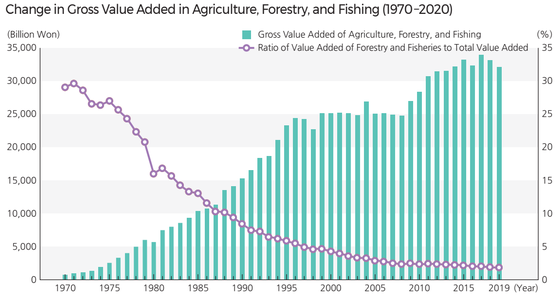
Agriculture, Forestry, Fishing, and Mining

The proportion of agriculture, forestry, fishing, and mining in the national economy has dramatically declined since full-fledged industrialization began. The gross value added in the agriculture, forestry, and fishing sectors stayed below 5 trillion won until the late 1970s and reached about 30 trillion won in the 2010s. On the other hand, the proportion of the gross value added in the agriculture, forestry, and fishing sectors to the total industry fell dramatically from about 29% in 1970 to roughly 2.4% in 2010, and its proportion has gradually decreased.

The number of workers employed in the agriculture, forestry, and fishing sectors went down dramatically from about 4.85 million people in 1970 to about 1.45 million people in 2020. The proportion of the number of workers employed in the agriculture, forestry, and fishing sectors to the total number of workers decreased from about 50% to about 5.4% for the same period. But it deserves some attention that the number of workers employed in the same industry continued to be increased slightly from 2017 to 2020. These changes are linked to growth in the number of young to middle-aged adults engaged in the agriculture, forestry, and fishing sectors, as well as migrant farmers, migrant fishermen, and urban-to-rural migrants. Also, the agriculture, forestry, and fishing sectors have been able to grow into a new untact industry amid the crisis of the COVID-19 pandemic.

There are regional differences in the gross value added and the number of workers in the agriculture, forestry, and fishing sectors. According to the gross value added in the agriculture, forestry, and fishing sector in 2018, Gyeongsangbuk-do showed the highest size with about 55 trillion won, followed by Jeollanam-do with about 52 trillion won, Chungcheongnam-do with about 41 trillion won, and Gyeongsangnam-do with about 40 trillion won. And, according to the regional proportion of gross value added in the agriculture, forestry, and fishing sector in 2018, Jeju-do showed the highest proportion with about 9.9%, followed by Jeollanam-do with about 7.9%, Jeollabuk-do with about 7.7%, and Gyeongsangbuk-do with about 5.4%. In addition, according to the number of workers employed in the agriculture, forestry, and fishing sectors in 2020, Gyeongsangbuk-do, Gangwon-do, and Jeollanam-do showed the highest number of workers in the agriculture, forestry, and fishing sectors, respectively.

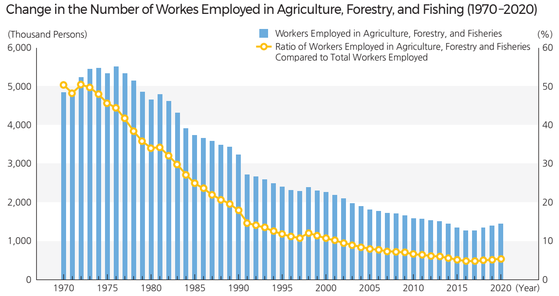
Change in Gross Value Added in Agriculture, Forestry, and Fishing (1970-2020)



* Value added is the Nominal Value for the Year.

The Bank Of Korea (Each Year)

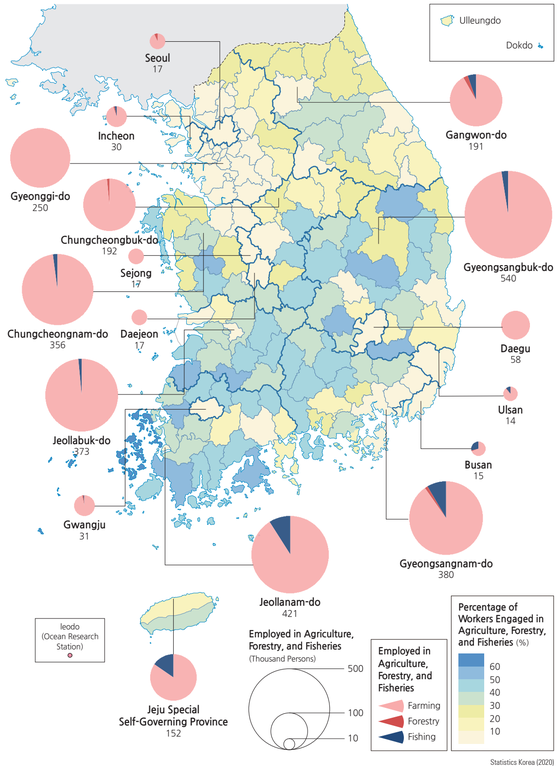
Change in the Number of Workes Employed in Agriculture, Forestry, and Fishing (1970-2020)



Statistics Korea (Each Year)

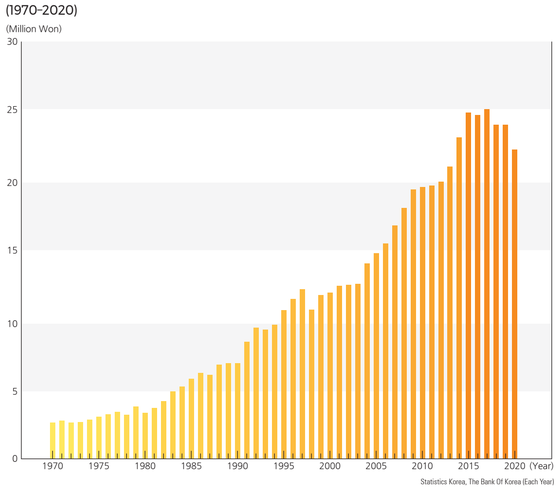
Overview of Agriculture, Forestry, and Fishing

Number of Workers Engaged in Agriculture, Forestry, and Fishing (2020)



Statistics Korea (2020)

Change in Gross Value Added per Workers Engaged in Agriculture, Forestry, and Fishing (1970-2020)

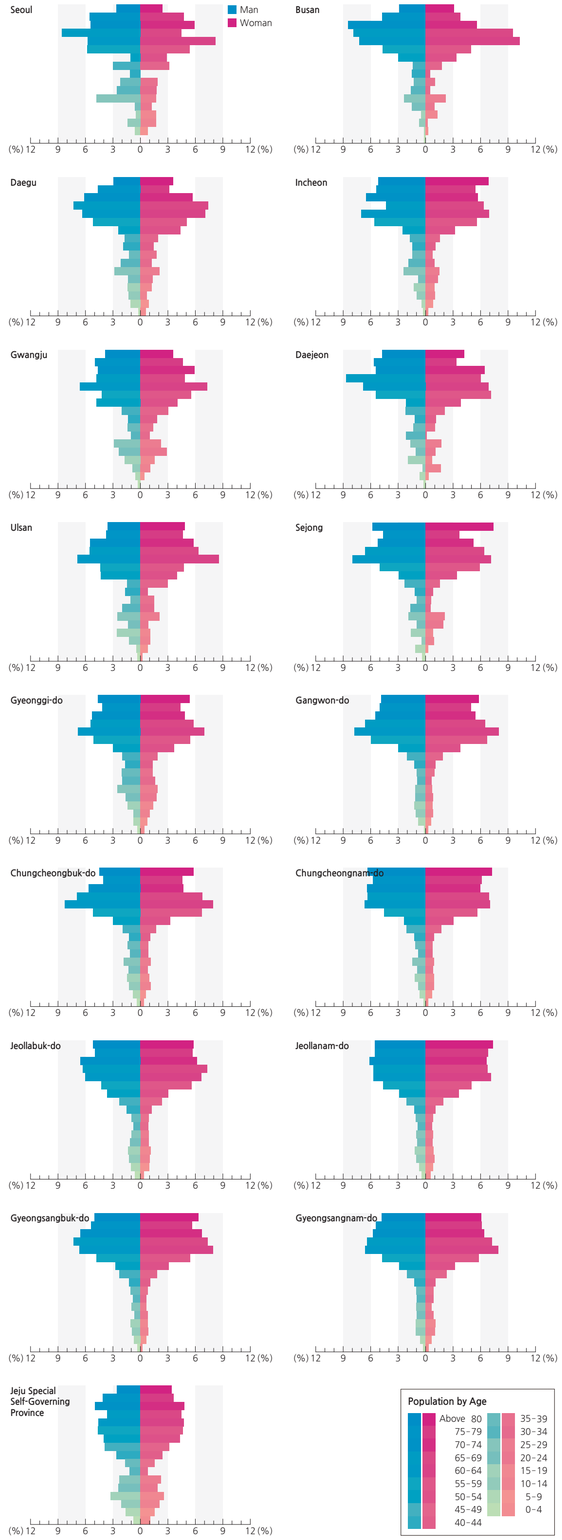


Statistics Korea, The Bank Of Korea (Each Year)

