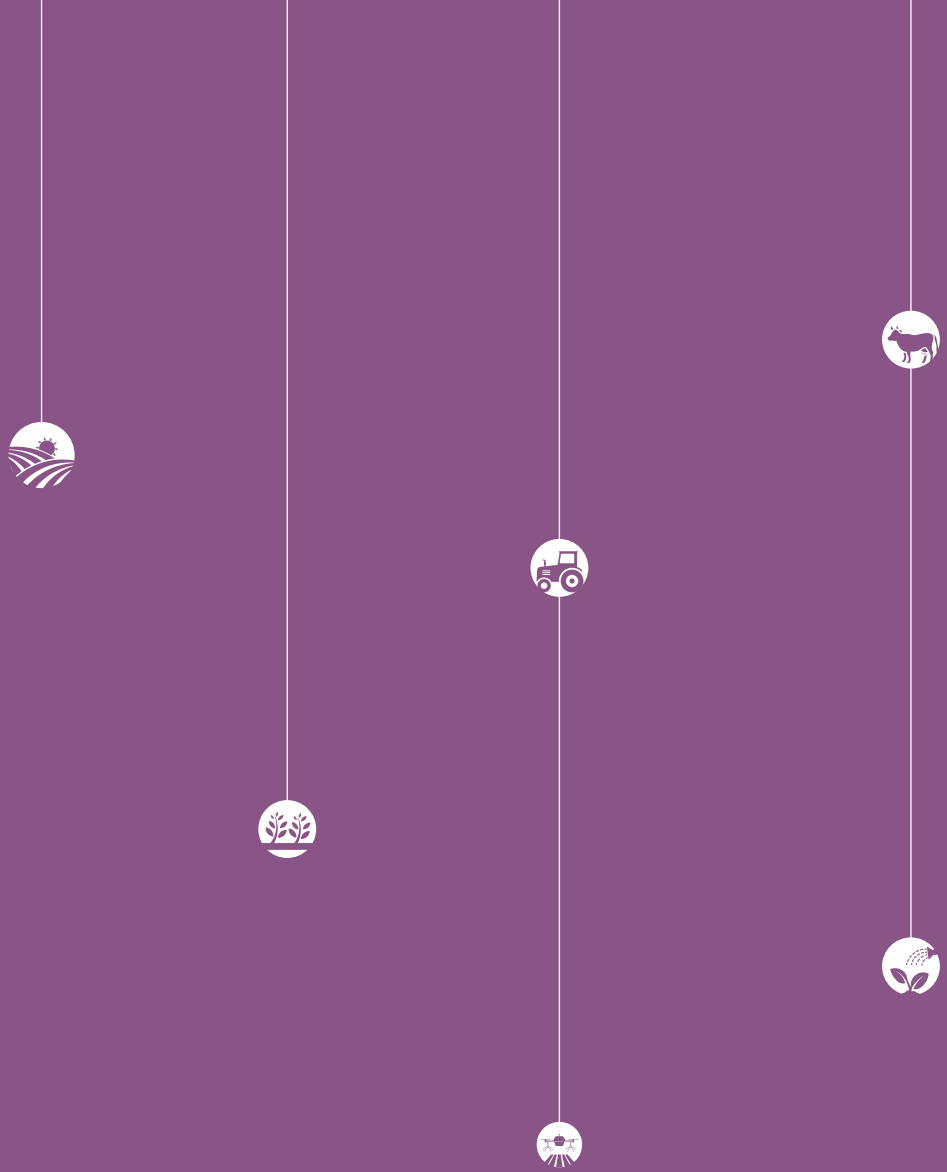

Agriculture in Korea 2025

CHAPTER

06

Emerging Issues in Agricultural and Rural Policies

1. The Current Status and Policy of Agro-food R&D
2. Sustainable Agriculture
3. Agricultural Income and Management Stability
4. Handover of Farming to the Next Generation
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CHAPTER 06

Emerging Issues in Agricultural and Rural Policies

1. The Current Status and Policy of Agro-food R&D

Agricultural and Food R&D Investment

R&D investment in the agricultural and food sector is primarily supported by national R&D funding from the Ministry of Agriculture, Food and Rural Affairs (MAFRA), the Rural Development Administration (RDA), and the Korea Forest Service (KFS). In 2023, the combined R&D budget for these organizations is KRW 1.2937 trillion. From 2017 to 2023, the overall budget for agriculture, food, and forestry (including RDA and KFS) increased by an average of 5.8% per year, while the national R&D budget grew by an average of 7.9% per year. As a result, the share of the R&D budget in the total agriculture, food, and forestry budget declined from 4.7% in 2017 to 4.2% in 2023 (see <Table 6-1>).

Table 6-1 R&D budget of the Ministry of Agriculture, Food and Rural Affairs, Rural Development Administration, and Korea Forest Service

unit: 100 million WON, %

Category	2017	2018	2019	2020	2021	2022	2023	Average annual growth rate
National R&D(A)	193,927	197,759	206,254	238,803	265,791	286,782	305,731	7.9
Agricultural and Food R&D(B)	9,206	9,447	9,511	10,092	11,334	12,257	12,937	5.8
(B/A)	(4.7)	(4.8)	(4.6)	(4.2)	(4.3)	(4.3)	(4.2)	-
MAFRA	1,890	1,973	1,956	2,076	2,281	2,662	2,535	5.0
RDA	6,288	6,454	6,467	6,869	7,705	8,124	8,777	5.7
KFS	1,028	1,020	1,088	1,147	1,348	1,471	1,625	7.9

Source: National Science & Technology Information Service, various years.

Agricultural R&D investment is mainly public, with private R&D investment representing a smaller proportion than in other industries. Of the total domestic R&D investment (KRW 119.74 trillion in 2023), including private investment, agriculture accounts for about KRW 1.9788 trillion, or 1.7%. Private sector (corporate) R&D spending in agriculture is KRW 634.5 billion (32.1%), which is less than the KRW 898.7 billion (45.4%) spent by public research institutes. This private sector share is much lower than the 2023 corporate R&D to national R&D ratio of KRW 94.2968 trillion to KRW 119.74 trillion (79.2%); see <Table 6-2>.

Table 6-2 R&D expenses by R&D entity

unit : %

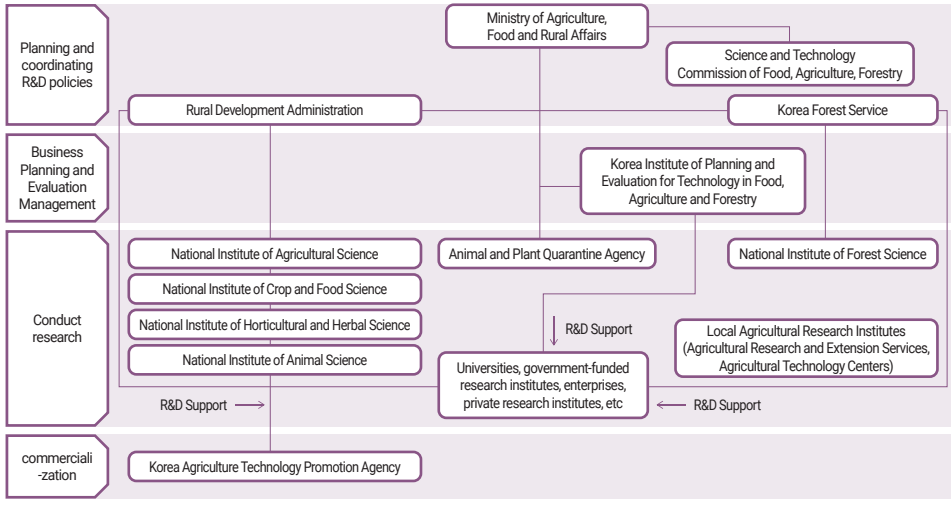
Category	Total R&D Expenses				R&D expenses in the Agricultural Sector			
	2020	2021	2022	2023	2020	2021	2022	2023
public research institutes	11.9	11.7	11.5	11.7	42.6	43.2	42.6	45.4
universities	9.0	9.1	9.1	9.1	20.9	21.3	20.2	22.5
enterprises	79.1	79.1	79.4	79.2	36.6	35.4	37.2	32.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: National Science & Technology Information Service, various years.

Korean Agricultural and Food R&D Promotion System and Entities

The Agriculture, Forestry, and Food Science and Technology Committee is the highest-level planning and coordination body established under the Agriculture, Forestry, and Food Science and Technology Promotion Act. The committee deliberates on policies and budget investment directions related to the development and promotion of agriculture, forestry, livestock, and food science and technology, and coordinates R&D projects across the ministry and agencies. Its primary responsibilities are integrated management of agricultural, forestry, and food science and technology R&D projects across the three ministries; establishing and coordinating comprehensive and implementation plans and key policies for the promotion of agriculture, forestry, and food science and technology; reviewing budget and investment directions; assessing the performance of key R&D projects through unit project and technology field evaluations; and ensuring diversity in agriculture, forestry, and food science and technology R&D by establishing a network of experts within and beyond the field <Figure 6-1>.

Figure 6-1 Agricultural and food R&D promotion system



Source: Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry.

The Ministry of Agriculture, Food and Rural Affairs (MAFRA) oversees research and development (R&D) policies in the agricultural and food sector, with the Animal and Plant Quarantine Agency serving as the research implementing agency. MAFRA is responsible for planning, evaluating, and managing R&D projects.

The Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry (IPET), established under the Act on the Promotion of Agricultural, Forestry, and Fisheries Science and Technology, is responsible for planning, evaluating, and managing MAFRA R&D projects. Universities, government-funded research institutes, corporations, and private research institutes implement these projects with support and management from IPET.

The Rural Development Administration (RDA) plans and manages R&D projects within the agency. The National Institute of Agricultural Sciences, the National Institute of Crop Science, the National Institute of Horticultural and Herbal Science, and the National Institute of Animal Science conduct R&D. The RDA also established and operates the Korea Agricultural Technology Promotion Agency (KOAT) under the Rural Development Act to support the practical application and commercialization of R&D results. The Agricultural Technology Commercialization Foundation is responsible for facilitating technology transfer, promoting and establishing infrastructure for R&D projects, and providing testing, analysis, and verification services.

In the forestry sector, the Korea Forest Service oversees R&D, with research and development conducted by its research institutes, including the National Institute of Forest Science. Additionally, local research institutes, such as the Provincial Agricultural Technology Institute, specialized crop testing centers affiliated with the Provincial Agricultural Technology Institute, and regional and city or county agricultural technology centers, conduct field application and development research. These institutions are responsible for guiding and disseminating developed technologies to the field <Table 6-3>.

Table 6-3 Agricultural and food R&D-related organizations and roles

Institutions		Roles
Ministry of Agriculture, Food and Rural Affairs		Establishment and implementation of general agricultural and food policies and R&D (technology) policies
Agriculture, Forestry, and Food Science and Technology Committee		Deliberation and coordination of matters related to policy establishment, comprehensive plan and implementation plan, budget investment direction, project evaluation and management for the promotion of agricultural, forestry and food science and technology
Korea Institute of Planning and Evaluation for Technology in Food, Agriculture and Forestry		Establishment of a comprehensive plan for fostering agricultural, forestry, and food science and technology, support for policy development, and planning, management, and evaluation of R&D projects under the Ministry of Agriculture, Food and Rural Affairs.
Rural Development Administration/ Korea Forest Service		Responsible for R&D (technology) policy under the agency. Promotes rural development projects based on R&D and technology.
Research institute	National and public research institutes under the Rural Development Administration	• National Institute of Agricultural Sciences • National Institute of Crop Science • National Institute of Horticultural and Herbal Science • National Institute of Animal Science
	National and public research institutes under the Korea Forest Service	• National Arboretum • National Forest Species Management Center • National Institute of Forest Science
local research institutes		Agricultural Technology Institutes and Agricultural Technology Centers mainly conduct field application/development research.
		• Provincial Agricultural Technology Institute • City/County Agricultural Technology Center • Specialized Crop Research Institute
Korea Agricultural Technology Promotion Agency		Promoting commercialization and supporting the industrialization of R&D achievements in the agricultural science and technology field.

Source: Kim et al., 2013; Rural Development Administration website supplemented by author.

The Fourth Master Plan for the Promotion of Agricultural, Forestry and Food Science and Technology

The Ministry of Agriculture, Food and Rural Affairs, the Rural Development Administration, and the Korea Forest Service announced the "4th Master Plan for the Promotion of Agricultural, Forestry, and Food Science and Technology" for 2025. This plan identifies five key research areas and 12 key strategic technology areas, which align with major agricultural policy tasks and directions. These areas address both domestic and international agricultural and rural environments.

The government is fundamentally changing the direction of agricultural research and development (R&D). Rather than focusing solely on accumulating technology, the new approach prioritizes addressing real-world challenges in agriculture, such as the climate crisis, food security, and rural extinction. The "Fourth Master Plan for the Promotion of Agricultural, Forestry, and Food Science and Technology (2025–2029)" announced by the Ministry of Agriculture, Food and Rural Affairs marks the beginning of this transformation. This plan, a national strategy for the next five years, redefines the framework for R&D and industry development in the agriculture, forestry, and food sectors, and integrates both policy reforms and technological development priorities.

Policy Sector

The most notable policy change is the shift in R&D investment methods. The government has decided to move from a traditional, individual-project-focused approach to a mission-oriented R&D system that addresses national issues. This system prioritizes identifying "what problems to solve" rather than "what technologies to develop." The government will support mid- to long-term, large-scale research projects that address complex agricultural challenges, such as climate change response, carbon neutrality, the decline of the agricultural workforce, rural extinction, and new and mutated livestock diseases. The government expects this approach will prevent short-term loss of R&D achievements and support a long-term structural transformation of agriculture.

Another key element of the policy strategy is improving the efficiency of the R&D promotion system. In the past, related agencies, such as the Ministry of Agriculture, Food and Rural Affairs, the Rural Development Administration, and the Korea Forest Service, conducted research independently, which led to duplication and inefficiency. The current plan strengthens joint participation among ministries and agencies from the planning stage and reorganizes research management and dissemination functions around specialized agencies. The plan specifically addresses the "last-mile disconnect," where research results are not applied in practice. It aims to support technology verification, field dissemination, and institutional linkages to ensure that

research results reach farmers, businesses, and local communities quickly.

The government announced plans to transition from public-led R&D to an innovation ecosystem driven by the private sector and local communities. To achieve this, it will increase private sector participation in research and enhance support for innovative agricultural and food companies. In addition, the government will create a regional R&D network to enable local communities to address specific agricultural challenges directly. This approach will change the role of regional agricultural technology centers from testing and distribution organizations to centers of local innovation.

Technology sector

As the policy framework changed, the government clearly defined the direction of technological development. In the Fourth Comprehensive Plan, the government identified five strategic technological areas and 16 key initiatives, establishing priorities for future agricultural, forestry, and food science and technology.

First, innovation in production systems based on digital and biotechnology is essential for future growth in the agriculture, forestry, and food industries. The plan is to use artificial intelligence, robotics, and data technologies to improve the labor-dependent agricultural structure and to increase production efficiency and quality. Key tasks include using green biotechnology to increase the added value of agricultural and forestry bioresources, addressing future food industries such as alternative and functional foods, and supporting the pet industry. This approach aims to transform agriculture from a simple production industry into a technology-based industry.

Climate change and disaster response are central to this plan's practical objectives. The plan seeks to develop agriculture that is resilient to extreme weather by creating climate-adapted varieties, advancing cultivation technologies, and establishing production systems tailored to specific regions and commodities. It also aims to expand low-carbon, eco-friendly agricultural technologies to support the 2050 carbon neutrality goal. In addition, the plan includes establishing a disaster prediction system that uses artificial intelligence and digital twin technology to prevent agricultural disasters and reduce damage.

In the high-quality and safe agricultural and food sector, advanced biotechnology and intelligent technologies will be used to improve the safe food supply system. This approach includes advancing livestock disease prevention technologies, improving food safety management through scientific methods, and securing core technologies for agricultural and food product exports. In addition, to strengthen food security and maintain supply and demand stability, productivity-enhancing technologies and digital-based supply and demand forecasting and management will be used to establish a food supply system that remains stable despite changes in the international political landscape.

Finally, the sustainable rural development sector expands the goal of technological development to include "quality of life." In addition to developing technologies that improve rural living conditions, prevent accidents involving farmers, and support vulnerable populations, the sector promotes the expansion of healing and welfare services that use agricultural and forestry resources. This policy message reflects the goal of reimagining rural areas as spaces for work, living, and relaxation, rather than focusing solely on production.

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2. Sustainable Agriculture

Environment-Friendly Agriculture

Background for Promoting Environment-Friendly Agriculture

Agriculture is an industry that utilizes and manages natural resources. Depending on which farming methods are applied and how agricultural environmental resources are managed, agriculture can exert either positive or negative impacts on the environment. In Korea, the spread of intensive farming systems characterized by high input and high output, which is intended to support a large population within a limited land area and to increase farm household income, has continuously heightened the environmental burden of the agricultural sector. As environmental issues stemming from agricultural production activities, such as water pollution and soil degradation, emerged as social concerns, the Ministry of Agriculture and Forestry established the Environmental Agriculture Division in December 1994 to promote environment-friendly agriculture that pursues harmony between agriculture and the environment. In 1996, the government formulated the Environmental Policy for Agriculture, Forestry, and Fisheries for the 21st Century, a blueprint for the development of environment-friendly agriculture. In 1997, the Environment-Friendly Agriculture Promotion Act was enacted, laying the institutional foundation.

In Korea, environment-friendly agriculture is defined as sustainable agriculture that seeks harmony between agriculture and the environment. Environment-friendly agriculture is an industry that does not use or minimizes the use of chemical input, such as synthetic pesticides, chemical fertilizers, antibiotics, and antibacterial agents, and that produces safe agricultural and livestock products while maintaining and preserving the ecosystem through recycling agricultural and livestock by-products. In other words, environment-friendly agriculture simultaneously pursues economically viable agricultural production, ecosystem conservation, and food safety. Thus, it occupies an important position in agricultural policy as Korea seeks to transition toward a sustainable agricultural system. Since the 2000s, the Ministry of Agriculture,

Food and Rural Affairs (MAFRA) has established and actively implemented various policy programs to advance sound environment-friendly agriculture.

Actual Conditions of Environment-Friendly Agriculture

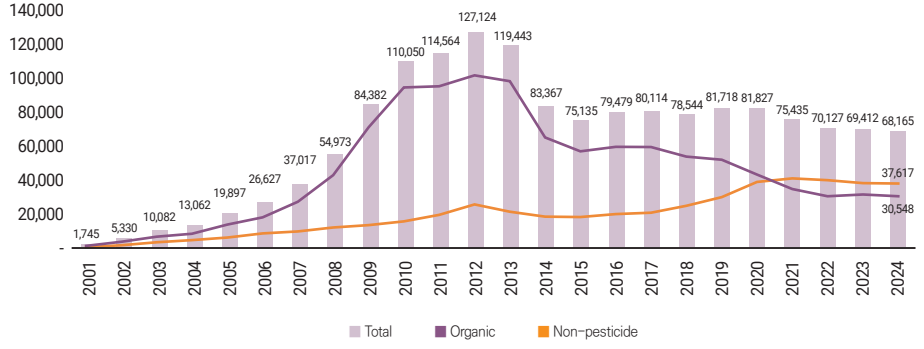
• Production Status of Environment-Friendly Agricultural Products

In Korea, environment-friendly farming was largely promoted by private organizations until the early 1990s. Full-fledged policies to foster environment-friendly agriculture were introduced in the mid-1990s. Subsequently, the number of certified farm households producing environment-friendly agricultural products has steadily increased since 2000. The area practicing environment-friendly agriculture (organic + non-pesticide) was only 1,745 ha in 2001, but it expanded to 127,124 ha in 2012, increasing at an annual average rate of 47.7%. However, owing to a slowdown in demand, this upward trend reversed after 2013, with the area declining by an annual average of 5.1%, reaching 68,162 ha as of 2024. The area practicing environment-friendly agriculture accounted for approximately 4.5% of the total cultivated land in 2024. By certification type, organic farming accounted for 25.8% and non-pesticide farming, 74.2%, in 2001. The share of organic farming decreased to 14.1% in 2010, whereas non-pesticide farming increased to 85.9%. Thereafter, organic farming recovered, accounting for 47.1% in 2020. More recently, its share has surpassed that of non-pesticide farming. As of 2024, organic cultivation represents 55.2% of the certified area, whereas non-pesticide cultivation accounts for 44.8% <Figure 6-2>.

Korea's level of promoting environment-friendly agriculture varies considerably by region. By province, Jeollanamdo Province has the largest certified area for environment-friendly agriculture at 34,797 ha, accounting for 51.0% of the national total, followed by Gyeonggi Province with 5,986 ha (8.8%), Gyeongsangnamdo Province with 5,258 ha (7.7%), and Jeollabukdo Province with 4,922 ha (7.2%) Figure 6-3>. The share of land for environment-friendly agriculture varies substantially across regions, reflecting differences in regional levels of interest in environment-friendly farming and policies implemented to promote it.

Figure 6-2 Certified Area for Environment-Friendly Agricultural Products

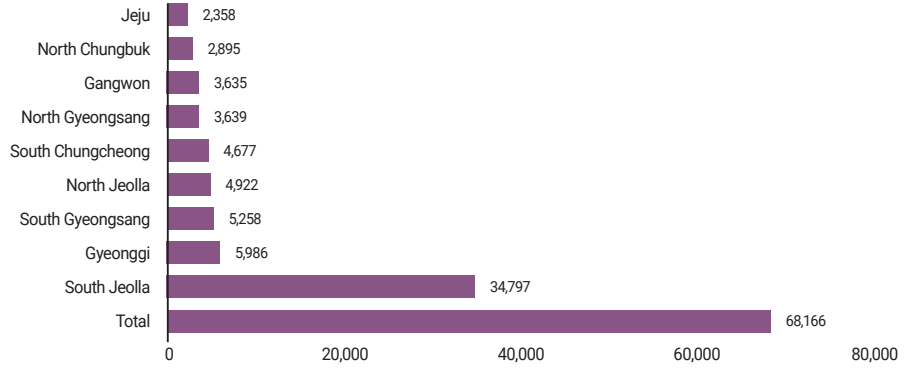
Unit: ha



Source: National Agricultural Products Quality Management Service, various years, *Environment-friendly Agricultural Products Certification Status*.

Figure 6-3 Status of the Area of Environment-Friendly Agriculture by Region (2024)

Unit: ha



Source: National Agricultural Products Quality Management Service, 2025, *Environment-friendly Agricultural Products Certification Status*.

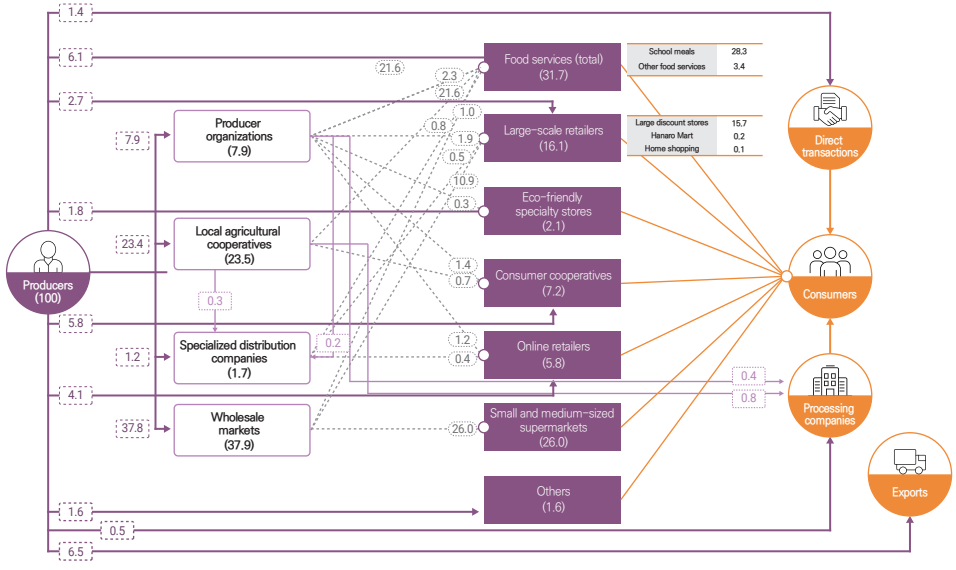
• Distribution Status of Environment-Friendly Agricultural Products

Traditionally, environment-friendly agricultural products have developed distribution channels that are distinct from those of general agricultural products, with local agricultural cooperatives playing a particularly important role at the production site stage. Recently, however, as major shipment destinations have declined, the share of

products distributed through wholesale markets has increased <Figure 6-4>.

The distribution channels of environment-friendly agricultural products shows that wholesale markets and local agricultural cooperatives play significant roles at the production and wholesale stages, accounting for 37.9% and 23.5%, respectively. However, wholesale markets tend to handle environment-friendly products according to the same standards as general agricultural goods, raising concerns that greater reliance on wholesale markets may make it difficult for producers to obtain the price levels they expect. This suggests the need for institutional and operational improvements to ensure that the value of environment-friendly agricultural products is appropriately recognized at the distribution stage. At the consumer stage, meal services account for the largest share at 31.7%, followed by small and medium-sized supermarkets at 26.0%, large retailers (e.g., department stores, hypermarkets, and supermarkets) at 16.1%, and consumer cooperatives at 7.2%.

Figure 6-4 Shares of Distribution Channels of Environment-Friendly Agricultural Products



Source: Korea Agro-Fisheries & Food Trade Corporation (aT) , 2024.

• Market Size of Environment-Friendly Agricultural Products

The transaction volume of environment-friendly agricultural products is difficult to accurately identify, as it varies considerably depending on the item and certification stage. The approximate market size may be estimated using information on distribution ratios of environment-friendly products, the government's purchase volumes of public stockpiled rice, the size of the school meal market surveyed by the Korea Agro-Fisheries & Food Trade Corporation (aT), and sales data from environment-friendly agricultural product stores.

The annual market size for 2021–2023 is estimated to be in the range of approximately KRW 2 trillion. Purchases for public stockpiling are estimated at KRW 13.3–21.3 billion, the school meal market, KRW 691.0–829.2 billion, and sales at environment-friendly agricultural product stores, KRW 904.5 billion–KRW 1.0143 trillion. The combined share of these sectors in the distribution of environment-friendly agricultural products is estimated to account 82.4–85.7% <Table 6-4>.

Table 6-4 Estimation of the Market Size of Environment-Friendly Agricultural Products (2021–2023)

unit: KRW 100 million

Classification	2021	2022	2023
Public stockpiled rice purchases	133	213	150
School meals	6,910	8,282	8,292
Sales at environment-friendly product stores	10,143	9,859	9,045
Total	17,186	18,353	17,487
Distribution share	85.7%	82.4%	85.5%
Estimated market size	20,054	22,273	20,453

Source: Korea Rural Economic Institute, *estimates.*

Major Environment-Friendly Agricultural Policy Programs

• Five-Year Plan to promote Environment-Friendly Agriculture

In accordance with the Act on the Promotion of Environment-Friendly Agriculture and Fisheries and the Management and Support for Organic Foods, etc. (hereafter, the Environment-Friendly Agriculture and Fisheries Act), the government has formulated and implemented five-year plans to promote environment-friendly agriculture. These plans set policy goals and basic directions for environmental conservation, measures for preventing and improving environmental pollution, and strategies for reducing the use of chemical inputs. The first five-year plan for promoting environment-friendly agriculture was implemented from 2001 to 2005. The second plan was subsequently established and implemented from 2006 to 2010, during which various policies related to production, distribution, consumption, and institutional frameworks were promoted. The third five-year plan (2011–2015) presented the vision of "realizing an environment-friendly green industry in which people and nature coexist," and promoted seven strategic tasks, including establishing a production base, revitalizing distribution and consumption, promoting processing and agricultural materials industries, advancing technology development and professional workforce training, fostering environment-friendly livestock and forestry, and establishing an agricultural environmental resource management system. The fourth five-year plan (2016–2020) presented the vision of "sustainable environment-friendly agriculture based on public trust," and promoted six strategic tasks: improving the certification system, establishing a stable distribution structure and expanding consumption, strengthening the production base, ensuring the stable supply of organic agricultural materials, reinforcing the environmental preservation functions of agriculture and forestry, and building an agricultural environment survey system. The fifth five-year plan (2021–2025) presented the vision of "expanding sustainable agriculture for the environment and the future," and pursued three strategic tasks: establishing an agricultural foundation for carbon reduction, disseminating sustainable environment-friendly agricultural models, and creating a system in which consumption drives production. The sixth five-year plan

(2026–2030) is being formulated through extensive discussions across areas such as production, distribution, consumption, processing, and resource management. It is scheduled to be announced in December 2025 and implemented beginning in January 2026.

• Direct Payments for Environment-Friendly Agriculture

The direct payment program for environment-friendly agriculture aims to promote the adoption of environment-friendly farming by compensating farmers for the initial income reduction and additional production costs associated with environment-friendly practices, while enhancing the environmental conservation functions and other public benefits of agriculture. The program has been implemented since 1999 to actively induce the production of environment-friendly agricultural products by expanding the number of farms practicing such agriculture.

Under the Environment-Friendly Agriculture Promotion Act, direct payments are provided for three to five years (or three to five payment periods if non-consecutive) to farmers or producer groups certified for environment-friendly agricultural products. Direct payment rates vary by certification stage and item group. In 2025, the maximum eligible area per farm household was expanded sixfold, from the previous 0.1–5.0 ha to 0.1–30.0 ha. For paddy fields, the unit payment was increased by KRW 250,000 per ha, resulting in KRW 950,000 per ha for organic farming and KRW 750,000 per ha for non-pesticide farming. For farmland where certified organic producers have received direct payment for five years while producing organic products, continuous direct payments are provided from the sixth year onward, with the payment rate increased from 50% to 60% of the original organic rate. In addition, the conversion payment rate was revised from the non-pesticide rate to the organic rate. However, for upland fields, unit payment rates have not been adjusted and remain at previous levels, ranging from KRW 1.1 million to KRW 1.4 million per ha, depending on the degree of environment-friendliness and crop type.

