2022

SDGs IN THE REPUBLIC OF KOREA: PROGRESS REPORT 2022

Statistics Korea
Statistics Research Institute

SDGs in the Republic of Korea: Progress Report

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Foreword

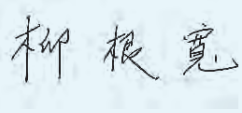
In 2022, the COVID-19 Pandemic is still ongoing, infecting almost 400 million people around the world as of February. The virus caused an unprecedented crisis, affecting every aspect of human lives, such as the economy, society and the environment. Numbers demonstrate all the sufferings and changes that we have witnessed.

Low-income countries and vulnerable groups were hit hard, resulting in higher poverty rate, less opportunity for education and jobs, and damages in health. Carbon emissions are still on the rise despite global economic slowdowns. SDGs have become more important than ever before. It is time for each country to demonstrate its leadership and achieve the goals. Last year, Statistics Korea launched the Korean SDG Data Platform, which provides real-time, open-source SDG data and updates written in English for international organizations such as the UN, national statistics offices and users around the world. In addition, Korea enacted the Framework Act on Sustainable Development early this year, laying a legal foundation for a more systematic SDGs implementation.

COVID-19 has affected everyone in the world, but the impact varies across different sectors and groups. While market income loss was offset by government financial support, many elderly citizens are still poor, many students are deprived of learning opportunities, and gaps are widening in academic achievement among those with different socio-economic backgrounds. GHG emissions have declined, but bolder actions are required to respond to the climate crisis. The number of jobs almost returned to pre-pandemic levels, and online shopping transactions have surged based on increasing contactless activities. It is ever more important for the governments and institutions to play key roles to put the virus under control, fairly distribute social resources, and resolve conflicts amid this unprecedented Pandemic. More attention is needed to set development agenda and provide ODA, so that every nation in the world, including developing countries, can be united to pursue sustainable development. Statistics Korea is ready to build a sustainable future with its "K-statistics" system to achieve data innovation and share it with others.

This newly published report illustrates Korea's progress towards SDGs based on data and statistics. It also provides visualized data based on high-quality, globally comparable statistics and evidence-based analysis to help readers better understand the figures. Statistics helps us record our lives based on numbers, which will later become part of valuable history. Both crises and opportunities should be measured before being addressed. I hope that this report will serve as a compass guiding the world toward the SDGs and provide key indicators for evidence-based policies.

Keunkwan RYU
Commissioner of Statistics Korea



Preface

The Statistics Research Institute(SRI), the state-run think tank of official statistics that monitors Korea's progress toward SDGs, publishes 『SDGs in the Republic of Korea: Progress Report』 every year, focusing on various sectors, including energy, poverty, and education. The report will review where the nation is in implementing SDGs from the global context, and analyze sociodemographic factors in detail to understand sufferings facing vulnerable groups. At the heart of the effort is data.

『SDGs in the Republic of Korea: Progress Report 2022』 is a self-portrait of Korea in its journey toward sustainable development, in that it demonstrates collective efforts by the people and the state to recover from the global crisis. The in-depth research in each of the 17 goals will illustrate how far we have come for the last one year and how far we should go.

In 2021, the second year of the COVID-19 global crisis, the number of employed people in most sectors almost recovered to pre-pandemic levels. In the COVID era, characterized by social distancing, sectors that do not require face-to-face interactions, such as online shopping, have recorded an exponential growth. Government support for families at risk served as a buffer against income loss. The efforts taken by the nation against the virus turned out to be very effective not only in protecting the economy, but also in controlling the infection, which has been widely recognized in the international society. In particular, the state is said to have better communication with its people in 2020 compared to 2019.

Unfortunately, however, numbers show the decline in academic ability due to long-term learning deficits facing elementary, middle and high school students. That is a big concern as it affects their future development. A risk was also identified in the environment sector. GHG emissions declined from 2018 to 2019, but both the amount of packaging waste and marine debris have increased. Increasingly extensive wildfires caused by climate change are causing forest loss, which is a threat to biodiversity and the environment as a whole. The environmental crisis will lead to another pandemic in the future.

The report was supported by 12 major national research institutes and researchers, to contain their wisdom in each of the 17 goals. I hope that the valuable information laid out in this report will guide the world not only to recover from the Pandemic, but also to take another leap forward to achieve sustainable development.

Lastly, I would like to express my gratitude to the following organizations for filling the 'Treasure House' of the report with the shiny jewels of valuable data: National Institute of Forest Science, Korea Research Institute of Human Settlements, Korea Institute for Industrial Economics & Trade, University of Seoul, Korea Energy Economics Institute, Korean Educational Development Institute, Korea Development Institute, Korea Rural Economic Institute, Korea Institute for Health and Social Affairs, Korea Women's Development Institute, Korea Maritime Institute, Korea Institute of Public Administration, Korea Environment Institute, and their researchers. I am also grateful to the Institute for Social Development and Policy Research of Seoul National University for serving as the control tower of the institutes. I also extend my deep gratitude to Youngshil Park, director of the SDG Data Research Center, Youkang Chin, Minhee Yun, and Soyeon Kim for refining the data collected from the researchers to produce the complete document.

I hope the report will create a gentle ripple in the hearts of readers who want to see the world with SDG data!

Asaph Young Chun
Director-General
Statistics Research Institute | Statistics Korea

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Overview

Global Paradigm Shift and SDGs

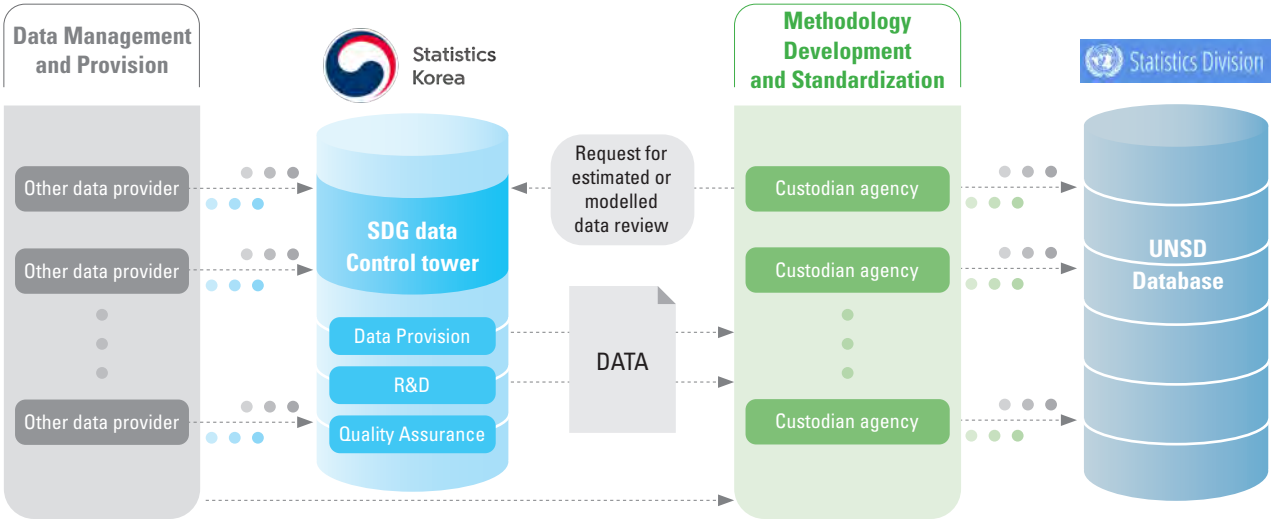
In the course of rapid economic growth, Korean society has devoted all its efforts to economic development, sacrificing social progress and environmental sustainability. However, as we enter the twenty-first century, it has become important to go beyond material growth to pursue progress in each field of society and the quality of life of individuals. It increasingly became a consensus that social progress and the environment have their unique domains and roles, which is separated from economic growth. In addition, Korea is committed to active participation in global cooperation as a responsible member of the international society, serving as a donor as it rose from the ruins of war thanks to international aid. The Sustainable Development Goals(SDGs) are at the center of scientific policy management through the indicator system, the transformation of the dominant paradigm, and the demands of the international community.

At the 70th United Nations(UN) General Assembly Development Summit in September 2015, the Millennium Development Goals(MDGs), which had been pursued for 15 years since 2000, was replaced with the 2030 Sustainable Development Agenda for another 15 years. The SDGs have 17 goals, 169 targets, and 231 global indicators, encompassing economy, society, environment, and global governance, topics that are commonly observed and raised in the global society. The SDGs call for institutional improvement and structural change in all countries pursuing a paradigm shift in a new era. The goals contain all aspects of the social and economic development agenda, including poverty, agriculture, education, gender equality, climate change, health, and economic growth, and encourage governments to reflect them on their national institutions and policies. In order to 'leave no one behind', the basic principle of SDGs, it is necessary to set systematic implementation strategies and monitor progress. In this context, The SRI has published the 『SDGs in the Republic of Korea: Progress Report』 every year since 2019.

Global SDG Indicators and Korean Data

『SDGs in the Republic of Korea: Progress Report』 produced

SDG Data Flow



Source : modified based on IAEG-SDGs(2019)

by the SRI aims to review progress of the 2030 agenda in Korea and share the study result with UN member states. Domestic data corresponding to the global indicators is used to assess the current situation in Korea and demonstrate where Korea stands in comparison to other Organization for Economic Cooperation and Development(OECD) countries.

The 2030 Agenda is reviewed annually at the global level through the High-Level Political Forum(HLPF) and the review is conducted based on data and statistics. For this process the UN General Assembly decided to develop a global indicator framework of the SDGs. To make sure that the framework functions properly, it is essential for each country to provide data. The roles of the national statistical system, international organizations, and the UN Statistics Division(SD) in the data exchange process are clearly defined in the figure below.

Countries take the primary responsibility for providing data, and should provide statistics that are produced based on the Fundamental Principles of Official Statistics, ensuring accuracy, transparency and reliability in the reporting process. International organizations examine whether the data and statistics collected from countries are internationally comparable, and then incorporate the data into a global database operated by the UNSD. In order to make sure the indicators are used for monitoring the SDGs at the global and regional level, data sets must be obtained from at least a decent number of countries. Accordingly, it is important for every country to provide their data.

In Korea, the SRI has worked to provide and verify data in response to data requests from international organizations as a national focal point of the global SDG indicators. The SRI works in close cooperation with 28 line-ministries and other statistics producers under the decentralized national statistical system. In principle, Korea provides 'nationally approved statistics' that have guaranteed quality. In some cases data from official government sources is provided even if it is not nationally approved. For non-statistical indicators that measure the availability of laws or systems, the data is provided after consulting with the responsible ministries.

Content of the Report

『SDGs in the Republic of Korea: Progress Report 2022』 maintains continuity with the previous report and focuses on changes caused by COVID-19 and response measures taken. While the 2021 report laid out the impact of COVID-19 and SDG implementation in Korea under the theme of 'COVID-19 and SDGs, their impact on vulnerable groups', this report demonstrates the efforts not only to navigate through the COVID crisis, but also to accept it as a new normal, focusing on the virus becoming part of our daily life. The 2022 report followed the principles presented below:

First, the report selected representative themes that reflect domestic and international conditions along with other key themes for each goal and indicator, and reviewed the implementation status of each SDG indicator and the overall trend of change based on the themes. Each goal contains an introduction demonstrating the selected themes, which is followed by different sub-sections. Korea's progress toward SDGs is illustrated from various points of views by comparing different regions in Korea, demographic groups and time periods, and by presenting where Korea stands compared to OECD countries.

Second, indicators that can highlight the impact of COVID-19 on Korean society were selected and time series comparison was emphasized. The 2021 report also mainly dealt with the impact of COVID-19 and Korea's response, but there was not enough national statistics reflecting the impact. Therefore, the 2022 report prioritized indicators highly relevant to COVID-19, but the availability of statistics was first considered in this process.

Third, a representative indicator was selected for each goal to keep monitoring the developments in future reports. All chapters also have three to four key indicators that demonstrate the unique identity of each goal and at least one indicator that shows the impact of COVID-19 and Korea's response.

Fourth, in addition to technical explanations, we also discussed the impact of the pandemic for each goal, response measures taken, the current status, limitations, and what needs to be improved. The progress toward SDGs in Korea was analyzed and presented in the report so that relevant organizations and government agencies can use the data for public relations and policy development.

Outline of the Study Results

While following the principles mentioned above, the report

lays out various content in each chapter. The analysis shows both hope and despair as the impact of COVID-19 has become more visible while collective actions have been made including government policy interventions, responses from the industries, and cooperation and participation of the Korean citizens.

COVID-19 has significantly affected all aspects of our lives, including economy, society, the environment and international cooperation, and the impact has become more visible. Airlines, restaurants and the service sector saw sharp drops in sales, and the total number of jobs also declined. Financial difficulties worsened housing conditions, resulting in more people falling below the minimum residential standards, especially in metropolitan areas where average rents are higher than other regions. Social distancing dramatically increased the amount of plastic packaging waste and domestic waste per capita. Limited cross-border travels led to a reduction in ODA.

The negative impact of COVID-19 tends to be concentrated on the socially vulnerable. The families at risk managed to make ends meet thanks to government financial support, but there are still a lot of elderly citizens who are suffering from poverty. Unemployment is high among the youth and women, the two less competitive groups in the labor market, and the employment rate became lower especially among married women with the burden of childcare. The youth and low-income groups are living in even worse housing conditions. Academic achievement loss is significant in small cities that are less developed in the social and economic perspective than their bigger counterparts. These facts demonstrate that COVID-19 has undermined overall living conditions and quality of life, disproportionately affecting those socially and economically underprivileged.

While everyone is facing difficulties due to the overall changes in and outside Korea caused by COVID-19, the actions taken by the government, the industries, and the civil society against the crisis are bearing fruit. The expanded financial support from the government has helped families make their ends meet and inequality demonstrated by the Gini coefficient is also getting better. With the bold actions by the government and active participation of the people, Korea became among the countries that vaccinated many citizens within a short period of time. The robust and resilient healthcare system is functioning properly. The unemployment rate for people in their 20s is still high, but it remains at a low level for those in their 40s and over. The number of employed people, which had fallen sharply, has returned to pre-COVID levels, and online shopping transactions have grown dramatically. The Korean government is gaining public trust by strengthening communication with the public and making the policy-making process more transparent amid the crisis.

The changes that Korea has made in the environment and international cooperation show that the nation is moving away from the paradigm that focuses only on economic development and growth and moving towards sustainable development of mankind. The share of green and renewable energy has been steadily increasing, and efforts to reduce GHG emissions have slowed emission growth. The institutions and response systems have been upgraded to build a solid foundation to address climate change, manage water resources, conserve fish resources and biodiversity, and manage domestic and industrial waste. Despite the prolonged COVID-19 pandemic, Korea has steadily provided ODA for those in need serving as a donor country in the international society.

The analysis results of the report reveal that inequality, poverty, discrimination and hatred remain a task to address, although Korea is making progress toward sustainable development based on the basic spirit of the SDGs. It is an undeniable fact that there are gaps between different gender groups, social classes, and regions. In addition, certain groups of people are still suffering from poverty. It is also true that many things should be done to conserve the environment for our children. Discrimination against people from underdeveloped countries, such as foreign workers, marriage migrant women, and undocumented foreigners, are still being witnessed.

Korea's Progress toward 17 Goals

Significant market income loss caused by COVID-19 was offset by government financial support, but the poverty rate of the elderly is still very high.

Vulnerable groups are disproportionately affected by poor nourishment and food insecurity.

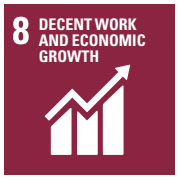
Korea has a high UHC level among OECD countries, but it needs to reduce catastrophic health expenditure and increase the number of healthcare workers.

Korea is witnessing a significant learning deficit caused by COVID-19 and widening gaps in academic achievement between urban and rural.

Women remain underrepresented in the economical and political fields.

Korea achieved a higher IWRM score in 2020 than it did in 2017, but it is still among the middle-to-low score groups in OECD, and water stress level is high.

The share of renewables in final energy consumption is increasing, but it is among the lowest levels in OECD.



A lot of women lost their jobs amid COVID-19, and deaths from industrial accidents increased from 2019 to 2020.

The number of jobs almost returned to pre-pandemic levels in 2021, and online shopping transactions have grown dramatically.

Income inequality is on a steady decline, but the gaps between Gini coefficients based on market income and on disposable income are the smallest among OECD countries.

Those living in the capital area are more likely to live under the minimum residential standards than their counterparts living in other regions, especially the youth and low-income groups.

Packaging waste, including plastic, has increased significantly due to COVID-19, and domestic waste generation per capita is also on the rise.