From 1970 to 2020, the gross value added per worker engaged in the agriculture, forestry, and fishing sectors had increased. For example, its gross value added per worker reached about 22 million won in 2020, while its gross value added per worker was about 2.56 million won in 1970. The increase in the gross value added per worker is due to increased agricultural productivity.

In 2019, the population structures of farm households by region showed that persons aged 65 years or over outnumbered other age groups. A mushroom-shaped population structure of farm households reflects that farm households are aging rapidly. However, there are regional differences in the population structures of farm households. For example, the proportion of farm households in the ages of 10s and 20s is relatively high in Jeju-do, partially because of the influx of young adults and middle-aged people. From 2010 to 2019, the population in the agriculture, forestry, and fishing sectors was aging rapidly. The proportion of the population aged 65 years or over in the agriculture, forestry, and fishing sectors increased from about 31% in 2010 to about 46% in 2019.

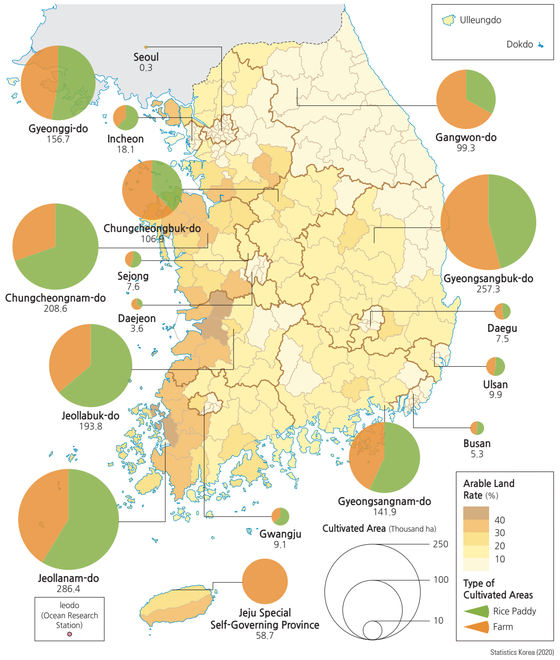
Population Structures of Farm Households (2019)



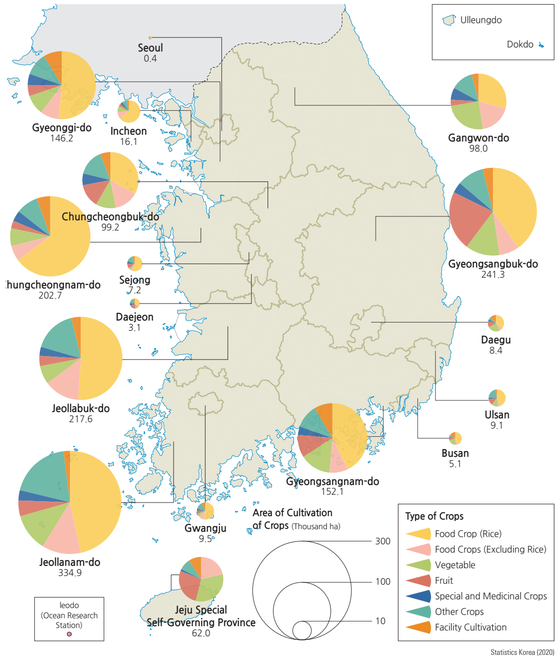
Statistics Korea (2019)

Changes in Agricultural Production

Cultivated Area and Arable Land Rate (2020)



Cultivated Area by Crops (2020)

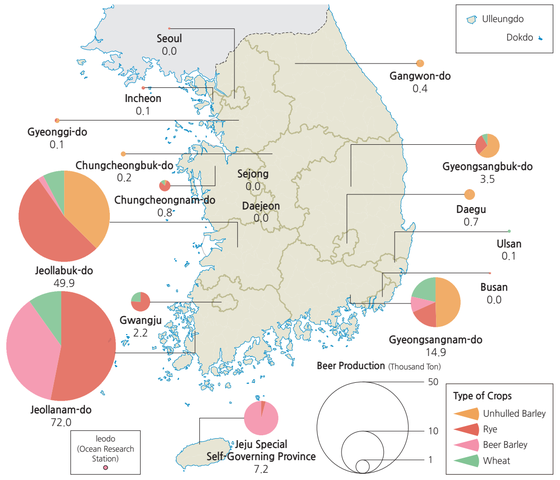


The maps of the cultivated area and arable land rate in 2020 show the current situation of agricultural production by region. According to the rice cultivated area in 2020, Jeollanam-do showed the highest area with 168,387 hectares, followed by Chungcheongnam-do with 145,103 hectares, and Jeollabuk-do with 123,638 hectares. According to the cultivated area of a dry field in 2020, Gyeongsangbuk-do showed the highest area with 139,387 hectares, followed by Jeollanam-do with 118,009 hectares, and Gyeonggi-do with 73,909 hectares. As of 2020, the arable land rate was the highest in Gimje-si (48.0%), followed by Iksan-si (45.0%) and Muan-gun (44.2%). The arable land rate appears high in plain areas such as Jeollanam-do, Jeollabuk-do, Chungcheongnam-do, and Gyeonggi-do.

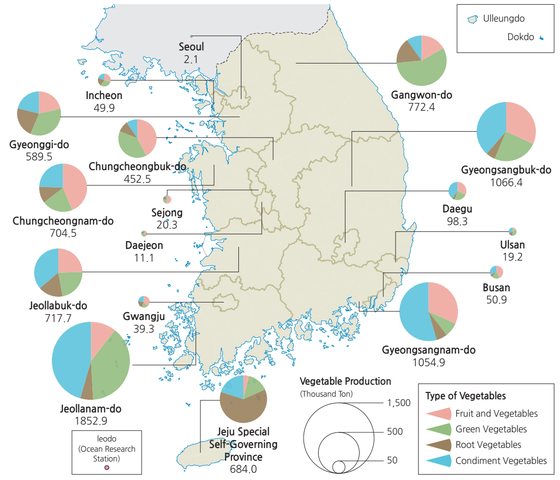
The type of agricultural production is subdivided into open-field production and greenhouse production. The open-field production contains various crops, such as grains, including rice, barley, and wheat, vegetables, orchards, specialty and medicinal crops, and other crops. There are regional differences in the cultivated land area by crop types. For example, in 2020, the cultivated land area of paddy rice was the highest in Jeollanam-do (156,230 hectares), followed by Chungcheongnam-do (131,284 hectares) and Jeollabuk-do (110,880 hectares). The cultivated land area of orchards in 2020 was the highest in Gyeongsangbuk-do (53,006 hectares), followed by Jeju-do (16,677 hectares) and Jeollanam-do (16,487 hectares). The cultivated land area of greenhouses was the highest in Gyeongsangnam-do (13,100 hectares), followed by Gyeonggi-do (12,887 hectares) and Chungcheongnam-do (11,139 hectares).