Major Directions for Advancing Environment-Friendly Agriculture

• Promotion of Environment-Friendly Agriculture

To effectively promote the development of environment-friendly agriculture, the government must secure a stable production base, establish conditions for revitalizing distribution and consumption, and reform the certification system toward a field-oriented approach. First, the government should expand environment-friendly direct payments, support for organic farming materials, and the designation of concentrated environment-friendly farming districts. It should also strengthen workforce support by disseminating new cultivation technologies, providing training programs, and expanding joint farming models, while fostering the foundation for regenerative organic agriculture through increased R&D investment.

Public demand for environment-friendly agricultural products should be expanded through programs such as the "environment-friendly food package for pregnant women" and school meal programs. In addition, the distribution and sales network should be strengthened by introducing dedicated sections for environment-friendly agricultural products. Efforts to raise private-sector awareness and expand demand should be sustained through consumer education and the provision of purchasing incentives for environment-friendly products.

To prevent unintended disadvantages to well-performing farms, the government must establish a risk assessment framework and continuously promote a process-oriented certification system that improves unreasonable regulations. To enhance consumer trust, the government should refine the certification mark system. Environment-friendly certification should be linked with low-carbon certification to support producers' active participation in environmentally sustainable agriculture.

• Improvement of the Agricultural Environment

Improving the agricultural environment nationwide requires strengthened efforts in farmland, water, and ecosystem conservation; carbon reduction; and the management of agricultural waste and livestock manure. First, the scope of soil testing and fertilizer recommendations should be expanded to reduce the use of chemical fertilizers to

an appropriate level, while precision agriculture should be promoted through data-based smart farming systems. The agricultural environment conservation program, which supports conventional farmers' participation in low-input farming methods, soil erosion prevention, and ecosystem conservation activities, should be expanded and reorganized, with the aim of incorporating it in the direct payment program.

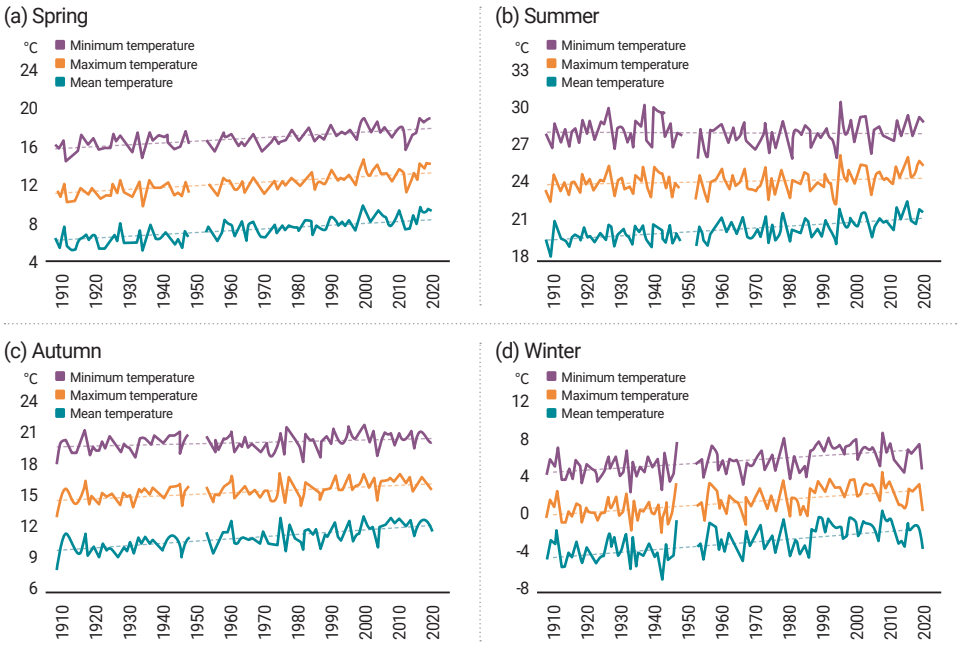
The government should establish a foundation for low-carbon agriculture through the carbon-neutral direct payment system, carbon credit mechanisms, and the continuous development and dissemination of low-carbon agricultural technologies, such as water management in paddy fields, efficient fertilizer use, and bio-char application. Finally, a regional resource-cycling agricultural system should be established to maximize the reuse of by-products generated in crop and livestock production, and to ensure integrated management of soil, nutrients, pests, and irrigation tailored to regional characteristics. In particular, building such a system requires the development of a comprehensive circular resource system that enables the reuse of organic materials (e.g., food waste and livestock manure) as renewable resources at the regional level.

Climate Change and Response

Prospects for Climate Change on the Korean Peninsula

Over the past 100 years, the temperature and precipitation on the Korean Peninsula have shown an increasing trend (National Institute of Meteorological Sciences, 2018). As shown in <Figure 6-5>, over the past 106 years (1912–2017), the annual mean temperature in Korea has risen by 0.18 °C per decade, and both the annual maximum and minimum temperatures have increased. During the same period, annual precipitation increased by 16.3 mm per decade, and the average annual precipitation in the most recent 30-year period (1,305.5 mm) rose by 124.1 mm compared with the previous 30-year average (1,181.4 mm).

Figure 6-5 Changes in average annual maximum, mean, minimum temperatures by season (1912–2017)

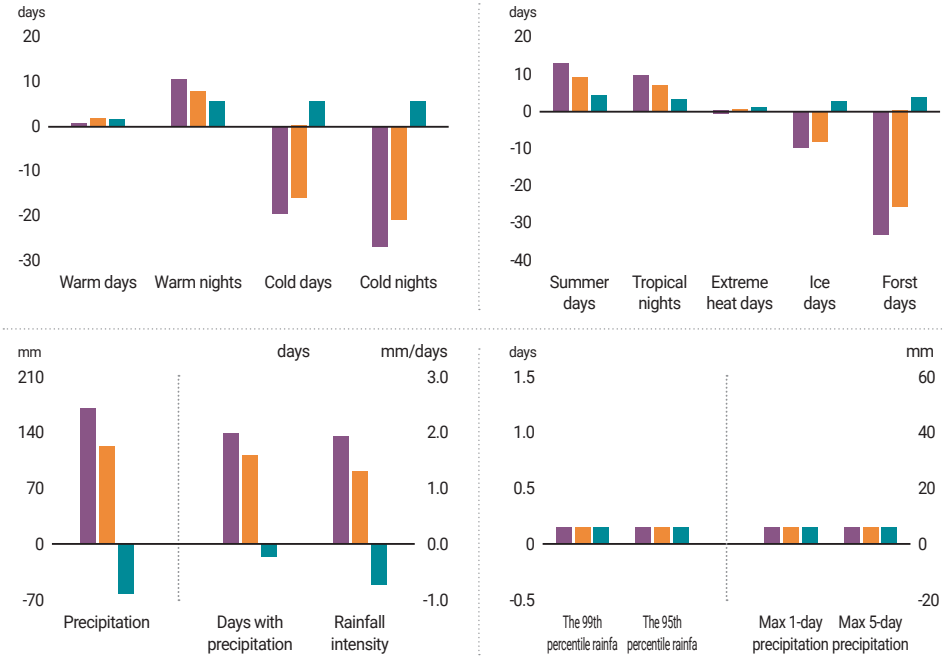


Source: National Institute of Meteorological Sciences, 2018, *Climate change on the Korean Peninsula over 100 years.*

The frequency and intensity of extreme weather events on the Korean Peninsula have also been increasing. Specifically, over the past 100 years, high temperature-related extremes in summer have sharply increased owing to warming, and in the most recent decade, the frequency and intensity of abnormal temperatures in spring, especially in May, have also risen. In addition, since the 2000s, the trend of winter temperature change has shifted to negative, leading to an increase in low temperature-related extreme events in recent years.

With respect to precipitation, heavy rainfall in summer has increased, whereas light rainfall has decreased, indicating intensification of precipitation polarization. However, unlike the pattern observed over the past 106 years, both heavy and light precipitation have increased simultaneously during the most recent decade <Figure 6-6>.

Figure 6-6 Changes in the extreme climate index from 1912 to 2017



Note: Purple indicates a trend of a linear change from 1912 to 2017; yellow indicates a change in the past three decades compared with that in the earlier three decades; light blue shows a change in the past decade compared with the past three decades.

Source: National Institute of Meteorological Sciences, 2018, *Climate Change on the Korean Peninsula over 100 years*.

Warming is projected to continue until the end of the 21st century owing to climate change. The annual mean temperature on the Korean Peninsula is expected to increase by more than 2 °C in all scenarios, an extent that exceeds the threshold of the Earth's resilience.[1] Precipitation is also projected to increase across all scenarios, ranging from at least 21 mm to as much as 456 mm by the end of the century <Table 6-5>.

1 Representative concentration pathways (RCPs) refer to greenhouse gas concentration scenarios developed by the Intergovernmental Panel on Climate Change (IPCC) based on assumptions about human activities and climate change response policies, and they consist of RCP 2.6, RCP 4.0, RCP 6.0, and RCP 8.5 according to the level of greenhouse gas emissions.

Table 6-5 Changes in Regional Average Temperature and Annual Precipitation (2081–2100 Compared with 2000–2019)

Classification	Scenario	A1	A2	B1	B2	C1	C2
Temperature (°C)	SSP1-2.6	10.3 (+2.3)	12.9 (+2.4)	14.8 (+2.4)	15.6 (+2.3)	13.2 (+2.3)	14.3 (+2.3)
	SSP5-8.5	14.4 (+6.4)	17.0 (+6.5)	18.8 (+6.4)	19.5 (+6.2)	16.8 (+5.9)	18.1 (+6.1)
Annual Precipitation (mm)	SSP1-2.6	1542 (+29)	1389 (+22)	1203 (+21)	1489 (+46)	3521 (+209)	1970 (+62)
	SSP5-8.5	1695 (+182)	1525 (+158)	1337 (+155)	1648 (+205)	3768 (+456)	2154 (+246)

Note: A1-C2 represent regional classifications: A1 = mountainous-central-higher elevation; A2 = mountainous-central-lower elevation; B1 = plains-central; B2 = plains-southern; C1 = mountainous-southern-higher elevation; C2 = mountainous-southern-lower elevation.

Source: National Institute of Meteorological Science, 2024, *Development and Assessment of Climate Change Scenarios in Response to the New Climate Regime (III).*

Warming is expected to increase both the extreme high-temperature index (TXx) and extreme precipitation index (RX1D) in Korea. Specifically, compared with the current climate (2000–2019), TXx is projected to rise by 1.9 °C (C1) to 3.3 °C (A2) under the low-carbon scenario (SSP1-2.6), and by 6.0 °C (C1) to 8.3 °C (A2) under the high-carbon scenario (SSP5-8.5) by the end of the 21st century (2081–2100). Extreme high-temperature events with intensities that currently occur once every 20 years are expected to occur at least once every 1.5 years even under the low-carbon scenario by the end of the century.

Extreme precipitation indices are also projected to increase substantially, with the RX1D index in region C1 increasing by more than 100 mm under all scenarios. Moreover, heavy rainfall events with intensities that historically occurred once every 20 years are projected to occur at least twice as often by the end of the 21st century <Table 6-6>.

Table 6-6 Changes in Regional Extreme Temperature and Precipitation Indices (2081–2100 Compared to 2000–2019)

Classification	Scenario	A1	A2	B1	B2	C1	C2
Extreme temperature index (TXx), (°C)	SSP1-2.6	35.5 (+3.0)	37.8 (+3.3)	38.5 (+3)	38 (+2.8)	31.8 (+1.9)	36.2 (+2.5)
	SSP5-8.5	40.6 (+8.1)	42.8 (+8.3)	43.3 (+7.8)	42.5 (+7.3)	35.9 (+6.0)	40.8 (+7.1)
Extreme precipitation index (RXID), (mm)	SSP1-2.6	159 (+19)	147 (+19)	133 (+19)	162 (+26)	386 (+101)	204 (+37)
	SSP5-8.5	176 (+36)	164 (+36)	151 (+37)	185 (+49)	406 (+121)	227 (+60)

Note: A1-C2 represent regional classifications: A1 = mountainous-central-higher elevation; A2 = mountainous-central-lower elevation; B1 = plains-central; B2 = plains-southern; C1 = mountainous-southern-higher elevation; C2 = mountainous-southern-lower elevation.

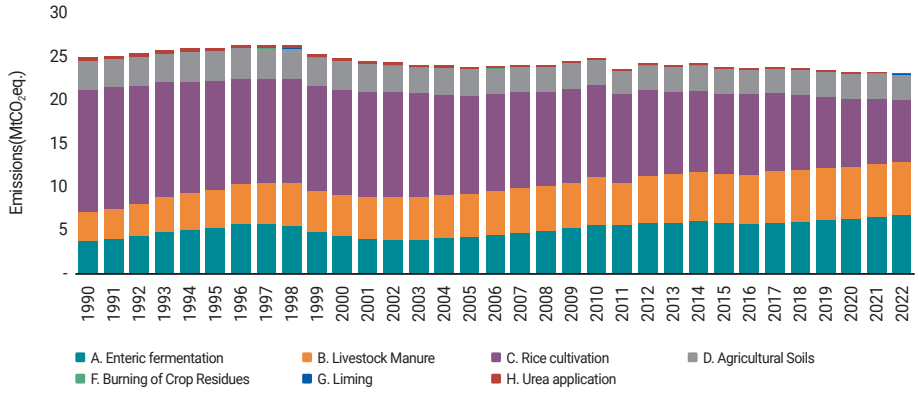
Source: National Institute of Meteorological Science, 2024, *Development and Assessment of Climate Change Scenarios in Response to the New Climate Regime (III).*

Response to Climate Change in the Agricultural Sector

• Status of Greenhouse Gas Emissions and Mitigation Policies in the Agricultural Sector

As of 2022, greenhouse gas emissions in the agricultural sector stood at 23.0 million tons of CO_2equivalent (CO_2eq), accounting for approximately 3.2% of Korea's total greenhouse gas emissions. This represents a decrease of 0.5% compared with 2021 and 2.3% compared with 2018. Specifically, emissions in the crop-production sector declined owing to reduced cultivated area, falling by 4.1% from 2021 and by 16.5% from 2018, thereby driving the overall reduction in agricultural emissions. In addition, emissions from liming and urea application decreased by 17.9% compared with 2021 and by 25.2% compared with 2018, owing to reduced use of urea fertilizer. In contrast, emissions in the livestock sector increased by 1.6% compared with 2021 and by 6.7% compared with 2018, attributable to rising demand and production of livestock products.

Figure 6-7 Trends in Greenhouse Gas Emissions in the Agricultural Sector



Source: Greenhouse Gas Inventory and Research Center of Korea, 2024, *National Greenhouse Gas Inventory Report 2024.*

The Korean government presented the 2030 National Greenhouse Gas Reduction Roadmap (hereafter, the 2030 Roadmap) in December 2016 in response to the Paris Accord. In 2018, it released a revised roadmap with strengthened reduction targets to enhance the feasibility of achieving national mitigation goals. Under the revised 2030 Roadmap, emissions must be reduced to 18.0 million tons of CO_2eq by 2030, representing a 27.1% reduction compared with 2018 levels. To implement the revised roadmap, the government must achieve an average annual reduction of approximately 1.0 million tons of CO_2eq for the remaining period as of 2024.

Recently, the government proposed the 2035 NDC, which aims to reduce net greenhouse gas emissions by 53–61% from the 2018 baseline level of 742.3 million tons of CO_2eq. Unlike the previous 2030 NDC, which presented a single reduction target, the 2035 NDC adopts a range-type target to account for uncertainties, such as future technological advancements. Moreover, past NDCs used total emissions for the base year and net emissions for the target year. Meanwhile, the new NDC applies net emissions for both, using the latest statistical framework (the 2006 IPCC Guidelines[2]).

2 *Therefore, direct one-to-one comparison of emission levels and target values between the 2030 and 2035 NDCs is not appropriate and requires careful interpretation.*

For the agriculture, livestock, forestry, and fisheries sector, the government has emphasized expanding energization facilities for improving livestock manure treatment. Based on 2024 net emissions (25.6 million tons CO_2eq), the sector is required to achieve reductions of 5.6 million tons CO_2eq (to 20.0 million tons CO_2eq, equivalent to a 53% reduction) up to 6.1 million tons CO_2eq (to 19.5 million tons CO_2eq, equivalent to a 61% reduction) to meet the 2035 NDC target range <Table 6-7>.

Table 6-7 2035 NDC Targets for the Agriculture, Livestock, and Fisheries Sector

Unit: Mt CO_2eq

Classification	Sector	2018	2024	2035 NDC			
				△53%		△61%	
				Emissions (reductions from 2018)	Reductions from 2024	Emissions (reductions from 2018)	Reductions from 2024
Net Emissions		742.3	651.4	348.9	△302.5	289.5	△361.9
Emissions	Agriculture, Livestock, and Fisheries	27.6	25.6	20.0 (△27.5%)	△5.6	19.5 (△29.3%)	△6.1

Source: Joint Government Press Release (Search date: Nov. 10, 2025).

The mitigation measures currently used to achieve the 2030 NDC targets are presented in <Table 6-8>. Specifically, intermittent irrigation is practiced in most paddy fields in Korea. In this practice, water is supplied only when necessary rather than maintaining continuously flooded fields. About 45% of fields apply the method for more than two weeks. Compared with continuously flooded cultivation, this method can reduce greenhouse gas emissions by approximately 40%.

In the livestock sector, greenhouse gases generated during manure treatment can be reduced by producing biogas from livestock manure and using it for electricity generation (livestock manure energization projects), or by utilizing composting and liquid fertilizer production facilities (livestock manure resource recycling facilities). Finally, to reduce fossil energy consumption in protected cultivation, the government should promote the use of renewable energy facilities—such as geothermal heat

pumps and wood pellet boilers—and energy-saving facilities—such as multi-layer insulating curtains, circulation-type insulating water curtains, and automatic covering devices for thermal tunnels.

Table 6-8 Korea's 2030 NDC Reduction Target and its Feasibility

Classification		Status	2030 NDC Target	Feasibility
Crop Production	Intermittent irrigation: more than 2 weeks, %	(2024) 45.7	61.1	High
	Shallow intermittent irrigation: ratio to intermittent irrigation, %	(2024) 86.7	10	Medium
	Nitrogen fertilizer reduction (N kg/ha)	(2024) 127	115	Low
	Biochar distribution (tons)	-	40,500	-
Livestock	Improvement in livestock manure treatment: share of manure moved outside agriculture, %	(2023) 15.2	33	Low
	Low-methane feed distribution rate (%)	(2024) 0.0	(Hanwoo, dairy cattle aged 2+ years) 30	Medium
	Use of optimized protein feed-reduction in manure nitrogen compared with 2018, %	-	13	-
	Smart livestock barn adoption rate (%)	(2024) 27.5	30	High
	Share of alternative processed meat (%)	-	4.4	-
Energy	High-efficiency energy facility adoption rate: share relative to diesel demand, %	-	9 (air-sourced heat pump 99.04 ha)	High
	Replacement of fossil fuels in machinery: share relative to diesel demand, %	-	5/10	-

Source: Jung et al., 2025, *Evaluation of the Implementation of 2030 NDC Greenhouse Gas Reduction in the Agriculture and Livestock Sector (Phase II).*

• Climate Change Adaptation Policy in the Agricultural Sector

The Korean government promotes climate change adaptation policy centered on the National Climate Change Adaptation Plan. This national plan serves as a basic framework and guideline for establishing detailed implementation plans by government ministries and local governments. The adaptation tasks of the MAFRA and the Rural

Development Administration (RDA) are also developed based on this plan. The 3rd National Climate Change Adaptation Plan (2021–2025) is currently being implemented with a total budget of KRW 32,110.98 billion, of which the agricultural sector is allocated KRW 10,677 billion to carry out the adaptation tasks listed in <Table 6-9>.

Table 6-9 Adaptation Tasks Related to the Agriculture and Livestock Sector Included in the 3rd National Climate Change Adaptation Plan

Strategic Direction	Task	Detailed Implementation Task
Provision of climate impact information to enhance climate resilience	Development of productivity assessment and forecasting technologies for the agriculture, livestock, and fisheries sectors	Assessment and integrated management of climate change impacts and vulnerabilities in the agricultural sector
		Monitoring of changes in production environments and yield forecasting for crop production
		Survey and mapping of productivity distribution in the livestock sector
	Strengthening early warning systems for agrometeorological disasters	Advancement of agrometeorological disaster early warning systems
		Expansion of on-site utilization of agrometeorological early warning systems
	Enhancing predictive technologies and assessment for agricultural productivity	Prediction and assessment of shifts in suitable cultivation areas for major crops
		Development of evaluation for region-specific cropping system adaptability and crop yield forecasting technologies
Strengthening climate-adaptive production infrastructure for agriculture and fisheries	Development and dissemination of climate-adaptive agricultural, livestock, and fisheries production facility technologies and control systems	Development of energy-efficient agricultural facility technologies and control systems
		Expansion and dissemination of smart agriculture, livestock, and fisheries production facilities
	Establishing a foundation for stable crop production and supply	Development of technologies to reduce damage caused by abnormal weather and climate-adaptive crop variety cultivation techniques
		Establishment of stable supply systems and improvement of agricultural disaster insurance
	Improvement of disaster-resilient agricultural infrastructure	Strengthening design standards and inspection of agricultural production facilities
		Strengthening management of agricultural infrastructure for disaster preparedness

Strategic Direction	Task	Detailed Implementation Task
Preservation of a safe agricultural and fisheries environment	Strengthening management of pests, diseases, and invasive species	Development of technologies for prevention and response to crop pests and diseases
	Strengthening water quality and soil environment management for agricultural use	Operation of water quality monitoring networks for agricultural reservoirs and improvement of water quality
		Assessment of climate change impacts and vulnerabilities on agricultural water quality
		Assessment of climate change impacts and vulnerabilities on agricultural soils
	Securing stable agricultural water resources under climate change	Installation of water facilities and restructuring of water supply systems in drought-prone areas
		Advancement of drought-response technologies for upland fields to cope with chronic water shortages

Source: Prepared based on Joint Government Ministries, 2021, *Detailed Implementation Plan for the 3rd National Climate Change Adaptation Plan.*

Most of the current adaptation policies in the agricultural sector fall under the following categories, all of which have strong characteristics of public goods: 1) provision of climate impact information to enhance climate resilience; 2) strengthening climate-adaptive agricultural production infrastructure; and 3) ensuring a safe agro-environment. Specifically, led by the RDA, Korea assesses the impacts and vulnerabilities of climate change on crop and livestock productivity, develops forecasting technologies, monitors changes in production environments, and establishes prediction services based on climate risks. Currently, the agrometeorological disaster early warning system provides services to 155 cities and counties nationwide and offers farm-level (30×30 m grid) customized weather information, crop-specific disaster forecasts, and response guidelines.

To strengthen climate-adaptive agricultural production infrastructure, Korea is pursuing tasks that enhance field-level adaptive capacity, such as analyzing changes in suitable cultivation areas, predicting pest and disease outbreaks, improving crop varieties and cultivation technologies, and establishing systems to ensure stable production and supply. In the area of safe agricultural environment preservation,

Korea is reinforcing its activities in investigating agricultural environmental damage caused by extreme weather, conducting disaster vulnerability assessments, building disaster management information databases, and advancing agrometeorological disaster early warning and management systems. In addition, crop disaster insurance coverage has expanded, with the enrollment rate reaching 54.4% and insured amount totaling KRW 31.7 trillion in 2024, whereas insurance payouts also increased to KRW 1 trillion.

Status and Direction of Agricultural Photovoltaics Policy

In November 2016, as a follow-up to the Renewable Energy Deployment Promotion Plan, the Korean government announced the Rural Solar Power Expansion Plan, which aimed to simultaneously expand renewable energy deployment and increase farm household income by encouraging farmer participation in solar power projects (Ministry of Trade, Industry and Energy, 2016). The Renewable Energy 3020 Implementation Plan (2017) set a target of raising the share of renewable energy generation to 20% by 2030 and, in relation to agriculture and rural areas, planned the installation of 10 GW of renewable energy capacity by 2030. To expand rural solar power deployment, Korea introduced the Korean-style feed-in tariff, under which the government purchases electricity at a fixed price for 20 years from small-scale solar power producers (≤100 kW), thereby enabling stable revenue generation. In addition, to enhance community acceptance, the government provided higher Renewable Energy Certificate weights for cooperative-type participation (where local residents form a cooperative and invest in a power project) and citizen participation funds (where residents invest in a fund and an SPC borrows from it to implement the project).

Furthermore, Korea introduced the "agrivoltaic model," which combines crop cultivation with solar power generation. Previously, farmland designated as agricultural promotion zones could not be used for solar installations. The new model allowed reclaimed farmland affected by soil salinization to be temporarily allowed to host solar facilities for up to 20 years. As of 2022, rural solar installations accounted

for approximately 7.7 GW (38.3%) of the nationwide 20.2 GW of installed solar capacity, producing 6.5 GW, exceeding the original 2018–2022 target of 3.3 GW by 3.2 GW <Table 6-10>.

Table 6-10 Status of Rural Solar Power Deployment

Unit: MW

Classification	2017	2018	2019	2020	2021	2022	Total
Nationwide	4,405	1,897	2,985	3,970	3,997	2,981	20,235
Rural	1,262	678	1,144	1,442	1,892	1,329	7,747
Farmland	773	542	902	1,007	1,247	860	5,331
Livestock and horticultural facilities	489	136	242	435	645	469	2,416

Source: MAFRA, 2024a, *Internal document.*

However, rural solar power expanded without institutional improvements for planned siting, resulting in several adverse effects, such as uncoordinated development, landscape degradation, and declining community acceptance. In particular, rural residents were often excluded from the benefits of solar deployment owing to a lack of expertise and experience in renewable energy projects. As such, solar installations led by external developers, rather than local farmers, became widespread and were not linked to increasing farm household income. This created conflicts with tenant farmers and contributed to growing negative perceptions of rural solar power. In addition, because agrivoltaic installations were permitted only through temporary-use approvals under the Farmland Act (limited to an eight-year period), economic viability became difficult to secure. Consequently, most rural solar projects involved farmland conversion, raising concerns about food security.

In 2024, MAFRA announced the Agrivoltaics Introduction Strategy, aimed at revising policies and institutional frameworks to ensure that "farmers can engage in both electricity generation and farming," thereby contributing to increased farm income and facilitating the transition to renewable energy. Under this strategy, agrivoltaic projects are limited to "farmers who own farmland and are capable of farming." To

enhance farmers' understanding of agrivoltaic projects, the government established training programs and developed agrivoltaics-specific insurance to strengthen farm management stability. To improve economic viability and system durability, the government extended the permitted period for temporary use of farmland for agrivoltaics from eight years to 23 years for farmland located outside agricultural promotion zones. Farmland granted temporary-use approval for agrivoltaics also becomes eligible for direct payments. According to an economic analysis by the Korea Rural Economic Institute (KREI), the benefit–cost ratio of agrivoltaics is 0.74 for an eight-year operational period but increases to 1.24 for a 20-year operational period (Jung et al., 2023).

Furthermore, under the Rural Spatial Reorganization Act, the government plans to provide policy incentives for renewable energy districts to promote clustered development, as part of government efforts to establish a regular post-management system for preventing inadequate farming practices by power producers. During the approval stage, education is provided for farmers and installation companies, design documents are verified, and agrivoltaics guidelines are distributed. During the production stage, farmer eligibility is verified through agricultural management information, and mandatory farming requirements equivalent to the level of direct payments are monitored through the "Agriculture-e System" (농업e지). Post-management includes establishing maintenance and repair systems for solar facilities, and imposing penalties (e.g., cancellation of project approval, restoration orders, revocation of temporary-use permission, fines, and surcharges) in cases of non-compliance with facility standards, farmland degradation, or failure to farm.

In 2025, the government announced the Sunlight Income Villages initiative. It aims to create sustainable rural communities, increase resident income, promote balanced regional development, and enhance local acceptance of renewable energy. Based on the principles of resident consent, orderly development, equitable benefit sharing, and balanced regional participation, the government plans to establish 100 villages annually from 2026, reaching a cumulative total of 500 villages by 2030.

Depending on installation site characteristics, the power generation model is

categorized as floating, agrivoltaic, or hybrid. Electricity sales revenue is shared among residents, and village cooperatives (composed of local residents) serve as the project entities. Eligible communities are defined as administrative villages with at least ten households, and priority is given to villages with suitable installation areas capable of supporting 300 kW to 1 MW of capacity and with feasible grid connection. To ensure smooth project implementation, the government supports all steps of the process, including land leasing, training, financing assistance, project execution, and post-management consulting.

Future Directions for Climate Change Response

The increasing frequency of extreme weather events caused by ongoing climate change has heightened production uncertainty in the agricultural sector. To ensure effective adaptation, the government needs to mainstream climate change adaptation by integrating agricultural adaptation policies with other sectoral policies. Such integration not only enhances the sustainability of agricultural policy and improves the adaptive capacity of target groups but also reduces policy conflicts and amplifies synergistic effects among different policy instruments.

In addition, as mitigation efforts are strengthened across all industrial sectors, the required greenhouse gas reduction from agriculture has increased significantly compared with the 2030 Roadmap. Accordingly, the demand for greenhouse gas mitigation in the agricultural sector is expected to increase further. To respond effectively, the sector needs to pursue more proactive policies aimed at advancing and disseminating mitigation technologies, activating private-sector participation, and improving awareness among both producers and consumers.

Demand for a transition to renewable energy in rural areas is also steadily increasing. To avoid the negative consequences observed in the past, such as disorderly development, landscape degradation, and reduced community acceptance, and to contribute to raising rural incomes and supporting sustainable rural development, the government needs to clearly establish the policy objectives for agrivoltaics. This should include imposing farming obligations on participating

farmers, creating a robust management system to prevent inadequate farming practices, providing reasonable incentives and support systems, and establishing a solid institutional foundation for agrivoltaic deployment.

Lastly, in 2020, the government introduced the "Korean Green New Deal," aiming to enhance the sustainability of the national economic system through more ambitious climate action. This implies that climate change response policies in the agricultural sector must also be closely aligned with the broader goal of agricultural sustainability. Therefore, Korea needs an integrated institutional framework capable of simultaneously addressing key issues in the agricultural sector, including climate change response, air quality improvement, and agricultural resource management.