Emissions decreased in 2019 from the previous year with the overall trend of GHG emission growth slowing down.

Total amount of marine debris has increased and the quality of seawater has relatively deteriorated since 2018.

Forest loss is putting biodiversity at risk, and the size of affected areas by wildfires has significantly increased per case as they are becoming larger.

Health service earned the highest score in a survey on satisfaction with public services, and both the state-public communication and political efficacy were improved.

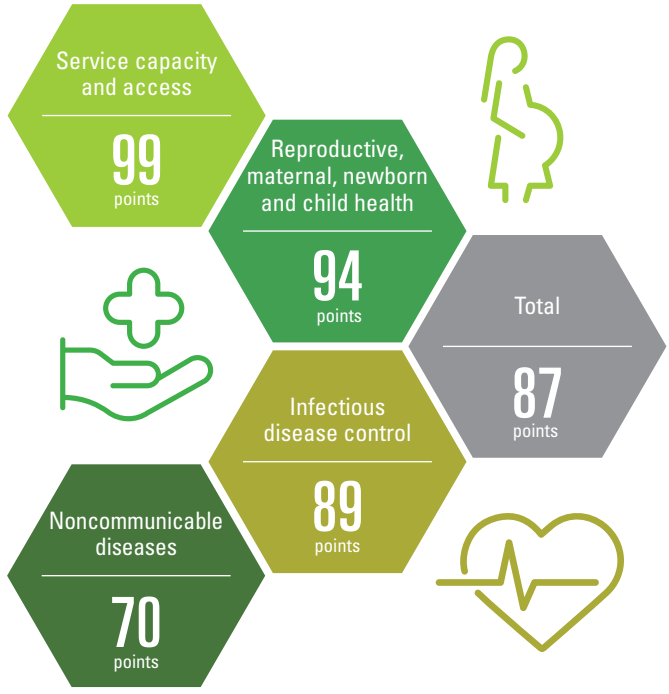
Despite the GDP loss due to COVID-19, global ODA reached an all-time high in 2020, but ODA as a percentage of GNI is quite low at 0.14% in Korea compared to other OECD countries.

SUSTAINABLE DEVELOPMENT GOALS

Infographics

Relative poverty rate by age group, 2020

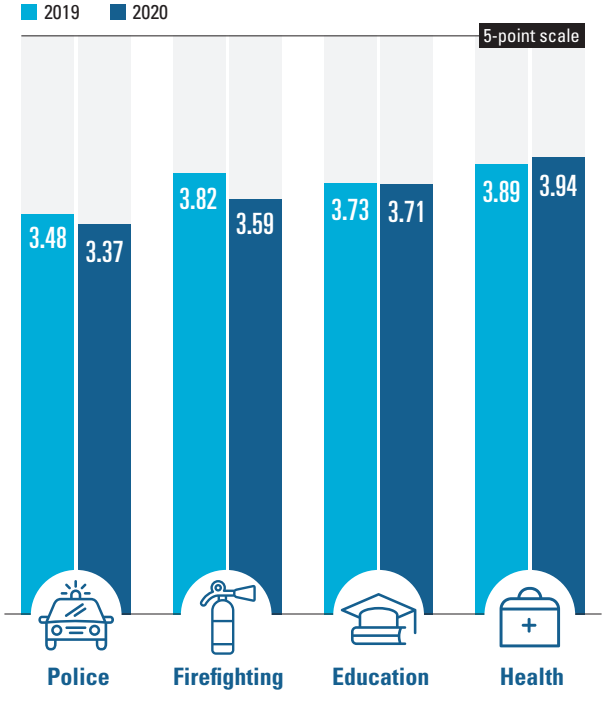
UHC service coverage index, 2019



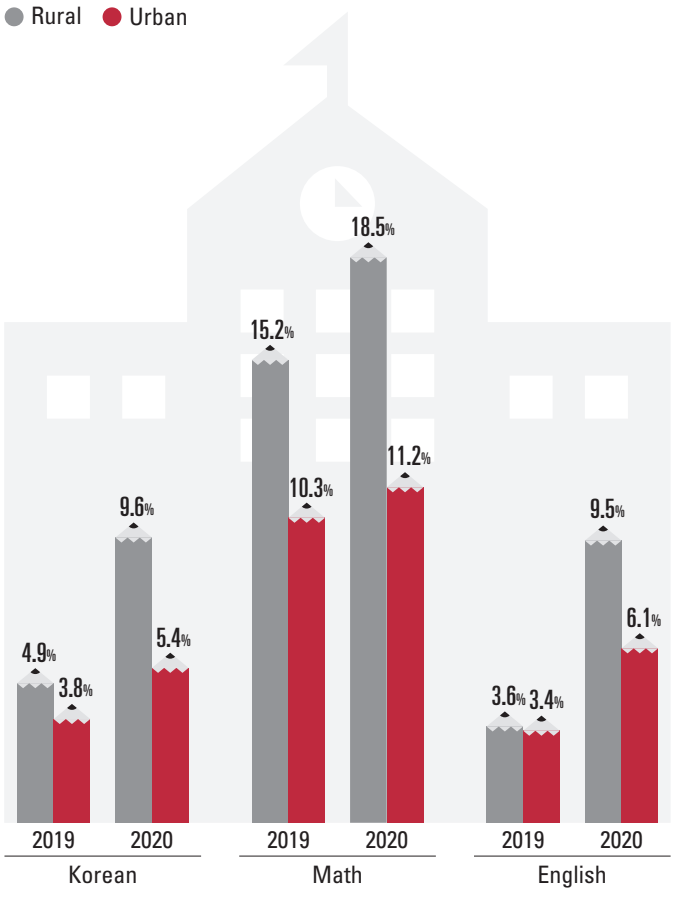
* UHC = Universal Health Coverage

Undernourished people by income group, 2019

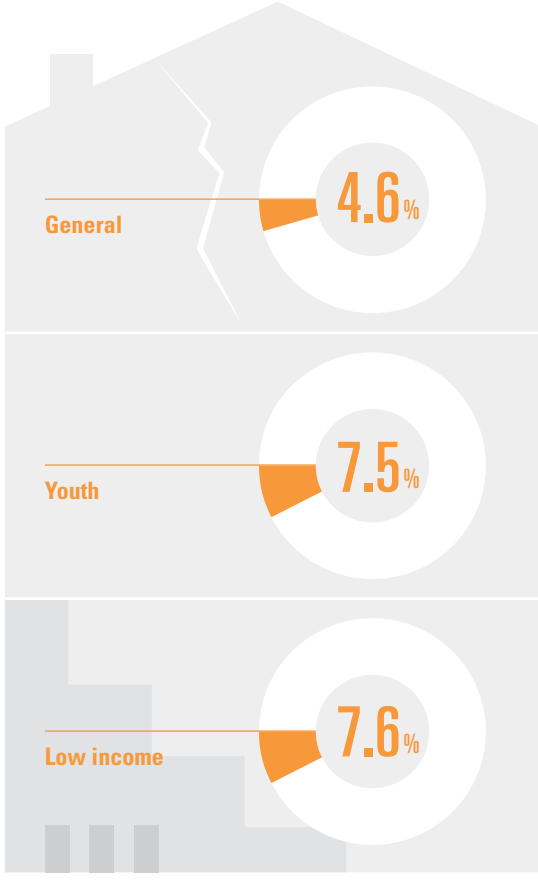
Satisfaction with service provided by public institution



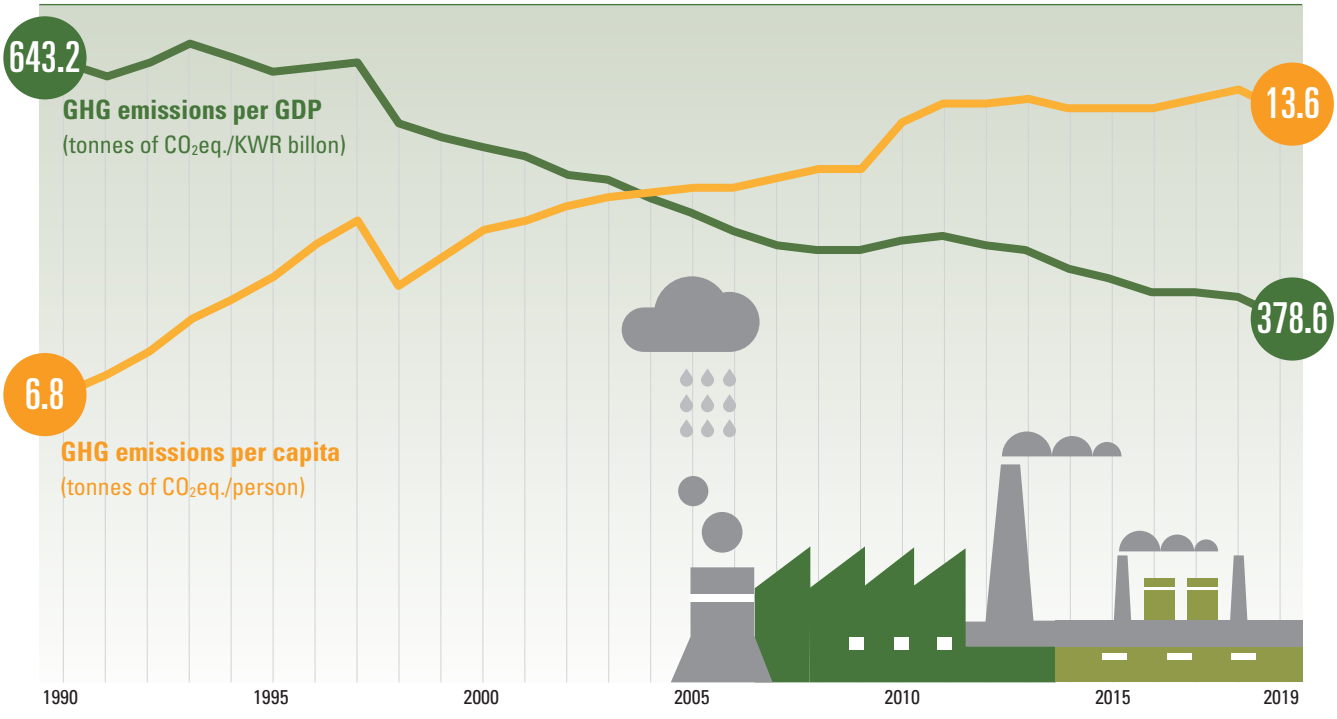
Middle school senior students below basic academic skills



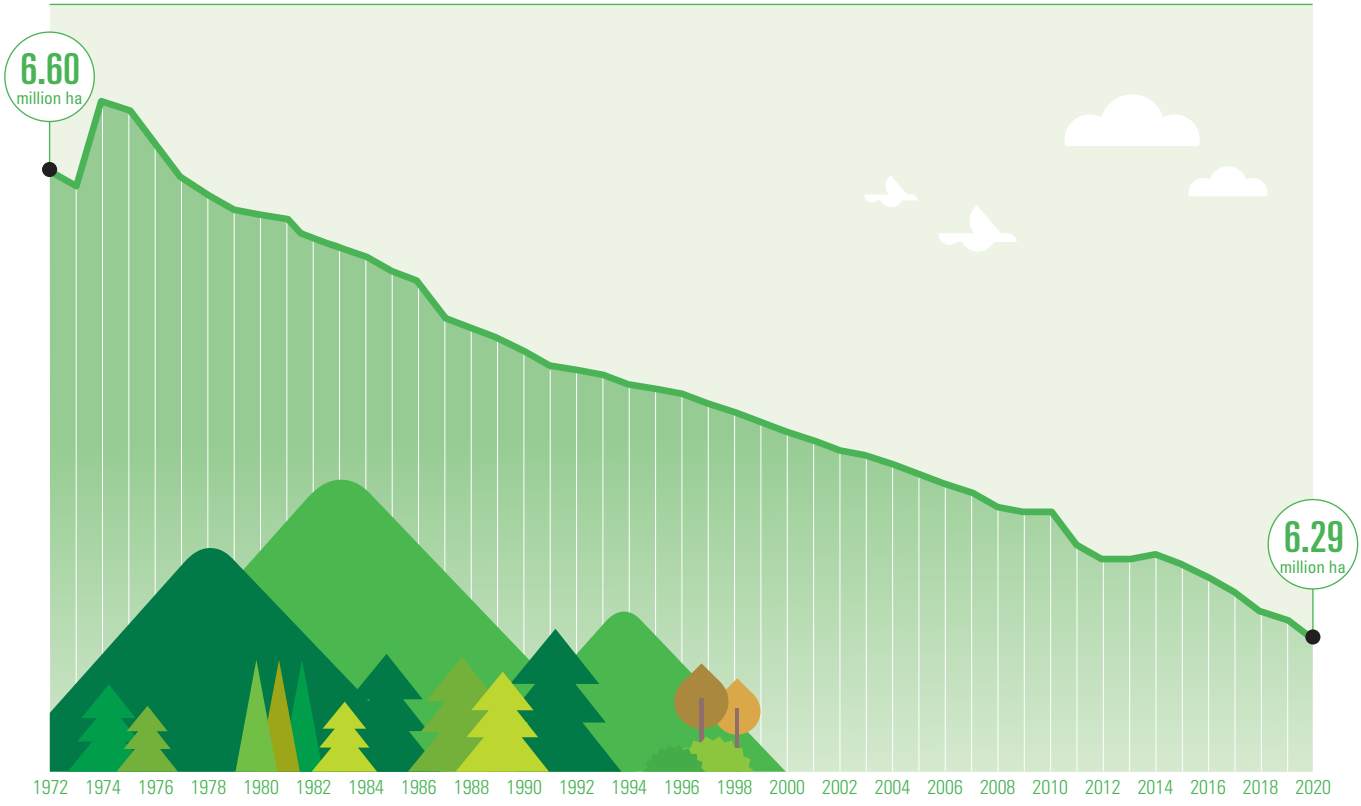
Households living under the minimum residential standards