The cultivated land area was decreased 0.8% annually from 1975 to 2019. The cultivated land area in 2019 was 1.58 million hectares, which is a decrease of roughly 660,000 hectares (-29.4%) compared to 1975. Rice field area decreased faster than dry field area as rice field area decreased by about 450,000 hectares (-35%) and dry field area decreased by about 210,000 hectares (-22%) during the same period. The arable land rate dropped from 140.4% in 1975 to 107.2% in 2019. In contrast, the cultivated land area per farm household rose 0.94 to 1.57 from 1975 to 2019, reflecting the growth of agriculture. In this regard, the government has implemented various policies such as fostering agricultural labor force, the enlargement of farm size, improving the production facility, the farm mechanization, and the facility modernization to enhance the competitiveness of agriculture since the early 1990s. The increase in cultivated land area per farm household, in particular, represents achieving an economy of scale which allows for lower production costs and increased price competitiveness. The number of farm households with less than 0.5 hectares of cultivated area decreased from 690,983 households in 1975 to 212,458 households in 2019, whereas the number of farm households with over 3.0 hectares of the cultivated area increased from 35,982 households in 1975 to 77,164 households in 2019. For the same period, the size of the cultivated area per household had increased through these changes. However, the cultivated land area per farm household is still not large compared to other countries.

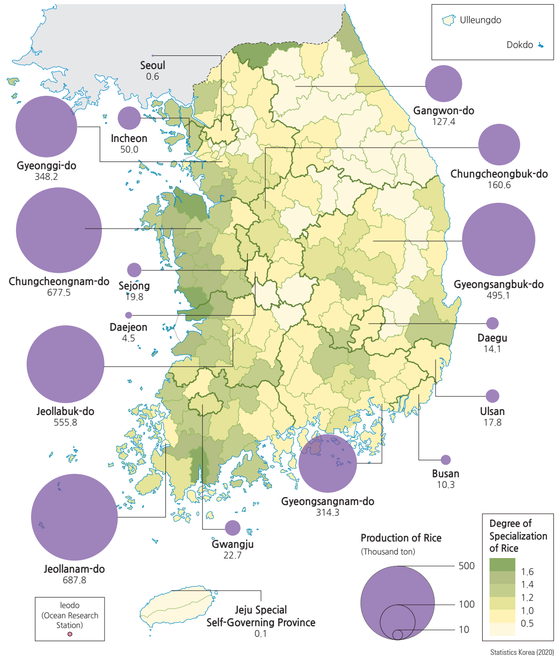
Barley and Wheat Production (2019)



Vegetable Production (2019)



Rice Production (Polished) and Specialized in Rice (2020)

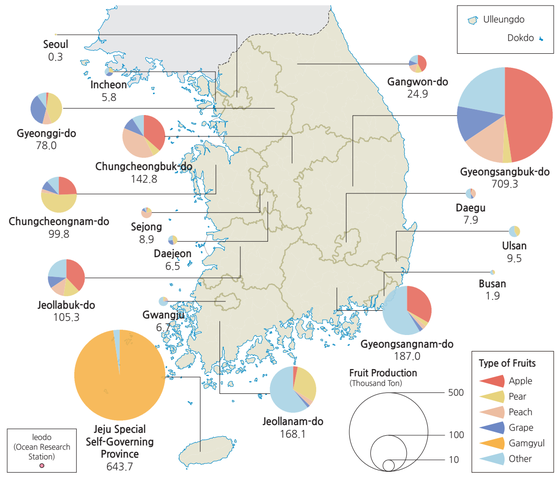


Rather, considering that the proportions of small-sized farm households (with less than 0.5 hectares of cultivated area) in the total farm households is gradually increasing due to the sharp shrinking of the number of farm households, the effect of economies of scale does not seem to be significant.

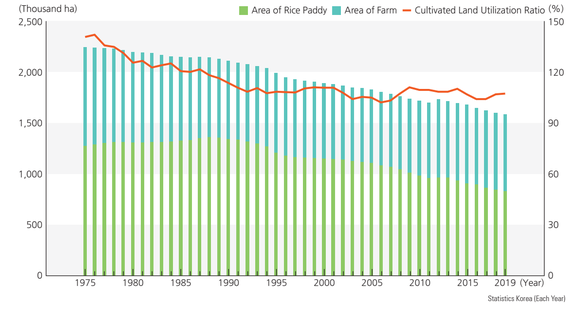
The changes in agricultural production were identified with a focus on the cultivated crop. Above all, the rice production volume and the rice-specialized areas, a major crop in Korea, were mapped as shown. In 2020, the rice production volume was the highest in Jeollanam-do (687,812 tons), followed by Chungcheongnam-do (677,533 tons), Jeollabuk-do (555,774 tons). Among the metropolitan cities, Incheon (50,006 tons) recorded the highest rice production. Rice production volume in Jeju-do was the lowest due to its volcanic soil. The specialization quotients (SQ) were calculated to identify the degree of regional specialization for some crops. The SQ of rice is measured as rice's proportion of a regional total for a cultivated area divided by rice's proportion of the national total for a cultivated area. For example, the SQ of over 1.0 region means that the region has a higher concentration of rice than the nation.

The rice production volume peaked in 1988 and has been declining since then. However, due to the recent increase in the production volume per cultivated area, the decreasing trend is slowing down. The production volume of rice in 1988 was about 6.05 million tons, whereas its production volume was about 3.51 million tons in 2020. The rice cultivated area peaked in 1987 (about 1.26 million hectares), has declined ever since, and has decreased sharply since 2001. As a result, the area of rice cultivation was no more than about 730,000 hectares in 2020.

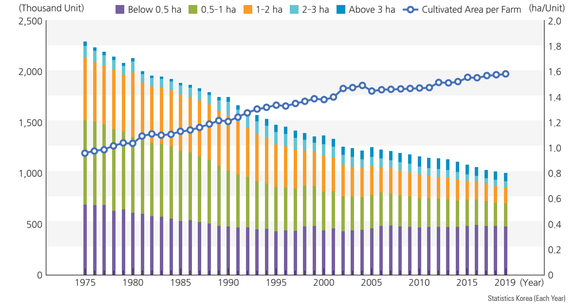
Fruit Production (2019)



Changes in Cultivated Area and Arable Land Rate (1975-2019)



Changes in the Number of Farm Households by the Size of Cultivated Area (1975-2019)

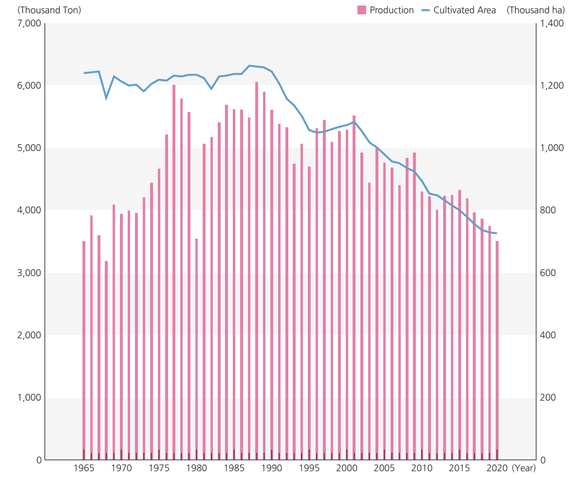


The changes in agricultural production by major crops from 1980 to 2019 reveal that the production of food crops decreased, while the production of cash crops, such as vegetables and fruits, increased. In 1980, vegetables were the most produced in the open fields, followed by rice, other food crops, orchards, and the vegetables produced in the greenhouse. In 2019, the vegetables produced in the open fields were the most produced, followed by rice, the vegetables produced in the greenhouse, fruits, and barley and wheat.