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3. Agricultural Income and Management Stability

This chapter examines the need for policies to reduce volatility in farm income. It reviews trends in gross agricultural receipts and farm operating expenses from 2000 onward to assess risks in agricultural income, then analyzes resulting farm income patterns. The chapter outlines the historical development of government initiatives to improve farm management stability and describes current policy instruments that buffer agricultural income fluctuations. Finally, it identifies key policy challenges and proposes strategic directions to further strengthen agricultural income stabilization.

Urgency of Policies to Mitigate Farm Income Volatility

Several factors have recently increased the volatility of farm income. These include fluctuations in production volume, volatility in agricultural prices, changes in farm operating expenses, shifts in demand, a weakening agricultural labor and managerial base, and the underdeveloped role of markets in agricultural risk management.

Increasing production variability

The increasing risk from fluctuations in production volume is closely related to rising environmental uncertainty caused by extreme weather events and climate change. In recent years, climate- and weather-related uncertainty has intensified, as shown by more frequent typhoons, an increase in spring frost days, higher annual maximum and minimum temperatures, more frequent heatwaves and warm days, and elevated sea surface temperatures. These changes indicate that Korea's climate is shifting from temperate to subtropical conditions and represent a key structural factor reducing the stability of the agricultural production base.

Typhoons cause significant damage to major agricultural regions, particularly in the southern part of the Korean Peninsula. Since the 2020s, an average of four typhoons per year have affected the peninsula, a higher frequency than in previous decades. Typhoons are among the main natural disasters that contribute to fluctuations and

declines in agricultural output.

Recently, volatility in fruit production has increased, with spring frost identified as the main cause. Spring frost damages floral tissues during blooming, which directly reduces yields. Although rising temperatures have advanced flowering dates, abnormal weather patterns have also extended the period between the first and last frost events and increased the frequency of frost. Kim Taehoo and Chae Hong-gi (2024) reported that spring frost damage has accounted for the largest share of indemnity payments under the national fruit crop insurance program since the late 2010s.

Another major cause of reduced agricultural production is heavy rainfall, which has increased in intensity in recent years. Although the frequency of daily precipitation below 60 mm has remained relatively stable, precipitation above 60 mm (levels linked to a high risk of disaster-related damage) has become more frequent and severe. In particular, daily precipitation events exceeding 100 mm were previously rare and less intense, but both their frequency and severity have increased significantly in recent years.

As the Korean Peninsula shifts toward a subtropical climate, the incidence of pests and diseases, many of which were previously not observed, has increased. This trend has reduced agricultural output and led to frequent declines in product quality.

Increasing Agricultural Price Volatility

The rise in agricultural price volatility is closely related to increased variability in production due to more frequent extreme weather events. Greater weather-related uncertainty has made production forecasting more difficult, which contributes to supply–demand imbalances in agricultural markets. Consequently, price volatility has increased, reducing the stability of farm management. In practice, year-to-year changes in the Farm Product Sales Price Index show substantial fluctuations across all major commodity categories, such as grains, fruits and vegetables, livestock products, and other agricultural goods.

Rising Macroeconomic Uncertainty

Increasing uncertainty in domestic and global macroeconomic conditions has

significantly increased volatility in agricultural farm operating expenses. In particular, larger fluctuations in international crude oil prices have been a key factor driving higher farm management costs. Since 2020, crude oil supply has been limited by sanctions on Russian oil exports, reduced investment by U.S. refiners, and restricted production increases by OPEC because of heightened political tensions between the United States and Arab countries. At the same time, the recovery of private consumption after the COVID-19 shock increased global oil demand, causing a sharp rise in international oil prices in the first half of 2022.

Because Korea relies entirely on imported crude oil, any increase in global oil prices is immediately reflected in higher import costs, which directly increase agricultural farm operating expenses. Although crude oil prices declined after 2023 due to a strong U.S. dollar and reduced global demand during an economic slowdown, the risk of future price spikes remains if geopolitical tensions in the Middle East intensify. Therefore, agricultural farm operating expenses are expected to remain subject to significant volatility.

Between 2020 and 2022, extreme weather events, increased co-movement with international oil prices, and global supply chain disruptions caused by the Russia–Ukraine war led to a sharp rise in global grain prices. After 2023, declining international crude oil prices, increased grain supply, and reduced grain demand due to China's domestic economic slowdown contributed to a downward stabilization of global grain prices. Despite this temporary relief, international grain price volatility is expected to remain high. Heightened trade tensions between the United States and China (a so-called "second trade war") could further weaken global economic conditions and place downward pressure on oil prices. In contrast, an escalation of geopolitical conflicts or renewed disruptions in global supply chains could cause another surge in international oil prices, increasing uncertainty in international grain markets.

More recently, the main factor driving higher import prices has been the depreciation of the Korean won. The exchange rate remained near KRW 1,100 per USD through 2021, but increased sharply from 2022, raising import prices. Several factors contributed to this depreciation. First, sustained interest rate increases by the

U.S. Federal Reserve beginning in early 2022 encouraged capital outflows from Korea, which reduced the domestic supply of U.S. dollars. Second, the ongoing Russia–Ukraine conflict, fiscal tightening in major advanced economies, and China's "zero-COVID" policy together slowed global economic activity, which increased demand for the U.S. dollar as a safe asset and weakened the Korean won. Third, increased domestic political uncertainty added further downward pressure on the Korean currency.

Ordinarily, import prices fluctuate less because raw material prices and exchange rates often show a negative correlation; when one increases, the other tends to decrease, which partially offsets price changes. However, during periods of external macroeconomic distress, this relationship weakens or reverses, resulting in simultaneous increases in both raw material prices (especially crude oil) and exchange rates. This co-movement sharply raises import prices. These dynamics have been especially evident during the global crisis since 2020. Increases in crude oil and grain prices, a steep depreciation of the Korean won, and heightened geopolitical uncertainty have all raised import prices and significantly affected the agricultural sector.

Although international crude oil and grain prices have declined in recent months, resulting in a lower overall import price index in 2024 compared to 2022, import prices remain significantly higher than before the crisis. In 2024, the overall import price index is about 40 percent higher than in 2020, and indices for major commodities have increased by approximately 25 percent to 119 percent.

Demographic Transitions

Rapid changes in food demand resulting from demographic shifts have become an important factor affecting agricultural income volatility. In Korea, dietary consumption patterns show increasing meat consumption, declining grain consumption, and stable or only slightly changing consumption of vegetables and fruits. Per capita annual rice consumption, the country's primary staple, has shown a clear long-term decline, while meat consumption has risen steadily. Vegetable consumption has remained mostly stable since the mid-1990s, fluctuating within a narrow range. Fruit consumption increased until the mid-2010s but has slightly declined in recent years.

The weakening of the agricultural labor base has increased dependence on external labor, reduced productivity, and limited the capacity to respond to natural disasters and other external shocks. Together, these changes contribute to greater volatility in farm income.

The aging of the agricultural workforce is evident in the changing distribution of farm operators by age group. The number of operators aged 70 or older increased from approximately 300,000 in 2003 to nearly 500,000 in 2023, now representing more than half of all farm households. In contrast, the number of operators under 30 has continued to decline and remains very low. The number of operators in their 40s and 50s has also decreased significantly. Although the number of operators in their 60s has remained relatively stable since 2010, most will move into the 70-and-over group within the next decade. This trend shows that the decline in the agricultural labor base is a persistent structural issue.

The weakening of the labor base involves more than labor shortages; it also limits farmers' ability to manage risks proactively in response to climate- and disaster-related shocks, which increases the likelihood of production risks. In addition, the higher risk of accidents among older operators during farm work directly threatens the stability of agricultural enterprises and is expected to increase uncertainty across the agricultural sector in the medium to long term.

The aging of farm operators has increased reliance on external hired labor. The number of daily workers in the agriculture, forestry, and fisheries sector has declined across most age groups, creating both an aging workforce and a shortage of domestic daily workers. The total number of daily workers fell from approximately 110,000 in 2010 to 46,000 in 2022. Most daily workers are in their 50s and 60s, but their numbers dropped from about 90,000 in 2010 to roughly 37,000 in 2022. In contrast, only workers in their 30s showed an increase, but their numbers remain too low to reverse the overall decline.

To address the aging of farm operators and the decline in domestic daily labor, the government introduced the Employment Permit System (EPS) and the Seasonal Worker Program. The number of foreign workers entering Korea through the EPS

declined in 2020 and 2021 because of the COVID-19 pandemic, but increased from 2022, exceeding 30,000 workers in 2024. The number of foreign seasonal workers, whose entry was also restricted during the pandemic, rose sharply after 2022 and reached approximately 46,000 in 2024. Although foreign workers have partially reduced labor shortages in the agricultural sector, they cannot fundamentally resolve the structural weakening of the domestic agricultural labor base. Increasing reliance on foreign labor may create risks, including delayed improvements in labor productivity, reduced disaster-response capacity, and decreased managerial stability. Over the long term, these factors are likely to increase volatility in farm income.

Urgency of Policies to Mitigate Agricultural Income Volatility

Despite these challenging conditions, markets continue to play a limited role in managing agricultural risks. Before the 2000s, the government was central in stabilizing farm income. It addressed price risks through government purchase programs and minimum price support, managed production risks through disaster relief measures, and mitigated cost risks with input subsidy programs. However, after Korea joined the WTO framework, active market intervention became increasingly restricted because of international trade rules. As a result, price-risk management shifted to supply–demand stabilization programs for selected commodities and producer-funded marketing boards. For production risks, the government introduced a public–private partnership model for agricultural insurance that uses private insurers. However, the private sector cannot operate these insurance schemes without significant government support.

In contrast, private markets continue to play a limited role in managing price and production-cost risks. Price risks are mainly addressed through government-led supply–demand adjustment programs, which are implemented by the National Agricultural Cooperative Federation (NACF) and commodity boards. Structural policies to stabilize farm operating expenses or encourage private-sector participation are limited, except for short-term measures to control input-price increases. Revenue insurance has been piloted for a few commodities, such as soybeans, grapes, garlic,

and onions; however, as of 2024, these initiatives are restricted to specific regions and small-scale budgets.

Trends in Agricultural Income

Trends in Agricultural Revenue

To examine changes in gross agricultural income among Korean farm households, trends were analyzed by farming type, production system, age of farm operator, and cultivated acreage. <Figure 6-8>

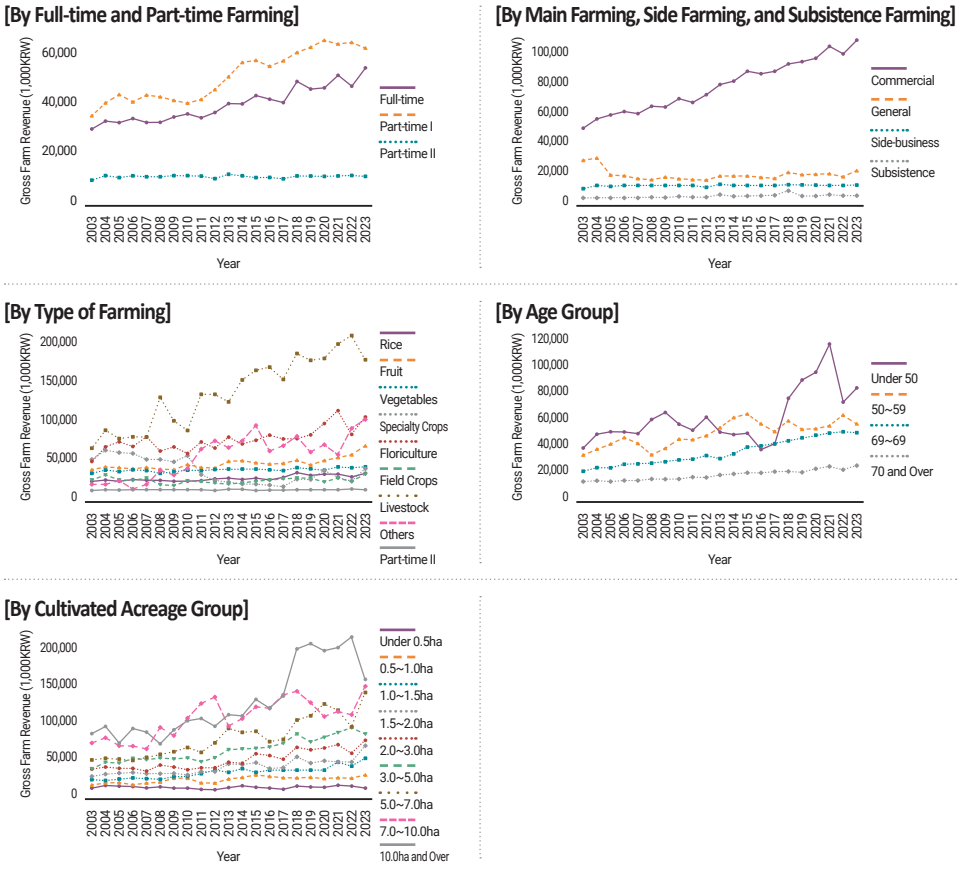
presents the results. A comparison of gross agricultural income between full-time and part-time farm households shows that, since 2003, full-time farms and Type I part-time farms (part-time farms whose gross agricultural income exceeds non-farm income) have shown a steady upward trend. In contrast, Type II part-time farms (those whose gross agricultural income is lower than their non-farm income) have remained largely stagnant, with no significant increase over time.

Income volatility varies by farm type. Type II part-time farms experience minimal fluctuation because their income remains stagnant. In contrast, full-time farms and Type I part-time farms have both increasing income and significant volatility. Full-time farms show greater volatility than Type I part-time farms, primarily because they depend almost exclusively on agricultural income, aside from transfer income, and therefore adopt more aggressive strategies to increase farm revenues. Consequently, full-time farms are the most vulnerable to income volatility among the three groups, indicating that they should be prioritized in farm income stabilization policies.

When gross agricultural income is compared across general farms, side-business farms, and subsistence farms, the results indicate that, since 2003, income for these groups has largely stagnated. In contrast, commercial farms, defined as general farms with at least 3 ha of land or at least KRW 20 million in annual agricultural sales, have shown significant growth, with annual income exceeding KRW 100 million in the 2020s. Commercial farms also experience moderate income volatility, while the other groups show minimal fluctuation because of stagnant income levels.

Farm households are classified as rice, fruit, vegetables, specialty crops, floriculture, field crops, livestock, or other enterprises based on the commodity that contributes the most to their agricultural income. Livestock, floriculture, fruit, and other farms have experienced increasing gross agricultural income, while rice, vegetables, specialty crops, and field crops have shown little change. Income volatility is higher in the high-value sectors, especially livestock, floriculture, and fruit, because these farms operate at larger revenue scales and face greater market and production risks.

Figure 6-8 Trends in gross farm revenue by farming type, age group, and cultivated acreage group



Source: MODS, various years, *Korea Farm Household Economy Survey.*

Gross agricultural income among farmers aged 60 and older has gradually increased with relatively low volatility. In contrast, farmers under 60 show both a greater increase in agricultural income and higher volatility. These generational differences reflect structural disparities in managerial capacity, market participation, and scale of operation.

Clear differences appear when income is analyzed by cultivated acreage. Small-scale farms have stagnant income with limited volatility, while large-scale farms experience substantial increases in gross agricultural income and greater volatility. This pattern likely reflects differences in marketing channels. Larger, full-time, and younger-operator farms typically sell through multiple channels with varying price structures, which increases revenue variability. In contrast, small-scale farms operated by older adults tend to rely on stable, local, or direct-sales channels, resulting in limited price and income fluctuations.

These findings show that full-time farms, commercial farms, farms involved in certain high-value production systems, younger farm operators, and large-scale farms have greater potential for income growth but are also more exposed to volatility. Therefore, government programs designed to stabilize farm income should use a more targeted approach, focusing on groups with higher risk levels instead of applying uniform measures to all farm households.

Trends in Agricultural farm operating expenses

<Figure 6-9> shows the results of an analysis of trends in agricultural farm operating expenses, disaggregated by farming type, production system, age of farm operator, and cultivated acreage. By farming type, farm operating expenses for full-time farms and Type I part-time farms increased steadily, while Type II part-time farms, despite stagnant gross farm income over a long period, had only a slight increase in operating expenses. In terms of volatility, unlike gross agricultural income, Type I part-time farms had greater variability in operating expenses than full-time farms, while Type II part-time farms showed almost no volatility, consistent with their gross farm income trends. These results indicate that, for farm operating expenses, the main issue is not volatility

but long-term cost increases. Because farm operating expenses continue to rise for full-time farms and Type I part-time farms, future farm management stabilization policies should focus on targeted measures to slow cost increases for these groups.

An analysis of production cost trends across general, side-business, and subsistence farms shows that these farm types do not display a clear upward trend in operating expenses. In contrast, commercial farms show a distinct increase in operating expenses. This increase reflects their larger operational scale and higher production intensity, which limit the ability to rely only on family labor and require greater use of hired labor. The labor cost share within total operating expenses is significantly higher for commercial farms. Recent shortages of agricultural labor and increased reliance on foreign seasonal workers have further increased labor expenses.

When analyzing farm operating expenses by farming type, livestock, floriculture, and other farms have experienced relatively steep cost increases compared to other categories. For livestock farms, feed represents the largest portion of operating expenses. Because most feed is imported, these farms are directly affected by exchange rate fluctuations and international grain price changes. The recent sharp rise in operating expenses for livestock farms results from a combination of unfavorable domestic and global economic conditions, rapid exchange rate increases, and greater volatility in international grain markets. Floriculture and other farms have also faced cost increases due to fluctuations in input prices, such as fertilizers and energy, although the rate of increase has been more moderate than that of livestock farms. Other farm types have seen rising operating expenses as well, but at a relatively limited pace.

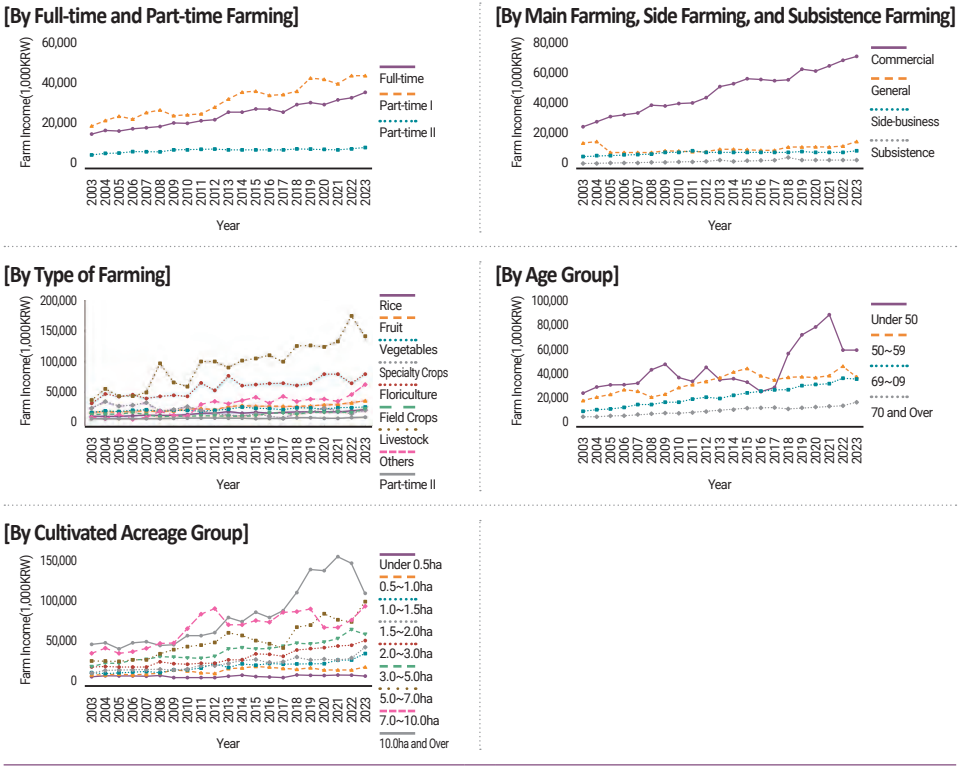
These results show that sensitivity to production-cost risks differs among farming systems, with some production systems more exposed to domestic and global economic and environmental conditions.

Farm operating expenses have increased across all age groups, with a particularly notable rise among farmers under 50. In addition, production cost volatility is significantly higher for younger farmers. These trends indicate that the groups expected to form the core agricultural labor force over the next two decades face structural vulnerabilities related to farm operating expenses.

Analysis by cultivated acreage group shows that farm operating expenses increase more sharply for farms with larger landholdings. Small-scale farms have relatively modest cost increases, while farms cultivating 10 ha or more experience the largest increases in operating expenses and the highest volatility. This suggests that large-scale farms are disproportionately exposed to production cost risks.

Farm households that depend more on agricultural income than on non-agricultural sources are more exposed to rising farm operating expenses and cost volatility. Similar patterns of differential exposure occur across farming systems. Younger farmers are more vulnerable to production-cost risks than older farmers.

Figure 6-9 Trends in agricultural production costs by farming type, age group, and cultivated acreage group



Source: MODS, various years, *Korea Farm Household Economy Survey.*

These findings confirm that certain groups are more vulnerable to production-cost risks. Consistent with the earlier analysis of gross agricultural income, the results indicate that farm management stabilization policies may be more efficient when they focus on high-risk groups rather than applying uniform measures to all farm households. Therefore, as with policies that address income volatility, production-cost risk management should prioritize targeted interventions for the most vulnerable groups.

Trends in Farm Income

<Figure 6-10> shows the results of an analysis of farm income trends by farming type, production system, age of farm operator, and cultivated acreage. Among full-time farm households, whose main earnings come from agriculture, farm income increased steadily until 2020, surpassing KRW 20 million, but then began to decline. Type I part-time farms saw modest but consistent growth, and by 2023, their farm income was similar to that of full-time farms. In contrast, Type II part-time farms experienced a continuous decline in farm income, leading to a significant decrease in the share of agricultural income within total household income. The decline in farm income, even in nominal terms, raises significant concerns.

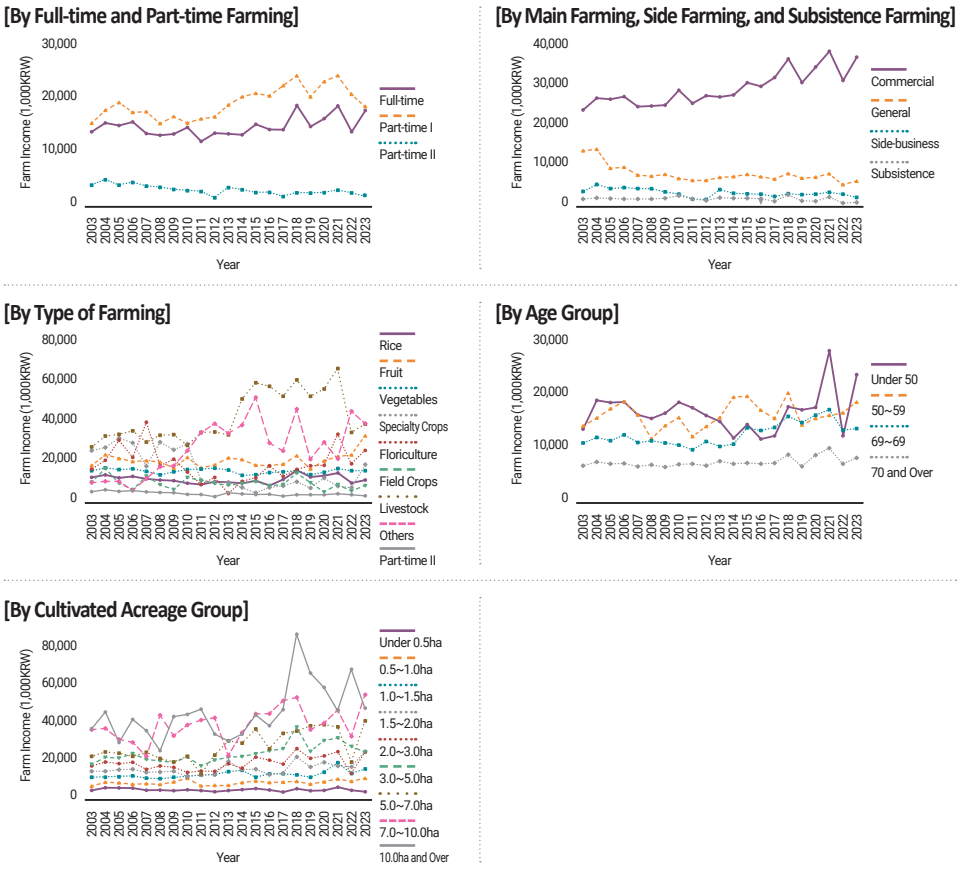
Across general, side-business, and subsistence farms, commercial farms exhibit both increasing farm income and greater income volatility. Although higher farm income is a positive indicator because specialized farms form the backbone of agricultural production, increased volatility signals higher managerial risk, reflecting both growth and vulnerability. In contrast, general farms show a decline in farm income compared to previous periods, while side-business and subsistence farms remain largely unchanged.

Farm income trends vary significantly by farming type. Livestock farms have experienced the fastest growth in farm income since the 2000s; however, they also show the highest volatility. Since the 2020s, amid increasing domestic and global economic uncertainty, livestock producers have faced a sharp decline in farm income. In contrast, rice farms, which represent the largest proportion of all farm households,

have relatively low income volatility but have faced prolonged stagnation in farm income.

By age group, farm income among operators aged 70 and over has generally remained stable, while those under 70 have shown an upward trend. However, in recent years, income volatility has increased across all age groups, with especially high volatility among farmers in their 50s and those under 50. These groups represent the core human resources for the future of agriculture in the Republic of Korea.

Figure 6-10 Trends in farm income by farming type, age group, and cultivated acreage group



Source: MODS, various years, *Korea Farm Household Economy Survey.*

Farm income varies with cultivated acreage. Larger farms generally generate higher income, but they also experience greater income volatility. This suggests that while large-scale farms achieve higher absolute income, they face increased managerial and market risks. Farm income, calculated as the difference between gross agricultural income and farm operating expenses, may show reduced or increased volatility depending on whether changes in these components offset or reinforce each other. In general, farm income trends align with those of gross agricultural income. However, in the livestock sector, farm income volatility is more pronounced, reflecting the sensitivity of feed and other key input costs to external factors such as global grain prices and exchange rates.

Taken together, the analysis shows that larger farms and relatively younger farmers experience greater exposure to farm income volatility. These patterns align with earlier findings on trends in gross agricultural income and farm operating expenses. Therefore, policies to reduce income volatility should prioritize farm households with large cultivated acreage, higher capital intensity, and younger operators, especially those under 50 whose managerial experience may be less established.

Evolution of Farm Management Stabilization Policies

Since the late 1980s, when Korea began to recognize agricultural market liberalization, including the Uruguay Round negotiations, as a major shift in the policy environment, the instruments used to stabilize farm household income have changed significantly. Policymakers have long acknowledged that agricultural income alone is insufficient to ensure adequate household income and have emphasized expanding non-farm income sources. However, the level of policy attention given specifically to agricultural income or agriculture-related household income has varied over time.

During the 1980s and 1990s, policy efforts primarily addressed farm household debt through measures such as interest rate reductions and extended loan repayment periods. However, the 1991 Rural Structure Improvement Program and subsequent agricultural policies shifted focus from direct debt relief to large-scale investment

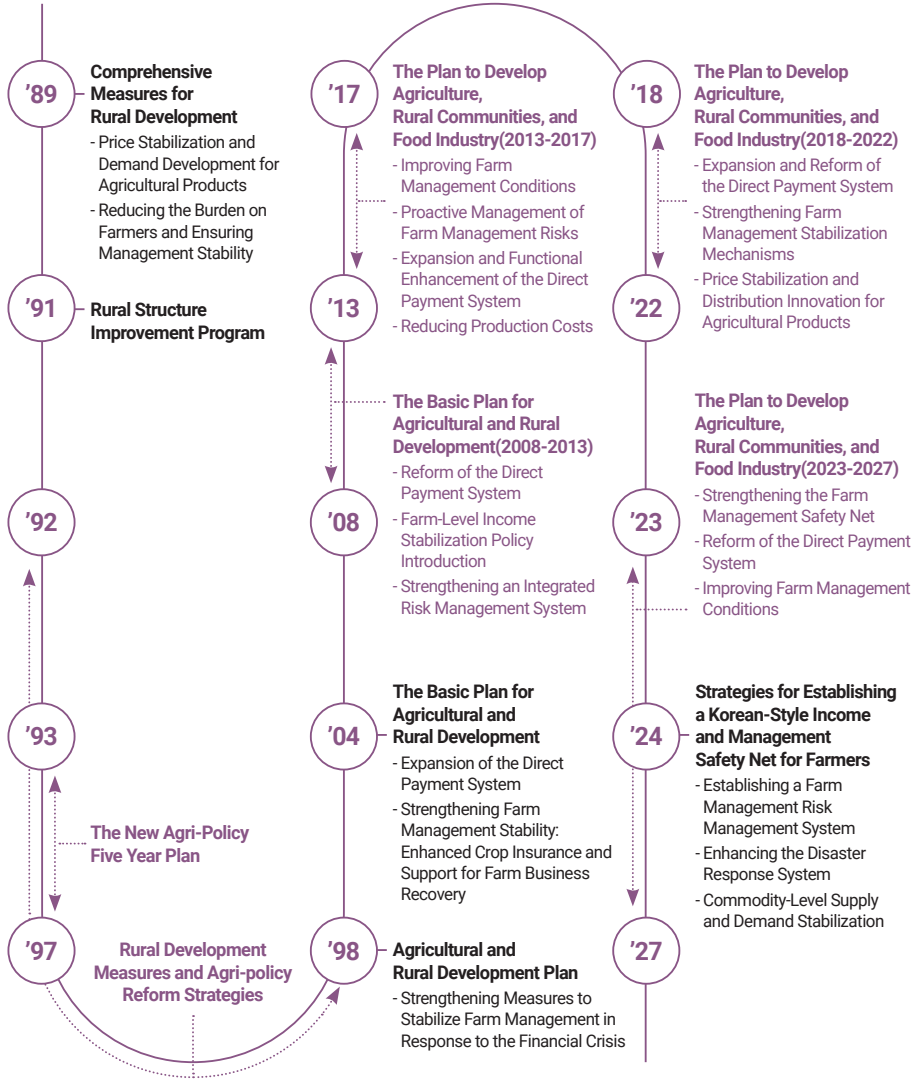
intended to strengthen agricultural competitiveness through structural reforms. In this context, policies aimed to increase agricultural income by improving the competitiveness of agricultural products, raising farm sales, and expanding high-value-added markets, such as export channels.