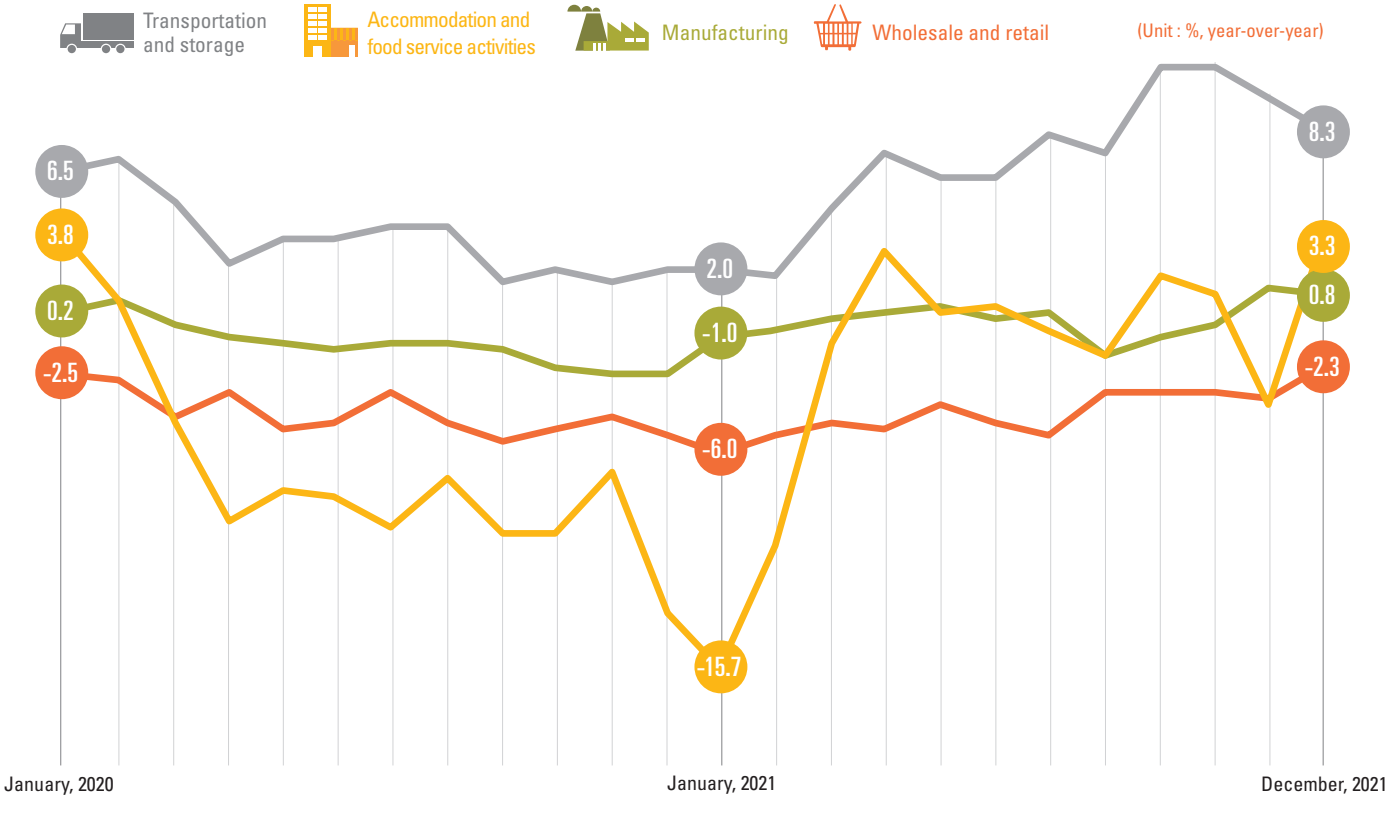
National Green House Gas emissions



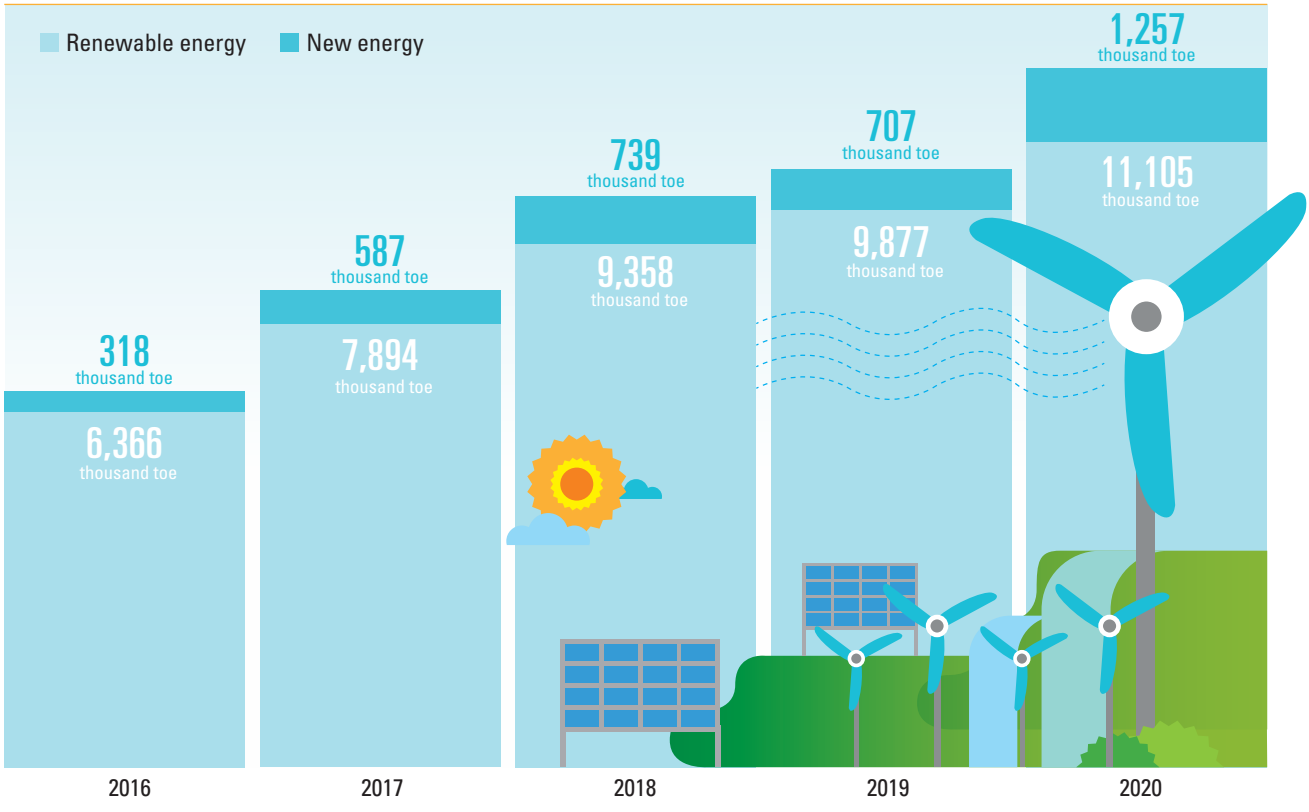
Forest area



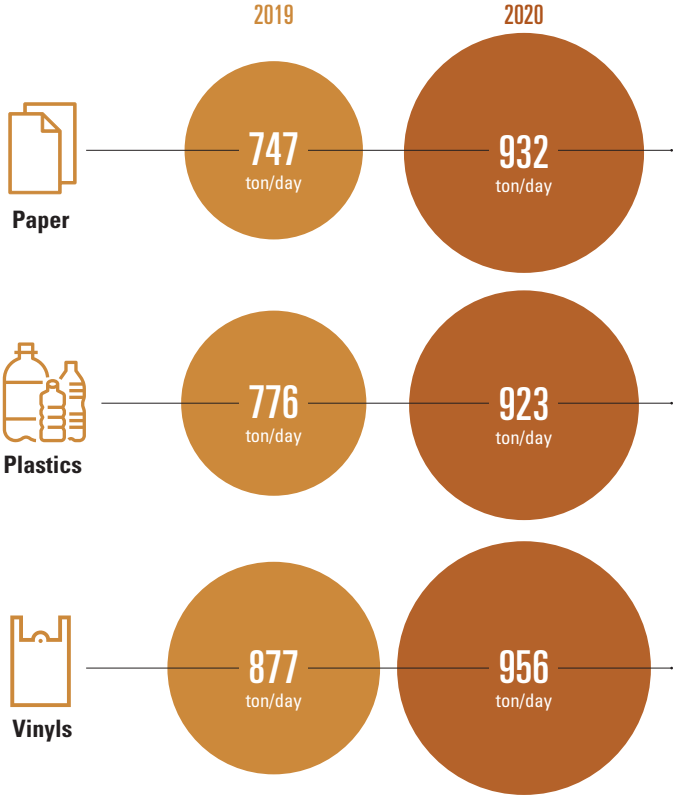
Change rate of the number of employees by industry



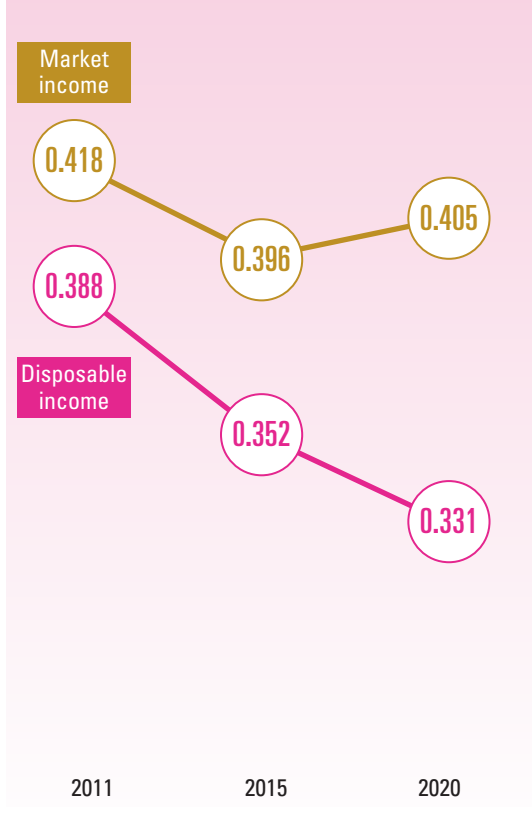
Production of new and renewable energy



Waste in the public treatment facilites



Gini coeffcient of Korea



1 NO POVERTY

Getty Images Bank

End poverty in all its forms everywhere

SDG 1 aims to monitor multidimensional poverty that may occur in accordance with the changing global environment, and in particular, to minimize the effects of disaster situations such as epidemics and climate crisis on the poor. Following the adoption of SDGs in 2015, the world made substantial progress in SDG 1 until the outbreak of COVID-19 Pandemic. Extreme poverty rate decreased from 10% in 2015 to 8.6% in 2018.

However, the ILO predicted that 1.6 billion non-regular workers in the world would see a 60% decrease in their income due to COVID-19; World Bank warned that the global poverty level would report its first increase since 1998; and UNDP expected the Human Development Index to drop for the first time since 1990.

Today, it is important to respond to external shocks in the short term and prepare for the post COVID-19 era in the long term. The society as a whole needs to become more resilient against the Pandemic. In particular, inclusive systems and policies are increasingly important to protect the people from future crises.

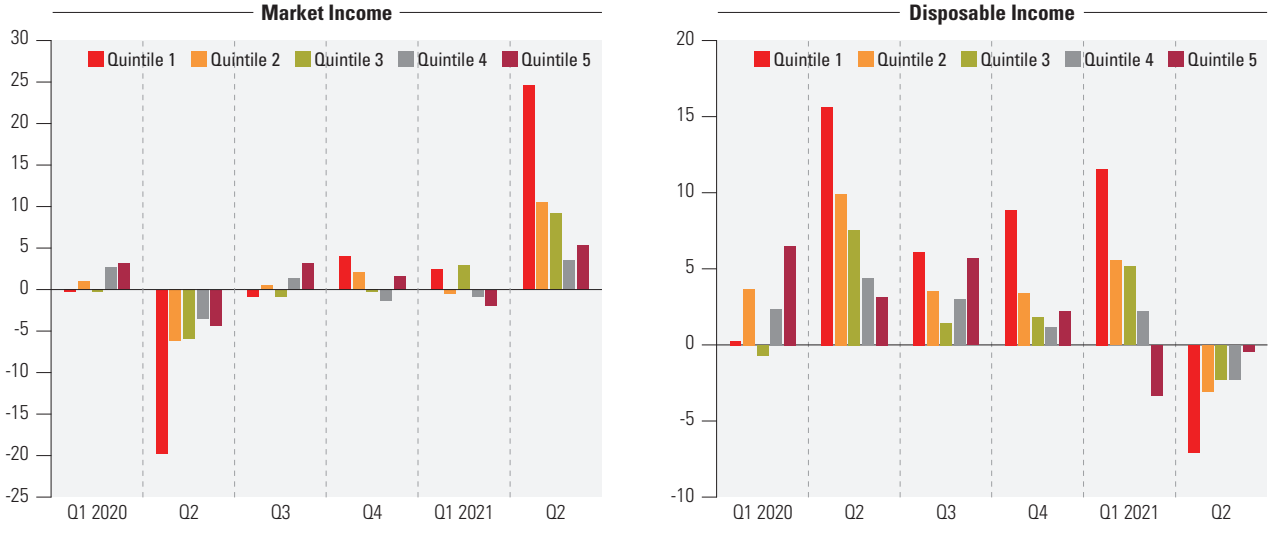
Although the market income of low-income families plummeted in Korea in the second quarter of 2020 due to the impact of COVID-19, the expanded government financial support has helped maintain part of their livelihood. For example, six supplementary budgets were adopted to support the livelihood of the vulnerable groups. The number of beneficiaries of the National Basic Livelihood Security System, the last safety net that supports the livelihood of low-income families, is also increasing with the expansion of protection for the vulnerable. However, a more systematic response is needed. High elderly poverty rate in Korea shows that some people are excluded from the social system in preparing for their old age.

Decreased market income from COVID-19 was offset by government financial support

Since March 2020, when the number of confirmed cases in Korea surged, vigorous actions following the surge resulted in sharp drops in market income in the second quarter of 2020. Low income households were especially hit hard. According to the analysis of the Household Income and Expenditure Survey by Statistics Korea, the market income of households in the second quarter of 2020 decreased by 19.8% among the bottom quintile population, 6.4% for the 2nd quintile, 6.1% for the 3rd quintile, 3.5% for the 4th quintile, and 4.4% among the 5th quintile.

As part of its response to COVID-19, the government provided financial support to small business owners, households facing a livelihood crisis, and households with care burden with the first supplementary budget of 2020, and the second supplementary budget was spent to provide relief packages for all citizens. As a result, household disposable in-

Change rates of market and disposable income by income quintile; Q1 2020~Q2 2021 (Unit: %)

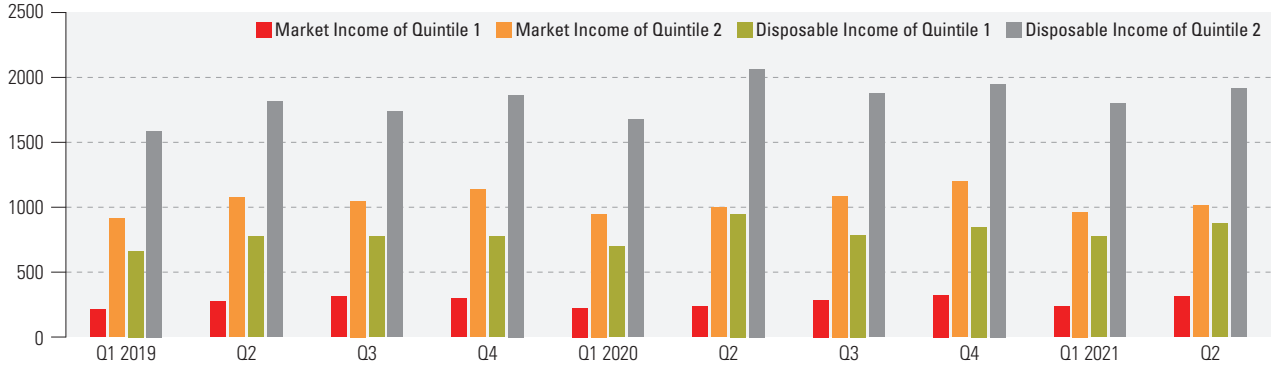


Source: Statistics Korea, analyzed results based on the Household Income and Expenditure Survey

Note 1 : Disposable income was calculated based on the formula of 'income - non-living expenditure', and market income 'earned income + business income + property income + private transfer income - private transfer expenditure'.

Note 2 : The graph shows change rates compared to the same quarter of the previous year.

Market and disposable income of quintile 1 and quintile 2 households whose members are 66 or older; Q1 2019-Q2 2021 (Unit: KRW 1,000)



Source: Statistics Korea, analyzed results based on the Household Income and Expenditure Survey.
Note 1: The quintile groups were first determined with the entire households involved, and only the households with members are 66 or older are presented in the graph.
Note 2: Disposable income was calculated based on the formula of 'income - non-living expenditure', and market income 'earned income + business income + property income + private transfer income - private transfer expenditure'.