The regional production volumes of barley and wheat, vegetables, orchards, specialty and medicinal crops, and major open-field crops in Korea, were mapped as shown. After harvesting rice, the area that cultivates barley and wheat is unevenly distributed. In 2020, Jeollanam-do, Jeollabuk-do, and Gyeongsangnam-do accounted for over 90% of the total production of barley and wheat. Vegetables recorded the highest production among the open-field crops. The vegetable production was the highest in Jeollanam-do (about 1.85 million tons), followed by Gyeongsangbuk-do (about 1.07 million tons) and Gyeongsangnam-do (about 1.05 million tons). Among fruits, apples, peaches, and grapes are produced mostly in Gyeongsangbuk-do, pears in Chungcheongnam-do, and tangerines in Jeju-do. Regarding the production of specialty and medicinal crops, Gyeongsangbuk-do produced the highest volume (about 69,000 tons), followed by Chungcheongnam-do (about 43,000 tons) and Gyeonggi-do (about 42,000 tons).

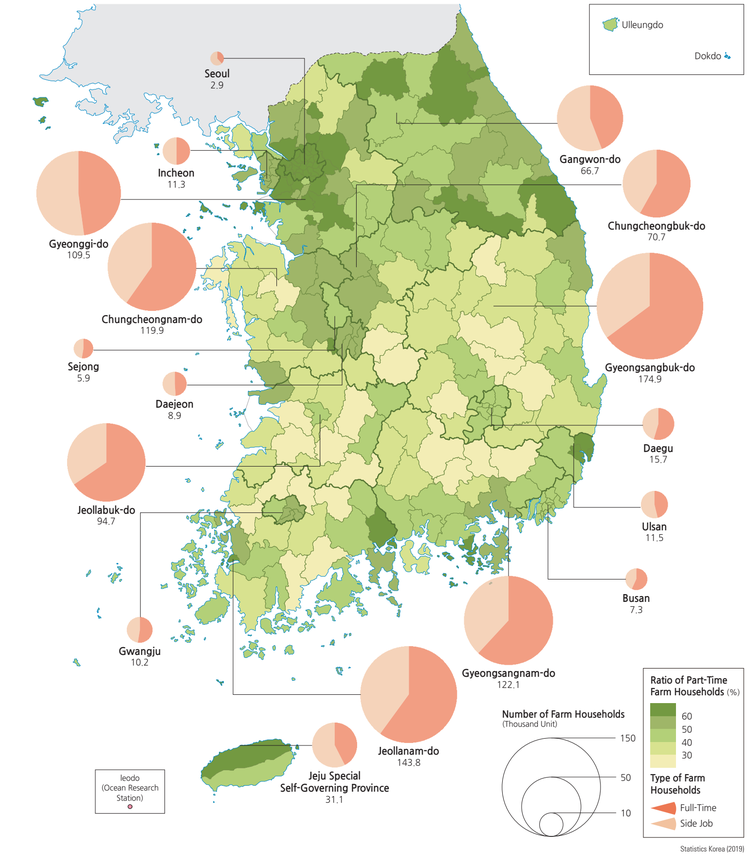
The changes in the agricultural production by major crops from 1980 to 2019 reveal that the production of food crops decreased, while the production of cash crops, such as vegetables and fruits, increased. In 1980, vegetables were the most produced in the open fields, followed by rice, other food crops, orchards, and the vegetables produced in the greenhouse. In 2019, the vegetables produced in the open fields were the most produced, followed by rice, the vegetables produced in the greenhouse, fruits, and barley and wheat.

Changes in Production and Cultivated Area of Rice (1965-2020)



Changes in Agricultural Management

Farm Households by Type of Businesses (2019)



Statistics Korea (2019)

The maps of the distributions of farm households by the types of business identify the current agricultural management features in Korea. According to the proportion of part-time farm households in the total number of farm households by region, expressed as choropleth maps, Ongjin-gun in Incheon was the highest (82.5%), followed by Anyang-si (80.5%), Osan-si (79.0%), and Bucheon-si (78.5%). According to the number of full-time farm households by region, expressed in the pie-graph map, Seoul had the highest intra-regional rate among the metropolitan cities, whereas Jeju-do had the highest intra-regional rate among the provinces. In contrast, Jeollabuk-do and Gyeongsangbuk-do were recorded as the highest and the second-highest province in the intra-regional rate of part-time farm households, respectively.

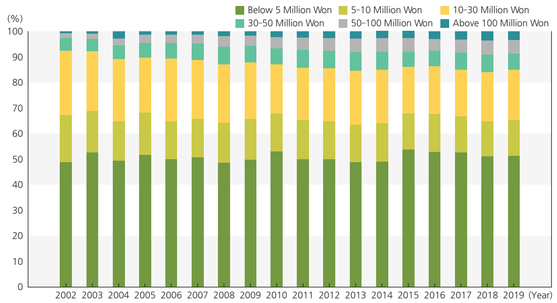
The type of part-time farm households is subdivided into Type 1 and Type 2; the agricultural income of Type 1 part-time farm households is higher than non-agricultural income. In contrast, the agricultural income of Type 2 part-time farm households is lower than non-agricultural income. The farm households' composition by types of business had changed from 1970 to 2019. The proportion of part-time farm households, which was very low at 14.8% in 1972, increased rapidly since the 1990s and reached 46.8% in 2013. Indeed, the decreasing rate of the number of full-time farm households (annual average -2.1%) is higher than that of the number of part-time farm households (annual average -1.3%) during the same period.

The number of farm households by sales volume had changed from 2002 to 2019. The proportion and number of farm households with annual sales of more than 100 million won were increased. However, the polarization of farm households' income is becoming more and more apparent, as small-scale farm households with annual sales of less than 5 million won still account for over 50%. As agricultural commercialization progressed, the number of farm households specializing in rice decreased more than that of vegetables or orchards. Thanks to the mechanization of agriculture and the development of agricultural technology, both labor and land productivities are increasing rapidly.

Changes in Agricultural Productivities of Farm Households (1970-2019)

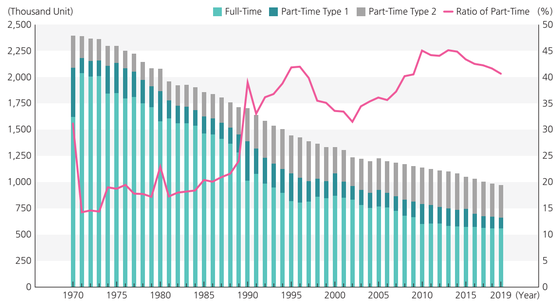
Statistics Korea (Each Year)

Changes in the Number of Farm Households by Sales Volume (2002-2019)



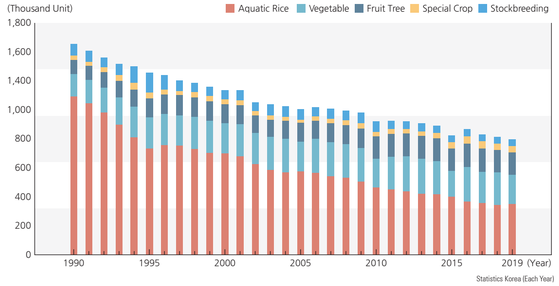
Statistics Korea (Each Year)

Changes in the Farm Households Composition by Types of Business (1970-2019)



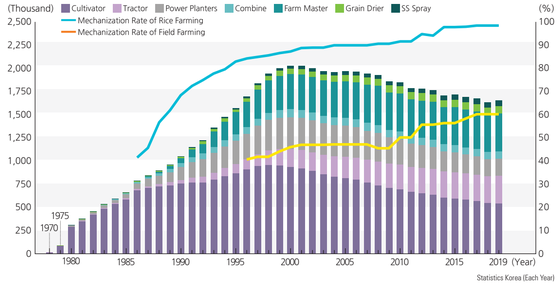
Statistics Korea (Each Year)

Changes in the Number of Farm Households by Types of Business (1990-2019)



Statistics Korea (Each Year)