Since the 2004 The Basic Plan for Agricultural and Rural Development, direct payments, agricultural insurance, and related programs have been identified as core instruments for stabilizing agricultural and farm household income. Although specific measures and policy priorities have changed over time, the main tools directly associated with agricultural income stabilization include direct payment schemes, agricultural disaster and revenue insurance, and disaster relief programs. Policies addressing supply–demand stabilization and agricultural price stabilization have been classified differently over time, sometimes as marketing policy and other times as food security policy. While these policies are clearly connected to income stabilization, supply–demand stabilization was included in the income safety net in the 2018–2022 The Plan for to Develop Agriculture, Rural Communities, and Food industry. In contrast, the 2023–2027 The Plan for to Develop Agriculture, Rural Communities, and Food industry classified it as part of broader efforts to ensure a safe and reliable food supply for the public.

According to the Ministry of Agriculture, Food and Rural Affairs' 2024 report, "Strategies for Establishing a Korean-Style Income and Management Safety Net for Farmers," policy tools for stabilizing farmers' income are categorized as direct payments, agricultural income stabilization insurance, disaster recovery support, agricultural insurance, and supply–demand stabilization programs. Direct payments, agricultural insurance, agricultural income stabilization insurance, and disaster relief measures have consistently been considered the main instruments for income stabilization. Since their designation as key policy tools in the 2004 The Basic Plan for Agricultural and Rural Development, these instruments have remained central to Korea's agricultural income stabilization strategy. During this period, policy directions have remained consistent, including expanding and restructuring the direct payment system to strengthen public-benefit functions, broadening coverage and increasing

protection levels under agricultural insurance, and improving the adequacy of disaster relief funding; see <Figure 6-11>.

Figure 6-11 Changes in Agricultural Income Stabilization Policies



Source: by the author.

Government Policies to Mitigate Agricultural Income Volatility

Volatility in agricultural income results from several factors, including production disruptions caused by climate change, more frequent and severe natural disasters, and fluctuations in agricultural prices. Individual farm efforts are insufficient to address these challenges. In response, the government implements policy instruments to reduce income variability, such as agricultural policy insurance, disaster relief programs, and supply–demand stabilization measures.

Agricultural Insurance

Agricultural insurance includes crop insurance, livestock insurance, livestock disease-treatment insurance, Agricultural Workers' Safety Insurance, and revenue insurance. These instruments are classified as policy insurance because the government subsidizes part of the premiums and all administrative costs according to the Agricultural and Fishery Disaster Insurance Act.

Crop and livestock insurance offset reductions in agricultural income caused by agricultural disasters, while revenue insurance mitigates declines in overall farm revenue. Although revenue insurance compensates for income losses resulting from price declines, statutory provisions have not yet fully incorporated price-related risks.

Crop insurance compensates farmers for losses resulting from natural hazards to support income stabilization. The Disaster Insurance Policy Division of the Ministry of Agriculture, Food and Rural Affairs (MAFRA) oversees the program, while the Korea Agricultural Policy Insurance & Finance Service (APFS) manages system planning, operational improvement, education, outreach, and program monitoring. Private insurers, currently NH-NongHyup Property & Casualty Insurance, are responsible for sales, loss assessment, and claim payments.

As of 2025, 76 crops are eligible for coverage. Only registered agricultural management entities may enroll, and the basic insurance unit is the actual cultivated parcel or production block, regardless of cadastral boundaries. Some crops, such as rice, facility crops, and mushrooms, require enrollment at the farm-operator level or

together with related production facilities. Eligibility criteria differ by crop and may include minimum sales volumes or cultivated area requirements. Certain crops are limited to specific regions and enrollment periods (e.g., winter radish in Jeju from August to October, lettuce in HoengSeong and PyeongChang from July to August).

When a disaster occurs, insured farmers notify the insurance provider, who then conducts a loss assessment and determines and pays indemnities. Farmers may select coverage levels of 60%, 70%, 80%, 85%, or 90%, although higher coverage levels can be limited based on previous enrollment history. The government typically subsidizes 50% of the pure premium, with some variation by crop and coverage level. Local governments may also subsidize part of the farmer's cost-sharing portion.

Livestock insurance covers losses resulting from natural disasters, fire, and disease. The Disaster Insurance Policy Division of MAFRA administers the program, while APFS acts as the program management agency. Private insurers, such as NongHyup, KB, DB, and Hanwha, operate the program.

Eligible policyholders are registered agricultural management entities, certified livestock farmers, and authorized livestock housing facilities. The policy covers 16 livestock species and includes facilities such as barns, ancillary structures, and equipment. Coverage is available throughout the year, and insurance is generally required for both livestock and related facilities. Coverage levels for livestock range from 60% to 95%, depending on the species, while facility coverage levels range from 90% to 100%. The government subsidizes 50% of premiums, or 40% for horses, with subsidy limits of KRW 50 million per management entity and KRW 40 million for horses. Local governments may offer additional support.

Revenue insurance compensates for decreases in agricultural revenue resulting from lower yields caused by disasters or from market price declines. Unlike crop insurance, revenue insurance includes price declines as a compensable source of revenue loss.

MAFRA oversees the program, APFS manages operations, and NH-Nonghyup Property & Casualty Insurance administers policies. Only agricultural management entities with at least 1,000□ of insured farmland are eligible. Enrollment can be

for a single parcel or multiple parcels together. In 2025, 15 crops are eligible, and government subsidies are available only until the total insured area reaches the crop-specific cultivated-area limit. For crops that require mandatory self-help fund payments or cultivation reporting, government support is provided only when these requirements are met.

Coverage levels are 60%, 70%, 80%, and 85%, with the 85% level available only to specific participating farms (e.g., vegetable price stabilization program or rice-acreage reduction participants). Government premium subsidies are capped at KRW 50 million per enrollee and decrease as the coverage level increases. Local governments may subsidize part of the farmer's cost-sharing portion; however, insured farmers are required to pay at least 15% of the pure premium.

Agricultural Disaster Relief

Agricultural disaster relief is governed by the Act on the Prevention of and Countermeasures Against Agricultural and Fishery Disasters, which aims to increase agricultural productivity and stabilize farm management by preventing disasters and providing recovery support after disasters. A locality is designated as a disaster-affected area if cumulative damage exceeds specified thresholds, generally 50 ha per municipality, 30 ha for frost, hail, or heavy snowfall, and 10 ha for wildlife damage. Adjacent municipalities may also receive support.

Financial assistance may cover pesticide costs, replanting costs, farmland rehabilitation, facility restoration, demolition costs, livelihood support, tuition waivers, loan repayment extensions, interest reductions, and access to emergency management funds. To prevent double compensation, farmers who receive indemnities from agricultural insurance are not eligible for overlapping restoration support for the same damaged assets. Subsidy ratios differ by category (e.g., 100% for pesticide assistance; 50% subsidy and 30% loan for replanting and livestock restocking; 35% subsidy and 55% loan for facility restoration).

Supply–Demand Stabilization Policies

Beginning in August 2026, grain supply-demand management, including for rice, wheat, and soybeans, will be implemented under the revised Grain Management Act. The Act shifts the focus from "grain management" to explicit "grain supply-demand management," expands public stockpiling, and requires annual supply-demand planning with appropriate acreage targets for paddy and rotational crops. The Act permits the use of optional direct payments to support acreage-adjustment programs. It also establishes a rice supply-demand management system for data collection and forecasting.

A new provision authorizes proactive supply control to stabilize rice prices. When projected production exceeds expected demand, the Minister of Agriculture may instruct designated entities ("Nonghyup, etc.") to purchase, market, or contract cultivated rice for supply adjustment. Support may include covering losses from sales or providing financing for contract production programs.

Supply-demand management includes pre-planting acreage-control programs and proactive supply adjustment during the harvest season when

needed. The revised Act on Distribution and Price Stabilization of Agricultural and Fishery Products, effective August 2026, strengthens supply-demand management for horticultural crops. The Act requires provincial governments to prepare supply-demand management plans that specify target production areas by major regions, production and shipment plans, crop growth and yield management measures, and other management arrangements.

The Minister of Agriculture must consolidate and coordinate provincial plans through a central consultative body and develop a national agricultural supply-demand management plan. This plan must include demand-supply projections, use-specific plans for reserve and imported agricultural products, acreage management targets, proactive supply-control measures, and programs that support stable production and supply.

Article 5-2 authorizes support for stable production and supply, including acreage management, crop growth management, adjustment of production and shipment schedules, expansion of disaster prevention facilities, and promotion of contract farming.

Article 5-3 permits the Ministry to establish provincial agricultural supply-demand management centers to support implementation.

A new price stabilization provision (Article 16-2) authorizes payments when average annual prices fall below a reference price. The Agricultural Price Stabilization Review Committee determines eligible commodities, such as grains and vegetables. This committee consists of up to 15 members, with at least one-third representing producer organizations.

Implications

The government's policies to stabilize agricultural income share a common objective but differ significantly in program coverage, target commodities, and compensation mechanisms. The disaster relief program covers the widest range of eligible commodities; however, support is only provided if disaster-affected areas within a city or county exceed a specified threshold. In contrast, supply–demand stabilization programs are expected to cover fewer commodities because eligible items require approval from the Price Stabilization Review Committee.

The mechanisms for verifying losses vary across policy instruments. For the two policy insurance programs, insurance providers conduct damage assessments and evaluate losses at the level of individual policyholders. In the disaster relief program, administrative personnel in jurisdictions designated as disaster-affected areas carry out assessments. For price-difference compensation under supply–demand stabilization programs, average prices are calculated using wholesale and farm-gate transaction prices according to standards set by presidential decree. Reference prices are determined based on production costs, supply–demand conditions, and other criteria defined by decree.

Under the crop disaster insurance program, farmers select a coverage level, and indemnities are paid when actual yields fall below the insured threshold, using the reference price to calculate the shortfall. In the revenue insurance program, farmers also choose a coverage level, and compensation is provided when realized revenue is less than the insured level. The disaster relief program offers compensation at rates

predetermined by the Ministry of Agriculture, Food and Rural Affairs (MAFRA), based on standardized unit values and preset national subsidy rates. In the price-difference compensation scheme within the supply–demand stabilization framework, financial support is provided, within budget limits, when the average market price is lower than the reference price; the Agricultural Price Stabilization Review Committee determines the specific support rates.

Because both disaster insurance and disaster relief provide compensation for disasters, insured farmers may receive overlapping payments. To address this, guidelines exist to prevent duplicate compensation. Revenue insurance covers revenue losses from disasters and from price declines, which can overlap with price-difference compensation under supply–demand stabilization programs. As with the coordination between disaster insurance and disaster relief, insured farmers are expected to receive compensation through their insurance policies, eliminating duplicate support. Therefore, price-difference compensation under the supply–demand stabilization program is expected to focus on farmers who are not enrolled in the revenue insurance program.

Policy Tasks for Strengthening Farm Income Stability

Establishing an Integrated Policy Framework for Income Stabilization

A variety of instruments, including direct payments, crop disaster insurance, farm revenue insurance, disaster relief programs, and commodity-specific supply–demand stabilization schemes, are currently used to reduce fluctuations in farm income. Although these instruments have similar policy objectives, they operate under different legal and organizational structures, which often leads to overlap, inconsistencies, and potential policy conflicts. Because commodity prices affect the indemnity structure of disaster and revenue insurance, and supply–demand stabilization measures influence both prices and income levels, a coherent and harmonized policy framework is necessary.

Following the 2024 announcement of the "Korean-Style Income and Management

Stabilization Framework," major statutes, including the Grain Management Act, Agricultural Products Price Stabilization Act, Agricultural Disaster Insurance Act, and Agricultural Disaster Countermeasures Act, have been substantially revised. These changes require the development of a renewed farm income stabilization strategy, with the supply–demand stabilization framework as a central structural component. Drawing on international examples, such as the U.S. Farm Bill (five-year cycle), Canada's Business Risk Management (BRM) program (over 20 years), and the EU Common Agricultural Policy (five- to seven-year planning cycles), Korea should pursue legally grounded, long-term policy continuity. A medium- to long-term roadmap that presents the government's strategic direction, past performance, and future objectives is needed to improve the predictability and credibility of agricultural income stabilization policies.

Disaster insurance and revenue insurance are managed by the Agricultural Policy Bureau, while commodity-specific supply stabilization is divided among several divisions within the Food Policy Bureau, including grains, livestock, and horticulture. Insurance programs set indemnity parameters before the production season, but supply management operates during and after the production cycle. Therefore, close coordination is essential. Supply stabilization measures also affect the following year's insurance price baselines. A formal coordination mechanism, such as monthly or quarterly inter-departmental policy councils, should be established to ensure timely information sharing and alignment across programs.

The relationship between supply stabilization and revenue insurance requires further explanation. When supply management absorbs most price volatility and disaster insurance addresses yield risk, operating revenue insurance may create inefficiencies and duplicate compensation. Compensation benchmarks also differ: insurance instruments use multi-year average prices that exclude extreme values, while supply stabilization relies on current market prices. These differences highlight the need to harmonize program design to prevent confusion and support coherent implementation.

Building a Comprehensive, Cross-Commodity Farm Risk Management Safety Net

Korea's current risk-management system is based on crop-specific coverage linked to individual farmland. Crop disaster insurance and disaster relief, including pesticide cost support and replanting subsidies, compensate at the crop level. However, mixed-cropping farmland is typically excluded, and many commodities are not insured. As a result, many farms continue to rely on disaster relief, which depends on disaster area designation and offers relatively low compensation.

To address these gaps, Korea should develop a more comprehensive and inclusive safety net. This approach includes introducing new insurance products for mixed-cropping farmland, using weighted-average production costs as the insured value, and implementing a Korean-style Non-Insured Crop Program that compensates losses at the individual farmland level without requiring disaster area designation.

Such programs would operate similarly to insurance schemes and require the development of production cost and yield data infrastructure. Commodities with consistently low disaster insurance enrollment could be moved to the non-insured program, which would offer a zero-premium basic coverage tier and optional premium-based enhanced coverage. The goal is to establish a complementary, integrated system in which disaster insurance and disaster relief serve as mutually reinforcing components of a unified risk management framework.

Tailored Policy Measures Reflecting Farm Characteristics

Analysis of farm economy data shows that income volatility is highest among full-time and Type-1 part-time farmers, younger farm operators, and large-scale farms. In contrast, Type-2 part-time and small-scale farms experience low volatility and stagnant agricultural income. Production costs follow similar trends, with rapid increases observed among large-scale, professional farms and among operators younger than 50 years.

For small-scale farms, agricultural income represents only a small portion of total household income, which limits the effectiveness of agricultural income stabilization policies. However, because these farmers continue to produce and maintain

farmer status, a basic stabilization mechanism remains necessary. Administrative inefficiencies, including high relative costs for insurance enrollment, loss assessment, and indemnity processing, also support the need for alternative approaches. A Basic Agricultural Disaster Insurance (tentative name) could be introduced to offer simple, low-cost compensation through production cost–based lump-sum payments triggered by verified disaster events, potentially using drones for rapid assessment.

For professional and large-scale farms, existing crop disaster insurance and revenue insurance should be restructured to improve comprehensive risk management. Possible measures include raising minimum eligibility thresholds and using tax and financial records to objectively verify revenue changes. These steps can reduce reliance on complex loss-adjustment procedures.

Enhancing Farmers' Risk Management Capabilities

Although government intervention is essential, the effectiveness of income stabilization policies ultimately depends on farmers' ability to implement risk management strategies. However, aging demographics and limited access to information have reduced farmers' adaptive capacity. Key areas for strengthening farmer capabilities include:

1. Strategic management planning (crop diversification, varietal diversification, diversified marketing channels, staggered shipment schedules, expanded machinery use).
2. Participation in technical and management training, enhancing resilience to production, cost, and market risks.
3. Strengthening farmer-to-farmer networks for timely information sharing, particularly regarding pests, diseases, and market conditions.
4. Active use of government risk-management instruments, including disaster and revenue insurance.

To support these efforts, government-led risk management consulting programs should be expanded. These programs should address yield, price, human, financial, and institutional risk, as well as strategic decision-making and technology adoption.

The existing consulting programs operated by the Korea Agency of Education, Culture, and Information Service (EPIS) should include risk-management modules. Local agricultural cooperatives, given their knowledge of regional production conditions and insurance products, should serve as on-site training providers.

Comprehensive Strategies for Reducing Production Costs

Production cost volatility and upward pressure, especially among full-time, Type-1 part-time, and younger farm operators, have become major risks. Farmers view cost risk, including labor, feed, fertilizer, and energy, as more serious than yield risk. Many cost drivers, such as labor shortages, global supply chain disruptions, rising input prices, and increased pest-control needs because of climate change, are beyond the control of individual farms.

Current support measures, such as input subsidies or emergency loans, provide short-term relief but do not address structural cost pressures. Therefore, a medium- to long-term strategy is needed

that combines research and development for input-saving technologies,

modernization and consolidation of production infrastructure,

mechanization and smart-farming solutions,

and improved seasonal labor supply and efficiency.

Adopting a staged, systematic approach will help achieve stable, long-term cost reduction and contribute to income stabilization.

4. Handover of Farming to the Next-Generation

Changes in the Agricultural Workforce Structure

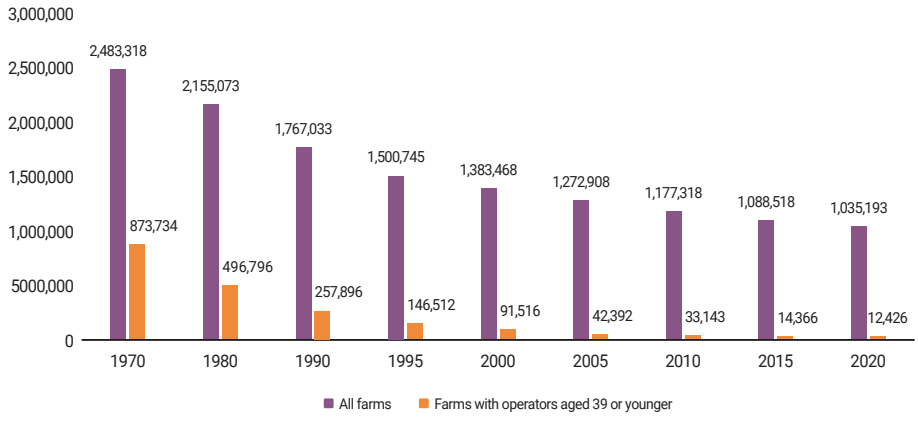
Since the 1970s, Korean agriculture has experienced structural changes, including a steady decline in the number of farm households and an increase in the average age of farm operators. The total number of farm households decreased from 2.483 million in 1970 to 1.035 million in 2020, representing a reduction of approximately 58 percent. Notably, between 1970 and 2005, the number of farm households fell to about half its original level, demonstrating a persistent long-term decline.

During the same period, the number of young farm households, defined as those headed by individuals aged 39 or younger, declined at a much faster rate than the total number of farm households. Young farm households decreased from 873,734 in 1970 to 496,796 in 1980, a 43 percent reduction, then to 257,896 in 1990, 91,516 in 2000, and 12,426 in 2020, reaching about 1.4 percent of the 1970 level. While the total number of farm households declined at an average annual rate of 1.7 percent, young farm households declined at a much higher rate of 8.2 percent. These trends indicate that the agricultural labor base has been steadily weakening in both absolute size and age structure.

Changes in the composition of farm operators are especially clear in the long-term trend shown in <Figure 6-13>. In the 1970s, most farm operators were under 40 or in their 40s. From the 1980s onward, the proportion of operators aged 50 and above increased rapidly. In 1980, operators aged 60 or older already made up 20.3 percent of the total, showing that older adults accounted for a significant share even then. During the 1990s and 2000s, the 60-and-over age group became the largest category. By 2020, operators aged 60 or older accounted for 73.3 percent of all farm operators, which is well above a simple majority.

Figure 6-12 Trends in total farm households and young farm households (1970–2020)

Unit: households



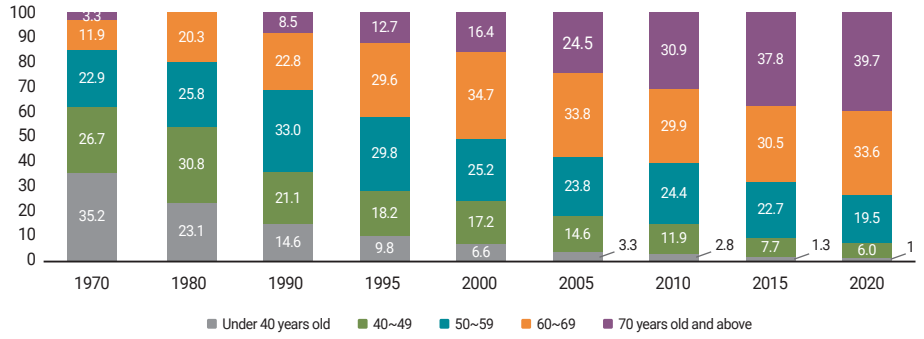
Note: "Young farm households" refer to households whose farm operator is aged 39 or younger.
Source: KOSIS, various years, *Census of Agriculture, Forestry and Fisheries.*

These changes in the age structure of farm operators go beyond demographic trends and raise important concerns about the sustainability of agriculture. The significant decrease in the proportion of young operators reduces the sector's ability to adopt new technologies, promote managerial innovation, and improve productivity. At the same time, the high concentration of older operators indicates a potential for rapid contraction of the agricultural base in the medium to long term, because the natural decline of this group increases the risk of sudden decreases in rural community stability and agricultural production capacity. In addition, the ongoing shortage of young farmers has led to structural challenges, such as instability in farm succession, delays in farmland restructuring, and limits on farm expansion.

Consequently, the simultaneous trends of decreasing farm numbers, fewer young farmers, and an aging population of farm operators have increased demographic imbalances in the agricultural workforce. These trends pose a significant threat to the long-term sustainability of the agricultural sector. Therefore, policy intervention to support stable generational transition and increase young people's entry into agriculture is necessary.

Figure 6-13 Proportion of farms by farm household head age (1970–2020)

Unit: %



Note: In 1980, the 20.3% proportion for the 60–69 age group represents the share of farms headed by individuals aged 60 and over.
Source: KOSIS, various years, Census of Agriculture, Forestry and Fisheries.

Policies for Generational Succession in Agriculture

In South Korea, individual programs and policy packages have been implemented to secure new young farmers and support generational renewal in the agricultural sector to ensure the sustainability of agriculture.

One such program is the "Program for Nurturing Next-Generation Farmers." In the 1980s, the aging farming population and the migration of rural youth to urban areas caused a decline in agricultural labor productivity and a shortage of farm successors. These challenges demonstrated the need for policies to support the development of agricultural successors. As a result, on November 5, 1980, the "Act on the Fund for Nurturing Successor Farmers and Fishermen" was enacted. Following this, on February 28, 1981, the "Enforcement Decree of the Act on the Fund for Nurturing Successor Farmers and Fishermen" was promulgated. Beginning in 1981, the "Program for Nurturing Next-Generation Farmers[3]" was implemented, targeting young individuals aged 30 or under.

3 While the official title of the program has evolved over the years into the current Program for Nurturing Next-Generation Farmers,' its core mechanism has remained consistent: providing financial support to successor farmers through interest rate subsidies (interest rate differentials).

Since then, in response to changes in the agricultural environment, the scope of agricultural successors, age requirements, and farming experience requirements have been modified at various times to address evolving policy needs. This program is currently implemented under the "Act on Fostering of and Support for Next Generation Farmers or Fishers and Young Farmers or Fishers.[4]" This legal framework allows young farmers to be treated and categorized separately from successor farmers. Accordingly, as of 2025, policies for generational succession in agriculture make a clear distinction between young farmers and successor farmers.

The comprehensive policy packages to nurture next-generation farmers have included the "Comprehensive Plan to Foster Elite Farmers (2004–2013)," "Measures to Foster Professional Farmers and Fishers (2012–2016)," and "Measures to Nurture Young Start-up Farmers (2018–2022)." Beginning in 2023, the "First Basic Plan to Nurture Successor and Young Farmers (2023–2027)" has guided the implementation of policies related to settlement support funds, financial assistance, farmland, education, and consulting for agricultural successors.

Over time, policies for nurturing next-generation farmers have evolved in several key areas: First, the policy direction has shifted from focusing exclusively on internal rural labor to attracting both internal and external talent to rural areas. Second, target groups have expanded from successor farmers to include more diverse categories, such as young farmers and those entering through employment. Third, education support has moved from one-time, supply-driven assistance to lifelong, demand-driven learning. Fourth, the implementation system has transitioned from a central-government-led approach to a collaborative model involving central and local governments alongside farmers' organizations. Finally, monitoring and evaluation systems have developed from simple project administration into a structured system based on phased evaluation and feedback.

4 While the official English version of this Act categorizes next-generation agricultural human resources into '**next generation farmers**' and '**young farmers**,' the Ministry of Agriculture, Food and Rural Affairs (MAFRA) distinguishes between '**successor farmers**' (referred to as next generation farmers in the Act) and '**young farmers**.' In this section, unless referring to the official statutory language, the term 'next-generation farmers' is used as an overarching concept encompassing both successor and young farmers.

Program for Nurturing Next-Generation Farmers (1981–Present)

To identify promising prospective farmers and beginning farmers who will lead future agricultural development, and to provide them with comprehensive support, including financing, education, and consulting for a defined period, the government has established the 'Program for Nurturing Next-Generation Farmers.' This program is implemented annually under the Act on Fostering of and Support for Next Generation Farmers or Fishers and Young Farmers or Fishers. Along with the 'Young Farmer Settlement Support Program', which targets young start-up farmers, it is one of the core initiatives for developing next-generation farmers.

This program originated from the enactment of the Act on the Fund for Nurturing Successor Farmers and Fishermen in 1980, with its official launch in 1981 initially targeting those aged 30 or younger. Since then, although the eligibility criteria have changed to reflect the evolving demographics of next-generation farmers, the program has continued without interruption to the present.

With the announcement of the 'Measures to Nurture Young Start-up Farmers' in 2017, successor farmers, defined as individuals under the age of 50 with fewer than 10 years of farming experience, were formally distinguished from young farmers, who are defined as individuals under the age of 40 with fewer than three years of experience. This policy change created a dual-track system and increased support specifically for young farmers. In 2020, the enactment of the Act on Fostering of and Support for Next Generation Farmers or Fishers and Young Farmers or Fishers legally codified the distinction between successor and young farmers.

As of 2025, the eligibility criteria for selection as a successor farmer are as follows. Applicants must be between the ages of 18 and 50 during the program year. They must be graduates of an agricultural high school or college, or have completed relevant training at an agricultural education institution recognized by the Ministry of Agriculture, Food and Rural Affairs (MAFRA) or local authorities (Mayor, County Chief, or District Head). Additionally, applicants must also have no more than 10 years of farming experience as of the registration date of their agricultural business information under the Act on Fostering and Supporting Agricultural and Fisheries

Business Entities. In 2025, the government plans to select 1,000 successor farmers from eligible applicants. Selected individuals receive benefits such as financial support for farm establishment and access to training programs. In addition, those who farm for at least five years after selection and are recognized as 'Outstanding Successor Farmers' may qualify for additional policy financing <Table 6-11>.

Table 6-11 Main features of the program for nurturing next-generation farmers (2025)

Financial Support (Successor Farmer Loans)	• Loan Limit: Up to KRW 500 million per household (eligible to apply within five years of being selected as a Successor Farmer) - Determination of Amount: The actual loan amount is determined by the lending institution based on collateral value, creditworthiness, and related evaluations. - Permitted Uses: The loan may be used for agricultural purposes, including the acquisition or leasing of farmland; the installation or leasing of agricultural facilities; the purchase of seeds, seedlings, and fertilizers; the acquisition of agricultural machinery; and the purchase of agricultural cargo trucks. • Interest Rate: Fixed rate of 1.5% per annum - Variable Rate Option: If a variable rate is chosen at the time of application, the lending institution's posted rate (adjusted every six months) applies. - The chosen interest rate structure (fixed or variable) cannot be changed once the loan has been executed. • Repayment Period: A 5-year grace period, followed by 20 years of equal principal installments.
Training	• Provision of training programs to strengthen the farming management skills and competencies of selected Successor Farmers - Topics include the policy directions of the Ministry of Agriculture, Food and Rural Affairs (MAFRA), accounting, taxation, management diagnostics, business consulting, and sharing of best-practice farming success cases.
Additional Financial Support for Outstanding Successor Farmers	• Additional policy financing is provided to individuals selected as Outstanding Successor Farmers among those who have farmed as Successor Farmers for five years or more. • Loan Limit: Up to KRW 200 million per household (eligible to apply within two years of being selected as an Outstanding Successor Farmer) - Determination of Amount: The actual loan amount is determined by the lending institution based on the applicant's collateral value, creditworthiness, and other relevant evaluations. • Loan Conditions: Fixed interest rate of 1.5% per annum, with a 5-year grace period and 10-year equal principal installments.

Source: MAFRA, 2024, *Guidelines for the Selection and Support of Successor Farmers (2025); Guidelines for the Selection and Support of Outstanding Successor Farmers (2025).*

Comprehensive Plan to Foster Elite Farmers (2004–2013)

After the Korea–Chile FTA, the government introduced comprehensive measures for agriculture and rural areas. The agricultural workforce development policy included two main areas: the development of elite agricultural personnel and the development of women farmers.

Policy programs aimed at developing elite agricultural personnel included fostering successor farmers, restructuring agricultural vocational schools, providing farmer education and training, supporting agricultural business consulting, training distribution specialists, supporting agricultural ventures, and revitalizing agricultural enterprises.

The Comprehensive Plan to Foster Elite Farmers aimed to cultivate 200,000 elite farm households over the next 10 years, so that these households would contribute more than 50% of total agricultural production.