Financial support for households facing a livelihood crisis to respond to COVID-19

Category		Main contents
2020	1st supplementary budget (Mar. 17)	Issue coupons to low income households to support consumption(KRW 1.0 trillion, 1.69 million households)
		Emergency welfare support, health insurance premiums relief, etc.(KRW 0.8 trillion, 5.75 million persons)
	3rd supplementary budget (Jul. 3)	Emergency welfare support(KRW 50 billion, 30 thousand households)
		Household emergency reliefs, microcredit and affordable housing, etc.(KRW 0.8 trillion, 0.11 million persons)
	4th supplementary budget (Sept. 22)	Emergency livelihood support for crisis households(KRW 0.4 trillion, 0.55 million households(0.88 million persons))
	Customized damage support (Dec. 29)	Emergency welfare support for low-income earner (KRW 0.1 trillion, 60 thousand households)
2021	1st supplementary budget (Mar. 25)	Marginal working poor temporary livelihood support (KRW 0.4 trillion, 0.8 million households)
		Street vendors support (KRW 20 billion, 40 thousand persons)
		Scholarship support (KRW 30 billion, 10 thousand persons)
		Emergency welfare and livelihood support(KRW 0.2 trillion, 80 thousand households)
	2nd supplementary budget (Jul. 1)	Low-income households support (KRW 0.3 trillion, 3 million persons)

Source1: Ministry of Economy and Finance, Government financial support project to overcome COVID-19, Press Release(April 1, 2021)
Sourse2: Ministry of Economy and Finance, 2nd Supplementary Budget Proposal of 2021, Press Release(July 1, 2021)

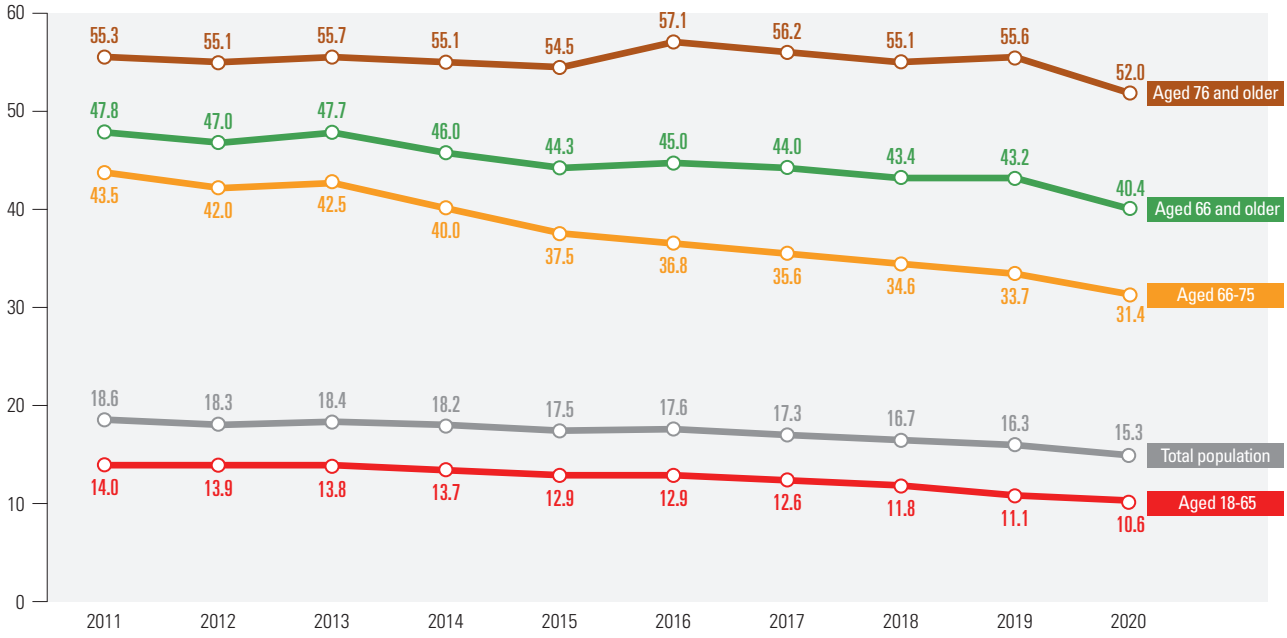
come of each income quintile in the second quarter of 2020 increased compared to the same period of the previous year. Household disposable income increased by 15.7% for 1st income quintile households, 10.0% for 2nd quintile, 7.6% for 3rd quintile, 4.3% for 4th income quintile, and 3.2% for 5th income quintile households. Due to the base effect of these rapid fluctuations in the second quarter of 2020, market income increased while disposable income decreased in the second quarter of 2021 from the previous year.

The financial support provided by the government had a large impact especially on disposable income of households whose members are all 66 or older. That was because they were the main target population of the support while the Pandemic had a limited impact on their market income as many of them do not work. As a result, in the second quarter of 2020, the market income of elderly households in quintile 1 and quintile 2 was KRW 237,000 and KRW 1,005,000 respectively, while their disposable income stood at KRW 950,000 and KRW 2,066,000. Compared to the second quarter of 2019, market income decreased by 13.8% and 6.0% while disposable income increased by 23.0% and 14.1%.

Various measures have been taken by countries around the world to tackle the economic impact of the COVID-19 crisis. The ILO has structured its key policy messages for response to the crisis around four pillars: The first pillar is stimulating the economy and employment with active fiscal policy, accommodative monetary policy, and lending and financial support to specific sectors including the health sector; The second pillar is supporting enterprises, jobs and incomes by extending social protection for all, implementing employment retention measures and providing financial/tax and other relief for enterprises; The third pillar is protecting workers in the workplace by strengthening occupational safety and health measures, adapting work arrangements, including teleworking, preventing discrimination and exclusion, providing health access for all, and expanding access to paid leave; and lastly, the fourth pillar is relying on social dialogue for solutions among the government, employees and employers.

The Korean government also provided direct financial support, lending and recovery support to small business owners through a total of six additional budgets since 2020 to respond to COVID-19, and provided the emergency employment stability subsidy to the population suffering job insecurity. In

Relative poverty rates based on disposable income by age group; 2011~2020 (unit: %)



Source: Statistics Korea, Bank of Korea, Financial Supervisory Service, Survey of Household Finances and Living Conditions(https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1HDLF06&conn_path=I3, retrieved on December 27, 2021)
Note : Disposable income was calculated based on the formula of 'market income+public transfer income-public transfer expenditure'.

addition, direct financial support was provided to households facing a livelihood crisis through emergency welfare support and temporary livelihood support. Those families also benefited from relief packages for all citizens from the 2nd supplementary budget in 2020 and the COVID-19 coexistence national support funds from the 2nd supplementary budget in 2021.

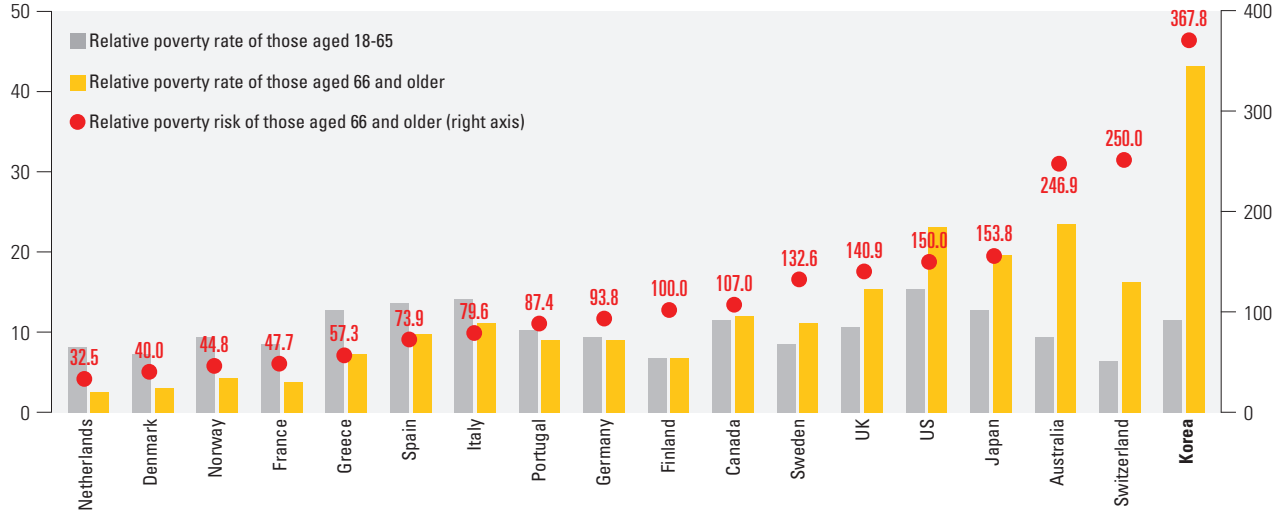
Poverty rate of the population aged 66 and older decreased while those 76 and older saw no significant reduction

The relative poverty rate shows the proportion of the poor receiving 50% less than the median household income in the total population. It indicates the number of people who are relatively poor compared to average workers in a society. The calculation based on the data from the Survey of Household Finances and Living Conditions by Statistics Korea shows that the relative poverty rate based on disposable income in Korea stood at 15.3% in 2020 continuing to decrease from 18.6% in 2011. The number for the population aged between 18 and 65 was 10.6% and 66 and over 40.4%, 3.4%p and 7.4%p decreases from 14.0% and 47.8% in 2011, showing a sharper drop in the elderly. While the rates have consistently declined in the 18-65 age group, it was not until 2014 that the figures started dropping in the elderly group. To be specific, the poverty rate for those aged 66 to 75 is on a downward trend from 43.5% in 2011, but the poverty rate for those aged 76 and older does not show a significant change from 55.3% in 2011 to 55.6% in 2019 before slightly decreasing to 52.0% in 2020.

As of 2020, the equivalized median income based on the disposable income of the population aged 66 and over was KRW 18.09 million, which is 55.8% of KRW 32.4 million for the population aged 18 to 65(Statistics Korea, Bank of Korea, Financial Supervisory Service, 2021). The reason for the low income level of the elderly is that many of them receive zero or just a small amount of public pension, which is the main source of income for the elderly. Although the number of pensioners has been steadily increasing, as of 2020, only 53.1% of those aged 65 and over were receiving public pensions. In particular, as the national pension for all citizens was not implemented until 1999, many of the elderly citizens, who were excluded from the system, are not receiving the pension from the government. Only 30.2% of the population aged 80 and over are pensioners, which is lower than the average level of the entire population of the nation(Statistics Korea, 2021).

The relative poverty risk level in Korea, calculated as the poverty rate for those aged 66 and over compared to the 18~65 age group, was 367.8%, the highest among OECD member countries. Among major OECD countries, the risk level is low in the Netherlands(32.5%), Denmark(40.0%) and Norway(44.8%), and high in Switzerland(250.0%), Australia(246.9%) and Japan(153.8%).

Relative poverty risk level of people aged 66 and over in major OECD countries; 2018 (Unit: %)

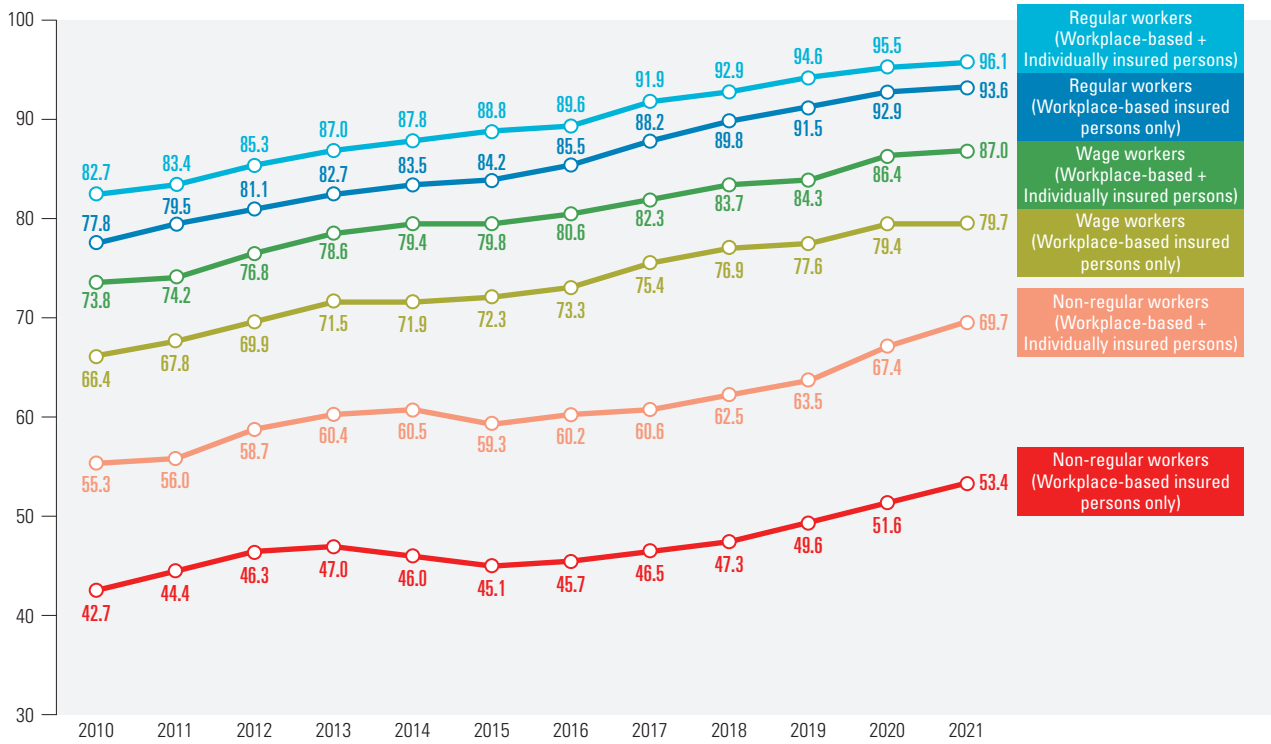


Source: OECD, Income Distribution Database(OECD.Stat, retrieved on September 17, 2021)
Note 1: Relative poverty risk level was calculated based on the poverty rate of people 66 and over compared to that of the 18~65 age group.
Note 2: Latest data after 2015 was used, mostly based on 2018 statistics(including Korea). Data collected in 2019 was used for Canada and the UK, 2017 for Denmark and Sweden, and 2015 for the Netherlands.

More people insure to national pension, but with significant gaps depending on types of employment

Korea's representative public retirement income security systems include the National Pension and Basic Pension. National Pension, or retirement pension, is paid to the elderly aged 62 and older as of 2021, and the Basic Pension to the bottom 70% of the elderly aged 65 years and older. In 2020, the total retirement pension payments was about KRW 21.8 trillion, and the Basic Pension KRW 16.2 trillion, serving as an important income source for the elderly(National Pension Service, 2021; Ministry of Health and Welfare, 2021). Being introduced in 1988, the National Pension system was implemented mainly

Percentage of insured persons of the National Pension of the National Pension by employment type; 2010~2021 (Unit: %)



Source: Statistics Korea, analyzed results based on additional material for August from Economically Active Population Survey
Note : The National Pension is for the employed people aged 59 years or younger. Government employees and private school teachers and others were not considered in the numbers above as they are among those who are not included in the pension system.

for workpalce-based before being expanded to all income earners in rural areas in 1995 and cities in 1999. Since then, the number of insured persons has steadily increased.

The insured rate of wage workers aged 59 and under who belong to enterprises has increased from 66.4% in 2010 to 79.7% in 2021. The number increases further to 87.0% in 2021 when individually insured persons are included. However, there are huge gaps in insured rates depending on types of employment. As of 2021, the insured rate of regular workers is 93.6%, while that of non-regular workers is 53.4%. When individually insured persons are calculated, the number for regular workers stands at 96.1%, and non-regular workers at 69.7%. Those who work less than 60 hours per month are not subject to the workplace-based pension system, and instead, they are encouraged to join the system as a local subscriber. That is why the insured rate of part-time workers is relatively low.

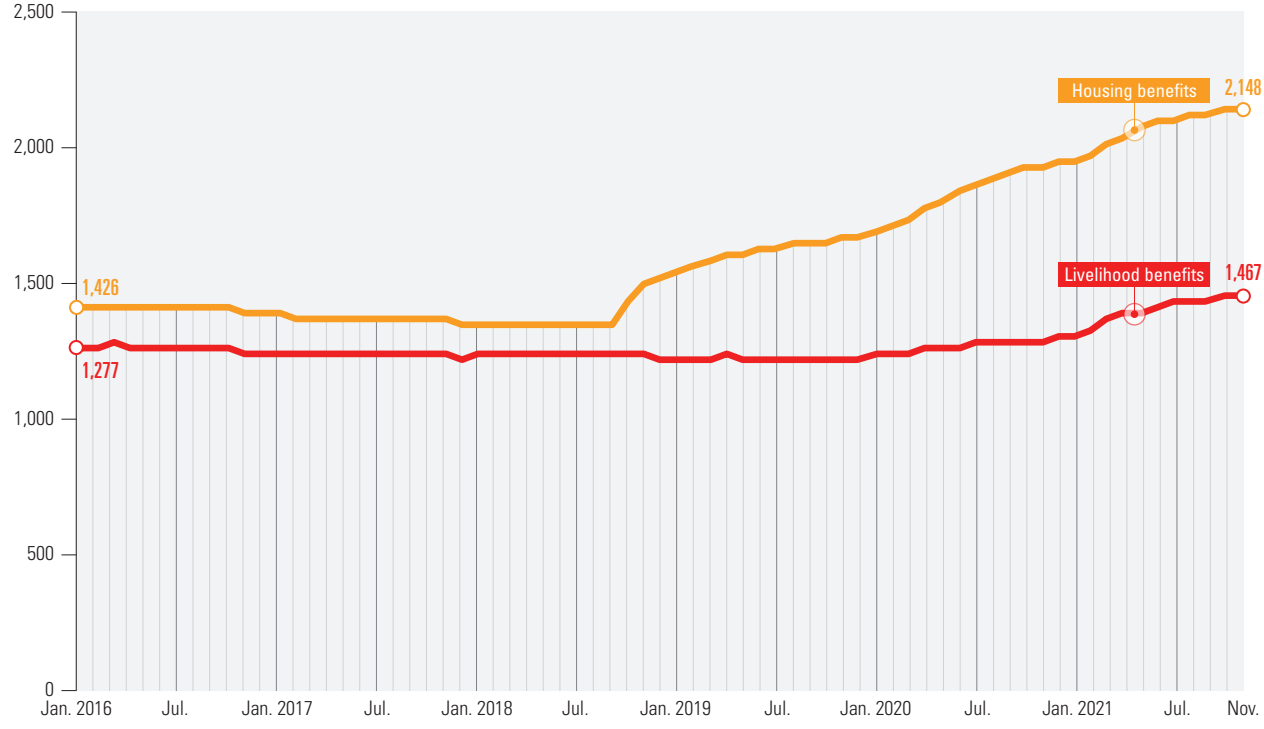
The number of recipients of livelihood and housing benefits are increasing with the eased family obligation criteria

The National Basic Livelihood Security System was adopted on October 1, 2000, replacing the existing Livelihood Protection Act, serving as an important income safety net for low-income families. Therefore, the number of beneficiaries of the Security System indicates the size of the population receiving support from the state due to difficulties in livelihood. With that being said, reductions in income do not necessarily make one eligible for the safety net as various factors are considered to determine the eligibility, including assets and family support obligation, as well as income level.