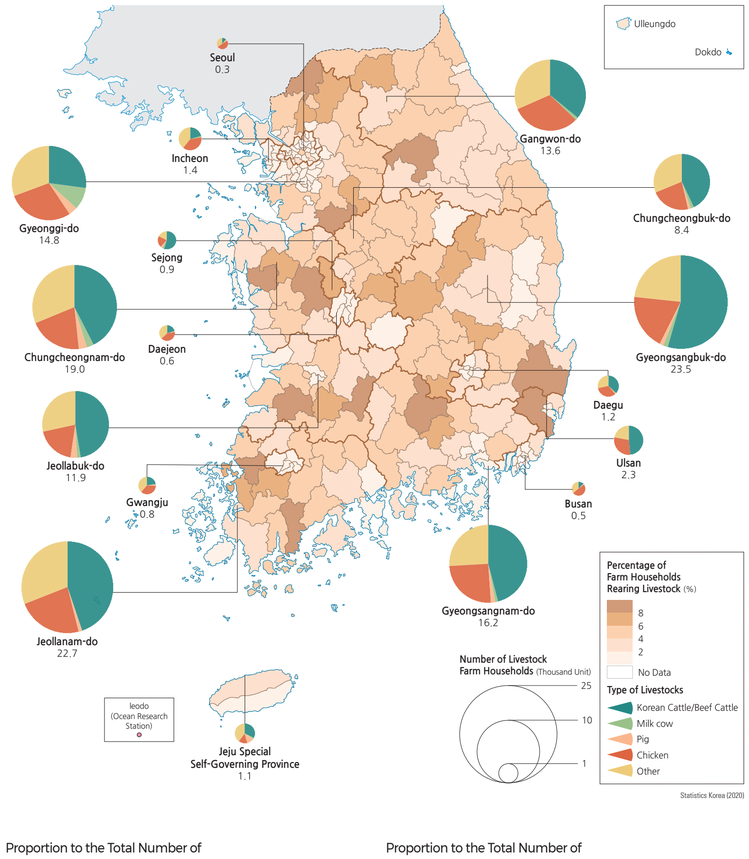
Mechanization Level in Agriculture (1970-2019)



Statistics Korea (Each Year)

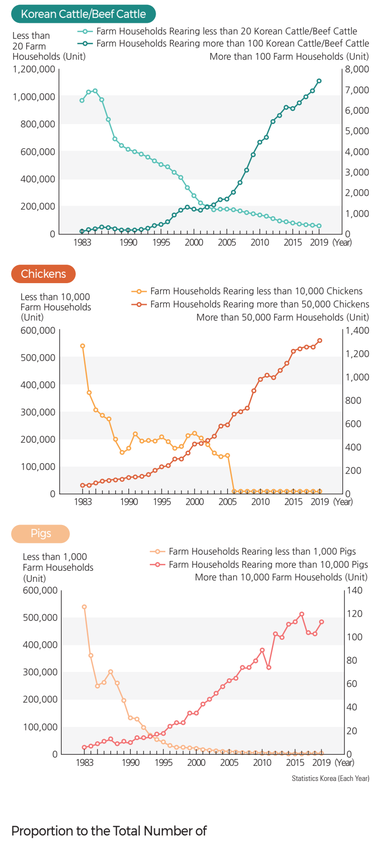
Livestock and Poultry

Distribution of Farm Households Rearing Livestock (2020)



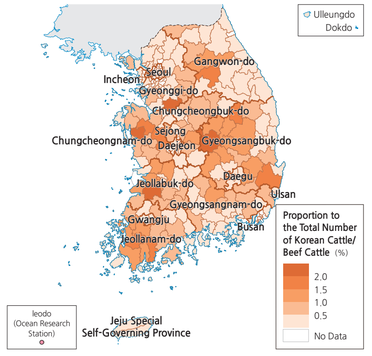
Statistics Korea (2020)

Changes in the Number of Major Livestock Farms by Herd Size (1983-2019)



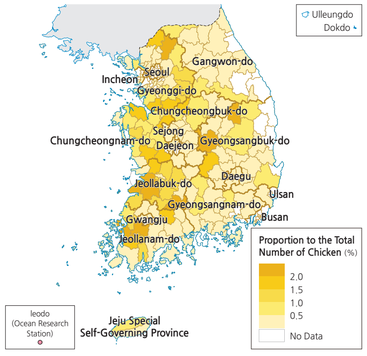
Statistics Korea (Each Year)

Proportion to the Total Number of Korean Cattle/Beef Cattle (2020)



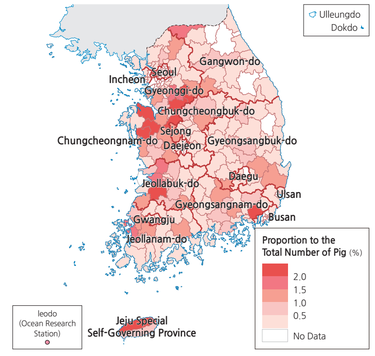
Statistics Korea (2020)

Proportion to the Total Number of Chicken (2020)



Statistics Korea (2020)

Proportion to the Total Number of Pig (2020)



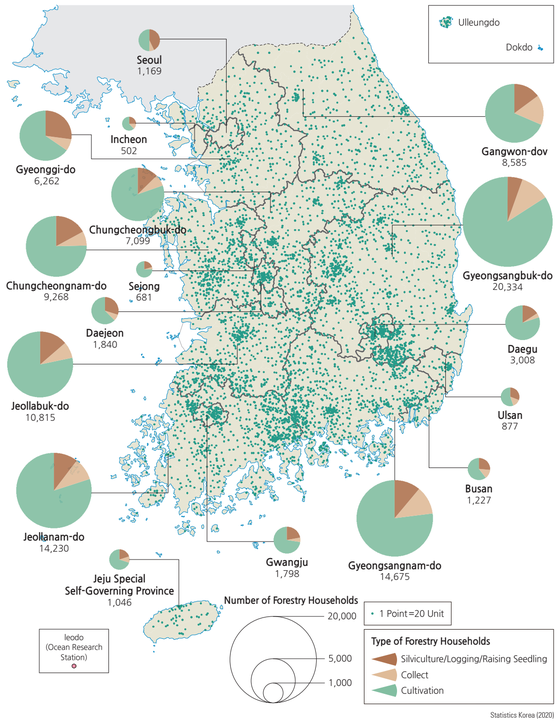
Statistics Korea (2020)

The livestock industry is one of the fastest-growing sectors in Korean agriculture. The proportion of specialized livestock farms, which derive most of their income from livestock raising, was roughly 5.3% in 2019. Therefore, there was no clear regional concentration of livestock farm households. However, a close geographical association between the number of livestock farms and the distribution of large-scale livestock farms can be identified; the large-scale and specialized livestock farms are closely associated, reaffirming their geographical concentration. In terms of the changes in the number of major livestock farms by herd size from 1983 to 2019, the number of large-scale livestock farms has increased, while the number of small-scale livestock farms has decreased. These changes can be explained by the fact that the level of enterprising and specialization in the Korean livestock industry gradually rose. The increase in the number of large-scale livestock farms is inevitably accompanied by an increase in environmental pollution by livestock farming. As a result, the restrictions on livestock farms' location are enhanced. Thus, it is estimated that such changes caused the regional concentration of livestock farms in Korea.