The plan presented several key policy measures: (1) training new entrants and attracting elite personnel to increase workforce supply; (2) establishing a support system to facilitate successful settlement; (3) providing demand-oriented, customized education; (4) expanding consulting services to improve farm management and risk management capacity; (5) establishing evaluation and post-management systems for elite agricultural workforce development; and (6) enhancing workforce development and improving conditions across the agricultural sector.

Measures to Foster Professional Farmers and Fishers (2012–2016)

As a supplementary measure to the existing Comprehensive Plan to Foster Elite Farmers, which was scheduled to end in 2013, the government proposed a new five-year workforce plan for the agriculture and fisheries sector for 2012–2016.

Focusing primarily on encouraging new entrants, the plan aimed to develop "new professional farmers and fishermen who will enhance the competitiveness of the agriculture and fisheries sector." The goals set for 2017 included attracting 10,000 new entrants under age 30, increasing the employment rate of agricultural and fisheries high school graduates to 30%, and raising the number of agricultural high school and university graduates selected as successor farmers to 1,000.

The plan aimed to strengthen the capacity of agricultural and fisheries schools to train professional farmers and fishers by gradually transforming schools for self-employed farmers and fishers into vocational schools specializing in the agri-food sector, enhancing specialized curricula in general agricultural and fisheries high schools, and expanding farming settlement programs for employment and entrepreneurship to 25 universities.

To strengthen the connection between industry and education, the plan aimed to offer higher education opportunities to high school graduates involved in farming, implement career exploration programs and mentoring for entrepreneurship and employment, and expand internship programs with agricultural and fisheries corporations for graduates of agricultural high schools and universities.

To support entrepreneurship and employment, the plan included establishing a comprehensive support system for successful farm succession, such as consulting and advisory services; expanding tax benefits and support services to facilitate succession; building a job information network for the agri-food sector; and operating a council to support entrepreneurship and employment among agricultural high school and university students.

The plan aimed to improve public education on the value of agriculture and fisheries by correcting negative portrayals in elementary, middle, and high school textbooks, promoting positive perceptions through school field trips related to agricultural and rural experiences, and expanding urban facilities that offer opportunities to experience agriculture and rural life.

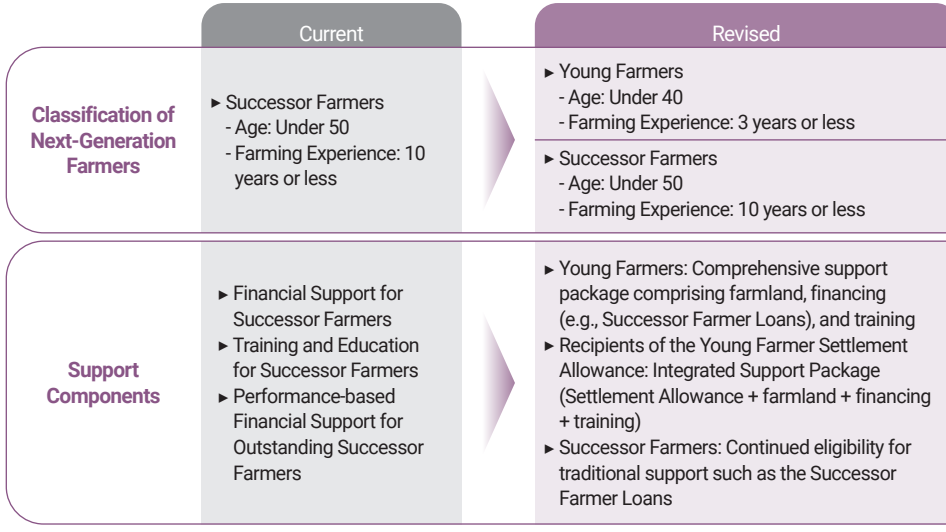
Measures to Nurture Young Start-up Farmers (2018–2022)

In 2017, the government announced the "Measures to Nurture Young Start-up Farmers" to support the sustainability of agriculture and establish a foundation for innovation-driven growth led by young farmers. The policy aimed to support 10,000 young farmers by 2022, positioning them as key drivers of agricultural innovation.

Under this policy, to encourage generational renewal in the agricultural sector, the next-generation farmers were divided into young farmers (individuals under

40 years old with less than 3 years of farming experience) and successor farmers (individuals under 50 years old with less than 10 years of experience). The government implemented a phased support system for young farmers, addressing entry, settlement, and growth, which forms the core structure of the policy.

Figure 6-14 Target groups and support components of the Measures to Nurture Young Start-up Farmers



Source: MAFRA Press Release(Dec, 21, 2017).

This policy aimed to address the challenges that young startup farmers encounter in the early stages of entering agriculture, such as unstable income, difficulties in securing farming capital and farmland, and the need to acquire farming skills <Table 6-12>. The major policy components are as follows: expanding the pool of skilled agricultural personnel; providing a Farming Settlement Support Payment and comprehensive assistance related to farmland, financing, and technology; and supporting programs for technological advancement and business diversification to promote the growth and advancement of young startup farmers.

Table 6-12 Objectives and key components of the Measures to Nurture Young Start-up Farmers (2018–2022)

Category	Key Content
Policy Objective	Nurturing 10,000 young farmers as key drivers of innovative agricultural growth by 2022
Entry Stage	• Promote entry of agricultural high school and university students, prospective young returnees to farming, and non-agriculture majors into the agricultural sector. › Expand enrollment quota of the Korea National University of Agriculture and Fisheries (KNUAF) (470 in 2017 → 550 in 2018) › Increase the number of Future Agriculture Leading High Schools › Increase the number of universities specialized in agricultural start-ups › Introduce the Long-term Education Program for Young Returning Farmers (newly established in 2018) - Select 50 prospective young returnees; provide 6-month practical training › Strengthen training for successor farmers by inheritance (1,000 in 2017 → 2,000 in 2022)
Settlement Stage	• Provide comprehensive support for selected Young Farmers, including settlement allowances, farmland, financing, and training. • Young Farmer Settlement Allowance › Among Young Farmers, 1,200 individuals are selected based on assessed farming commitment and growth potential. › Provide a monthly settlement allowance of up to KRW 1 million for up to three years. - KRW 1,000,000 in the 1st year; KRW 900,000 in the 2nd year; KRW 800,000 in the 3rd year - Recipients are required to maintain farming activity, complete training programs, and keep management records. • Customized Farmland Support › Priority access to the Farmland Bank's land rental and purchase programs (up to 2 ha) • Successor Farmers Loans › Expand the Successor Farmers Loan (loan ceiling: KRW 200 million → 300 million) › For Young Farmers: preferential credit guarantees by the Agricultural, Forestry and Fisheries Credit Guarantee Fund (guarantee ratio: 90% → 95%) • Training, Consulting, and Other Support › Mandatory "Essential Farming Settlement Training" for Young Farmer Settlement Allowance recipients (160 hours per year) › Operation of Management Training Rental Farms - Establish 30 rental farms (3,000㎡ each, including smart farms) › Practical Training with Mentor Farms - Provide training allowances: KRW 400,000 per month for mentor farms; KRW 800,000 per month for mentees (3–7 months)

Category	Key Content
Settlement Stage	‣ Support Program for Competitive Small-Scale Farmers - Diagnose management status and technological levels using a management analysis system, and provide tailored guidance ‣ Competitiveness Enhancement Program - Support consulting, new product development, and marketing (up to KRW 50 million per participant)
Growth Stage	• Support the transition of young farmers into professional agribusiness operators through technological advancement, business scale-up, and diversification. ‣ Strengthen advanced technology capabilities through the Advanced Technology Joint Training Centers - 7 centers in 2017 → 4 additional centers designated in 2018 ‣ Promote business diversification through investments from the Agri-Food Fund of Funds ‣ Provide preferential R&D support for agricultural corporations established by Young Farmers by utilizing the Agri-Food Venture Startup Voucher Program

Source: MAFRA Press Release (Dec, 21, 2017).

First Basic Plan to Nurture Successor and Young Farmers (2023–2027)

Following the Measures to Nurture Young Start-up Farmers established in 2017, various programs– including the selection of young farmers, support for early settlement and start-up capital, education, consulting, and the creation of a smart farm start-up ecosystem–have contributed to slowing the decline in the number of young farmers by attracting new entrants to the agricultural sector.

However, persistent policy demands remain for early-stage income stabilization, access to farmland and financing, and improved living conditions. In response, based on the Act on Fostering of and Support for Next Generation Farmers or Fishers and Young Farmers or Fishers, the government developed the First Basic Plan to Nurture Successor and Young Farmers (2023–2027) in 2022. This plan established a staged support system—Preparation, Entry/Settlement, and Growth—with the goal of nurturing 30,000 young farmers by 2027 to address structural imbalances in the agricultural workforce (see <Table 6-13>).

Table 6-13 Objectives and key strategic components of the First Basic Plan to Nurture Successor and Young Farmers (2023–2027)

Category	Key Content
Plan Objective	Nurturing 30,000 young farmers as the vanguard of agricultural innovation and future-growth industries
Strategy 1	• Expand support to a greater number of successor and young farmers. ‣ Increase the number of recipients for the Young Farmer Settlement Allowance (from 2,000 to 4,000) ‣ Increase the number of Successor Farmers selected (from 3,000 to 5,000) ‣ Increase the number of Outstanding Successor Farmers selected (from 300 to 500)
Strategy 2	• Support young and successor farmers in securing farmland and financing more easily. ‣ Strengthen farmland purchase and lease support through the Farmland Bank - Significantly expand farmland supply allocated to young farmers - Introduce new farmland supply models (e.g., creation of agricultural start-up complexes, lease-first–purchase-later schemes) ‣ Improve loan conditions for Successor Farmer Loans - Extend the repayment period (from 15 to 25 years) - Reduce the interest rate (from 2% to 1.5%) - Increase the loan limit (from KRW 300 million to KRW 500 million) ‣ Establish a government-led direct investment fund
Strategy 3	• Support young and successor farmers in becoming professional agricultural managers. ‣ Provide tailored, field-oriented training by growth stage - Expand practice-based start-up training - Train specialized instructors for youth apprenticeship programs ‣ Support income diversification through integration and value-added activities ‣ Link R&D support with technology development and market access
Strategy 4	• Create clear and tangible improvements to enhance rural areas more pleasant and attractive. ‣ Expand rental housing and childcare services in rural communities ‣ Improve and reorganize rural living spaces ‣ Support the formation of youth farmer communities

Source: MAFRA Press Release (Oct. 4, 2022).

Major Support Programs for Young Farmers

The Young Farmers' Settlement Support Program, introduced in 2018, aims to attract capable young individuals to agriculture and support their stable settlement in rural areas. Young farmers selected under the program (hereinafter referred to

as “beneficiaries”) receive the Young Farmer Settlement Allowance. According to Articles 8 (**Selection of, and Support for, Successor Agricultural or Fisheries Business Operators**) and 13 (**Preferential Treatment of Young Farmers or Fishers**) of the Act on Fostering of and Support for Next Generation Farmers or Fishers and Young Farmers or Fishers, beneficiaries are eligible to apply for various linked support measures, such as successor farmer loans, farmland support, leading-farm practical training, and management consulting for young farmers. Beneficiaries may also receive priority access to these programs.

• Young Farmer Settlement Allowance

Launched in 2018, this program aims to increase young farmers’ settlement rates by providing compensation for unstable income during the initial stage of farm start-up. The program targets individuals aged 18 to 39 who have independently managed a farm for three years or less, with eligibility generally limited to one beneficiary per household. Beneficiaries may receive a monthly settlement support payment of up to KRW 1.1 million for a maximum of three years. Those supported for the full three-year period receive KRW 1.1 million per month in the first year, KRW 1 million per month in the second year, and KRW 900,000 per month in the third year.

From 2018 to 2022, the support amount was KRW 1 million per month in the first year, KRW 900,000 in the second year, and KRW 800,000 in the third year. However, under the implementation of the First Basic Plan to Nurture Successor and Young Farmers (2023–2027), the support level increased, resulting in higher payment amounts.

Table 6-14 Number of beneficiaries of the Young Farmers’ Settlement Support Program

Unit: persons

2018	2019	2020	2021	2022	2023	2024	2025	Total
1,600	1,600	1,600	1,800	2,000	4,000	5,000	5,000	17,600

Source: MAFRA, 2018, *Results of the Young Farmers’ Settlement Support Program, various years, Guidelines for the Young Farmers’ Settlement Support Program.*

The Young Farmer Settlement Allowance is available only to selected young farmers who meet the eligibility criteria and pass both document screening and interview evaluations. The main eligibility requirements are age, farming experience, military service status, and residency. Applicants who meet all primary requirements may still be ineligible if they operate a business unrelated to agriculture, work as full-time employees at public institutions or private companies, or have assets or income above a specified threshold.

After selection, beneficiaries must meet several obligations to avoid sanctions, including suspension of payments or cancellation of beneficiary status. These obligations include independent farm management, completion of mandatory training, enrollment in agricultural disaster insurance and commodity funds, record-keeping of farm management accounts, implementation of farm plans, maintaining full-time independent farming, timely submission of required documents, proper application for and use of the allowance, and compliance with the mandatory farming period. Additionally, recipients of the Young Farmer Settlement Allowance must continue farming for a period equal to the duration in which they received the allowance after the payment period ends.

• Financial Support

Major financial support programs for young farmers include the Successor Farmer Loans, which provide interest-subsidized loans, and the Loan Program for Young Smart Farmers.

Under the Successor Farmer Loans, young farmers are eligible for the same support as successor farmers, with a maximum of KRW 500 million available for farmland purchase or lease, facility installation or lease, and other farming-related purposes. Loans are provided at a fixed interest rate of 1.5 percent, with a 5-year grace period and a 20-year repayment period. Young farmers receive priority in loan allocation over successor farmers. Under the Measures to Nurture Young Start-up Farmers (2018–2022), the loan ceiling for the successor agricultural fund was KRW 300 million, with an annual interest rate of 2 percent, a 3-year grace period, and a 7-year repayment period.

The Loan Program for Young Smart Farmers is a loan-based support program for young farmers aged 18 to 39 who have graduated from an agricultural high school or university program, or who have completed the Smart Farm Youth Startup Incubation Center program. The fund offers up to KRW 3 billion for purchasing or leasing farmland and for installing or leasing facilities to operate a smart farm. The interest rate is 1.0 percent for facility loans and 1.5 percent for operating loans, with a 5-year grace period and a 20-year repayment period. The Agricultural, Forestry and Fisheries Credit Guarantee Fund guarantees 90 percent of the financing.

• Farmland Support

Customized farmland support programs aim to help young farmers secure access to farmland. Key policies include public farmland leasing, farmland purchase and lease support, and the lease-first, sell-later farmland program.

Under these programs, the Farmland Bank purchases or leases farmland and then sells or leases it to young farmers and other individuals. In the lease-first, sell-later program, when a young farmer identifies farmland they wish to acquire, the Farmland Bank first purchases the land and leases it to the farmer for up to 30 years before transferring ownership.

Although the customized farmland support program is not exclusively targeted at young farmers, priority is given to them. However, as prioritization criteria and support levels vary by program, applicants should refer to the most recent Guidelines for the Customized Farmland Support Program issued by the Korea Rural Community Corporation for detailed information.

• Training and Consulting Support

Various educational programs support the farming capabilities of prospective and young farmers, including entrepreneurship education at agricultural high schools and universities, Smart Farm Youth Startup Incubation Center courses, and long-term settlement training for youth returning to farming. The Agricultural Education Portal provides essential educational information to support the preparation and settlement

of young farmers.

Consulting support is available through the Young Farmer 2040 Startup and Investment Intensive Consulting Program, which subsidizes a portion of the consulting cost. The program aims to guide appropriate investment decisions and support stable farming settlement for farmers and agricultural corporations. Through this program, young farmers–who often lack agricultural experience and management skills–can acquire essential farming and management knowledge and receive evaluations of their investment plans.

- **Housing Support**

To encourage youth migration and settlement in rural areas, the Youth Rural Housing Village Program offers rental housing complexes featuring detached homes and community facilities. Eligible beneficiaries include individuals under 40 years old who are returning to or relocating to rural areas, newlyweds, and households with at least one child where the head of household is under 40 years old.

Following the designation of 4 initial regions in 2019, youth housing villages were established. As of December 2024, 123 households–comprising 280 residents including 92 children–have moved into these 4 villages. By 2025, a total of 23 regions will be designated, and each district will develop a detached housing complex with approximately 30 rental units.

Scale of Nurturing Next-Generation Farmers

Through agricultural successor workforce development programs, 164,000 next-generation farmers were trained from 1981 to 2023, with total financial support–specifically successor farmer loans and young farmer settlement allowances–amounting to KRW 5.427 trillion. From 2019 to 2023, the number of selected young farmers in the Young Farmers' Settlement Support Program increased, and the scale of next-generation farmers also showed a rising trend (see <Table 6-15>).

Table 6-15 Number of next-generation farmers trained and financial support provided (1981–2023)

Unit: persons, 10 billion KRW

Category		1981~2018	2019	2020	2021	2022	2023	Total
Number of Next-Generation Farmers		146,536	2,598	2,797	3,086	3,251	5,459	163,727
Financial Support Provided		3,189	241	324	373	385	916	5,427
Field	Rice	27,506	528	369	469	482	907	30,261
	Vegetables & Floriculture	22,369	768	869	890	1,188	1,954	28,038
	Fruit	8,884	388	435	525	673	1,100	12,005
	Special Crops	6,518	164	159	165	146	252	7,404
	Mixed Farming	24,508	262	193	239	273	445	25,920
	Cattle	39.482	135	382	511	302	460	41.272
	Dairy	8,460	48	75	9	39	72	8,703
	Other Livestock	8,809	305	315	278	148	269	10,124

Source: MAFRA, 2024, *Key Statistics on Agriculture, Food and Rural Affairs 2024.*

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5. Smart Agriculture with Application of AI

Emergence of Smart Agriculture and AI

Global Background

The emergence of AgTech and smart agriculture is driven by a combination of global and domestic structural changes. Globally, food demand is projected to increase owing to population growth and rising income levels. However, essential natural resources, such as energy, water, land, and forests, are becoming increasingly scarce. Relying solely on traditional farming practices will make it progressively more difficult to secure sufficient food production. The world population is expected to grow from 6.1 billion in 2000 to 10 billion by 2050, whereas per-capita meat consumption is forecast to rise from 36.4 kg in 2000 to 45.3 kg by 2030. These trends clearly indicate substantial growth in global food demand. Conversely, volatility in food production and global supply chains is intensifying. Over the past 50 years, global greenhouse gas emissions have doubled, resulting in more frequent extreme climate events, such as erratic rainfall, droughts, and floods, all of which negatively affect agricultural productivity. In addition, geopolitical instability, including the Russia–Ukraine war, heightened U.S.–China trade tensions, and the Israel–Hamas conflict, is deepening disruptions in global food and input supply chains.

Domestic Background

Domestic structural changes include worsening labor shortages in rural areas owing to rapid population aging, increasing farmland conversion driven by development pressure, declining grain self-sufficiency resulting from rising agricultural imports, and deteriorating food-security conditions caused by more frequent extreme weather events <Table 6-16>. Specifically, the farmland area, which forms the foundation of agricultural production, decreased from 1.69 million ha in 2014 to 1.51 million ha in 2024. The farming population fell from 2.32 million people in 2018 to 2.00 million in 2024. Farm household debt, an indicator of farm management conditions, increased

from KRW 35.64 million in 2014 to KRW 45.02 million in 2024, whereas the grain self-sufficiency rate declined from 53.2% in 2014 to 49.0% in 2023.

Owing to rural depopulation, the share of municipalities classified as being at risk of extinction has continued to rise. The proportion of rural residents aged 65 years or older surged from 39.1% in 2014 to 55.8% in 2024. Meanwhile, disparities in living conditions between urban and rural areas persist, as shown by satisfaction gaps in health care and welfare (1.4 points), education and culture (0.9 points), residential infrastructure (0.4 points), and economy and employment (0.4 points). Despite increasing public concern for environmental sustainability, the environmental burden on agricultural and rural areas also continues to grow. Notably, pesticide use per ha increased from 11.3 kg/ha in 2014 to 12.7 kg/ha in 2023, contrary to expectations for reduced chemical input.

Table 6-16 Impacts of Domestic Environmental Changes on the Agricultural Sector

Environmental Change	Impact on Agricultural Sector	Source
Reduction of agricultural production base	• Continued agricultural market liberalization (RCEP, CPTPP, IPEF, etc.) • Decrease in farmland area (2014: 1.69 million ha → 2024: 1.51 million ha)	Statistics Korea Press Release (Feb. 27, 2025)
Decline and aging of farming population	• Farm population decreased (2018: 2.32 million → 2024: 2.0 million)	MODS (Search date: Apr. 17, 2025)
Worsening farm income and management balance	• Increase in farm household debt (2014: KRW 35.64 million → 2024: KRW 45.02 million)	MODS (Search date: May 23, 2025)
Decline in food self-sufficiency	• Reduction in food self-sufficiency rate (2014: 53.2% → 2023: 49.0%)	MAFRA (2024)
Changing rural population structure	• Increase in number of municipalities at risk of demographic extinction • Rise in older adult population (65+ years old) in rural areas (2014: 39.1% → 2024: 55.8%)	MODS (Search date: Apr. 17, 2025)
Weakening living conditions	• Urban–rural satisfaction gap in 2024: Health care/Welfare, 1.4 pts; Education/Culture, 0.9 pts; Residential Infrastructure, 0.4 pts; Economy/Jobs, 0.4 pts	Government Joint Report (2025)
Growing environmental burden in agriculture	• Increase in pesticide use per ha (2014: 11.3 kg/ha→ 2023: 12.7 kg/ha)	JipyoNuri (National Indicators) (Search date: Dec. 2, 2025)

Source: See text above.

Emergence of Smart Agriculture in the Consumer Sector

The consumer sector has experienced continuous growth in year-round demand for fresh vegetables, flowers, and fruits, driven by economic development and rising national income, which have diversified and upgraded consumption patterns. In other words, while global and domestic factors are making stable food supply increasingly difficult, consumer demand for fresh, high-quality agricultural products continues to rise. This paradox requires an effective response. Given these conditions, conventional farming methods can no longer adequately address the challenge, and smart agriculture has emerged as a key alternative.

Concepts of AgTech and Smart Agriculture

Concept and Examples of AgTech

AgTech is a compound term combining agriculture and technology and is broadly used to refer to "Agriculture in Technology." In a wider sense, it encompasses advanced technologies applied to achieve smart agriculture and precision agriculture, such as agricultural biotechnology (Ag Biotechnology), ICT technologies, and nanotechnology.

AgTech has gained global attention for its potential to enhance agricultural productivity. For example, AgTech-based devices showcased at CES in Las Vegas have consistently received innovation awards. John Deere, one of the world's largest agricultural machinery companies, won the 2022 CES Best Innovation Award for its See & Spray technology and also unveiled a fully autonomous tractor. At CES 2025, Korean companies made remarkable achievements as well <Figure 6-15>: Midbar received the Best Innovation Award for its AirFarm (an air-based plant cultivation system), and Daedong won an Innovation Award for its AI-powered indoor smart-farm box.

Figure 6-15 CES Award-Winning Cases from Korean Companies

Midbar's AirFarm
(air-based plant cultivation system)

Source: Midbar website (Search date: Dec. 2, 2025).

Daedong's AI-based Smart Farm Box

Source: Daedong website (Search date: Dec. 2, 2025).

Concepts and Differences Between Precision Agriculture and Smart Agriculture

Precision agriculture refers to a farming method designed to reduce environmental burdens and enhance productivity by applying agricultural input (e.g., water, fertilizer, pesticides, etc.) at the right time, in the right place, and in the right amount within the same plot of land. It originated in the U.S. during the 1970s, with the term becoming established in the late 1990s.

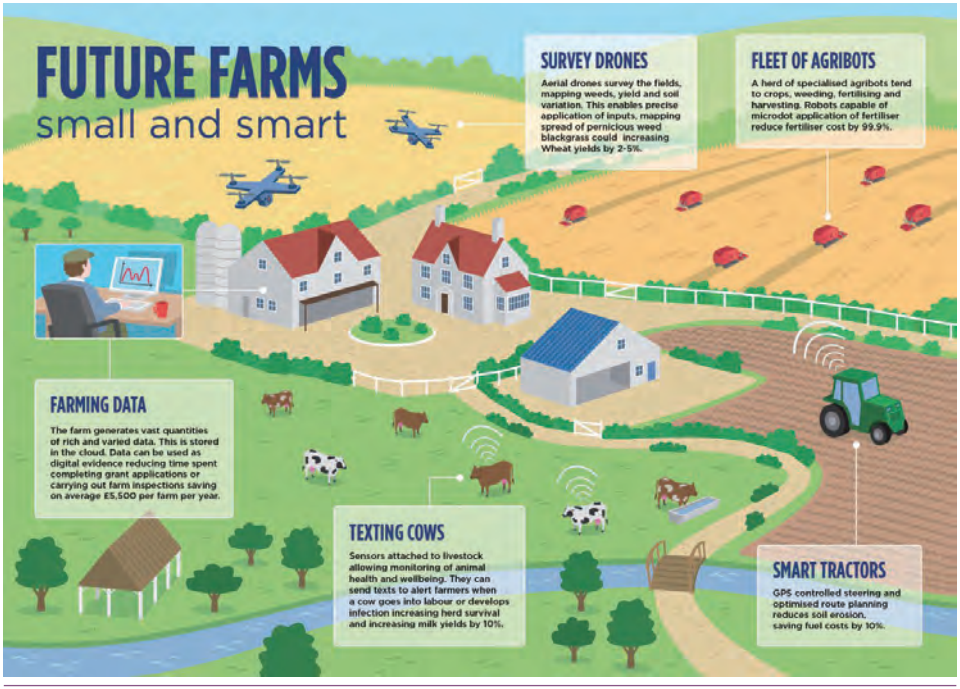
Smart agriculture advances these concepts by integrating precision-farming technologies with intelligent networks and data-management tools. By utilizing smart-farming equipment that collects, analyzes, and processes data, as well as all available information and expert knowledge, smart agriculture creates new added value in the agricultural sector while ensuring sustainability, reducing environmental impacts, and enhancing safety. Smart agriculture applies advanced ICT technologies and infrastructure to improve productivity and operational efficiency. It has developed mainly in protected horticulture and livestock farming in Korea and is now expanding into open-field smart farming.

Both precision agriculture and smart agriculture employ various sensors for

information collection, automated equipment for labor saving, and management programs for data processing. However, the key distinction lies in who makes the decisions. In precision agriculture, humans remain the primary decision-makers in farming operations. In smart agriculture, decision-making is system-driven, relying on automated, data-based systems rather than human judgment.

Therefore, transitioning from precision agriculture to full smart agriculture requires prior advancement in mechanization and automation of the working environment, along with comprehensive digitalization of all data generated during farming processes <Figure 6-16>. Based on this foundation, AI systems supported by machine learning, deep learning, and generative AI can then be established.

Figure 6-16 Conceptual Illustration of Future Agriculture and Rural Areas with Smart Farming



Source: Staubes, 2017.

Status and Performance of Smart Agriculture

Open-field Sector: Agricultural Drones

Agricultural drones are mainly used for pest control operations, direct rice seeding, herbicide application, fertilizer application, forage crop sowing, pest monitoring, and crop condition surveys. Although annual drone-treated acreage is not officially recorded, estimates based on the number of agricultural drones distributed indicate that the treatment area reached approximately 388,000 ha in 2023, equivalent to 54.9% of all paddy fields in Korea for that year <Table 6-17>.

Table 6-17 Estimated Pest-control Area Using Agricultural Drones

Unit: ha

Year	2019	2021	2023	Average Annual Growth Rate
Treatment area	116,605	252,517	388,429	35.1%

Source: Lee et al., 2024.

A structured online survey conducted from September 19 to 27, 2024 (sample size: 180 farmers) found that 82.6% of farmers responded that they plan to increase drone use for pesticide spraying in the future, and 61.1%plan to increase drone use for fertilizer application <Table 6-18>. This reflects labor shortages caused by aging and depopulation in rural areas, which have increased farmers' preference for drones. The treated acreage using drones is expected to continue growing.

Table 6-18 Farmers' Intention to Increase Future Drone Use by Agricultural Task

Unit: %

Category	Pesticide Spraying	Fertilizer Application
Yes	82.8	61.1
Neutral	12.2	18.9
No	5.0	20.0

Source: Lee et al., 2024.

Using the input–output table for the agricultural, forestry, and fisheries service industry (Code 0500), the Korea Rural Economic Institute estimated the ripple effects of the drone spraying service industry from 2019 to 2023. Results show that agricultural drone service activities generated KRW 261.7 billion in total production inducement, KRW 110.2 billion in value-added inducement, 1,768 jobs (created across industries) <Table 6-19>.

Table 6-19 Ripple Effects of Agricultural Drone Spraying Services (2019–2023)

Unit: KRW millions, persons

Industry Classification	Production Inducement	Value-added Inducement	Employment Inducement
Drone Spraying Services	110,274	47,773	989
Agriculture	3,273	1,721	76
Fisheries and Mining	7,207	3,001	22
Food and Beverage Manufacturing	4,227	1,089	10
Textiles and Leather	3,632	793	11
Wood, Paper, and Printing	3,051	909	10
Other Manufacturing	48,118	13,509	72
Repair, Energy, Recycling, Construction	13,373	5,837	46
Distribution and Transportation	25,815	11,971	237
Services	42,760	23,604	295
Total	261,730	110,206	1,768

Source: Lee et al., 2024.

Open-field Sector: Autonomous Tractors

Autonomous agricultural machinery has been sold commercially since 2021, but the market is still in its early stages. Korea's autonomous-machinery market consists of retrofitted existing machinery (integrating autonomous-assist modules) and fully autonomous new machinery. Given the durability and volume of existing equipment, retrofitted systems are expected to dominate for the foreseeable future. Currently, autonomous tractors in Korea are mostly retrofitted models. North American and

Japanese products are priced high (KRW 17.6–20 million) with an estimated market share of 20%. Korean-made products occupy a mid-range price tier (KRW 8–9.7 million) with a market share of 21%. Meanwhile, Chinese products, priced between KRW 7 and 10 million, hold a dominant 59% market share owing to cost competitiveness <Table 6-20>.