The number of recipients of livelihood benefits under the system increased from 1,276,000 in January 2016 to 1,467,300 in November 2021, and housing benefits from 1,426,000 to 2.14 million during the same period. The number of recipients of housing benefits increased rapidly from October 2018, and the number of recipients of livelihood benefits showed a modest increase after January 2020, but sharper increases have been witnessed from 2021. The main reason for the increases is that only income and assets of applicants are considered with the exclusion of family support obligation from the eligibility criteria. The exclusion and easing of the obligation criteria mean that the state will take the responsibility to support the low-income population instead of placing it on individuals. The criteria was removed for housing benefits in October 2018, and eased for livelihood benefits in January 2020, a criteria applied to the severely disabled, the elderly, and single-parent households.

The number of recipients of livelihood and housing benefits under the National Basic Livelihood Security System; January 2016~November 2021

(Unit: 1,000 persons)



Source: Korea Social Security Information Service, the number of beneficiary households and individuals of Basic Livelihood Security System by benefit type(monthly)
Data : https://www.bokjiro.go.kr/ssis-teu/twatga/sociGuaStat/SociGuaStatDetailIframe.do?datsNo=1&datsCINo=1011&datsCICrit=WS, retrieved on January 13, 2022)
Note : The number of recipients includes duplicate recipients.

2 ZERO HUNGER

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

SDG 2 aims to build a comprehensive food system to end hunger, supply and consume a sufficient amount of food, and provide quality nutrition. Eradicating hunger and malnutrition is one of the greatest challenges facing the world today. Although food production is large enough to feed the entire population in the world, the global hunger population still stands at 810 million as of 2020. In particular, the number of hungry people increased by 130 million compared to the previous year due to recent climate change and the impact of COVID-19.

In Korea, COVID-19 is expected to have an impact on the stability of food supply and food accessibility for vulnerable groups. Not only will workers face difficulties due to the contraction of the restaurant and food industry, but it may also negatively affect the stability of domestic agricultural products and food supply. In particular, the level of food accessibility of the low-income class, which is relatively vulnerable to economic fluctuations, may decrease, which will have a negative impact on public health and nutrition. In order to improve the overall nutritional level of the vulnerable, both quantity and quality of food must be ensured.

It is very important for Korea to secure a domestic production base and to a stable supply of grains in the global market as its self-sufficiency rate of major grains other than rice remains at a very low level. In terms of food supply stability, it is important to understand the actual conditions of the domestic production base of agricultural products. Specifically, priority should be given to securing and preserving a stable agricultural production base such as arable land and agricultural manpower. It is required to secure sufficient farmland and preserve its quality, for example, soil management, as it is a key production tool for a stable food supply.

Low income groups are disproportionately affected by poor nourishment and food insecurity

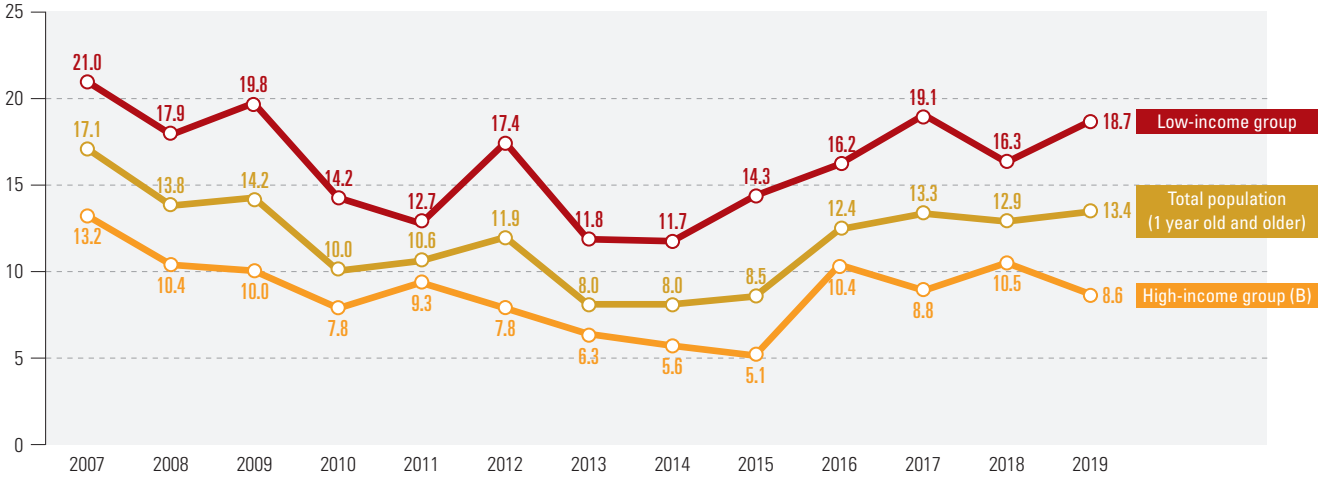
Modern society has entered an era of excessive nutrition due to economic growth, the development of the food industry, and the expansion of food trade. However, the problem of poor nourishment is still there. Undernutrition refers to a condition in which energy intake is less than 75% of the required amount and the intake of calcium, iron, vitamin A, and riboflavin is less than the average required amount.

As of 2019, the proportion of undernourished people(1 year old and older) was 13.4%. The number(1 year old and older) decreased from 17.1% in 2007 to 8.0% in 2014, but has increased again since then and has recently reached the level of 12~13%.

By income level, in 2019, the percentage of poorly nourished population was 8.6% in the high income group and 18.7% in the low income group. The proportion has increased significantly especially among lower income groups between 2007 and 2019.

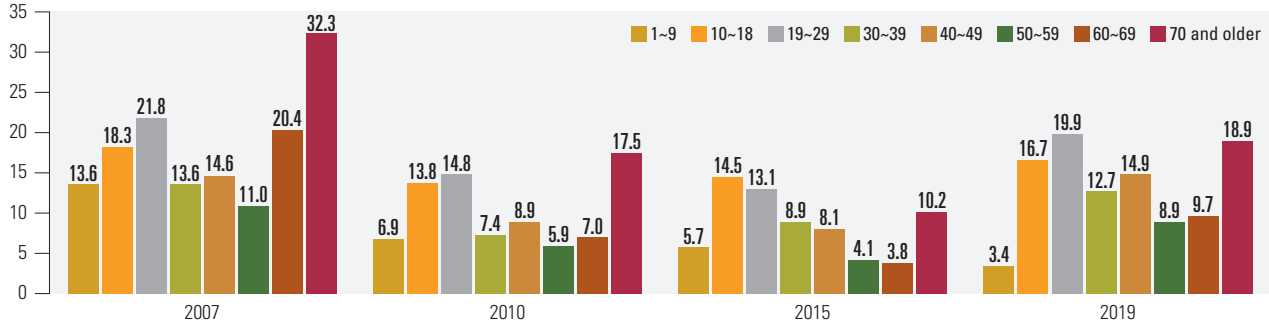
By age, as of 2019, the 19~29 aged group has the highest percentage at 19.9%, followed by those in their 70s or older(18.9%) and the 10~18 age group(16.7%). The high pro-

Percentage of undernourished people by income group; 2007~2019 (Unit: %)



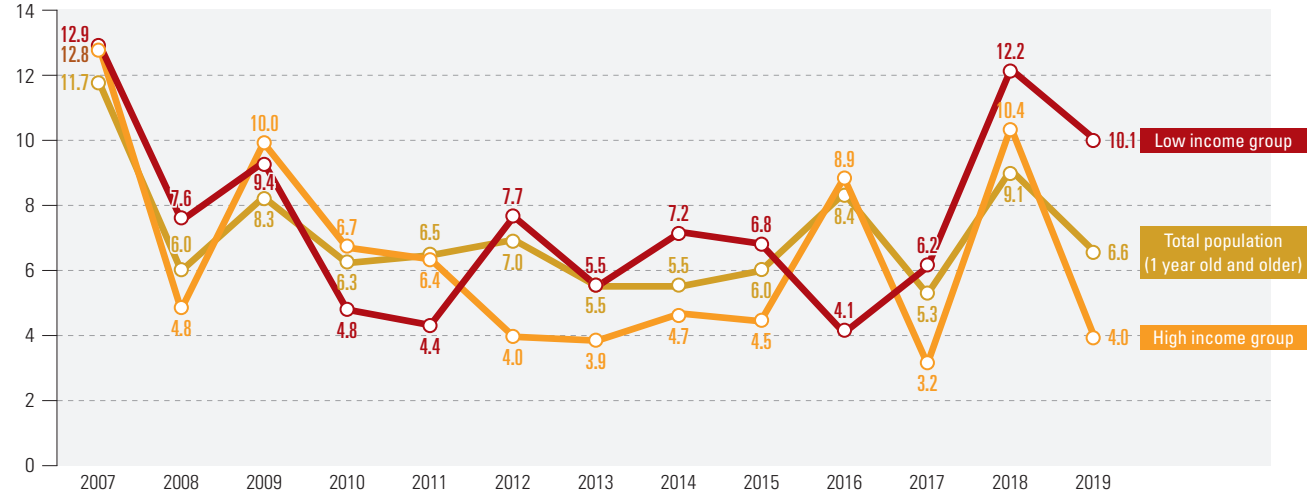
Source: Korea Disease Control and Prevention Agency, National Health & Nutrition Examination Survey

Percentage of undernourished people by age group; 2007~2019 (Unit: %)



Source: Korea Disease Control and Prevention Agency, National Health & Nutrition Examination Survey, each year

Gender gap of undernourished people by income group; 2007~2019 (Unit: %)



Source: Korea Disease Control and Prevention Agency, National Health & Nutrition Examination Survey
Note : The gender gap = the percentage of undernourished female - the percentage of undernourished male

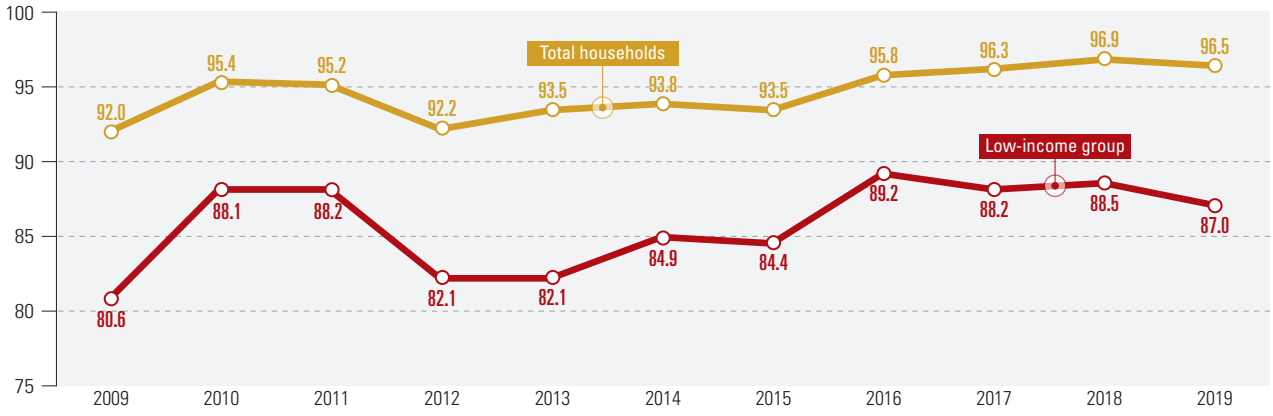
portion of undernourished people in the younger and older age groups is consistent across all periods. The proportion of undernourished people over 70 years old was 32.3% in 2007, which was overwhelmingly higher than that of other age groups, but the gap decreased dramatically in 2019.

By gender, the proportion of undernourished female is relatively higher than that of men. As of 2019, the number among female stood at 16.7%, 6.6%p higher than their male counterpart, which was 10.1%. The trend of higher undernourishment among the female population has been seen from 2007 to 2019. Of course, the gap between men and women was 11.7%p in 2007, which decreased to 5.3%p in 2017 and increased to 9.1%p in 2018, finally reaching 6.6%p in 2019. This gender gap appeared consistently regardless of income level

Problems such as food shortage, lack of eating, and nutrient intake imbalance caused by the lack of stable food supply are mainly concentrated on the economically disadvantaged groups. In addition, the proportion of food expenditure among low-income households is relatively high compared to other groups. According to the National Health & Nutrition Examination Survey, as of 2019, the proportion of households with food security in the low income group was 87.0%, 9.5%p lower than the total percentage of 96.5%. The gap between the total number and that of the low income group saw ups and downs with the downward overall trend since 2010, but recently it is increasing again after reaching its lowest level of 6.6%p in 2016.

Most of the problems of absolute hunger have been resolved thanks to economic development, increase in income, and overall improvement of quality of life, but more efforts are required to secure good quality food for the vulnerable. In Korea, the concept of food security has changed from securing a stable food supply base(enhancing food self-sufficiency) in the past to supplying safe and nutritious food to improve people's quality of life. The government needs to

Percentage of households with food security; 2009~2019 (Unit: %)



Source: Korea Disease Control and Prevention Agency, National Health & Nutrition Examination Survey

Note : Percentage of households with food security(%): Those in charge of purchasing food for their family members were asked about diet of their family for the past one year, and the percentage was calculated based on the number of people who answered 'All of my family members could eat a variety of foods as much as we wanted' or 'all of my family members could eat food as much as we wanted, but could not eat a variety of foods'.

reflect the change in the concept of food security in its policies. In addition, from the perspective of food security, the government needs to provide a stable supply of high-quality food to provide sufficient, quality food for the vulnerable.

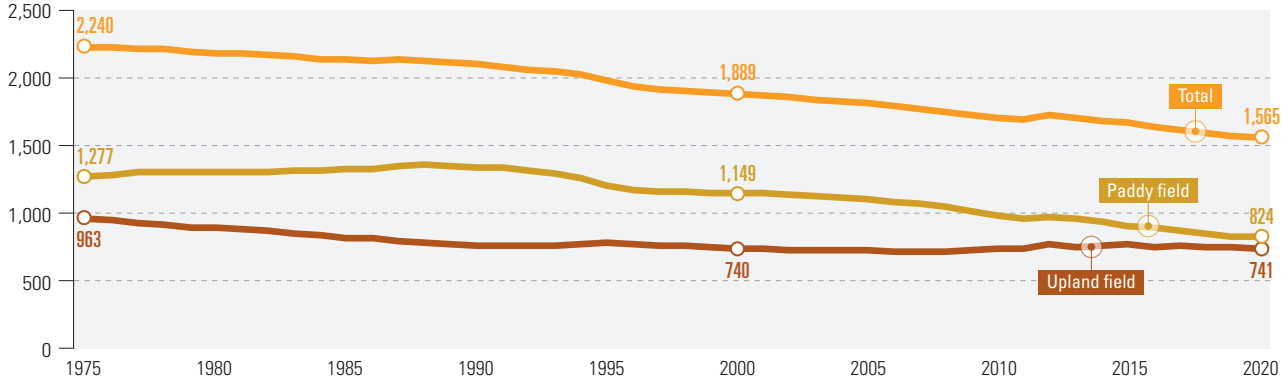
Continued decreases in cultivated land area

Agricultural area is a key production tool for a stable food supply. SDG 2 aims to ensure a sustainable food production system and focuses on the implementation of resilient agricultural activities, and sees the ratio of cultivated land as a key indicator. It is an important task for a nation to appropriately manage and conserve agricultural area in terms of quantity and quality. However, as the demand for land for other purposes increases in the process of urbanization and industrialization, agricultural area has been converted into residential or industrial land resulting in decreased cultivated land.

The cultivated land area of Korea has been continuously decreasing. The total land area of Korea increased from about 9.972 million hectares in 2007 to about 10.04 million hectares in 2019. On the other hand, more cultivated land was converted for other purposes than newly secured ones through reclamation, which in turn resulted in the total cultivated land area decreasing from about 1.89 million hectares in 2000 to about 1.57 million hectares in 2020. The proportion of cultivated land in the total land area also decreased from 19.3% in 2000 to 15.7% in 2019. Most of the decrease came from reduced paddy fields. The area of farmland used for paddy fields decreased from about 1.15 million hectares in 2000 to about 0.82 million hectares in 2020 while the size of upland fields did not change significantly at the level of about 0.74 million hectares during the same period.