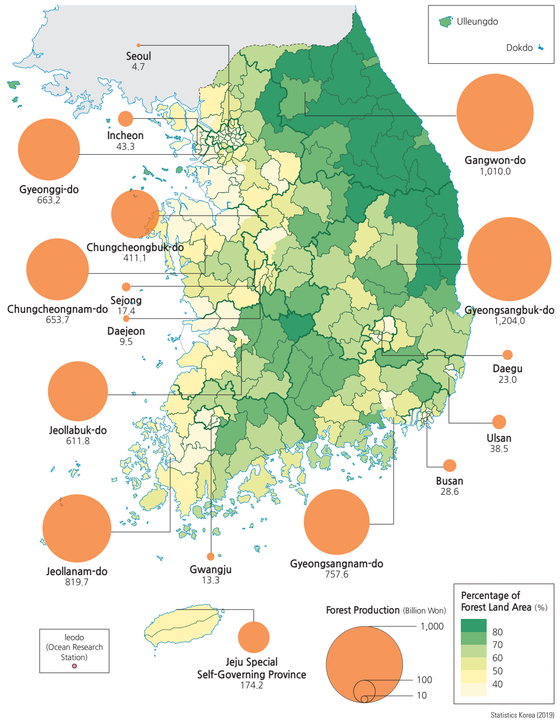
In 2020, the proportion of livestock farms in regional total agricultural farms ranked by descending order was Hoengseong-gun (13.9%), Hapcheon-gun (11.2%), Hongseong-gun (10.9%), Anseong-si (10.1%), Yeoncheon-gun (9.4%), Gongju-si (9.3%). There are regional differences in the number of livestock farms; the number of livestock farms for Korean beef cattle and beef cattle in 2020 was the highest in Gyeongsangbuk-do; the number of livestock farms for chicken in 2020 was the highest in Jeollanam-do; the number of livestock farms for pigs in 2020 was the highest in Chungcheongnam-do. In terms of the regional proportions of livestock farming in the national total, the proportions of Korean beef cattle and beef cattle ranked by descending order were: Jeongeup-si, Anseong-si, Sangju-si, Hongseong-gun, Gyeongju-si; the proportions of chicken ranked by descending order were Yeongju-si, Muan-gun, Namwon-si, Sangju-si, Jeongeup-si; the proportions of pigs ranked by descending order were Hongseong-gun, Icheon-si, Jeju-si, Jeongeup-si, Anseong-si.

Forestry

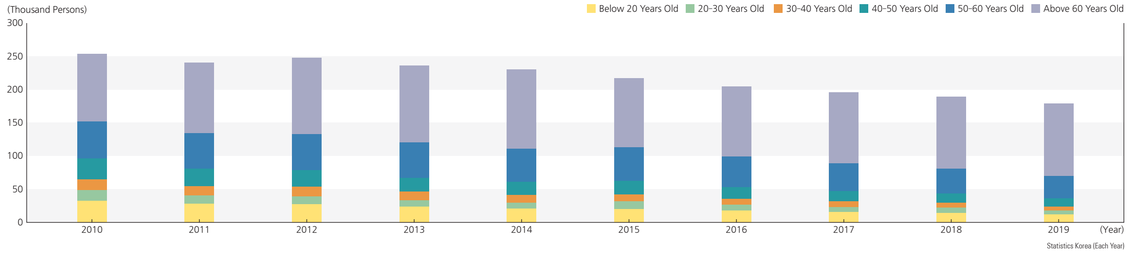
Distribution of Forest Households (2020)



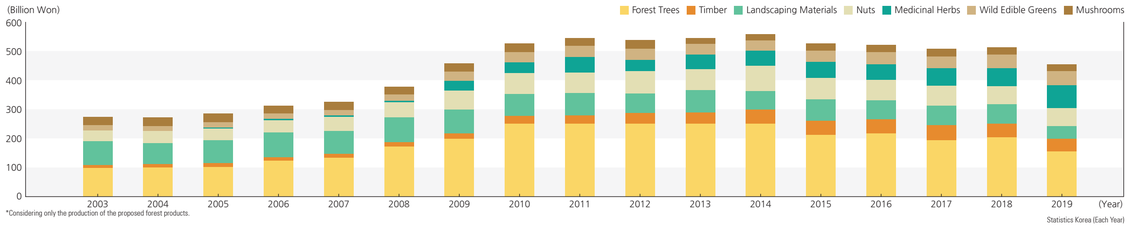
Forest Production and Percentage of Forest Land Area (2019)



Changes in Forest Households Population by Age Groups (2010-2019)



Changes in Production Value by Type of Forest Products (2003-2019)



*Considering only the production of the proposed forest products.

The maps of the number of forestry households by region and by types of forest production reveal the overall distribution of forestry in Korea. According to the number of forestry households by region, Gyeongsangbuk-do (20,334 households), Gyeongsangnam-do (14,675 households), Jeollanam-do (14,230 households), Jeollabuk-do (10,815 households), Chungcheongnam-do (9,268 households). According to the number of forestry households by types of forestry management, a cultivation household was the highest (79,173 households), followed by Silviculture/Logging/Raising Seedling (14,090 households), and collect (10,153 households).

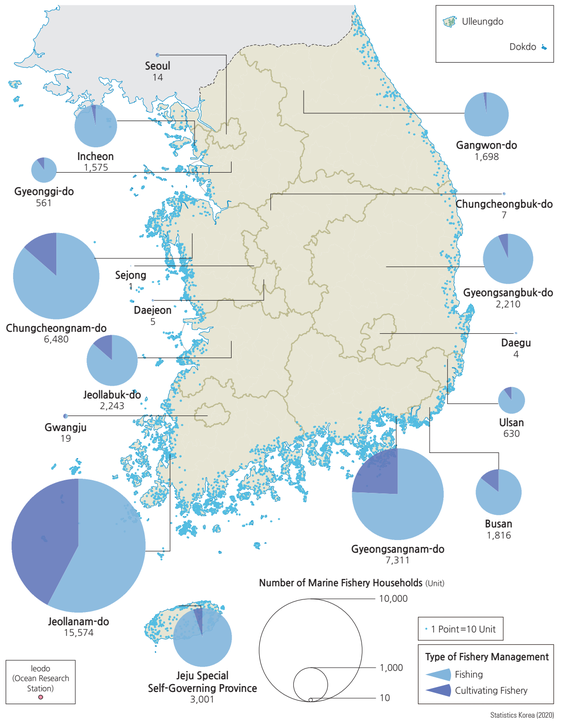
The proportion of forest land area ranked by descending order was Inje-gun (89.4%), Teabaek-si (88.4%), Samcheok-si (87.9%), and Uljin-gun (85.5%). And the total value of forestry production by region was the highest in Gyeongsangbuk-do (about 1.2 trillion won), followed by Gangwon-do (about 1 trillion won), Jeollanam-do (about 820 billion won), Gyeongsangnam-do (about 760 billion won), and Gyeonggi-do (about 660 billion won).

The number of forestry households continues to decrease, like the number of farm and livestock households. In 2019, the number of individuals in forestry households was 178,420 people, compared with 253,656 people in 2010. The diminishing rate was about 29.7%. Moreover, considering the proportion of the forestry household population over 60 has increased continually, there is a need to prepare measures against the aging phenomenon of the forest household population.

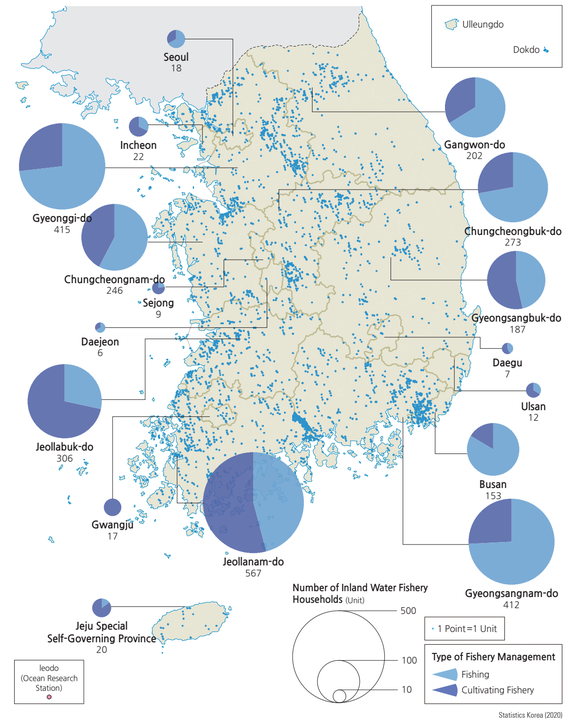
The production volume by type of forestry product was generally high in the net gross growing stock. Since the net gross growing stock can grow through long-term management, there is a need to prepare mid-to-long-term measures for the sustainability of forest resources. Recently, the short-term forestry products, such as landscaping materials, nuts, medicinal herbs, wild edible greens, and mushrooms, have gradually increased. These forestry products were mainly gathered or picked from the wild in the past. However, in recent years, they have been cultivated in large quantities in the field, resulting in a rapid increase in yield and production value.