Table 6-20 Autonomous Tractor Prices and Market Share by Country

Type	Country	Manufacturer	Price (unit: KRW 1,000)	Market Share (%)	
Advanced Market	North America	T	20,000	8	20
	Japan	T	17,600	12	
S. Korea	S. Korea	P	9,500	18	21
	S. Korea	A	8,000–8,500	3	
	S. Korea	T	9,750	0	
China	China	F	7,040–9,900 (extra fee for turning function)	49	59
	China	Other	7,000–10,000	10	

Source: Lee et al., 2024.

A survey of 481 farmers (September 2024) showed that expectations for autonomous machinery were highest for labor cost savings, faster work completion, and greater safety in unexpected situations <Table 6-21>.

Table 6-21 Farmers' Expected Benefits of Autonomous Agricultural Machinery

Unit: %

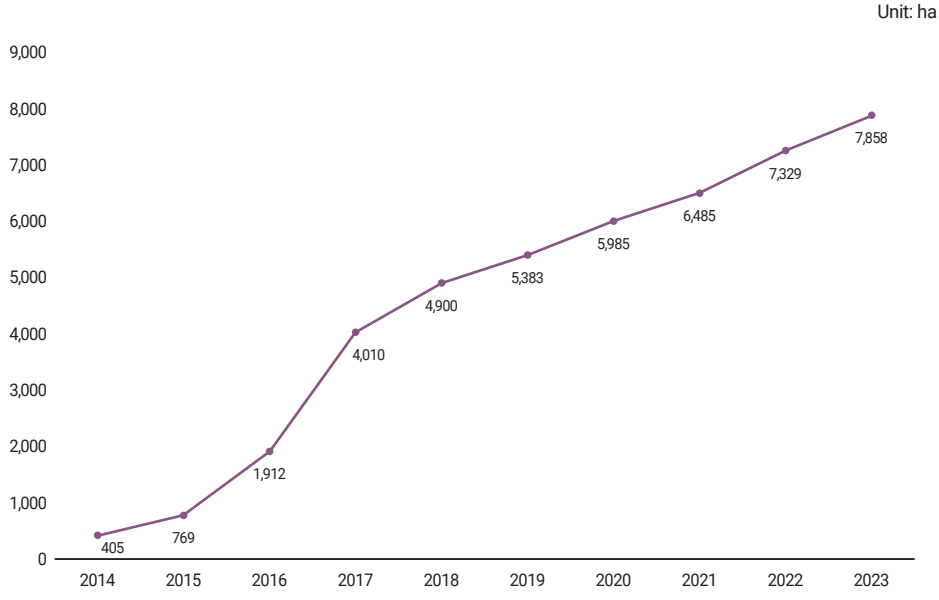
Category	Rental Farmers			Owner Farmers		
	Negative	Neutral	Positive	Negative	Neutral	Positive
Labor cost savings	2.6	23.8	73.6	11.8	18.8	69.4
Faster operation	9.8	35.2	55.0	15.3	34.1	50.6
Safety in emergencies	19.7	35.3	45.0	25.9	17.6	56.5
Ease of operation	16.0	32.2	51.8	36.5	30.6	33.0
Reduced operating costs	30.0	30.6	39.4	49.4	23.5	27.1

Source: Lee et al., 2024.

Indoor Farming Sector: Smart Farms

Smart farms utilize sensors, ICT, automated environmental control, and big data to manage complex growing conditions. They integrate multiple AgTech solutions into a single advanced farming system. As of 2023, Korea's smart-farm area was 7,858 ha, representing 14.8% of total protected horticulture area (53,182 ha). Considering municipal projects and self-financed installations, the actual area is likely higher <Figure 6-17>.

Figure 6-17 Cumulative Smart Farm Area by Year



Source: Lee et al., 2024.

Performance of Smart Farms

The average agricultural income of smart-farm households increased from KRW 360,000 per 3.3 ㎡ before adoption to KRW 520,000 per 3.3 ㎡ in the first year after adoption. Income generally continues to rise with each additional year of operation. For tomato smart farms, agricultural income increased from KRW 350,000 per 3.3

㎡ before adoption to KRW 490,000 per 3.3 ㎡ in the first year. For strawberry smart farms, income rose from KRW 320,000 per 3.3 ㎡ to KRW 510,000 per 3.3 ㎡. For paprika smart farms, income increased from KRW 290,000 per 3.3 ㎡ to KRW 430,000 per 3.3 ㎡ after the first year of adoption <Table 6-22>.

Table 6-22 Changes in Agricultural Income by Crop Type

Unit: KRW 10,000/3.3 ㎡

Crop	Pre-adoption	Year 1	Year 2	Year 3	Year 4	Year 5	Average Annual Growth
Overall	3.6	5.2	5.2	4.8	5.6	5.7	9.9%
Tomato	3.5	4.9	3.6	4.8	4.9	4.9	7.1%
Strawberry	3.2	5.1	5.8	5.3	5.0	6.5	15.4%
Paprika	2.9	4.3	5.0	4.7	8.9	7.2	19.9%

Source: Lee et al., 2024.

Because smart farms require substantial upfront investment, the evaluation should focus on management performance through changes in productivity rather than agricultural income alone. In the first year of adoption, the surge in farmers' self-financed investment significantly increases the capital input index, resulting in a decline in total factor productivity to 0.601, which is lower than the pre-adoption level. On average, it takes approximately three years for productivity to return to pre-adoption levels <Table 6-23>.

Although complex environmental-control systems recover productivity more quickly compared with simple control systems, the higher financial burden on farmers must be considered. Therefore, systems that help shorten the recovery period of farm management performance are needed. One such measure is expanding consulting services for farmers, as only 22% currently receive consulting support. In addition, the completion rate of smart-farm training programs remains low at 29%, highlighting the need to strengthen farmer education on smart-farm systems.

Table 6-23 Trends in Total Factor Productivity among Smart Farm Households

Category	Pre-adoption	Year 1	Year 2	Year 3	Year 4	Year 5
All Smart Farms	1.000	0.601	0.974	0.930	2.040	1.538
Simple Control	1.000	0.700	1.072	0.645	1.298	1.001
Complex Control	1.000	0.624	1.104	1.536	3.265	2.521

Source: Lee et al., 2024.

As productivity improves with the adoption of smart farms, farm income also increases. In 2023, the rise in tomato production resulting from smart-farm adoption generated an estimated KRW 46.8 billion in additional total revenue for tomato-producing households. In the same year, strawberry smart farms saw an increase of KRW 42.5 billion, whereas paprika smart farms recorded an increase of KRW 38.4 billion.

The expanded agricultural output produced through smart farms is estimated to have generated KRW 234.9 billion in total production inducement effects. Of this, KRW 134.1 billion accrued to the agricultural sector, KRW 22.5 billion to upstream agricultural industries, KRW 8.5 billion to downstream agricultural industries, and KRW 27.0 billion to indirectly related industries. In addition, the value-added inducement effect is estimated at KRW 127.7 billion, and the employment inducement effect at 528 jobs <Table 6-24>.

Table 6-24 Ripple Effects of Increased Agricultural Output from Smart Farms (2023)

Unit: KRW millions, persons

Category		Production Inducement	Value-added Inducement	Employment Inducement
Agriculture		134,070	88,347	486.6
Upstream Industries	Agricultural, Forestry, and Fishery Services	2,231	967	2
	Feed	1,456	220	0.1
	Fertilizer	14,401	4,450	2
	Pesticides	4,335	1,309	0.6
	Agricultural Machinery	109	27	0
	Food Machinery	3	1	0

Category		Production Inducement	Value-added Inducement	Employment Inducement
Upstream Industries	Agricultural/Forestry/Civil Engineering	-	-	-
	Subtotal (Upstream)	22,536	6,974	4.8
Downstream Industries	Food Manufacturing	1,403	273	0.4
	Beverage Manufacturing	192	72	0
	Tobacco	0	0	0
	Leather Products	135	21	0
	Wood and Wood Products	354	88	0.1
	Pulp and Paper Products	4,674	1,346	1.1
	Restaurants and Bars	1,719	534	1.9
	Subtotal (Downstream)	8,478	2,336	3.6
Indirectly Agriculture Related Industries (Distribution, Transport, Education, Financial Services)		27,048	14,413	20.5
Other Industries		42,775	15,590	12.4
Total		234,906	127,659	527.9

Source: Lee et al., 2024.

Integration of Smart Agriculture and AI[5]

The ultimate goal of smart agriculture is to maximize productivity through data-driven farming, eliminating the need for human judgment in routine decision-making. Accordingly, the integration of AI is essential for achieving the objectives of smart agriculture, and this has been demonstrated through a variety of practical applications.

By combining smart agriculture with AI, machine learning, IoT, and big data analytics, farmers can minimize the use of agricultural input, analyze environmental and crop-growth data in real time, increase productivity, reduce production costs, and mitigate environmental impacts. These technologies enable continuous monitoring of soil, weather, and crop conditions, allowing farmers to predict yields,

5 This section is developed with reference to Vardhan et al. (2025).

determine optimal timing for seeding, fertilization, pest control, and harvesting, as well as manage climate and pest-related risks more effectively. Furthermore, the use of harvesting robots, transplanting and management robots, weeding robots, and autonomous agricultural machinery, including autonomous tractors and sprayers, helps address labor shortages, reduce crop damage during harvest, and improve labor productivity by automating hazardous or labor-intensive tasks.

AI also supports farm management through predictive models such as yield forecasting, pest and disease outbreak prediction, agricultural market price forecasting, and climate-risk assessment (including drought and flood risks). These capabilities provide farmers with timely and accurate information required for better decision-making.

Policy Recommendations for Promoting Smart Agriculture and AI

Securing a Development Foundation

To foster the growth of the agricultural drone service industry and autonomous agricultural machinery industry, the government needs to establish a mid- to long-term roadmap and develop phased annual implementation plans. The roadmap should present the industry's vision and strategic goals, outline yearly tasks, identify responsible entities, and detail required budget and personnel. This roadmap should be formulated with broad participation from industry stakeholders, field experts, government policymakers, and research institutions.

Establishing Central–Local Government Governance

Strengthening policy coordination between the central and local governments is essential for promoting the adoption of smart agriculture and AI use. While the central government has shown a strong commitment to nurturing smart agriculture-related industries, some local governments exclude domestic equipment from subsidy programs for reasons such as budget constraints or performance considerations. This has, in effect, resulted in reverse discrimination against domestic products. To

ensure sustainable development of the smart-agriculture industry, the government should implement policy measures for expanding subsidy coverage for domestic smart-agriculture equipment and considering incentive mechanisms for farmers who purchase domestic equipment (e.g., preferential insurance benefits under the Agricultural Machinery Comprehensive Insurance Program).

Establishing Statistics for Smart Agriculture

To strengthen the foundation of smart agriculture and advance the development, adoption, and application of AI in the agricultural sector, the government needs to build a systematic statistical framework. Although agricultural drone service operations are widely used, particularly among rice farmers, no official system exists for surveying industry conditions or service quality. As such, key information has been elucidated, such as farmers' user experiences, service performance, and industry limitations. If GPS data and operational information recorded by drones during pesticide and fertilizer application were linked with digital farm maps, baseline data on regional pest and disease status could be generated and used to support future monitoring. Therefore, a regular survey system for agricultural drone service industries must be established, and efforts should be made to build a database of pesticide-spraying and fertilizer-application areas.

For autonomous tractors, the existing agricultural machinery statistics, such as ownership status and registry data, should be refined with more detailed classification items. While the small market size currently makes statistical aggregation difficult, such efforts are essential for understanding long-term industry trends. In addition, standardized guidelines for processing smart-farm data should be developed. Many leading farmers view environmental data collected through smart-farm systems as a critical asset that reflects their accumulated experience and expertise, and therefore request appropriate compensation for providing such data. Moreover, existing agricultural data must undergo standardization and cleaning, which are prerequisites for building data-driven smart agriculture. This highlights the need to establish a clear national strategy and actionable plan for utilizing the accumulated datasets.

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6. International Agricultural Development and Cooperation

Directions and Strategies of Korea's International Development Cooperation

The Committee for International Development Cooperation (CIDC) finalized "The 3rd Master Plan for International Development Cooperation (2021–2025)" in January 2021, identifying the following three core objectives: strengthening sustainable resilience in developing countries, expanding global solidarity, and advancing Korea's ODA implementation system. The strategy set forth inclusive development, sustainability, digital and green transition linkages, and the expansion of public–private partnerships as key policy directions in response to post COVID-19 recovery and reconstruction needs. While Korea's ODA/GNI ratio stood at 0.16% in 2020 and 0.17% in 2022; the government aims to gradually scale up ODA in the medium term to approach the OECD DAC average.

Table 6-25 Targets of The 3rd Master Plan for International Development Cooperation

Classification	Results of "The 1st Master Plan for International Development Cooperation (2011–2015)"	Targets of "The 2nd Master Plan for International Development Cooperation (2016–2020)"	Targets of "The 3rd Master Plan for International Development Cooperation (2021–2025)"
Direction		① Integrated ODA ② Substantial ODA ③ Shared ODA	① Inclusive and sustainable development cooperation ② Linkages with digital and green transitions ③ Expansion of partnerships with the private sector and civil society ④ Advancement of a strategic ODA implementation system
ODA Scale	ODA/GNI ratio: 0.13% ('14)	Increasing the ratio (ODA/GNI: 0.20%, OECD average: 0.29%)	Increasing the ratio (ODA/GNI: gradual increase with continued scale-up through 2025)

Classification	Results of "The 1st Master Plan for International Development Cooperation (2011–2015)"	Targets of "The 2nd Master Plan for International Development Cooperation (2016–2020)"	Targets of "The 3rd Master Plan for International Development Cooperation (2021–2025)"
Ratio of non-grant to grant aid	37:63 ('14, net expenditure)	Maintaining the current ratio (40:60 based on net expenditure)	Maintaining the current ratio or minimizing adjustments between concessional and grant aid (40:60, net disbursement basis)
Ratio of bilateral to multilateral aid	75:25 ('14, net expenditure)	Maintaining the current ratio (75:25 based on net expenditure)	Maintaining 75:25 (net disbursement basis) Strengthening cooperation with multilateral organizations (including multilateral and multi-bi modalities)
Untied aid ratio	62% ('14)	Raising the ratio (non-grant 55%, grant 95%)	Continued increase (non-grant 55%, grant 95%)

Source: Government Joint Ministries, 2021.

From 2021 to 2025, Korea's international development cooperation has prioritized health, food security, digital transformation, and climate crisis response as core sectors, with a focus on global recovery and reconstruction in the post COVID-19 era (Government of Korea, various years). In particular, the government has emphasized the development of collaboration models among governments, international organizations, and the private sector, the strengthening of public–private partnerships (PPP), the refinement of Country Partnership Strategies (CPS) and their alignment with sector strategies to accelerate developing countries' progress toward the sustainable development goals (SDGs).

Furthermore, to advance the ODA implementation system, key strategies have included enhancing performance management, reinforcing demand-driven project design based on partner-country needs, improving linkages among projects, and systematizing post-project management.

Table 6-26 Strategies and implementation tasks of Korea's International Development Cooperation projects

Year	Strategy	Task
2018	Promote effective ODA	- Assist developing countries in implementing SDGs - Promote activities based on national cooperation strategies - Substantialize the linkage between projects and evaluation
	Promote transparent ODA	- Enhance transparency at all stages of project implementation - Increase disclosure of consumer-friendly information - Enhance public understanding and participation
	Promote shared ODA	- Create jobs by developing the ODA ecosystem and strengthen partnership with the private sector - Expand phased humanitarian aid - Solidify global partnership
2020	Spread ODA achievements	- Raise the status of the nation as a leading donor country to deepen global partnerships - Support the sustainable development of developing countries - Enhance policy synergy effects through ODA
	Solidify the foundation for promoting ODA	- Improve integrated ODA infrastructure - Strengthen strategic ODA - Promote stronger cooperation with the private sector
	Improve ODA project management methods	- Strengthen professional screening and pursue practical projects - Systemize the project management process - Raise the transparency of project management and promote thorough follow-up management
2025	Inclusive and sustainable development cooperation	- Expansion of support for poverty reduction, health, and food security - Strengthening the climate crisis response and Green ODA - Enhancement of social and economic resilience
	ODA advancement grounded in digital transformation	- Strengthening digital-based cooperation in agriculture, education, and health - Expanding development cooperation built on smart infrastructure and data systems - Advancing digital governance and capacity-building programs
	Expansion of cooperation with the private sector and international organizations	- Activation of private sector-participatory ODA, including PPP and impact finance - Strengthening multilateral and multi-bi programs in cooperation with international organizations - Expanding partnerships with civil society and academia
	Enhancement of the strategic ODA implementation system	- Refinement of CPS and development of sector-wide comprehensive strategies - Advancement of performance management and evaluation, and reinforcement of post-project management - Enhancement of transparency, accountability, and data-driven project management

Source: Government Joint Ministries, various years.

The MAFRA has established the First Comprehensive Plan for International Agricultural Cooperation Projects (2025–2029), presenting a medium-term objective to strengthen food security in partner countries while securing new growth drivers for Korea's agri-food sector through the expanded dissemination of project outcomes. To this end, the Ministry aims to expand its support to more than 50 partner countries by 2029 and to develop at least 10 public–private partnership models.

The Plan identifies several key strategies: establishing a distinct agricultural ODA brand and ensuring balanced and diversified project expansion, providing comprehensive support across the entire agricultural value chain (institutions, production infrastructure, processing, distribution, and human resource development), strengthening PPPs through collaboration with international organizations, NGOs, and private firms, developing a foundation for agri-food export promotion, and enhancing performance management across the full project cycle as well as improving implementation systems and professional capacity (MAFRA, 2025).

Status of Korea's International Development Cooperation in the Agricultural Sector

Korea's overall ODA budget and the ODA budget for the agriculture, forestry, and fisheries sector have shown a steady upward trend over the past decade. The total ODA budget increased from KRW 2.439 trillion in 2016 to KRW 6.501 trillion in 2025, representing approximately a 2.7-fold expansion. During the same period, the ODA budget for the agriculture, forestry, and fisheries sector rose from KRW 157.1 billion to KRW 339.6 billion. In particular, between 2023 and 2025, growing demand related to food security and climate response contributed to a continued increase in the sectoral budget.

Table 6-27 Status of Korea's ODA project budgets for agriculture (2016-2025)

Unit: KRW 100 millions

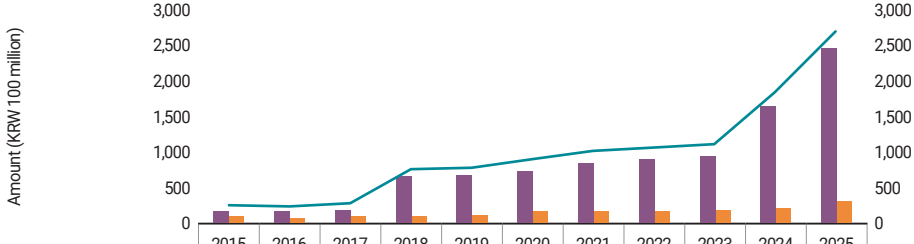
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total ODA	24,394	26,359	30,482	32,003	34,270	37,543	39,383	47,771	62,629	65,010
Agriculture and fisheries	1,571	2,119	1,766	2,209	2,734	2,497	2,398	2,550	2,928	3,396

Source: Government Joint Ministries, various years.

MAFRA

The scale of agricultural international development cooperation projects led by the MAFRA has continued to expand in recent years. The agricultural ODA budget, which stood at approximately KRW 89 billion in 2020, has grown substantially to around KRW 268.5 billion in 2025, driven by increasing demand related to food security enhancement, climate and environmental response, and smart agriculture. In particular, the expansion of food assistance programs in partnership with the World Food Programme (WFP), branded agricultural initiatives such as the K-Rice belt, and project-based interventions centered on smart and digital agriculture have been major contributors to this budgetary increase.

Figure 6-18 Status of MAFRA's agricultural ODA project budgets (2015-2025)



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Bilateral grant aid	156.5	164.5	180.9	655.3	668.5	725.1	839.8	894.7	929.1	1,633.7	2,448.4
Multilateral aid	85.6	60.7	89	93.3	100.2	164.4	166	158	171.5	198.2	237.5
Total	242.1	225.2	269.9	748.6	768.7	889.5	1,005.8	1,052.7	1,100.6	1,831.9	2,685.9

Source: Government Joint Ministries, various years.

MAFRA's agricultural ODA portfolio comprises three major pillars:

(1) project-type interventions that combine technical assistance by specialized personnel with material support such as facilities and equipment, (2) development consulting (KAPEX) aimed at strengthening partner countries' policy formulation capacities, and (3) multilateral cooperation projects implemented in collaboration with international organizations.

Since 2021, cooperation with international organizations such as FAO, IFAD, and WFP has been expanded, increasing the share of multilateral and multi-bi modalities. Simultaneously, programmatic initiatives based on Korean model projects—including K-Ricebelt, smart agriculture, and digital agriculture—have grown steadily. These developments indicate a shift in the MAFRA's international agricultural cooperation from stand-alone, project-based assistance toward programmatic and branded ODA models.

Rural Development Administration (RDA)

The RDA has steadily expanded its international cooperation initiatives aimed at improving agricultural productivity and strengthening technological capacity in developing countries, primarily through the Korea Program for International Cooperation in Agricultural Technology (KOPIA). As of 2025, KOPIA centers operate in 23 partner countries, developing and disseminating country-specific technologies such as seed varietal improvement, pest and disease management, and cultivation techniques while supporting technology diffusion through local field demonstrations.

In addition to KOPIA, RDA operates several regional multilateral cooperation platforms—including the Asian Food and Agriculture Cooperation Initiative (AFACI), the Korea–Africa Food and Agriculture Cooperation Initiative (KAFACI), and the Korea–Latin America Food and Agriculture Cooperation Initiative (KoLFACI). These platforms strengthen international research networks across regions by supporting joint research, technology development, and climate change–related studies that address key agricultural challenges in each continent.

RDA's budget for agricultural ODA has also exhibited continuous growth. The

budget increased from KRW 15.7 billion in 2015 to KRW 23.24 billion in 2020 and further expanded to KRW 40.77 billion in 2024 and KRW 43.84 billion in 2025, driven by the heightened need to respond to global food crises and closer alignment with Korea's foreign policy priorities. In 2025, bilateral grant projects account for KRW 43.43 billion, while multilateral cooperation projects represent KRW 410 million, with approximately 97.5% of the portfolio comprising bilateral, technology-focused project-type interventions.

The 2025 implementation strategy emphasizes 1) expanding food-crisis response ODA through inter-ministerial collaboration, 2) strengthening agricultural technology cooperation in alignment with national diplomatic agendas such as the Korea–Africa Summit, 3) increasing strategic support for priority partner countries (which constitute 40.3% of the 2025 portfolio), and 4) improving linkages among grant-based programs (seven cases of cross-project linkages in 2025).

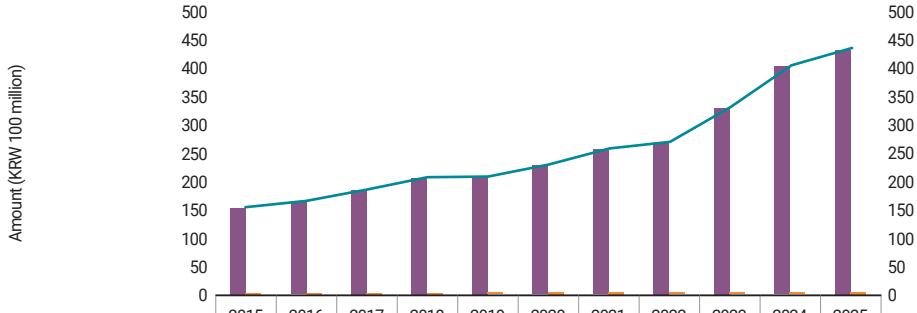
Special attention is being paid to country-tailored technical support, particularly in Africa, including improvements to rice seed production systems, the development of climate-resilient technologies, and the expansion of research-based cooperation.

The RDA's core activities continue to be implemented through KOPIA, operating project-based programs in countries such as Ethiopia, Bolivia, Laos, Zimbabwe, and Sri Lanka, focusing on production technologies, seed development, and field-level demonstration trials. In addition to this, multilateral cooperation through AFACI, KAFACI, and KoLFACI has expanded, strengthening a programmatic approach that links technology transfer to institutional improvement and capacity-building across participating regions

Korea Forest Service (KFS)

KFS has strategically advanced its forest-related ODA portfolio in areas such as climate change response, desertification prevention, wildfire management, and forest restoration, primarily through global forest cooperation initiatives including the Peace Forest Initiative (PFI) (KFS, 2024). To strengthen region-specific engagement, KFS has established overseas forest cooperation centers in countries such as Indonesia and

Figure 6-19 Status of the RDA's agricultural ODA project budgets (2015-2025)



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Bilateral grant aid	154	164.9	184.9	207.2	207.8	228.8	257.2	269.1	330.8	404.3	434.3
Multilateral aid	3	3.2	3.2	2.8	3.3	3.6	3.6	3.4	3.3	3.3	4.1
Total	157	168.1	188.1	210	211.1	232.4	260.8	272.5	334.2	407.7	438.4

Source: Government Joint Ministries, various years.

Cambodia, thereby expanding forest cooperation activities across the Mekong region (Cambodia, Laos, Myanmar, and Vietnam) as well as in Central Asia and Africa.

KFS's budget for forest ODA has shown a gradual upward trend, increasing from KRW 11.2 billion in 2015 to KRW 14.6 billion in 2020. Subsequently, driven by the rise in global wildfire incidents, growing demands for carbon neutrality, and strengthened cooperation with climate-vulnerable countries, the budget reached KRW 26.86 billion in 2024 and KRW 26.5 billion in 2025. In 2025, bilateral grant projects account for KRW 26.23 billion and multilateral cooperation projects for KRW 270 million, with approximately 79% of the budget directed toward project-type technical cooperation.

The 2025 implementation strategy includes 1) strengthening Korean-style Green ODA, 2) packaging flagship projects in wildfire response, desertification control, and forest recreation, 3) expanding cooperation aligned with national interest and foreign policy agendas, 4) enhancing climate response capacity, and 5) strategically adjusting programs centered on priority partner countries.

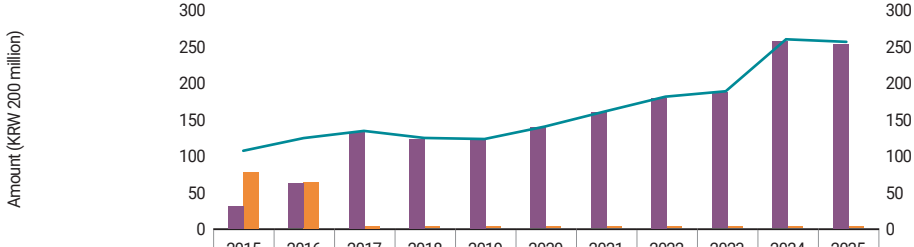
Representative focus areas include forest fire recovery and restoration

infrastructure development in Mongolia, the wildfire disaster management system in South Sumatra, Indonesia, and the ecotourism-based forest recreation program in Cambodia (KFS, 2024).

In addition, cooperation projects for desertification prevention and dryland restoration in Mongolia and Tajikistan, as well as mangrove forest establishment in Vietnam, are promoted as key "green package" development cooperation models drawing on Korea's experience in forest rehabilitation. In Central America—particularly Honduras and El Salvador—KFS is expanding projects that integrate forest restoration with agroforestry-based livelihood improvement, thereby strengthening a holistic approach connecting forests, agriculture, and local economies (KFS, 2024).

On the multilateral front, KFS continues to elevate Korea's global standing by leveraging existing platforms such as AFoCO (Asian Forest Cooperation Organization) and the Changwon Initiative while expanding cooperation networks with climate-vulnerable countries in the Pacific Islands and Central Asia. These strategic, multilayered partnerships contribute to strengthening Korea's role in climate change–related fields, including REDD+ capacity-building, forest financing, and forest ecosystem restoration initiatives.

Figure 6-20 Status of the KFS's forest ODA project budgets (2015-2025)



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Bilateral grant aid	32	63.8	136.9	127.3	125.8	143.3	164.6	185.3	192.9	265.9	262.3
Multilateral aid	80	66	3	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Total	112	129.8	139.9	130	128.5	146	167.3	188	195.6	268.6	265

Source: Government Joint Ministries, various years.

Prospects and Tasks

Prospects

- **Paradigm Shift in Agricultural ODA: Transition toward a Food Systems-Centered Approach**

The global food and agriculture sector is facing a prolonged convergence of crises—including climate change, conflicts, and supply chain instability—which has rendered the achievement of the SDGs, particularly SDG 2 (Zero Hunger) and SDG 13 (Climate Action), increasingly uncertain. Consequently, the international community is being called upon to move beyond production- and supply-centered approaches toward a structural transformation that encompasses the entirety of the food system—production, distribution, consumption, nutrition, and climate.

According to FAO (2024), the number of people experiencing moderate-to-severe food insecurity has surpassed two billion, marking a shift in the nature of the crisis from temporary shortages to structural, geopolitical, and chronic patterns. This evolving global environment is driving ODA objectives away from the traditional notion of "aid" in agriculture and food assistance toward a broader agenda of food systems transformation. In particular, integrated approaches that link food, climate, and health are emerging as a central direction of contemporary development cooperation.

The Government of Korea has similarly designated food security, public health, and climate response as priority areas under the 3rd Mid-Term Strategy for International Development Cooperation (2021–2025) and the 2025 Implementation Plan (Office for Government Policy Coordination, 2025). Looking ahead, the forthcoming 4th Mid-Term Strategy (2026–2030) is expected to place even greater emphasis on food system resilience, climate adaptation, and technology-driven agricultural ODA as core components of Korea's national development cooperation strategy.

- **Growing Importance and Structural Reconfiguration of Agricultural and Forestry ODA**

Climate change is simultaneously pressuring food systems, water resources, and ecosystems, elevating agricultural and forestry ODA as a critical pillar for climate

adaptation, risk management, and livelihood stabilization. Development cooperation demand is rapidly shifting toward 1) climate–security–food (Nexus)-oriented national programs, 2) expanded support for climate-resilient varieties, soils, and farming systems, 3) increased needs for drought and flood response infrastructure and early warning systems (EWS), and 4) stronger integration with climate finance mechanisms such as REDD+, carbon sequestration initiatives, and ecosystem restoration (OECD DAC, 2023; FAO, 2024).