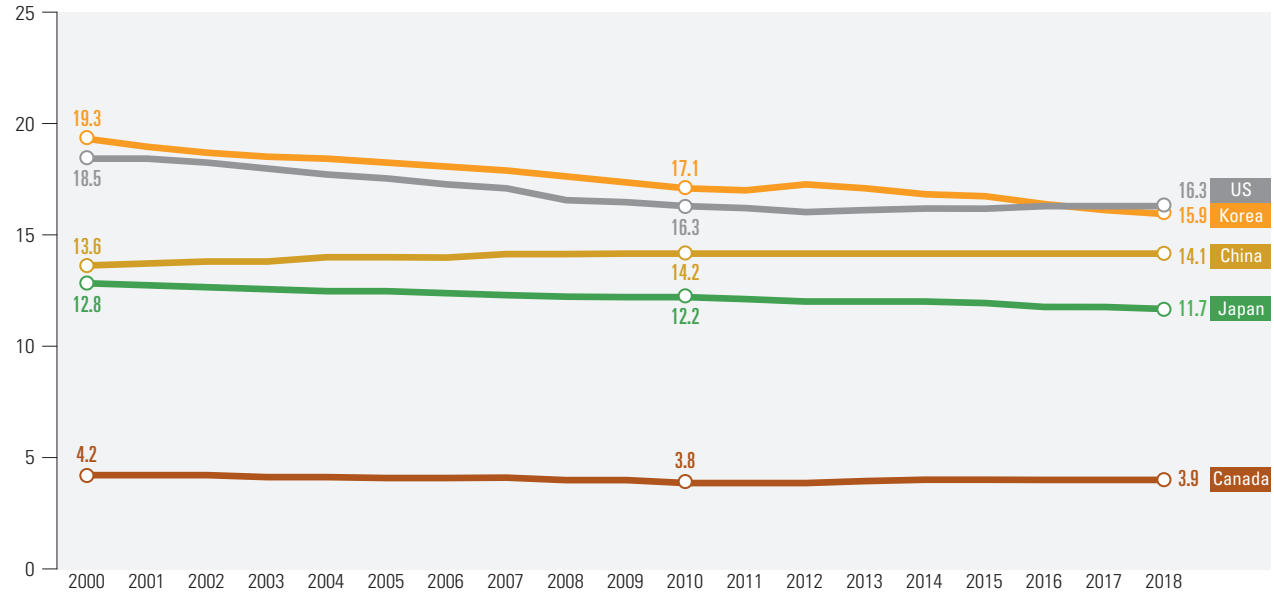
Cultivated land area in major countries including Japan, the United States, and Canada is also on the decline. Just as the proportion of cultivated land area in Korea has decreased from 19.3% in 2000 to 15.9% in 2018, the percentage also dropped from 12.8% to 11.7% in Japan, 18.5% to 16.3% in

Changes in cultivated land area; 1975~2020 (Unit: 1,000ha)



Source: Statistics Korea, Agricultural Area Survey(https://kosis.kr, retrieved on October 15, 2021)

Changes in the percentage of cultivated land area by country; 2000~2018 (Unit: %)



Source: Ministry of Land, Infrastructure and Transport, Cadastral Statistical Annual Report 2020(Korea), FAO STAT(Japan, China, USA, Canada)(https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_2KAA101&conn_path=I3, 2, retrieved on April 19, 2021)
Note : The percentage was calculated based on the total land area and farmland in each country.

the United States, and 4.2% to 3.9% in Canada. China saw a slight increase from 13.6% to 14.1% during the same period.

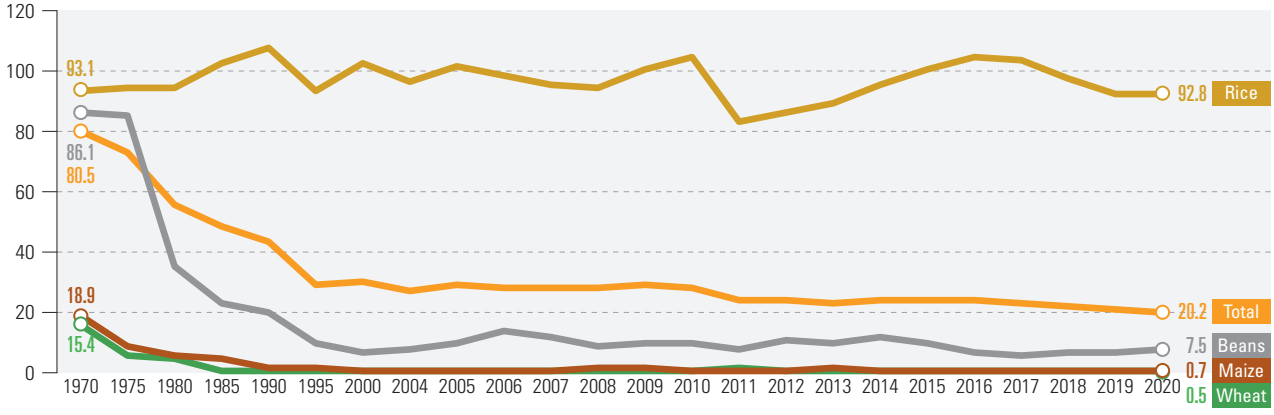
Continuous decrease in self-supply rate of grains other than rice

The global demand for grains has been continuously increasing due to the growing demand for feed as both global population and income are on the rise. In addition, the demand for grains in the global market is expected to grow further as more grains are being used to produce bioenergy. On the other hand, both frequency and intensity of global climate disasters are increasing, including abnormally high or low temperatures and frequent local floods and droughts caused by climate change, undermining stable supply of grains in the international market.

Korea is a representative grain importer with the grain self-supply rate of only 20.2% as of 2020. This is a result of the continued sharp decline in the self-supply rate since the 1990s. The number stood at 43.1% in 1990, and it has steadily declined after it fell to 29.1% in 1995. Rice, the staple food in Korea, has a self-supply rate of 90% or more, but the rates for other basic grains are very low at 0.5% for wheat, 0.7% for maize, and 7.5% for beans.

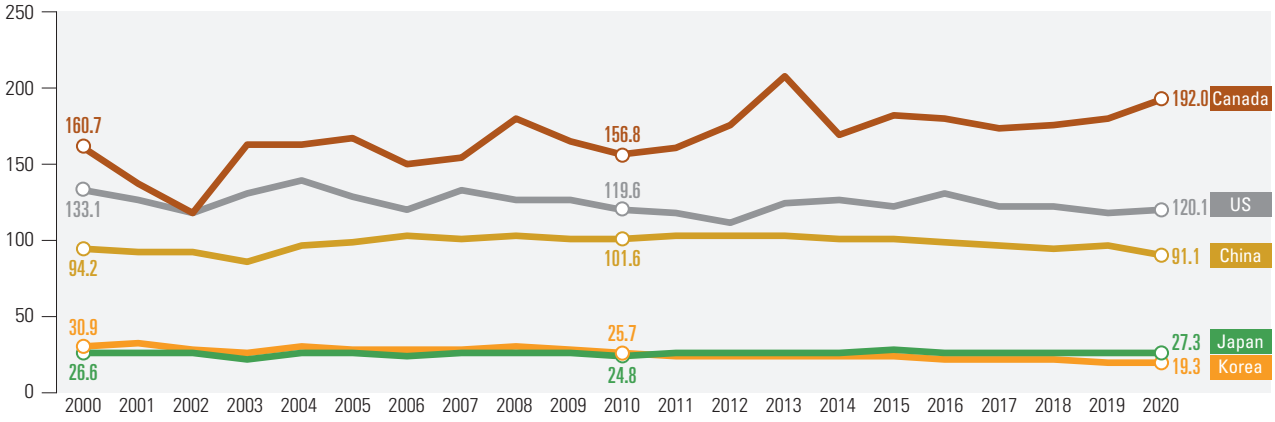
By country, self-supply rates of grains stood at 133.1% in 2000, 119.6% in 2010, and 120.1% in 2020 in the US; and 160.7%, 156.8%, and 192.0% in the same period in Cana-

Grain self-supply rate; 1970~2020 (Unit: %)



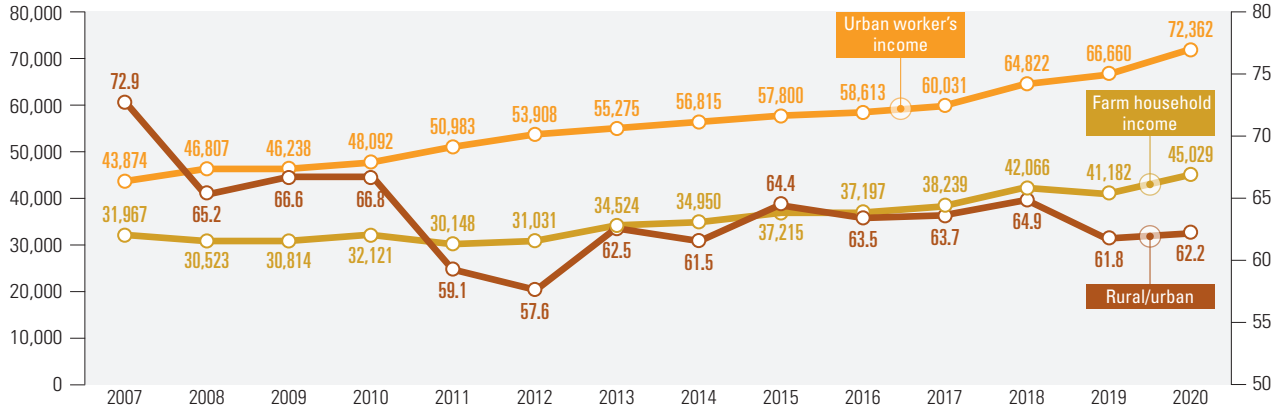
Source: Ministry of Agriculture, Food and Rural Affairs, Key Statistics on Agriculture, Forestry, Livestock and Food, each year
Note : 2020 figures are provisional, which is based on grain year(from November 1 of the previous year to October 31 of the year).

Self-supply rates of grains by country; 2000~2020 (Unit: %)



Source: AMIS(Agricultural Market Information System), Commodity → TOTAL CEREALS
Note : The grain self-supply rate(production/consumption×100) was calculated using AMIS data on production and consumption by country.

Urban-rural income gap; 2007~2020 (Unit: KRW 1,000, %)



Source: Statistics Korea, Farm Household Economy Survey·Household Income and Expenditure Survey (Quarter), each year
Note : Annual income data from the Farm Household Economy Survey was used for the income levels of rural population (households with more than 2 members) and the average monthly income was converted into annual data for the urban income level(households with more than 2 members) before comparing the two to calculate the gaps.

da, both of which are grain exporters with the rates exceeding 100%. China saw 94.2%, 101.6%, and 91.1% during the same period. On the other hand, Japan reported 26.6% in 2000, 24.8% in 2010, and 27.3% in 2020, showing relatively low levels like Korea.

The income gap between urban and rural areas continues to grow

For a stable supply of food, the income of farmers, the main producers, must be stable. Farm household income consists of agricultural income, non-farm income, and transfer income. Agricultural income is income earned through agricultural production activities and has high volatility depending on changes in weather conditions and supply and demand conditions for agricultural products. Non-farm income refers to income from activities other than agriculture, such as income from double jobs and earned income. In recent years, active income-generating activities are being restricted as farm households are aging. On the other hand, transfer income consists of private transfer income and public transfer income. In recent years, various government subsidies(various pensions, direct payments, etc.) have been increasing, showing an increasing trend.

Comparing the income levels of the two groups, income of urban workers increased by 3.9% per year on average between 2007 and 2020, while that of farm households increased only by 2.7%, widening the income gap. The rate decreased from 72.9% in 2007 to 57.6% in 2012, and has recently been maintained at the 60% level. In other words, as of 2020, rural residents earn 62.2% of the income that urban workers receive. It is necessary to lower income-related risks facing farmers by reducing income volatility to make agriculture sustainable and food supply stable. In addition, it is also important to expand the farmers' income safety net to a level similar to that of workers in other industries.

3 GOOD HEALTH AND WELL-BEING

Getty Images Bank

Ensure healthy lives and promote well-being for all at all ages

With the motto of ensuring healthy lives for all, SDG 3 emphasizes that all humans have a right to receive quality healthcare. To achieve this, the international community has made long-term efforts to establish a response system for infectious diseases(including tuberculosis, malaria, HIV) with the WHO at the center. Recently, the world is taking a comprehensive approach based on a sustainable healthcare system to address health inequality and strengthen coverage for essential health care services. The 2019 UN General Assembly high-level meeting set the global goal of achieving Universal Health Care(UHC). The UHC focuses on improving the health of the people through a robust and resilient healthcare system. It is also emphasized that individuals and communities should be able to use necessary health care services without any economic burden.

For the past two decades, the world has set common goals(MDGs, SDGs) and strengthened international cooperation to cope with various health crises. However, global challenges are still there. Gaps between countries and regions remain significant in healthcare workers, which has been a key foundation for the operation of the healthcare system. COVID-19 has increased health inequality and reduced access to essential health services at home and abroad. In particular, countries with different economic capacities report different levels of vaccination rates, which is considered an essential health service, threatening the achievement of the goal of Good Health and Well-Being for all at all ages.

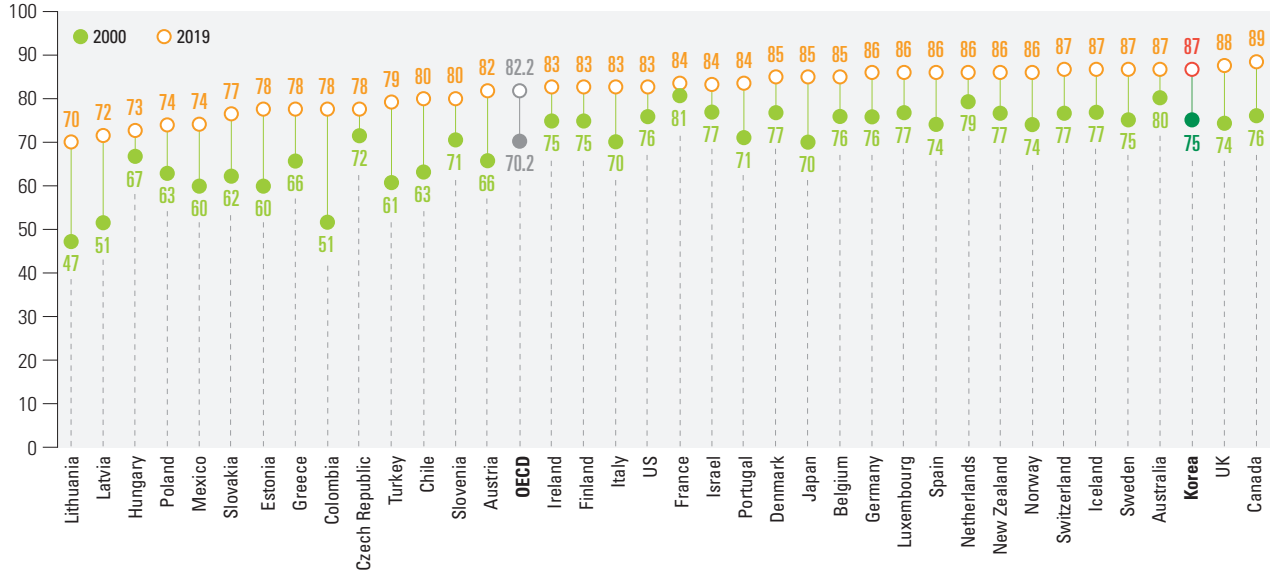
The chapter will explore the level of implementation of SDG 3 through the UHC service coverage index, its four sub- areas and relevant indicators. As healthcare workers and vaccination are fundamental elements in achieving UHC and implementing the SDGs, the global status of these two indicators will also be reviewed. One of the following sections will also examine the number of households with limited access to healthcare services due to financial difficulties by presenting the percentage of families with catastrophic health expenditure.

Korea's UHC service coverage level has improved rapidly, but with not enough health workers

In Korea, the UHC service coverage index stood at 87 in 2019. This is a significant improvement compared to the year 2000(75) when the data was first collected. The index has increased across all Member States with the OECD average jumping from 70.2 in 2000 to 82.2 in 2019. Among major advanced countries, only Canada(89) and the United Kingdom(88) have a higher index than Korea.