Fishing

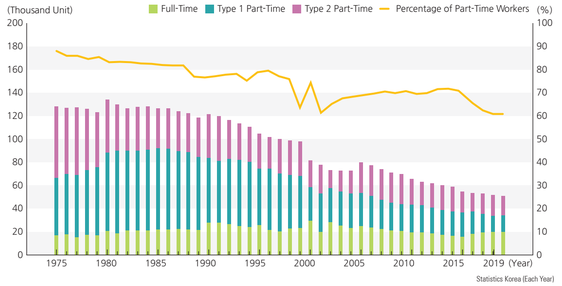
Distribution of Marine Fishery Households (2020)



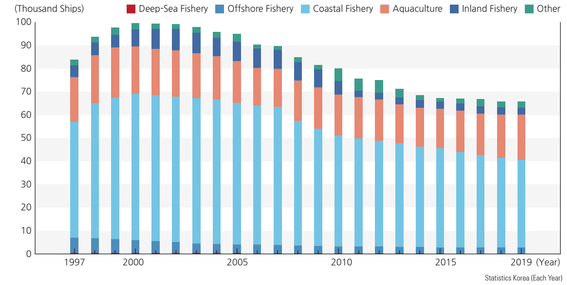
Distribution of Inland Water Fishery Households (2020)



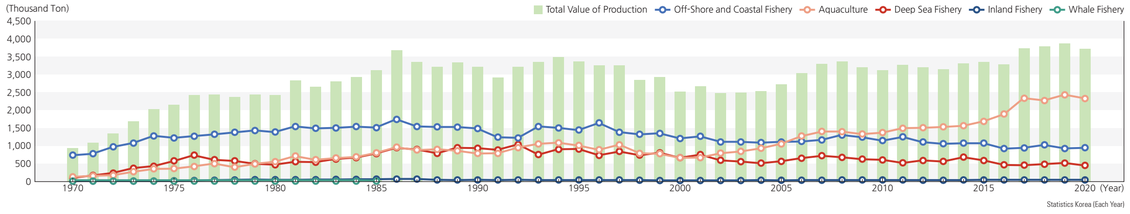
Changes in the Number of Fishing Households by Type of Engagement (Marine Fishery)



Changes in the Number of Fishing Vessels by Type of Fisheries



Changes in the Value of Production by Type of Fishing (1970-2020)



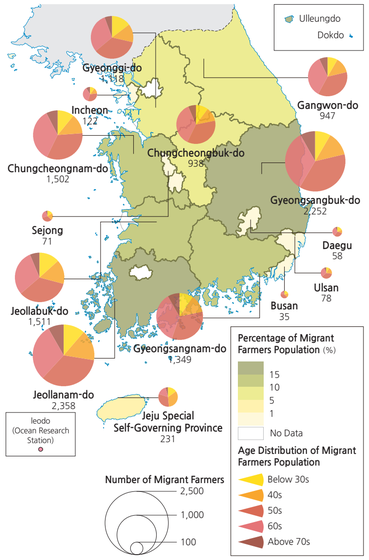
The Korean fishing industry has experienced many uncertainties due to the depletion of fishing resources and imported fishing products over the last few decades. The decline is prominent in coastal and deep-sea fishing, which have traditionally been important in the Korean fishing industry. However, the total fishing industry output and value of production have improved slightly, with a gradual increase in aquaculture and inland water fisheries since 2000.

The overall depression in the fishing industry has caused a persistent decline in the fishing household population and the number of fishing households. The fishing household population has declined at an average annual rate of 4.2% over the past 50 years (1970–2019), and the proportion of people aged 65 years or over in the total fishing household population reached 39.2% in 2019. Similar to the change in fishing household population, the number of fishing households fell from about 149,000 households in 1970 to about 51,000 households in 2019. In terms of the changes in the number of fishing households by type of business, the decreasing rate of the number of part-time fishing households is higher than that of the number of full-time fishing households. As a result, the percentage of full-time fishing households is relatively high. It is estimated that such changes are linked to the growing number of fishing households that started to join the large-scale fishing industry centered on aquaculture after the 2000s. These changes, to some extent, have led to an increase in the size of fishing households and specialization of the fishing industry.

However, fishing businesses overall are still small in scale. The government has tried to reduce the number of fishing vessels to encourage fishing businesses to engage in larger-scale operations. However, both the number of total fishing vessels and the average tonnage per vessel have steadily decreased during the 2000s. Despite the government's effort, the aim to increase the size of vessels has not been accomplished.

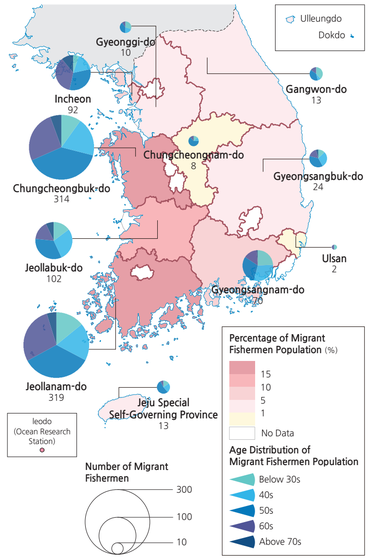
Migrant-Farmers, Migrant-Fishermen, Urban-to-Rural Migrants

Distribution of Migrant Farmers (2020)



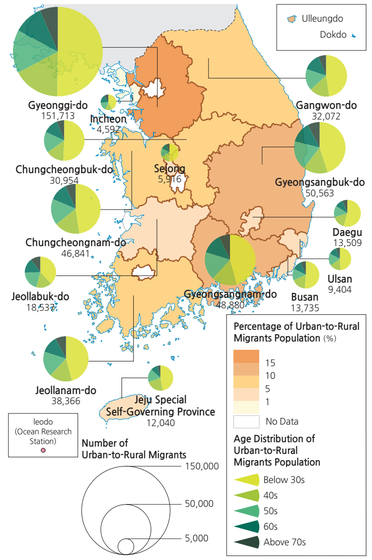
Statistics Korea (2020)

Distribution of Migrant Fishermen (2020)



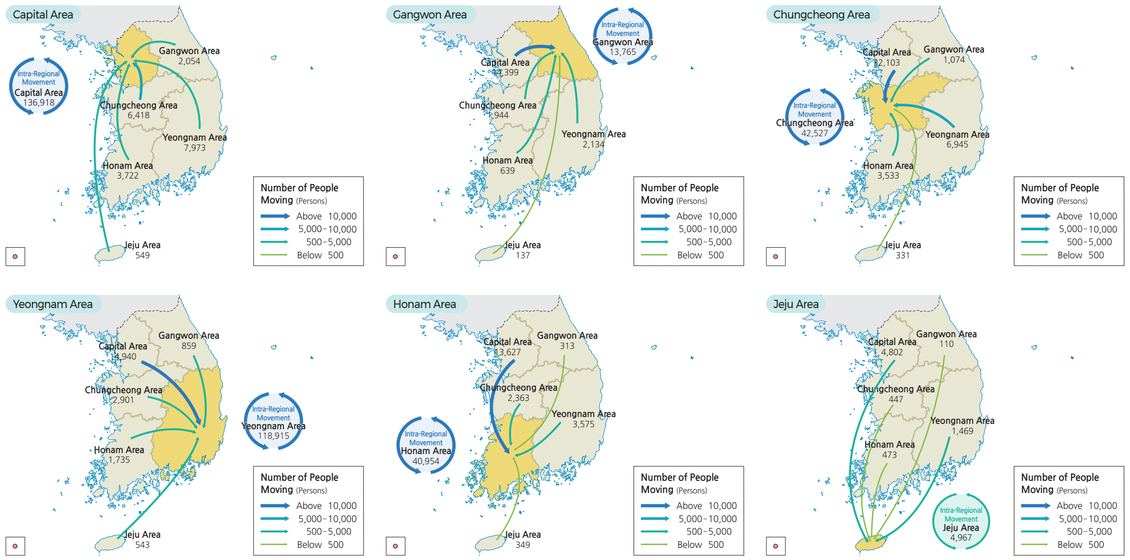
Statistics Korea (2020)