In response, the MAFRA is expanding climate-responsive technology dissemination and program-based support (MAFRA, 2025), while the RDA is strengthening technology-diffusion cooperation centered on KOPIA demonstration plots and varietal development. The KFS is likewise scaling up REDD+, desertification control, wildfire management, and ecosystem restoration programs (KFS, 2024).

Taken together, these trends indicate that integrated Nexus-based program models connecting agriculture, forestry, and water resources are expected to expand further in the medium- to long- term.

• Advancing Korea's Performance-oriented ODA Framework

Since the implementation of "The 3rd Master Plan for International Development Cooperation (2021–2025)," Korea's ODA has been shifting away from short-term, stand-alone projects toward a medium- to long-term, multi-component programmatic approach. This transition has been driven by the expansion of program-based ODA, the introduction of performance-based management, and the strengthened operation of CPS-centered country partnership frameworks.

In particular, monitoring and evaluation (M&E) practices—such as indicator frameworks, baseline and endline settings, and evidence-based monitoring—have been gradually upgraded to align more closely with OECD–DAC evaluation criteria and international standards. Consequently, agricultural and forestry ODA is being reorganized around integrated, climate–food–ecosystem package programs, which, in turn, necessitates the advancement of performance-management systems capable of ensuring rigorous measurement of outcomes and verification of effectiveness.

- **Strengthening the Alignment between Foreign Economic Policy and Development Cooperation**

The Korean government is increasingly forging tight linkages between major diplomatic initiatives—such as the Korea–Africa Summit (2024), cooperation networks with Latin America, and the follow-up strategies to the New Southern and New Northern Policies—and its development cooperation agenda. Consequently, the strategic coherence between ODA and Korea's broader national strategy, economic diplomacy, and climate diplomacy is deepening more visibly than ever.

Furthermore, in line with "The 3rd Master Plan for International Development Cooperation (2021–2025)," technology-driven ODA aligned with the Korean New Deal—encompassing digital agriculture, smart farming, and satellite/GIS-based information management—and National Innovation Strategies is expanding. This shift is anticipated to bring about structural changes in the modalities and operational frameworks of agricultural and forestry ODA in the coming years.

Task

First, it is essential to strategically expand agricultural ODA to support the transformation of food systems. Moving beyond the traditional productivity-oriented approach, development cooperation must adopt an integrated framework that addresses the entire national food system. This requires program designs that encompass 1) production, distribution, consumption, nutrition, and food security, 2) the establishment of resilience architectures to manage price and trade volatility, 3) the advancement of CPS based on regional food system and nutrition insecurity analyses, and 4) scaling up data-driven agricultural decision-support systems.

Second, the full-scale expansion of climate-adaptation-oriented agricultural and forestry ODA has become an essential policy imperative. As climate vulnerability in developing countries intensifies, climate-resilient agriculture and forestry have emerged as core policy domains (UNEP, 2022; OECD DAC, 2023). Priority areas include 1) the dissemination of drought- and disaster-resistant crop varieties and climate-smart agricultural practices, 2) the expansion of forest- and soil-based carbon

sinks and ecosystem restoration, 3) stronger linkages with major climate finance mechanisms such as REDD+, GCF, and CIF, and 4) establishing systems to respond to climate-induced shocks such as wildfires, droughts, and floods. In particular, the agricultural and forestry sectors will increasingly require integration with climate finance—namely, the expansion of blended-finance mechanisms—as a foundational element of future cooperation.

Third, advancing a performance-centered ODA system is no longer optional but an indispensable priority. The government, through "The 3rd Master Plan for International Development Cooperation (2021–2025)" and the 2025 Institutional Capacity Assessment, has consistently underscored the need to strengthen performance management, expand evidence-based and quantitative monitoring, and scale up baseline surveys. Accordingly, the agricultural and forestry sectors must enhance the coherence of the PDM–PMF–e-PDM framework, standardize country-level baseline surveys, and progressively adopt GIS-, IoT-, and satellite-based performance monitoring tools while establishing an inter-institutional data-sharing architecture. These measures constitute core requirements for consolidating a performance-driven, program-based ODA system. Ultimately, such system enhancements form a central pillar for improving ODA effectiveness and long-term sustainability.

Fourth, it is essential to strengthen package-based and cross-sectoral project structures across ministries, agencies, and the private sector. As development demands increasingly span agriculture, forestry, fisheries, and water resources, the need for integrated and cross-ministerial approaches has grown unmistakably. Major government bodies—including the MAFRA, the RDA, and the KFS—have already articulated in their mid- to long-term strategies a commitment to expanding cross-sectoral research and inter-ministerial collaboration.

Given this policy direction, the agricultural and forestry ODA portfolio must explore integrated models grounded in the agriculture–forestry–aquaculture–water nexus, identify pathways to expand private-sector engagement through PPP and CSR-linked modalities, and reinforce regional platform–based cooperation in key areas

such as Africa and the Mekong region. Moreover, as the global use of NbS continues to grow (UNEP, 2022), the development of NbS-driven, convergence-type package models across the MAFRA, the KFS, and the Ministry of Oceans and Fisheries emerges as a viable medium- to long-term agenda. Ultimately, strengthening multilayered governance that spans ministries, partner countries, international organizations, and the private sector is not merely desirable—it is indispensable for the future direction of Korea's ODA.

Finally, ensuring alignment with national strategies for the period of 2026–2030 is becoming increasingly critical. "The forthcoming 4th Master Plan for International Development Cooperation (2026–2030)" is expected to reinforce its medium-term strategic pillars around food security, climate action, and support for vulnerable states—continuing the priorities articulated in the 3rd Master Plan and reflecting the OECD–DAC's global agenda that links food, climate, and security. Against this backdrop, the agricultural and forestry sectors are anticipated to undergo a strategic restructuring centered on the following three axes: 1) strengthening national and regional food security, 2) enhancing household and local economic resilience, and 3) expanding the international diffusion of Korean agricultural and forestry technologies. Consequently, agricultural ODA must establish a coherent framework that balances these pillars—food security, local economic resilience, and technology dissemination—to ensure full alignment with Korea's evolving national development cooperation strategy.

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7. Foreign Workers in Agriculture

Foreign Worker Employment Policy in the Agricultural Sector

The agricultural sector continues to face persistent labor shortages because of aging farm households, the depletion of the agricultural labor pool caused by rural population decline, and the reluctance of domestic workers to take agricultural jobs. In particular, labor shortages during the busy farming season are a recurring annual problem. Various policies are currently being implemented to address these labor shortages, one of which is the policy to allow the inflow of foreign workers.

Foreign worker policies related to the agricultural sector in South Korea can be broadly divided into the Employment Permit System (EPS) and the Seasonal Foreign Worker Program (SFWP). The EPS is a system that permits the employment of foreign workers in industries experiencing labor shortages (e.g., manufacturing, construction, agriculture/forestry/fisheries, and services). Therefore, the EPS is not a system specifically dedicated only to the agricultural sector.

The EPS targets regular workers who will work for one year or more. The basic period of employment is three years, but the employment period can be extended by an additional one year and ten months if requested by the employer. If, after this period of four years and ten months, an employer at an eligible workplace wishes to re-employ the foreign worker, the worker can return through the Re-entry Program for productive workers. This involves departing the country, re-entering within one month, and working for up to an additional four years and ten months. However, re-employment is not possible after this second period.

The residence and employment statuses under the EPS are divided into E-9 (General Foreign Workers) and H-2 (Special Foreign Workers). The E-9 visa (General Foreign Workers) is granted to foreigners who meet conditions, including the Korean Language Proficiency Test (TOPIK), allowing them to work legally in Korea. The H-2 visa (Special Foreign Workers) is issued as a multi-entry visa valid for three years to ethnic Koreans with foreign nationality from China and Central Asia who meet certain

requirements. After foreigner registration, undergoing employment education and the job application process, they can be employed in permitted sectors for simple labor, which includes agriculture.

Under the EPS, the criteria for the employment of foreign workers are set based on the crop item/product type and the scale of farming, and foreign workers are allocated to each workplace accordingly. The employment allowance criteria for foreign workers by crop item/product type and farming scale are as shown in the table below.

Table 6-28 EPS employment quota (allowed number of foreign workers) by crop item and farming scale

Crop item \ Farming scale		Farming scale (unit : ㎡)					
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Crop cultivation	Facility Horticulture and Specialty Crops	2000~4000	4,000 ~ 6,499	6,500 ~ 11,499	11,500 ~ 16,499	16,500 ~ 21,499	21,500~
	Facility Mushrooms		1,000 ~ 1,699	1,700 ~ 3,099	3,100 ~ 4,499	4,500 ~ 5,899	5,900~
	Fruits		20,000 ~ 39,999	40,000 ~ 79,999	80,000 ~ 119,999	120,000 ~ 159,999	160,000~
	Ginseng, Vegetables		16,000 ~ 29,999	30,000 ~ 49,999	50,000 ~ 69,999	70,000 ~ 89,999	90,000~
	Bean Sprout Seedling Cultivation		200 ~ 349	350 ~ 649	650 ~ 949	950 ~ 1,249	1,250~
	Other Horticulture Specialty Crops		12,000 ~ 19,499	19,500 ~ 34,499	34,500 ~ 49,499	49,500 ~ 64,499	64,500~
Livestock farming	Dairy Cattle	900~1400	1,400 ~ 2,399	2,400 ~ 4,399	4,400 ~ 6,399	6,400 ~ 8,399	8,400~
	Hanwoo	1500~3000	3,000 ~ 4,999	5,000 ~ 8,999	9,000 ~ 12,999	13,000 ~ 16,999	17,000~
	Swine Farming	500~1000	1,000 ~ 1,999	2,000 ~ 3,999	4,000 ~ 5,999	6,000 ~ 7,999	8,000~
	Horses		250 ~ 499	500 ~ 999	1,000 ~ 1,499	1,500 ~ 1,999	2,000~

Crop item \ Farming scale		Farming scale (unit : ㎡)					
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Livestock farming	Poultry Farming	1000~2000	2,000 ~ 3,499	3,500 ~ 6,499	6,500 ~ 9,499	9,500 ~ 12,499	12,500~
	Beekeeping		100~199gun	200~299gun	300~399gun	400~999gun	1,000gun~
	Other Livestock		700 ~ 1,699	1,700 ~ 3,699	3,700 ~ 5,699	5,700 ~ 7,699	7,700~
Crop and Livestock Services			Domestic Insured Workers 1 ~ 10	-	Domestic Insured Workers 11 ~ 50	Domestic Insured Workers 51 ~ 100	Domestic Insured Workers 100~
Employment Quota		4	7	10	12	15	20
Ceiling on New Employment Permits		2					
		4					

Source: MAFRA Press Release (Aug. 31, 2022).

Although the EPS has partially addressed the labor shortage problem in the agricultural sector, its effect has been very limited as it is a system premised on employment for one year or more, making it suitable for farms that require regular workers. However, the employment type demanded by most crop-cultivating farms is that of temporary workers hired during the busy farming season. In other words, as the employment demand of the majority of crop farms was concentrated in specific periods, there were limitations in utilizing the EPS, which requires year-round employment. Indeed, the primary reason for farms not utilizing the EPS, despite its availability, was the highest response indicating that they did not need to employ a worker for a full year (Eom et al., 2020; Choi et al., 2024).

In response, the government introduced the SFWP as a pilot project in 2015 and converted it to a full-scale program in 2017 to address the seasonal labor demands of crop-cultivating farms. The program was introduced to solve the problem of excess labor demand concentrated in specific periods, such as planting and harvesting seasons. When it was first introduced, the status of sojourn and employment was C-4, allowing seasonal workers to be employed and stay in crop cultivation for a maximum

of 90 days. The introduction of the SFWP somewhat alleviated the labor shortage concentrated during the planting and harvesting seasons. However, for some crops, the required period of employment exceeded three months (90 days) for farm work, and the C-4 visa status introduced in 2017 could not meet this extended labor demand. Consequently, in 2020, the government established a new Seasonal Worker Program (SWP) (E-8) allowing employment for up to five months, in addition to the existing program that allows three months of employment. With the addition of seasonal workers holding the E-8 visa status, the SFWP now enables employment for three months under the C-4 status and five months under the E-8 status.

Similar to the EPS, the SFWP also determines the allowed number of workers based on the crop item/product type and the scale of farming. The criteria for the employment quota according to each crop item/product type and farming scale under the SFWP are as shown in the table below.

Table 6-29 SFWP employment quota (allowed number of foreign workers) by crop item and farming scale

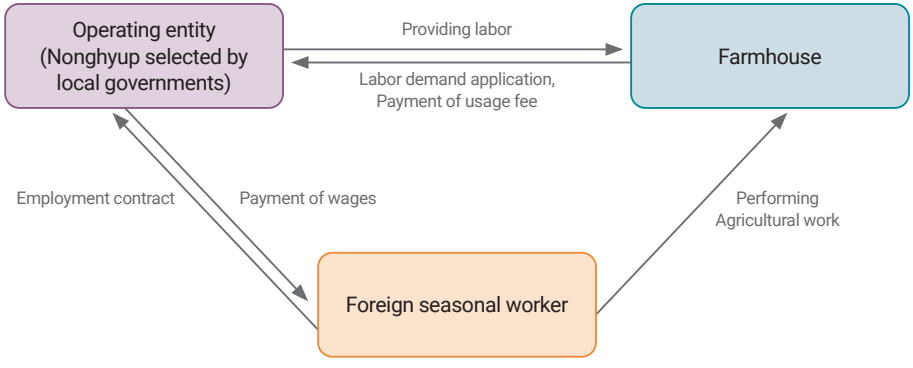
Farming scale / Crop item	Farming scale (unit: 1,000㎡)				
① Facility Horticulture Specialty Crops	~2.6	2.6~3.9	3.9~5.2	5.2~6.5	6.5~
② Mushrooms	~5.2	5.2~7.8	7.8~10.4	10.4~13	13~
③ Fruits	~16	16~24	24~32	32~38	38
④ Ginseng, Vegetables	~12	12~18	18~24	24~30	30~
⑤ Bean Sprout Seedling Cultivation	~0.35	0.35~0.65	0.65~0.95	0.95~1.25	1.25~
⑥ Other Horticulture Specialty Crops	~7.8	7.8~11.7	11.7~15.6	15.6~19.5	19.5~
⑦ Grains	~50	50~300	300~400	400~500	500~
⑧ Other Food Crops	~7	7~10	10~13	13~16	16~
⑨ Dried Persimmon Processing	~70geop	70~80geop	80~90geop	90~100geop	100geop~
Employment Quota	5	6	7	8	9

Source: MAFRA Press Release (Aug. 31, 2022)

Employing foreign workers for three months and five months (as established in the previous section) widened the range of employment period choices for farms, unlike when only the EPS was available. However, the workers most frequently employed by farms are daily workers (employed for less than one month), and the system still did not allow the employment of foreign daily workers. Even though the employment of foreign daily workers was already prevalent in the field, the lack of official authorization created a significant gap between the policy and the reality on the ground (Eom et al., 2020). Consequently, the government introduced the Public Seasonal Foreign Worker Program (PSFWP) in 2022, enabling farms to utilize foreign workers on a daily basis.

Unlike the existing SWP where farms hire directly, PSFWP allows farms to deploy workers for farm work on a daily basis when needed. While farms utilize the workers on a daily unit, the public seasonal workers are employed for three or five months, similar to existing seasonal workers. However, the employing entity is not the individual farm; currently, the local Nonghyup (Agricultural Cooperatives) hires the public seasonal workers for three or five months, allowing multiple farms in the region that require labor to utilize the workers. This is schematically represented in the Figure below.

Figure 6-21 Conceptual diagram of the operational method for the PSFWP

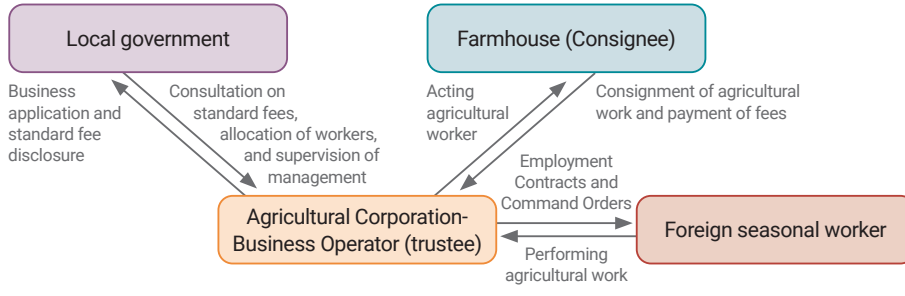


Source: MAFRA, 2024, 2024 Implementation Guidelines for the Rural Labor Intermediation Center Program.

The PSFWP provided an opportunity to partially resolve the shortage of daily workers, the type of labor most frequently employed by farms, and it also resulted in high farm satisfaction (Eom et al., 2023b). Subsequently, the employment period for seasonal workers was extended to a maximum of eight months (5 + 3 months) in 2023. This extension applies to both the farm-hired and the public seasonal workers, making seasonal worker employment possible for 3, 5, and 8 months.

In 2025, the government piloted the Farm Work Outsourcing Seasonal Worker Program. This system involves a legal entity (e.g., an agricultural corporation) that meets specific requirements directly employing foreign seasonal workers to take over and perform the entirety of farm work entrusted by individual farms. The operational method is based on a contract for work (outsourcing contract) under civil law. Unlike previous systems, the farm entrusts a specific farm task (e.g., harvesting a hectare of garlic) to the outsourcing corporation, and the corporation assumes the responsibility and obligation to complete that task. The farm pays a predetermined outsourcing fee after entrusting the labor-intensive farm work to the corporation. In this structure, the employment contract and work instructions for the foreign seasonal workers belong to the business operator (the outsourcing corporation) that receives the entrusted farm work. The operational method of the Farm Work Outsourcing Seasonal Worker Program is shown in the Figure below.

Figure 6-22 Conceptual diagram of the operational method for the Farm Work Outsourcing Seasonal Worker Program



Source: MAFRA Press Release (Oct. 22, 2025).

Current Status of Foreign Worker Employment in the Agriculture Sector

The number of foreign workers employed in agriculture under the EPS (E-9) increased by approximately 1,000 workers each year from 2016 to 2019. However, the numbers decreased in 2020 and 2021 compared to the existing Figures because of factors related to COVID-19, such as the denial and delay of entry for new arrivals and the departure of foreign nationals in the early stages of the pandemic. Subsequently, the number recovered to 24,000 in 2022 and further increased to 31,000 workers in 2024.

Table 6-30 Number of foreign workers (E-9 EPS) in the agriculture sector (2016–2024)

unit: person

Category	2016	2017	2018	2019	2020	2021	2022	2023	2024
Workers	21,083	22,802	23,804	24,509	20,689	17,781	24,139	29,250	31,046

Source: KOSIS, various years, National Data Agency, Employment Trends of the EPS.

The number of foreign workers engaged in the agriculture sector through the SWP increased from 831 in 2017 to 2,948 in 2019. This number dropped to zero in 2020 because of the inability of seasonal workers to enter the country following COVID-19. It recovered somewhat to 538 in 2021. Following severe labor shortages in 2020 and 2021, the number sharply increased to around 10,000 in 2022 because of the surge in applications for seasonal workers. Subsequently, the number dramatically increased to 50,579 in 2024.

Table 6-31 Number of foreign workers in the agriculture sector under the SWP (C-4, E-8) (2017–2024)

unit: person

Category	2017	2018	2019	2020	2021	2022	2023	2024
Workers	831	2,249	2,948	0	538	10,536	26,355	50,579

Source: Eom et al., 2023a; Ministry of Justice, various years, Immigration Data.

The continuous increase in the number of workers through the EPS (E-9) and the SWP is because of a structural reliance on foreign workers. This reliance is caused by a convergence of several issues: the agricultural labor market's labor supply cannot meet its demand, domestic workers avoid entering the agricultural labor market, and there are compounding problems such as the aging population and the depopulation of rural areas.

In reality, other than foreign workers employed through the EPS (E-9) and the SWP, undocumented (illegal) stayers and illegally employed foreign workers are also engaged in agriculture (Eom et al., 2020; Choi et al., 2024). The only currently officially published statistic that includes all foreign workers in the agriculture sector—including these undocumented and illegally employed foreign workers—is the total number of workdays of foreign workers employed by farm households recorded in the 2020 Census of Agriculture, Forestry, and Fisheries, which is 1,319,500. Of this total, short-term employment of less than one month accounts for the largest share at 896,187 workdays, which represents the most common form of employment utilized by the majority of farm households. Employment of 1 month to less than 3 months, 3 months to less than 6 months, and 6 months or more was 222,161, 98,170, and 102,982 workdays, respectively. The ratio of foreign worker workdays to the total workdays of all employed workers in farm households ranged from 43.7% to 51.4%.

The Figures (2020 statistics), however, must be interpreted by considering the special circumstances of the time. In 2020, because of the impact of COVID-19, the number of seasonal workers entering the country was zero (0), and the number of foreign workers under the EPS (E-9) entering the agriculture sector was also low, reaching only 1,388. Furthermore, considering that the pandemic-induced labor shortage occurred across all industries, leading to the possibility of foreign workers in agriculture moving to other sectors, the actual proportion of foreign workers employed in agriculture before or after the COVID-19 outbreak was significantly higher than the Figure presented.

Considering the fact that there was zero (0) seasonal worker entry in 2020, the majority of the foreign workers who were employed for short periods (less than 1

month, 1 month to less than 3 months, and 3 months to less than 6 months) were likely undocumented (unregistered) foreign workers. Moreover, given the small scale of E-9 foreign worker entry into agriculture in 2020 (1,388 people), a significant number of undocumented foreign workers were also likely included in the Figure for long-term employment of 6 months or more.

Table 6-32 Scale of foreign worker employment by farm households (2020)

Unit: work days (double counting), %

Category	Less than 1 month	1~3 months	3~6 months	More than 6 months
Scale of Foreign Worker Employment	896,187	222,161	98,170	102,982
Ratio of Foreign Workers	43.7	46.3	51.4	51.3
Size of the Total Workforce	2,048,680	480,269	190,990	200,594

Source: MDIS, 2020, Analysis of Raw Data from the Census of Agriculture, Forestry, and Fisheries.

Policy Tasks Related to Foreign Workers in the Agriculture Sector

Although the reliance on foreign workers in the agriculture sector is gradually increasing, several issues are emerging in the field. Consequently, the government is improving its systems to reflect field demands, including the introduction of the SWP alongside the existing EPS (E-9), diversifying employment periods within the SWP, and implementing programs such as the Public-Type and the Contract Farming-Type Seasonal Worker Programs.

However, there are several areas that require further discussion and improvement.

First, it is necessary to exclude the intervention of private overseas dispatch agencies (brokers) in the seasonal worker dispatch process. Current guidelines prohibit overseas private dispatch agencies from selecting and sending workers; however, the selection and dispatch of seasonal workers through private agencies still occurs in some regions. The involvement of private dispatch agencies leads to cases where workers pay excessive fees to secure employment as seasonal workers. This, in

turn, increases the incentive for seasonal workers to engage in undocumented (illegal) stays. For instance, a local government official commented, "The key to preventing foreign seasonal workers from absconding is to minimize dispatch costs so that workers can earn a good amount of money."[6] In response, the government announced that it would establish a specialized support institution capable of exclusively managing the signing of Memoranda of Understanding (MOUs) for seasonal worker dispatch/introduction, as well as the recruitment and management of seasonal workers. However, this institution has not yet been established. Public involvement in signing MOUs regarding the dispatch of seasonal workers with overseas local governments will be able to mitigate the current issues of private broker intervention, high dispatch fees, and the resulting increased incentive for undocumented stay. Therefore, the government should designate or establish a professional institution that can officially perform tasks such as signing Seasonal Worker MOUs.

Second, it is necessary to resolve the information asymmetry regarding workplace information and agricultural working environments before departure. Foreign workers assigned to agricultural workplaces through the EPS (E-9) and the SWP need to be provided with maximum advance information, including the contents of the labor contract, details about accommodation facilities, and information about the agricultural tasks they will perform after entry.

Third, it is necessary to devise measures to resolve conflicts between agricultural employers and workers concerning the working environment during the foreign worker's period of stay (after entry). The conflicts frequently occurring between agricultural employers and workers in the field often relate to wages, working hours, break times, holidays, work instructions, and the dispatching of workers to businesses (workplaces) other than the assigned one.

While conflicts and disagreements certainly exist between the parties, the circumstances faced by the majority of agricultural employers also play a role in the background of these situations. The current average age of agricultural employers is

6 https://www.joongang.co.kr/article/25095679#home

68 years; that is, most are unfamiliar with worker labor management. Furthermore, when there is no work on their own farms, some employers view sending foreign workers to work at other farms as a traditional form of labor exchange (known as Pumasi). Moreover, the majority of employers are often unclear about the content of the applicable Labor Standards Act (Eom et al., 2024).

To resolve these issues, primary labor management education for agricultural employers assigned foreign workers is necessary as a prerequisite. Additionally, it is essential to establish a stay management and support system at the regional (si/gun) level that addresses conflicts between employers and workers.

Currently, when conflicts arise between the employer and the worker, the absence of an official organization or contactable institution leads to them resolving issues individually; otherwise, foreign workers have to seek resolution through foreign human rights organizations or their national communities. While conflicts are sometimes resolved successfully, failure to resolve them can lead to further deterioration, resulting in the worker absconding from the workplace, illegal stay, or illegal employment. Furthermore, cases of workers' human rights being violated may also occur. To prevent these situations, labor management education for agricultural employers and the establishment of a regional stay management and support system are necessary.

Fourth, in some cases, agricultural employers propose illegal stays to highly productive seasonal workers. The SWP operates on a system where workers return to their home country after working for 3, 5, or 8 months. When the employment period ends, the incentive for illegal stay is activated because workers want to continue earning a higher salary compared to their home country. If an agricultural employer proposes illegal stay, some workers accept the offer.

This situation arises because there is no pathway for seasonal workers to advance to the next stage. Compared to workers under the EPS (E-9), E-9 workers can work for a maximum of 4 years and 10 months + 4 years and 10 months (up to 9 years and 8 months), and if they meet certain requirements, they can transition to the Skilled Worker (E-7-4) visa with a long-term stay status. However, despite performing similar

tasks, the maximum employment period for seasonal workers is 8 months, and they cannot advance to long-term stay status. Therefore, to improve this situation, it would be helpful to consider extending the re-entry period for highly productive seasonal workers (e.g., a maximum number of entries or of months) and granting bonus points to highly productive seasonal workers who meet the Korean language and other necessary requirements when applying for the EPS. Furthermore, it would be necessary to establish a pathway for certain seasonal workers who meet certain requirements to transition to the Skilled Worker (E-7-4) visa.

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8. Companion Animals

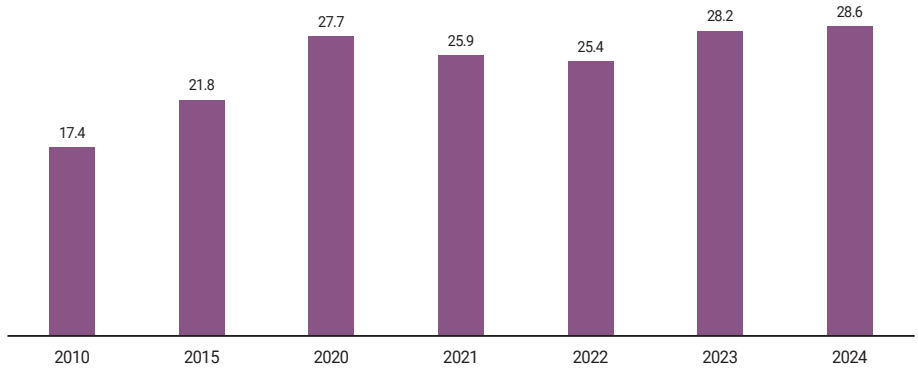
Concept of Companion Animals and Current Status of Ownership

In Korea, the concept of companion animals is defined in Article 2 of the Animal Protection Act. The Act states that "a companion animal refers to dogs, cats, and other animals specified by the Ordinance of the Ministry of Agriculture, Food and Rural Affairs (MAFRA), raised for companionship." In addition to dogs and cats, rabbits, ferrets, guinea pigs, and hamsters are also included in the legal category of companion animals. However, most statistical data and policy measures focus on dogs and cats because they have higher ownership rates.

Driven by socioeconomic changes, including rising national income, an increase in single-person households, and demographic shifts such as low birth rates and population aging, the proportion of households raising companion animals, especially dogs and cats, continues to rise. In 2024, 28.6% of households had companion animals, representing a 0.4 percentage point increase from the previous year and an average annual growth rate of 3.6% since 2010 <Figure 6-23>.

Figure 6-23 Trends in the proportion of companion animals-owning households

Unit: %



Note: Based on dogs and cats.
Source: MAFRA, various years, *Public Awareness Survey on Animal Welfare*.

In 2024, the total number of owned dogs and cats was 7.762 million, a decrease of 2.8% from the previous year but reflecting an average annual increase of 1.1% since 2015. Dogs made up 64.3% of this population, and cats accounted for 35.7%. Since 2015, the dog population has declined slightly at an average annual rate of 0.3%, while the cat population has increased by 4.3% per year, showing a consistent rise in cat ownership <Table 6-33>.

Table 6-33 Trends in the number of pet animals owned

Unit: Thousands

Category	2015	2018	2019	2020	2021	2022	2024	Average annual growth rate
Dogs	5,126	5,072	5,985	6,018	5,179	5,448	4,992	△0.3
Cats	1,897	1,280	2,579	2,583	2,254	2,540	2,770	4.3
Total	7,023	6,352	8,564	8,601	7,433	7,988	7,762	1.1

Note: Based on dogs and cats.
Source: MAFRA, various years, *Public Awareness Survey on Animal Welfare.*

Companion Animals-Related Policies

As the number of pet-owning households increases, the importance of improving companion animal welfare and related industries has grown. This trend has led to the implementation of relevant laws and the development and promotion of various government policies.