The UHC service coverage index measures the level of coverage and equity of 16 essential healthcare services in 4 areas including reproductive health, infectious disease non-

UHC service coverage index; 2000, 2019 (Unit: point)



Source: WHO, 2021, Tracking universal health coverage: 2021 Global monitoring report; UN SDGs database(https://unstats.un.org/sdgs/unsdg, retrieved on January 13, 2022)

Areas of UHC service coverage index and Korea's score

Area	Essential Healthcare Services	SDG Targets	Score (2019)
Reproductive, maternal, newborn and child health	• Family planning • Antenatal care and delivery care • Child immunization • Careseeking for suspected pneumonia	SDGs 3.1 SDGs 3.2 SDGs 3.7	94
Infectious disease control	• TB effective treatment • HIV treatment • Malaria prevention(Insecticide-treated nets) • At least basic sanitation	SDGs 3.3	89
Noncommunicable diseases	• Normal blood pressure • Mean fasting plasma glucose • Cervical cancer screening • Tobacco nonsmoking	SDGs 3.4 SDGs 3.a	70
Service capacity and access	• Access to hospitals • Health worker density • Access to essential medical supplies • Health security: IHR core capacity index	SDGs 3.c SDGs 3.d	99

Source: WHO database(https://www.who.int/data/gho/data/themes/topics/indicator-groups/indicator-group-details/GHO/universal-health-coverage-index, retrieved on Oct 11, 2021)

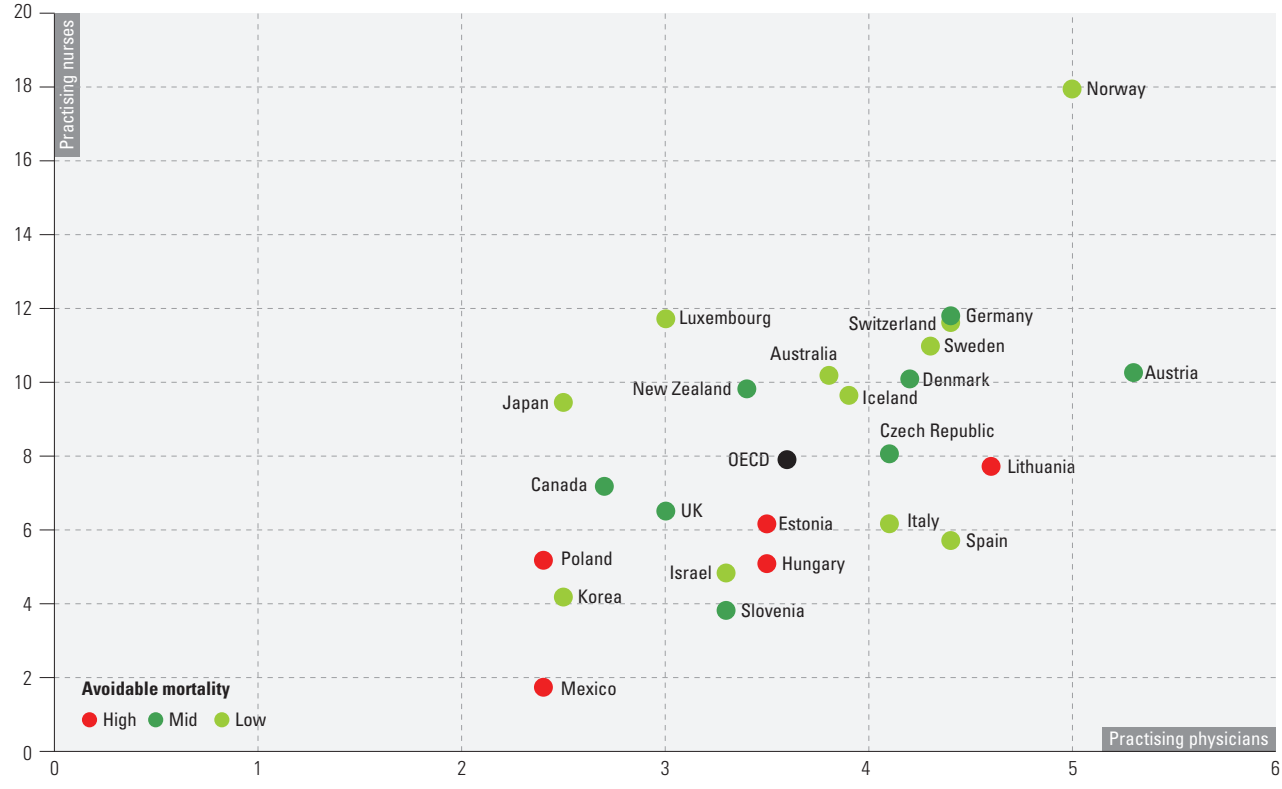
communicable diseases, and service capacity and access. Although the achievement of UHC is monitored by the UHC service coverage index, which is one of the indicators of the Health SDGs, it encompasses several indicators of the Health SDGs. As Korea has a high UHC service coverage index, the level of achievement in each of the sub-categories constituting it is rather good. Nevertheless, there are indicators that require improvement compared to countries at similar economic levels. It is necessary to take care of the targets that require improvement in each area constituting the index.

Healthcare workers are the basic elements for the healthcare system. Without them, it is impossible to protect the health of the public in daily life, and to respond in a timely manner to a health crisis such as COVID-19. In 2019, the number of practising physicians(including oriental doctors) in Korea was 2.5 per 1,000 population, and the number of practising nurses was 4.2, both of which are lower than the OECD average(3.6 practising physicians and 7.9 nurses). Poland(2.4) and Mexico(2.4) are the only countries with fewer practising physicians than Korea. On the other hand, Norway(5.0) and Austria(5.3) have more than 5 practising physicians 1,000 people. As for practising nurses, the number is low in Mexico(1.7) and Greece(2.0), and high in Switzerland(11.6), Luxembourg(11.7), Germany(11.8) and Norway(17.9).

The avoidable mortality is low(yellow green dots) in countries with sufficient physicians and nurses as they can

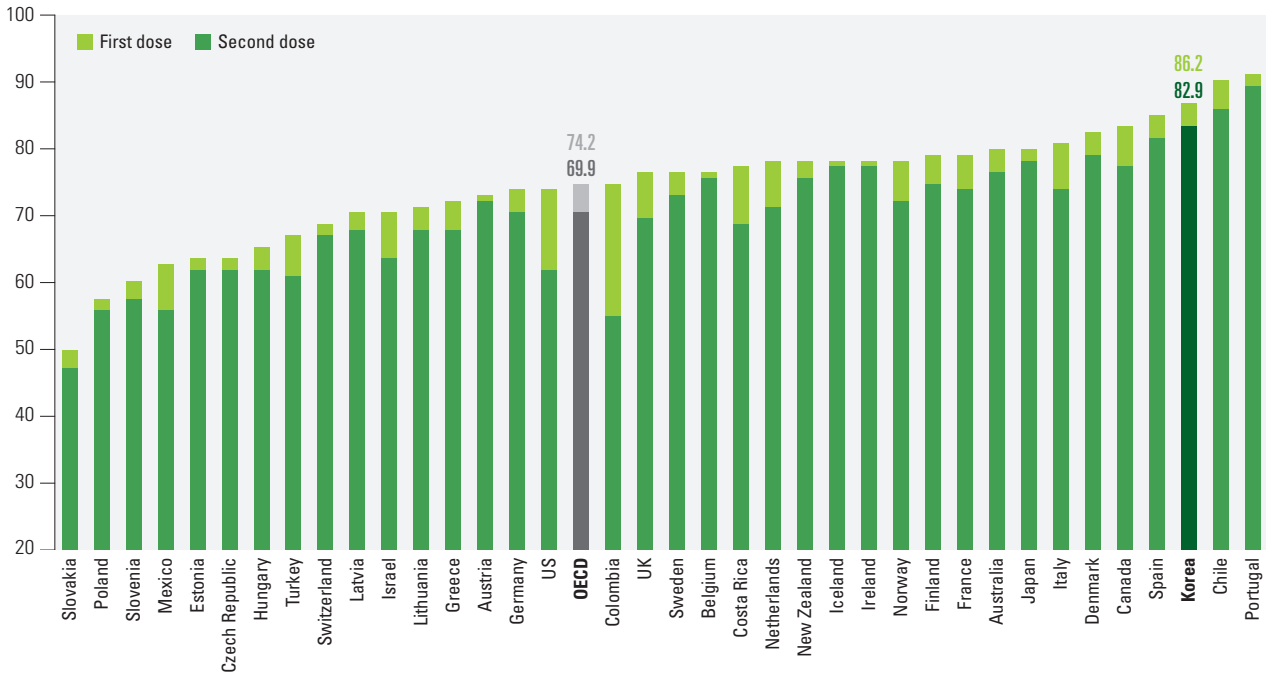
Numbers of practising physicians and nurses of OECD countries; 2019

(Unit: No. of persons per 1,000)



Source: OECD Statistics, Health Care Resources, retrieved on September 10, 2021
Note 1: 2018 data was derived for Denmark, Japan and Sweden, and 2017 data for Luxembourg and Poland.
Note 2: The avoidable mortality is based on Health at a glance 2021(OECD, 2021: 3).

COVID-19 vaccination rate of OECD countries; January 1, 2022 (Unit: %)



Source: Our World In Data(https://ourworldindata.org/covid-vaccinations, retrieved on October 26, 2021), citation from https://www.oecd.org/coronavirus/en/vaccines
Note 1: The figure is based on data on December 31, 2021 for Columbia; December 30, 2021 for Sweden, Hungary, and Iceland; December 29, 2021 for Spain; December 28, 2021 for Japan; and December 27, 2021 for Portugal.
Note 2: Luxembourg was excluded from the analysis because there was no latest information on second dose vaccination.

provide disease prevention services and timely treatment. The data indicates that it is important to increase the number of healthcare workers to enhance access to healthcare services and keep people safe.

Significant gaps in COVID-19 vaccination rates between countries

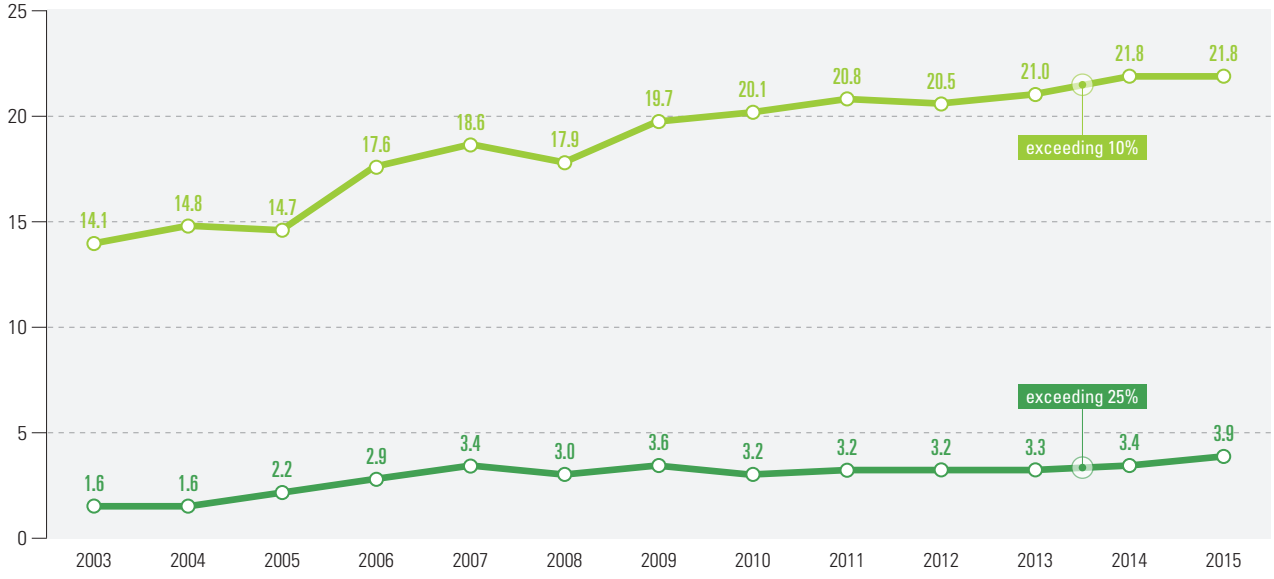
Vaccination is known to be the most successful public health intervention. New vaccines should be developed to fight against new infectious diseases. Timely intervention requires rapid development of vaccines, but it takes time and money to ensure complete safety and effectiveness. While OECD countries are in relatively good shape, many low-income countries do not have access to vaccination or suffer from delays due to lack of financial capacity.

As of January 1, 2022, vaccination against COVID-19 in OECD countries stands at 74.2% for the 1st dose and 69.9% for the 2nd dose. In Korea, the numbers are 86.2% and 82.9% respectively. In some countries, the first dose vaccination rate is less than 50%(Slovakia), while others exceed 80%(Italy, Denmark, Canada, Spain, Korea, Chile and Portugal). The difference between the first and second dose vaccination rates varies greatly from country to country. Japan, Portugal, Iceland, Ireland and Belgium have gaps of less than 1.5 percentage points, while Colombia and the United States report more than 10 percentage points.

Korea has the highest percentage of households facing catastrophic health expenditure

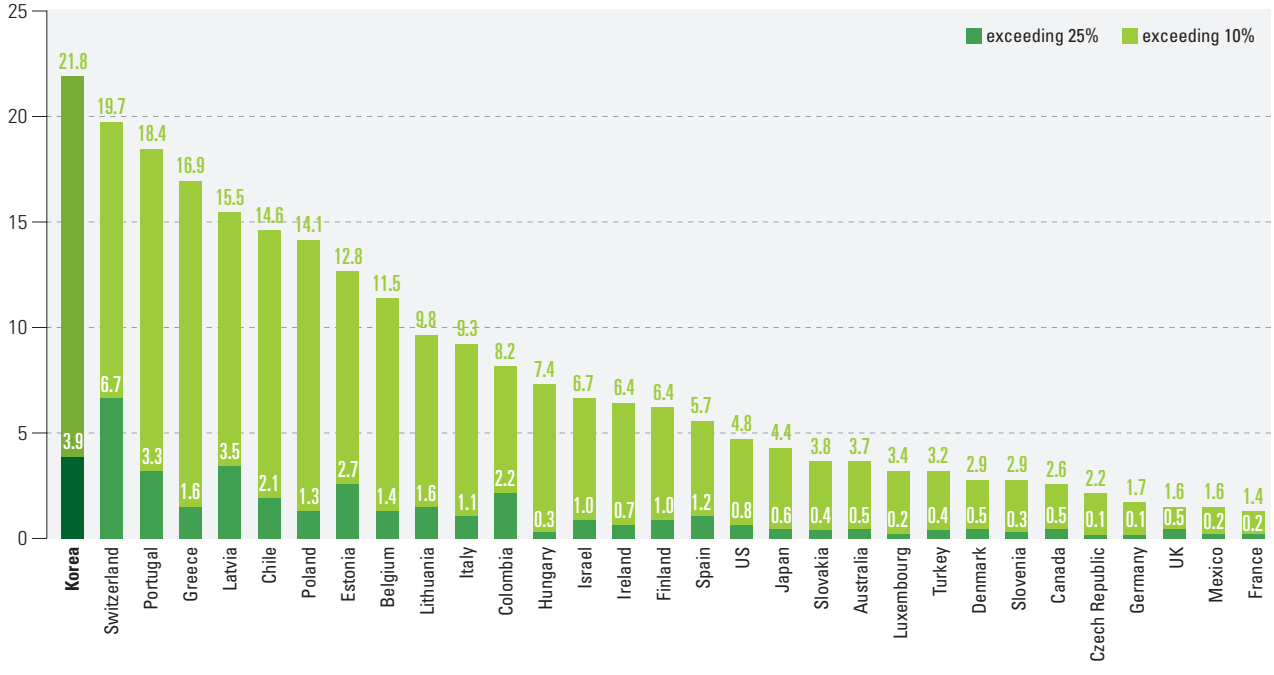
In order to achieve Universal Health Care, it is important not only to expand the scope of service coverage, but also to reduce the economic burden that patients might feel while using medical services. International organizations, led by WHO, are monitoring the burden of medical expenses through related indicators. One of them is catastrophic health expenditure. The indicator shows the proportion of families who have to spend more than 10% or 25% of their ability to pay(gross household income or total expenditure) on healthcare. As of 2015, 21.8% of households spent more than 10% of their income on healthcare services and 3.9% of families more than 25%. The percentages had sharply increased since 2003, when data began to be analyzed, but the increase started to slow down in 2010. The slowdown is attributable to policies to increase insurance coverage that reduced out-of-pocket payments for serious diseases including cancer and cardiovascular diseases. However, the proportion of families with catastrophic health expenditure in Korea is still the highest among the OECD countries.