Distribution of Urban-to-Rural Migrants (2020)



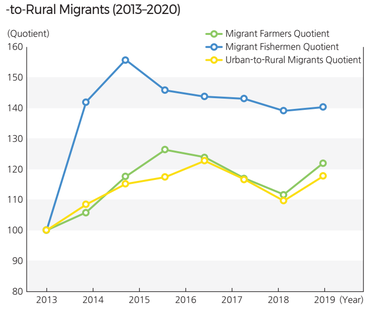
Statistics Korea (2020)

Influx of Migrant Farmers, Migrant Fishermen, and Urban-to-Rural Migrants (2020)



Statistics Korea (2020)

Changes in Migrant Farmers, Migrant Fishermen, and Urban-to-Rural Migrants (2013-2020)



*This shows the change in the relative value with the population of 100 in 2013.

Statistics Korea (Each Year)

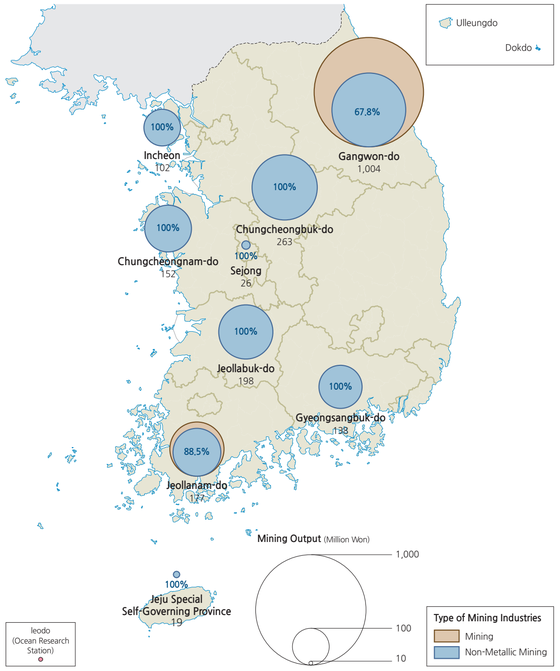
According to the following conditions, a person who had lived in -dong area for more than one year and migrated to -eup or -myeon areas during the period under investigation is classified into migrant-farmers, migrant-fishermen, and urban-to-rural migrants. 'Migrant-farmers' is defined as a person who is registered in the Agricultural Ledger or the Registration Lists of Agricultural Business Entities or the Registration Lists of Livestock Business to participate in agricultural activities during the period under investigation. 'Migrant-fisherman or woman' is defined as a person who is registered in the Fishing Ledger or the Registration Lists of Fishing Business Entities or the Registration Lists of Fishing Business to participate in fishing activities during the period under investigation. 'Urban-to-rural migrants' is defined as the rest of the population, except for students, soldiers, temporary job mobility, migrant-farmers, and migrant-fishermen.

The percentage of migrant farmers by region in 2020 was the highest in Jeollanam-do (18.8%), followed by Gyeongsangbuk-do (17.9%), Jeollabuk-do (12.0%), and Chungcheongnam-do (11.9%). The percentage of migrant fishermen by region in the same year was the highest in Jeollanam-do (33.0%), followed by Chungcheongnam-do (32.5%), Jeollabuk-do (10.5%), and Incheon (9.5%). Moreover, the percentage of urban-to-rural migrants by region in the same year was the highest in Gyeonggi-do (31.8%), followed by Gyeongsangbuk-do (10.6%), Gyeongsangnam-do (10.2%), and Chungcheongnam-do (9.8%).

The composition rate of the departure region in migrant farmers was the highest in Gyeonggi-do (20.4%), followed by Seoul (15.6%), Kwangju (8.3%); among them, the proportion of the Seoul Metropolitan Area (Seoul, Incheon, and Gyeonggi-do) in the total departure region was 41.5% (5,212 people). The composition rate of the departure region in migrant fishermen was the highest in Gyeonggi-do (24.1%), followed by Incheon (15.9%), Seoul (14.2%); among them, the proportion of the Seoul Metropolitan Area in the total departure region was 54.2% (524 people). Moreover, the composition rate of the departure region in urban-to-rural migrants was the highest in Gyeonggi-do (25.5%), followed by Seoul (14.4%), Gyeongsangnam-do (7.3%); among them, the proportion of the Seoul Metropolitan Area in the total departure region was 44.2% (211,079 people).

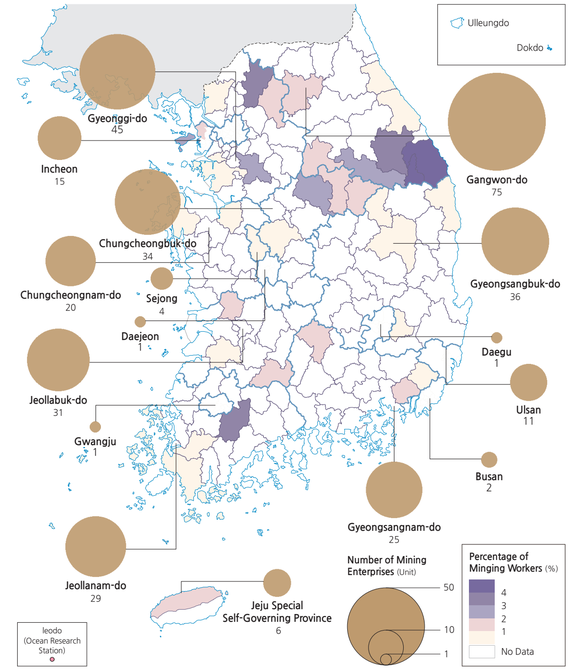
Mining

Production Value of Mining Industries (2019)



Statistics Korea (2019)

Distribution of Mining Enterprises (2019)



Statistics Korea (2020)

Changes in Gross Value Added in Mining (1953-2020)

*Value added is the nominal value for the current year.

The Bank Of Korea (Each Year)

Changes in the Number of Enterprises and Workers in Mining (1955-2019)

Statistics Korea (Each Year)

Changes in the Number of Enterprises and Workers in Mining (1955-2019)

Metallic Mineral

Nonmetallic Mineral

Statistics Korea, Current Status of Mineral Production (Each Year)

In 2020, Korea had a total of 310 mines in operation (20 metal mines, 286 non-metal mines, and 4 coal mines). Most of the mines currently in operation are limestone and Kaolin mines. In addition, there are also silicate and feldspar mines. Therefore, in terms of the production value of mining industries by region, the proportion of non-metal mining is overwhelmingly high. And the number of mining enterprises and workers was concentrated in Gangwon-do, Gyeonggi-do, Gyeongsangbuk-do, and Chungcheongbuk-do, where the mines in operation are located.

The proportion of the mining industry in the national economy fell sharply due to the transformation from a coal-centered energy consumption structure to an oil-centered energy consumption structure. In nominal value, the gross value added in mining was about 41.5 billion won in 1970, reaching about 2 trillion won in 2019. However, the proportion of gross value added in mining dramatically declined from about 1.6% in 1970 to about 0.1% in 2019. The downturn in the mining industry is accompanied by the decline of mining workers. In addition, in terms of the changes in the number of mining enterprises by sales volume, the number of mining enterprises decreased, but the proportion of large-scale mines increased.