<Table 6-34> shows that the most representative law related to companion animals in Korea is the "Animal Protection Act," enacted in 1991. The Act contains eight chapters and covers areas such as companion animals, laboratory animals, and farm animals. Provisions directly related to companion animals appear in Chapter 1 (General Provisions), Chapter 2 (Formulation of the Comprehensive Animal Welfare Plan, etc.), Chapter 3 (Protection and Management of Animals), Chapter 6 (Companion Animal-Related Businesses), Chapter 7 (Supplementary Provisions), and Chapter 8 (Penal Provisions).

Table 6-34 Major companion animal provisions in the Animal Protection Act

Category	Major Provisions
Chapter 1 (General Provisions)	Article 1 (Purpose), Article 2 (Definitions), Article 3 (Basic Principles of Animal Protection), Article 4 (Duties of the State, Local Governments, and Citizens)
Chapter 2 (Formulation of the Comprehensive Animal Welfare Plan, etc.)	Article 6 (Comprehensive Animal Welfare Plan)
Chapter 3 (Protection and Management of Animals)	Article 10 (Prohibition of Animal Abuse, etc.), Article 12 (Methods of Transferring Companion Animals), Article 15 (Registration of Animals Subject to Registration), Article 16 (Management of Animals Subject to Registration), Section 2 (Management of Dangerous Dogs), Section 3 (Companion Animal Behavior Specialists), Section 4 (Rescue and Care of Animals)
Chapter 6 (Companion Animal-Related Businesses)	Article 69 (Licensing of Businesses), Article 71 (Special Provisions for Public Pet Cremation Facilities), Article 72 (Restrictions on Establishing Animal Cremation Facilities), Article 73 (Registration of Businesses), Article 76 (Reporting of Business Suspension or Closure), Article 78 (Compliance Requirements for Business Operators)
Chapter 7 (Supplementary Provisions)	Article 94 (Surveys and Disclosure of Information), Article 95 (Collection and Utilization of Animal Protection Information)
Chapter 8 (Penal Provisions)	Articles 97–101 (Penalties and Administrative Fines)

Source: Ministry of Government Legislation·Korea Law Information Center, *Animal Protection Act*.

Policies related to companion animals in Korea have focused on animal protection and welfare improvement, along with ongoing efforts to support pet-related industries. In accordance with Article 6 of the Animal Protection Act, the government has announced three national plans, each established on a five-year cycle, to enhance animal welfare. Most recently, in February of this year, the government released and began implementing the third plan, the "Third Comprehensive Animal Welfare Plan (2025–2029)" (see <Table 6-35>).

Table 6-35 Major companion animal policies

Category	Major Policies
2008. 07	Comprehensive Plan for Animal Protection and Welfare
2014. 12	1st Comprehensive Animal Welfare Plan(2015~2019)
2016. 12	Action Plan for Companion Animal Protection and Industry Promotion
2020. 01	2nd Comprehensive Animal Welfare Plan(2020~2024)
2022. 12	Measures to Strengthen Animal Welfare
2023. 08	Plan for Fostering the Companion Animal Industry
2025. 02	3rd Comprehensive Animal Welfare Plan(2025~2029)

Source: MAFRA internal document.

Companion Animal Protection and Welfare

Animal Registration System

The animal registration system, established under the Animal Protection Act, aims to prevent pet loss and abandonment and to increase owners' responsibility. A pilot program for dog registration began in 2008, followed by nationwide mandatory registration in 2014. Owners must register dogs aged 2 months or older using either an implanted microchip or an external identification device. A pilot program for cat registration started at the municipal level in 2018 and expanded nationwide in 2022, with only microchip-based registration allowed for cats.

In 2024, 259,909 companion animals were newly registered, reflecting a 4.2% decrease from the previous year. The cumulative number of registered animals, excluding deceased ones, reached 3,491,607, which is a 6.3% increase compared to the previous year <Table 6-36>.

Owing to efforts by the central and local governments to increase the registration rate of dogs subject to mandatory registration, the overall registration rate of companion dogs has increased. Surveys conducted by the Ministry of Agriculture, Food and Rural Affairs show that the registration rate of companion dogs rose from 8.8% in 2010 to 82.5% in 2024. However, because this Figure is based on sample survey results and dog registration is mandatory, there is still a need to further increase the registration rate (see <Figure 6-24>).

Table 6-36 Trends in companion animal registration

Unit: Number of Animals, %

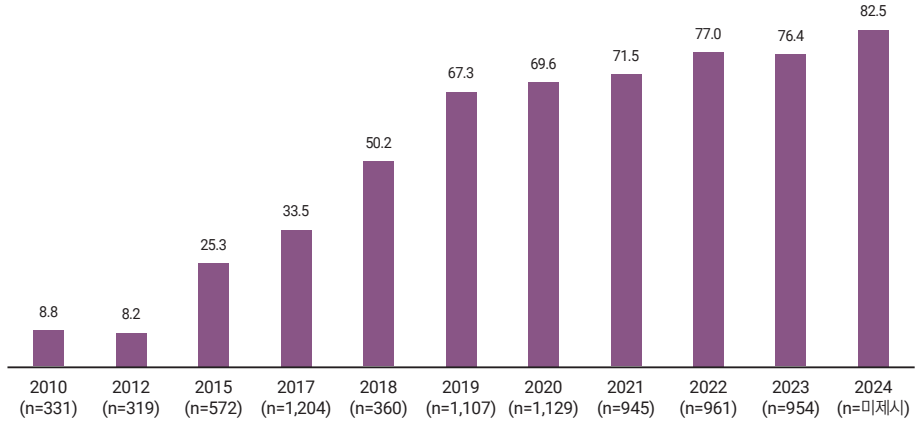
Category	New Registrations			Cumulative Registrations		
	Dogs	Cats	Total	Dogs	Cats	Total
2014	192,274		192,274	887,966		887,966
2015	91,232		91,232	979,198		979,198
2016	91,509		91,509	1,070,707		1,070,707
2017	104,809		104,809	1,175,516		1,175,516
2018	146,617		146,617	1,304,077		1,304,077
2019	797,081		797,081	2,092,163		2,092,163
2020	235,637		235,637	2,321,701		2,321,701
2021	500,321	9,683	510,004	2,766,250	16,559	2,782,809
2022	290,958	11,639	302,597	3,025,859	28,483	3,054,342
2023	257,989	13,184	271,173	3,244,234	41,982	3,286,216
2024	245,236	14,673	259,909	3,434,624	56,983	3,491,607
Average annual growth rate	2.5	14.9	3.1	14.5	51.0	14.7

Note: Data on cat registrations have been collected since 2021.

Source: MAFRA, various years, *Survey on the Status of Companion Animal Protection and Welfare.*

Figure 6-24 Trends in dog registration rates

Unit: %



Source: MAFRA, various years, *Public Awareness Survey on Animal Welfare.*

Companion animal registration is conducted through animal registration agencies designated by local governments. As of 2024, there are 4,408 registration agencies, reflecting a continued upward trend, with a notable increase in 2014 when dog registration became mandatory. Veterinary clinics constitute the majority of these agencies, accounting for 88.2% (3,889 locations; see <Table 6-37>).

Table 6-37 Trends in the number of animal registration agencies

Unit: Number of Agencies

Category	2009	2010	2014	2015	2020	2021	2024
Number of Animal Registration Agencies	500	731	3,239	3,602	3,690	3,989	4,408

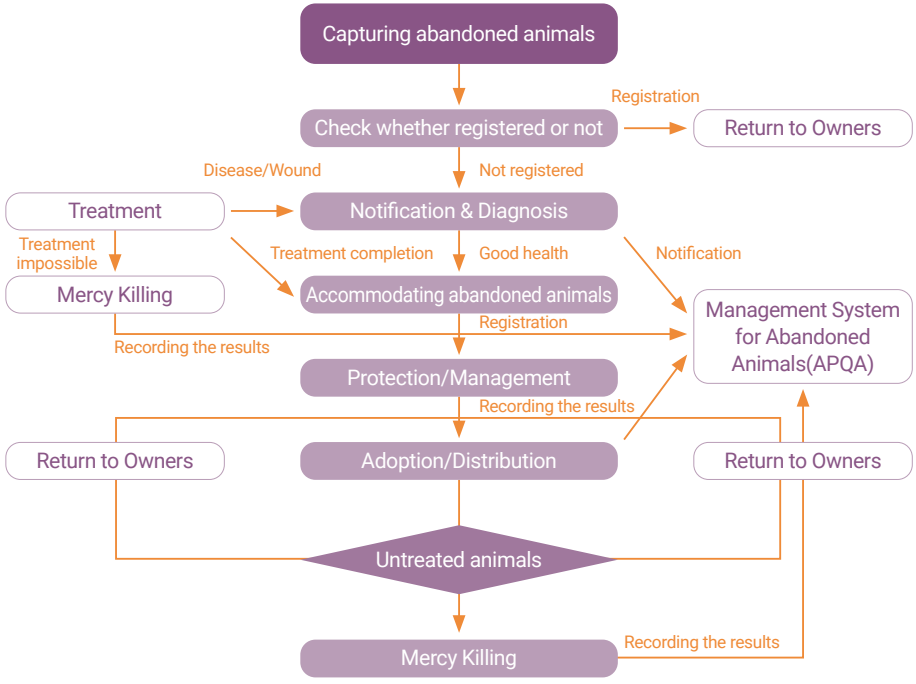
Source: MAFRA, various years, *Survey on the Status of Companion Animal Protection and Welfare.*

Lost and Abandoned Animals

The Animal Protection Act defines lost or abandoned animals as those found wandering or deserted without an owner in public spaces, such as roads or parks. When such an animal is found, individuals can report it to the relevant city, county, or district office, or to an animal shelter. Authorities then verify whether the animal is registered. If registration is confirmed, the animal is returned to its owner. If not, the animal is protected and managed through an animal shelter (see <Figure 6-25>).

As of 2024, animal protection centers rescued 106,824 lost and abandoned animals, including 77,304 dogs, 27,826 cats, and 1,694 other animals. Although this number has decreased since 2020, it has remained at approximately 110,000 animals per year (see <Figure 6-26>).

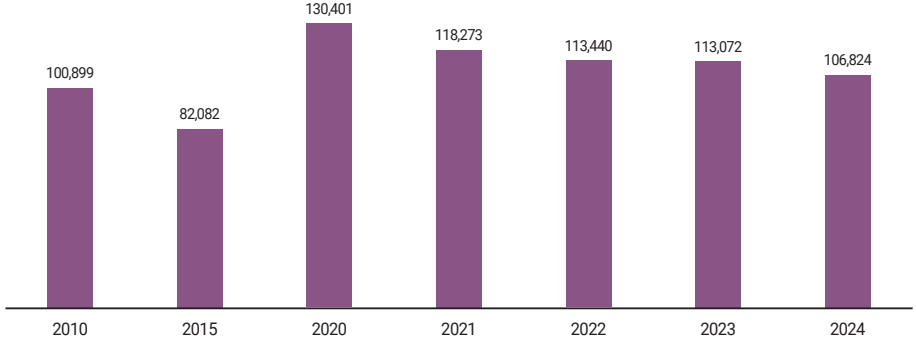
Figure 6-25 System for the protection and management of lost and abandoned animals



Source: Animal and Plant Quarantine Agency internal document.

Figure 6-26 Trends in the number of rescued lost and abandoned animals

Unit: Number of Animals



Source: MAFRA, various years, *Survey on the Status of Companion Animal Protection and Welfare.*

As of 2024, 231 animal protection centers operate nationwide, with an average sheltering period of 28.1 days. Regarding the outcomes for lost and abandoned animals under protection, only 34.9% were returned to their owners or adopted, while 45.9% either died naturally or were humanely euthanized, indicating a relatively high proportion <Tables 6-38, 6-39>.

Table 6-38 Trends in the number of animal protection centers

Unit: Number of Centers, Days, %

Category	2013	2015	2020	2021	2022	2023	2024	Average annual growth rate
Number of Centers	361	307	280	369	239	228	231	△4.0
Average Sheltering Period	26.0	23.4	27.0	24.0	26.0	27.8	28.1	0.7

Source: MAFRA, various years, *Survey on the Status of Companion Animal Protection and Welfare.*

Table 6-39 Status of lost and abandoned animals by type of protection and management (2024)

Unit: Number of Animals, %

Category	Under Protection	Returned	Adopted	Donated	Natural Death	Humane Euthanasia	Other	Total
Number of Rescued Animals	14,437	12,188	25,136	4,101	29,368	19,712	1,882	106,824
Proportion	13.5	11.4	23.5	3.8	27.5	18.5	1.8	100.0

Note: "Other" includes cases such as animals that cannot be captured and the release of cats.
Source: MAFRA, 2025, *2024 Survey on the Status of Companion Animal Protection and Welfare.*

Companion Animal Business Establishments

The Animal Protection Act defines eight companion animal–related business categories, with four requiring permits and four requiring registration. The permit-required categories are animal breeding, animal importation, animal sales, and animal funeral services. The registration-required categories are animal exhibition, animal boarding and care, animal grooming, and animal transportation (see <Table 6-40>).

Table 6-40 Companion animal–related business categories

Category		Detailed Scope
Permit Businesses	Animal Breeding	A business that breeds and sells companion animals
	Animal Importation	A business that imports and sells companion animals
	Animal Sales	A business that purchases and sells companion animals, or brokers and mediates their sale
	Animal Funeral Services	A business that installs and operates one or more facilities such as funeral halls, cremation facilities, drying facilities, hydrolysis facilities, or enshrinement facilities for companion animals
Registration Businesses	Animal Exhibition	A business that exhibits five or more companion animals owned by the operator for viewing or interaction purposes
	Animal Boarding and Care	A business that temporarily boards, trains, or cares for companion animals entrusted by their owners
	Animal Grooming	A business that grooms or hygienically manages the fur, skin, nails, and other features of companion animals
	Animal Transportation	A business that transports companion animals using automobiles

Source: Ministry of Government Legislation·Korea Law Information Center, Animal Protection Act, Enforcement Rules of the Animal Protection Act.

The number of companion animal–related business establishments increased to 23,565 in 2024. Animal grooming businesses represent the largest share at 43.2%, followed by animal boarding and care businesses at 23.8%, and animal sales businesses at 13.2% <Table 6-41>.

Table 6-41 Trends in the number of companion animal business establishments

Unit: Number of Establishments, %

Category	Permit Businesses				Registration Businesses				Total
	Breeding	Importation	Sales	Funeral Services	Exhibition	Boarding and Care	Grooming	Transportation	
2016	382	12	3,778	20	-	-	-	-	4,192
2017	545	30	3,991	26	-	-	-	-	4,592
2018	1,186	70	4,056	33	394	2,745	4,726	281	13,491
2019	1,690	75	4,179	44	548	3,809	6,351	459	17,155

Category	Permit Businesses				Registration Businesses				Total
	Breeding	Importation	Sales	Funeral Services	Exhibition	Boarding and Care	Grooming	Transportation	
2020	1,952	120	4,159	57	664	4,406	7,271	656	19,285
2021	2,019	122	4,010	63	653	4,802	8,222	794	20,685
2022	2,086	125	3,944	68	638	5,034	8,868	1,313	22,076
2023	2,011	94	3,154	74	541	4,820	8,404	1,477	20,575
2024	2,010	122	3,114	83	604	5,603	10,172	1,857	23,565
Average annual growth rate	23.1	33.6	△2.4	19.5	7.4	12.6	13.6	37.0	24.1

Note: Animal exhibition, boarding and care, grooming, and transportation businesses were added as companion animal–related business categories beginning in 2018.

Source: MAFRA, various years, *Survey on the Status of Companion Animal Protection and Welfare.*

The number of workers employed in companion animal–related business establishments increased to 29,305 in 2024. Animal grooming businesses accounted for the largest share at 39.0%, followed by animal boarding and care businesses at 25.2%, and animal sales businesses at 13.5% <Table 6-42>.

Table 6-42 Trends in the number of workers in companion animal business establishments

Unit: Persons, %

Category	Permit Businesses				Registration Businesses				Total
	Breeding	Importation	Sales	Funeral Services	Exhibition	Boarding and Care	Grooming	Transportation	
2016	573	18	4,857	91	-	-	-	-	5,539
2017	788	44	5,106	125	-	-	-	-	6,063
2018	1,704	82	4,902	119	518	3,654	5,309	323	16,611
2019	2,507	96	5,477	220	804	5,180	7,750	521	22,555
2020	2,710	172	5,397	245	892	5,795	8,741	739	24,691
2021	2,647	169	5,082	265	811	5,911	9,085	893	24,863
2022	2,744	177	4,868	256	822	5,991	9,767	1,468	26,093
2023	3,136	189	3,904	340	739	6,115	9,414	1,669	25,506

Category	Permit Businesses				Registration Businesses				Total
	Breeding	Importation	Sales	Funeral Services	Exhibition	Boarding and Care	Grooming	Transportation	
2024	3,132	152	3,969	378	880	7,379	11,429	1,986	29,305
Average annual growth rate	23.7	30.6	△2.5	19.5	9.2	12.4	13.6	35.4	23.2

Note: Animal exhibition, boarding and care, grooming, and transportation businesses were added as companion animal–related business categories beginning in 2018.

Source: MAFRA, various years, *Survey on the Status of Companion Animal Protection and Welfare.*

Companion Animal-Related Industries

Concept and Classification

The companion animal-related industry includes sectors associated with companion animal care, such as pet food, veterinary services, funeral services, supplies, insurance, and other related areas. This industry has expanded and become more sophisticated because of the increasing number of households with companion animals and the rising social status of animals. Consequently, it is emerging as a new growth industry with significant effects on employment.

The companion animal-related industry includes pet food, pet healthcare (including veterinary pharmaceuticals, veterinary medical services, and pet insurance), pet services (such as care, education and training, and funeral services), and pet tech (including automation, smart devices, and digital healthcare).

Pet Food

In 2024, the total supply of pet food in Korea, including production volume, imports, and carryover inventory, was approximately 264,000 tons, representing an average annual increase of 7.8% since 2020. Domestic consumption accounted for about 194,000 tons, exports for 64,000 tons, and carryover inventory for the following year for approximately 6,000 tons. Domestically produced pet food made up 66.7% of the Korean market <Table 6-43>.

Table 6-43 Trends in pet food supply and demand

Unit: Tons, %

Category		2020	2021	2022	2023	2024	Average annual growth rate
Supply	Carryover from Previous Year	2,136	5,019	4,023	5,633	5,730	28.0
	Production Volume	136,359	164,045	186,847	186,165	197,411	9.7
	Import Volume	59,376	64,750	71,103	58,955	66,691	2.9
	Subtotal	195,735	228,795	257,950	245,120	264,102	7.8
Demand	Consumption Volume	165,315	185,435	191,083	181,476	194,071	4.1
	Export Volume	25,401	39,338	61,234	57,915	63,955	26.0
	Carryover to Next Year	5,019	4,023	5,633	5,730	6,076	4.9
	Subtotal	195,735	228,795	257,950	245,120	264,102	7.8
Domestic Market Share		65.1	65.8	63.9	68.5	66.7	-

Note 1) The domestic market share was calculated as (production−exports)/(production−exports + imports), excluding carryover inventory from the previous and following years.
2) Because the carryover inventory for 2024 was not yet published, the value was estimated using the increase in pet food production.
3) Carryover inventory is converted from year-end inventory values into quantity.

Source 1) MAFRA, various years, *Pet food production volumes.*
2) ITC Trade Map data, various years, *Pet food import volumes.*
3) MODS, various years, *Mining and Manufacturing Survey.*

Korea's pet food import volume increased from approximately 64,000 tons in 2018 to about 67,000 tons in 2024, with an average annual growth rate of 0.7%. During this period, the import value rose from around USD 240 million to approximately USD 340 million, reflecting an average annual growth rate of 5.9%. In 2024, China is the largest source of Korea's pet food imports, followed by the United States, Thailand, Canada, and Japan <Table 6-44>.

Table 6-44 Trends in pet food imports

Unit: Thousand USD, Tons, %

Category		2018	2020	2022	2024	Average annual growth rate
China	Import Value	65,695	84,015	103,480	105,042	8.1
	Import Volume	10,236	12,643	15,629	17,334	9.2
USA	Import Value	50,425	61,038	74,225	61,565	3.4
	Import Volume	17,736	17,560	18,991	13,732	△4.2
Thailand	Import Value	22,586	33,016	44,750	42,166	11.0
	Import Volume	7,221	8,755	10,452	10,087	5.7
Canada	Import Value	16,230	18,148	32,772	27,616	9.3
	Import Volume	4,287	5,005	7,611	6,127	6.1
Japan	Import Value	15,527	18,186	19,845	21,437	5.5
	Import Volume	1,182	1,352	1,852	2,219	11.1
Others	Import Value	23,484	37,045	45,644	48,609	12.9
	Import Volume	4,733	6,954	8,457	9,110	11.5
Total	Import Value	238,927	270,733	347,251	336,791	5.9
	Import Volume	64,015	59,376	71,103	66,691	0.7

Note: Data are based on HS Code 2309.10 (dog and cat food).
Source: ITC Trade Map, various years.

Korea's pet food export volume increased from 6,833 tons in 2018 to approximately 64,000 tons in 2024, with an average annual growth rate of 45.2%. During this period, the export value rose from about USD 10 million to around USD 160 million, reflecting an average annual growth rate of 49.3%. In 2024, the main export destinations for Korean dog food are Japan, Thailand, Taiwan, Australia, and Vietnam, while the primary destinations for cat food are Japan, Taiwan, Thailand, Vietnam, and Australia (see <Table 6-45>).

Table 6-45 Trends in pet food exports

Unit: Thousand USD, Tons, %

Category	2018	2020	2022	2024	Average annual growth rate
Export Value	14,498	67,491	149,067	160,861	49.3
Export Volume	6,833	25,401	61,234	63,955	45.2

Note: Data are based on HS Code 2309.10 (dog and cat food).
Source: ITC Trade Map, various years.

Pet Supplies

The market size of pet supplies in Korea is projected to increase from approximately USD 200 million in 2022 to about USD 840 million in 2032, with an average annual growth rate of 15.5%. Among pet supplies, leashes, carriers, and bedding products represent the largest market segment. This segment is expected to grow from around USD 130 million to about USD 550 million over the same period, with an average annual growth rate of 15.7% <Table 6-46>.

Table 6-46 Market size and outlook for pet supplies

Unit: Million USD, %

Category	2022	2024	2026	2030	2032	Average annual growth rate
Cleaning Products	3.2	4.1	5.4	9.3	12.1	14.2
Care Products	16.5	21.5	28.1	48.1	62.9	14.3
Lotions	6.9	10.9	17.1	42.5	66.9	25.5
Oral Care Products	11.1	14.7	19.4	33.7	44.6	14.9
Leashes, Carriers, and Bedding	128.9	172.5	230.8	413.2	552.8	15.7
Pet Apparel	33.1	41.6	52.2	82.5	103.7	12.1
Total	199.7	265.3	353.0	629.3	843.0	15.5

Source: Yoo et al., 2023.

Korea's imports of pet supplies increased from approximately USD 28.52 million in 2018 to about USD 29.24 million in 2024, with an average annual growth rate of 0.4%.

In 2024, China is the largest source of Korea's pet supply imports, with an import value of about USD 21.92 million, accounting for 75.0% of the total. Vietnam, Italy, and France follow, accounting for 9.9%, 3.4%, and 2.6%, respectively (see <Table 6-47>).

Table 6-47 Trends in pet supplies imports

Unit: Thousand USD(%), %

Category	2018	2020	2022	2024	Average annual growth rate
China	21,899 (76.8)	18,866 (75.3)	24,846 (73.0)	21,915 (75.0)	-
Vietnam	1,434 (5.0)	2,504 (10.0)	3,473 (10.2)	2,905 (9.9)	12.5
Italy	728 (2.6)	536 (2.1)	1,425 (4.2)	994 (3.4)	5.3
France	319 (1.1)	322 (1.3)	808 (2.4)	766 (2.6)	15.7
USA	857 (3.0)	552 (2.2)	672 (2.0)	437 (1.5)	△10.6
Germany	1,319 (4.6)	882 (3.5)	775 (2.3)	390 (1.3)	△18.4
Myanmar	-	213 (0.9)	117 (0.3)	349 (1.2)	13.1
Others	1,959 (6.9)	1,167 (4.7)	1,909 (5.6)	1,481 (5.1)	△4.6
Total	28,515 (100.0)	25,042 (100.0)	34,025 (100.0)	29,237 (100.0)	0.4

Note: Data are based on HS Code 4201.00 (animal saddlery, harnesses, and apparel).
Source: ITC Trade Map, various years.

Korea's pet supply exports increased from approximately USD 5.87 million in 2018 to about USD 6.29 million in 2024, with an average annual growth rate of 1.2%. In 2024, Japan is the largest export destination for Korean pet supplies, with an export value of about USD 2.47 million, representing 39.3% of the total. The United States and Canada follow, accounting for 19.1% and 10.5%, respectively (see <Table 6-48>).

Table 6-48 Trends in pet supplies exports

Unit: Thousand USD(%), %

Category	2018	2020	2022	2024	Average annual growth rate
Japan	1,184 (20.2)	2,660 (32.9)	3,002 (32.6)	2,470 (39.3)	13.0
USA	2,003 (34.1)	2,590 (32.1)	3,294 (35.7)	1,201 (19.1)	△8.2
Canada	84 (1.4)	432 (5.3)	640 (6.9)	662 (10.5)	41.1
China	69 (1.2)	70 (0.9)	53 (0.6)	234 (3.7)	22.6
Russia	250 (4.3)	392 (4.9)	272 (3.0)	224 (3.6)	△1.8
Taiwan	36 (0.6)	63 (0.8)	161 (1.7)	197 (3.1)	32.7
Hong Kong	20 (0.3)	21 (0.3)	114 (1.2)	176 (2.8)	43.7
Others	2,226 (37.9)	1,852 (22.9)	1,683 (18.3)	1,127 (17.9)	△10.7
Total	5,872 (100.0)	8,080 (100.0)	9,219 (100.0)	6,291 (100.0)	1.2

Note: Data are based on HS Code 4201.00(animal saddlery, harnesses, and apparel).
Source: ITC Trade Map, various years.

Pet Healthcare

Korea's pet healthcare market is projected to grow from approximately USD 250 million in 2022 to about USD 890 million in 2032, with an average annual growth rate of 13.6%. Among pet healthcare-related products, the market for veterinary pharmaceuticals is expected to increase from around USD 240 million to about USD 840 million over the same period, reflecting an average annual growth rate of 13.6%. The veterinary software market is projected to grow from approximately USD

1.3 million to about USD 5 million, with an average annual growth rate of 14.6%. In addition, the veterinary medical device market is expected to grow from about USD 9.2 million to approximately USD 35.7 million, also showing an average annual growth rate of 14.6% <Table 6-49>.

Table 6-49 Market size and outlook for pet healthcare

Unit: Million USD, %

Category	2022	2024	2026	2030	2032	Average annual growth rate
Veterinary Pharmaceuticals	236	304	393	654	844	13.6
Veterinary Software	1.3	1.7	2.2	3.8	5.0	14.6
Veterinary Medical Devices	9.2	12.0	15.8	27.2	35.7	14.6
Total	246	318	411	685	885	13.6

Note 1) Veterinary pharmaceuticals include live attenuated vaccines, DNA vaccines, recombinant vaccines, inactivated vaccines, anti-infectives, anti-inflammatory agents, analgesics, and other drugs.
2) Veterinary medical devices include radiography systems, ultrasound systems, computed tomography (CT) systems, magnetic resonance imaging (MRI) systems, video endoscopy systems, X-ray CT contrast agents, MRI contrast agents, and ultrasound contrast agents.

Source: Yoo et al., 2023.

Pet Tech

Korea's pet tech market is projected to grow from approximately USD 56 million in 2022 to about USD 230 million in 2032, with an average annual growth rate of 15.4%. Among pet tech products, automated devices are expected to increase from about USD 24 million to around USD 64 million during the same period, reflecting an average annual growth rate of 10.3%. Smart toys are projected to grow from approximately USD 18 million to about USD 60 million, with an average annual growth rate of 12.9%. In addition, pet safety products are expected to rise from around USD 14 million to approximately USD 110 million, showing an average annual growth rate of 22.9% <Table 6-50>.

Table 6-50 Market size and outlook for pet tech

Unit: Million USD, %

Category	2022	2024	2026	2030	2032	Average annual growth rate
Automation Devices	24.2	29.3	35.5	52.6	64.3	10.3
Smart Toys	17.9	22.9	29.1	47.3	60.2	12.9
Pet Safety Products	13.9	20.4	30.5	70.7	109.3	22.9
Total	56.0	72.6	95.2	170.6	233.7	15.4

Note 1) Automated devices include automatic feeders, automatic water dispensers, and smart litter boxes.
2) Pet safety products include tracking devices, monitoring devices, smart collars and harnesses, and pet fences.
Source: Yoo et al., 2023.

Prospects and Tasks

The number of households in Korea that own companion animals is expected to continue increasing, and the importance of both companion animal welfare and companion animal-related industries is likely to grow. As a result, policies addressing gaps in the companion animal welfare system and supporting companion animal-related industries are expected to be strengthened. In this context, the key areas for improvement in the companion animal sector are as follows.

First, institutional improvements and infrastructure development related to companion animals are necessary. To achieve this, several measures should be implemented: improving relevant laws and regulations, including enhancing the legal status of companion animals; developing indicators to evaluate companion animal welfare; establishing a statistical system for companion animal welfare; improving the veterinary care system for companion animals; expanding animal protection facilities and improving site conditions; increasing the budget allocated for companion animal welfare; and strengthening the functions and coordination between dedicated organizations at the central and local government levels.

Second, welfare improvements should address the specific needs of companion animals at each life stage. To achieve this, the following measures should be implemented: reviewing the introduction of upper age limits for breeding dogs and cats; strengthening owner education before and after adoption and expanding

the scope of animals subject to registration; promoting the re-adoption of lost and abandoned animals; enhancing care services for aging companion animals; and easing regulations on deregistration while expanding animal funeral services.

Third, to support the growth of pet-related industries, it is necessary to establish industry infrastructure and improve industrial competitiveness. The following measures should be implemented: building a statistical foundation for pet-related industries; establishing differentiated support systems for each sector to ensure the sustainability of both domestic demand and exports; introducing and applying a quality certification system for domestic products; expanding support for providing market information on export destinations and for participating in international exhibitions; and preparing field-centered support measures, including assistance with regulations and certification requirements in export markets.

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