Changes in the share of households facing catastrophic health expenditure in Korea; 2003~2015 (Unit: %)



Source: UN SDG database(https://unstats.un.org/sdgs/unsdg, retrieved on September 10, 2021)

The share of households facing catastrophic health expenditure of OECD countries (Unit: %)



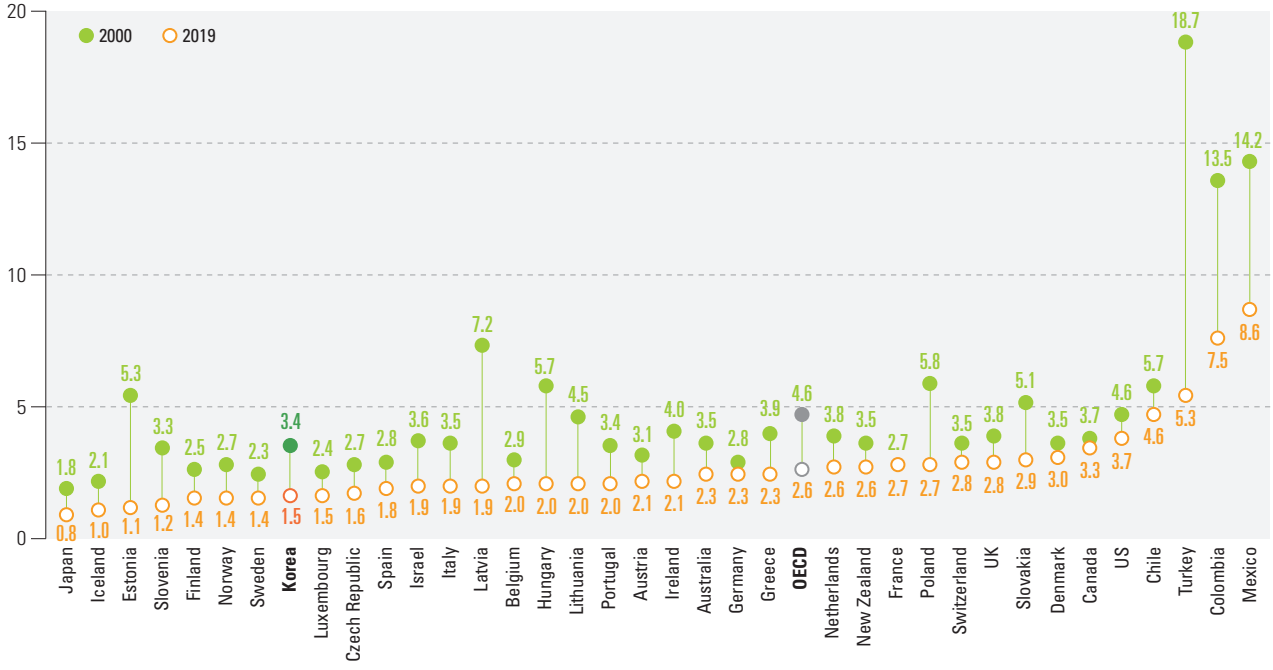
Source: UN SDG database(https://unstats.un.org/sdgs/unsdg, retrieved on September 10, 2021)
Note : The reference year of country ranges from 2010 to 2016 except for Switzerland(2004), Estonia(2007), and Latvia(2009).

Neonatal mortality rate is very low in Korea

Neonatal mortality is usually witnessed in low-income families. Quality antenatal and postpartum care and care services can improve the survival and health of newborns. In 2019, the mortality rate in Korea was 1.5 per 1,000 live births, lower than the OECD average of 2.6. This is a decrease of more than half compared to 3.4 in 2000. The only countries with a lower neonatal mortality rate than Korea are Japan(0.8), Iceland(1.0), Estonia(1.1), Slovenia(1.2), Finland(1.4), Norway(1.4), and Sweden(1.4). It is also commendable that Korea reports a low percentage of neonatal deaths in under-5 deaths, which means not many newborn babies in the nation

Neonatal mortality rate of OECD countries; 2000, 2019

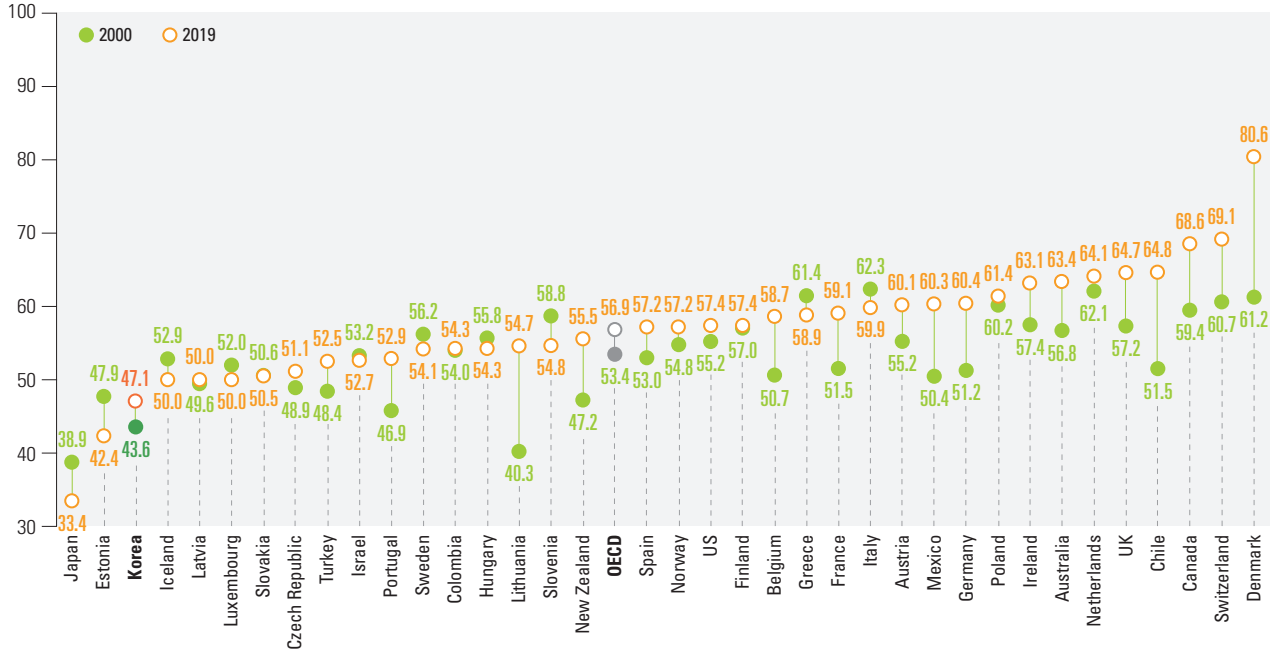
(Unit: per 1,000 live births)



Source: UN SDG database(https://unstats.un.org/sdgs/unsdg, retrieved on September 10, 2021)

Percentage of neonatal deaths in under-5 deaths of OECD countries; 2000, 2019

(Unit: %)



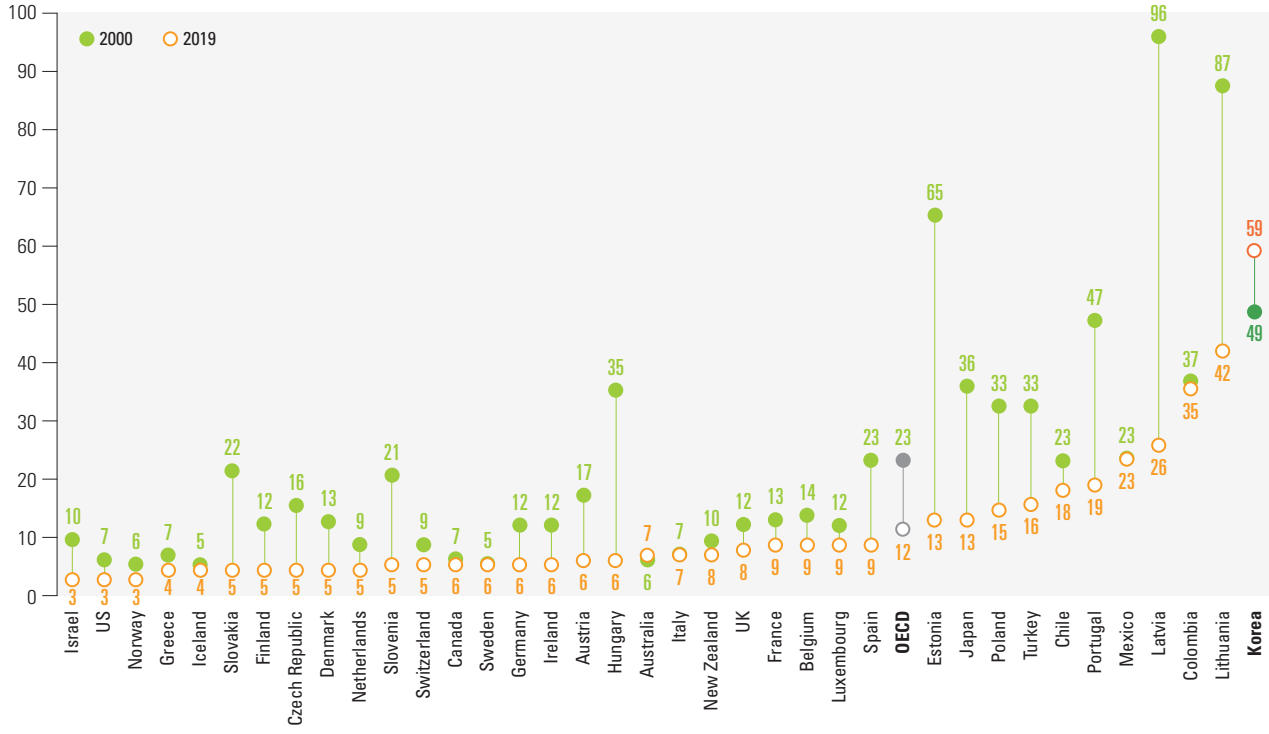
Source: UN SDG database(https://unstats.un.org/sdgs/unsdg, retrieved on September 10, 2021)

are exposed to risks. In Korea, only 47.1% of deaths under the age of 5 occurred during the neonatal period, the third lowest after Japan(33.4%) and Estonia(42.4%). However, unlike these countries, the number has risen by 3.5%p from 2000(43.6%) in Korea, requiring greater attention to risk management for newborns.

Unlike other OECD countries, tuberculosis cases are increasing in Korea

The international community, led by WHO, is implementing strategies to reduce tuberculosis patients and deaths with the goal of reducing the incidence rate by 50% by 2025 and 80% by 2030. Of course, while it is not easy for an individ-

Incidence of tuberculosis per 10,000 population of OECD countries; 2000, 2019 (Unit: No. of persons per 10,000)



Source: UN SDG database(https://unstats.un.org/sdgs/unsdg, retrieved on September 10, 2021)

ual country to achieve them on its own as they are global goals, the need to reduce the cases is very clear. However, the incidence of tuberculosis in Korea in 2019 was 59.0 per 10,000 people, an increase from 2000(49.0), which is also the highest among OECD countries. Considering that the incidence of tuberculosis has been decreasing in most OECD countries over the past 20 years, Korea needs more realistic and practical policies. At the current rate, it is hard to achieve the goal of the comprehensive tuberculosis control plan to reduce the tuberculosis incidence to 10 or less by 2030. In order to reduce the incidence of tuberculosis to the target levels and to realize a 'tuberculosis-free society and a healthy country', it is necessary to prepare solid guidelines that enable effective intervention in the entire process of prevention, early detection, transmission control, treatment, and follow-up management.

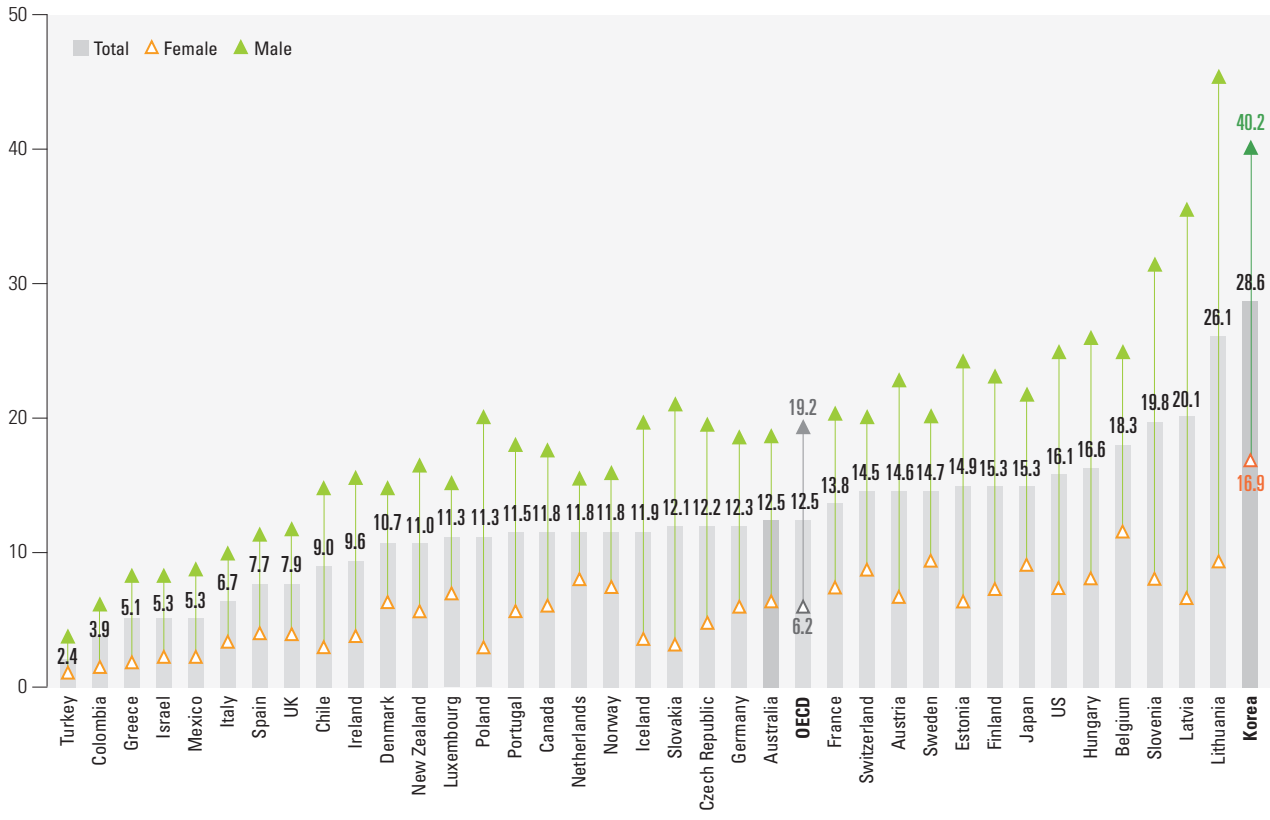
Suiside rate in Korea is the highest among OECD countries

Suicide is known to be highly related to mental illness(including depression and alcoholism), and it occurs impulsively during various crises in life, such as economic difficulties, deterioration of social relationships, and chronic diseases. In addition, it is also caused by bad experiences such as conflict, violence, abuse, loss, and feelings of isolation. High suicide rates indicate that many people are experiencing personal and social risk factors. In 2019, 28.6 people out of 100,000 killed themselves in Korea, the highest among OECD countries(average number is 12.5). Turkey(2.4), Colombia(3.9), Greece(5.1), Israel(5.3) and Mexico(5.3) have low suicide rates, while Korea, Lithuania(26.1), Latvia(20.1), Slovenia(19.8) and Belgium(18.3) have high rates. On the other hand, the suicide rate shows significant differences according to gender. On average, the suicide rate for men(19.2) is triple that of women(6.2) in OECD countries, but there are countries(Poland, Iceland, Slovakia, and Latvia) where the gender gap is more than five times. In Korea, the rate is 40.2 for men and 16.9 for women, which means men are 2.4 times more likely to kill themselves than their female counterparts.

The number in Korea used to be lower than the OECD average in 2000, but it started to increase rapidly in the mid to late 2000s and increased to 34.0 in 2010. Since then, it has turned to a decreasing trend, but it is still more than twice the OECD average. Suicide is a complex problem that can occur throughout the life cycle and in any region, which cannot be reduced through healthcare interventions alone. Moving forward, comprehensive and integrated efforts are required based on cooperation between various sectors such as schools, enterprises and media outlets.

Suicide rate of OECD countries, 2019

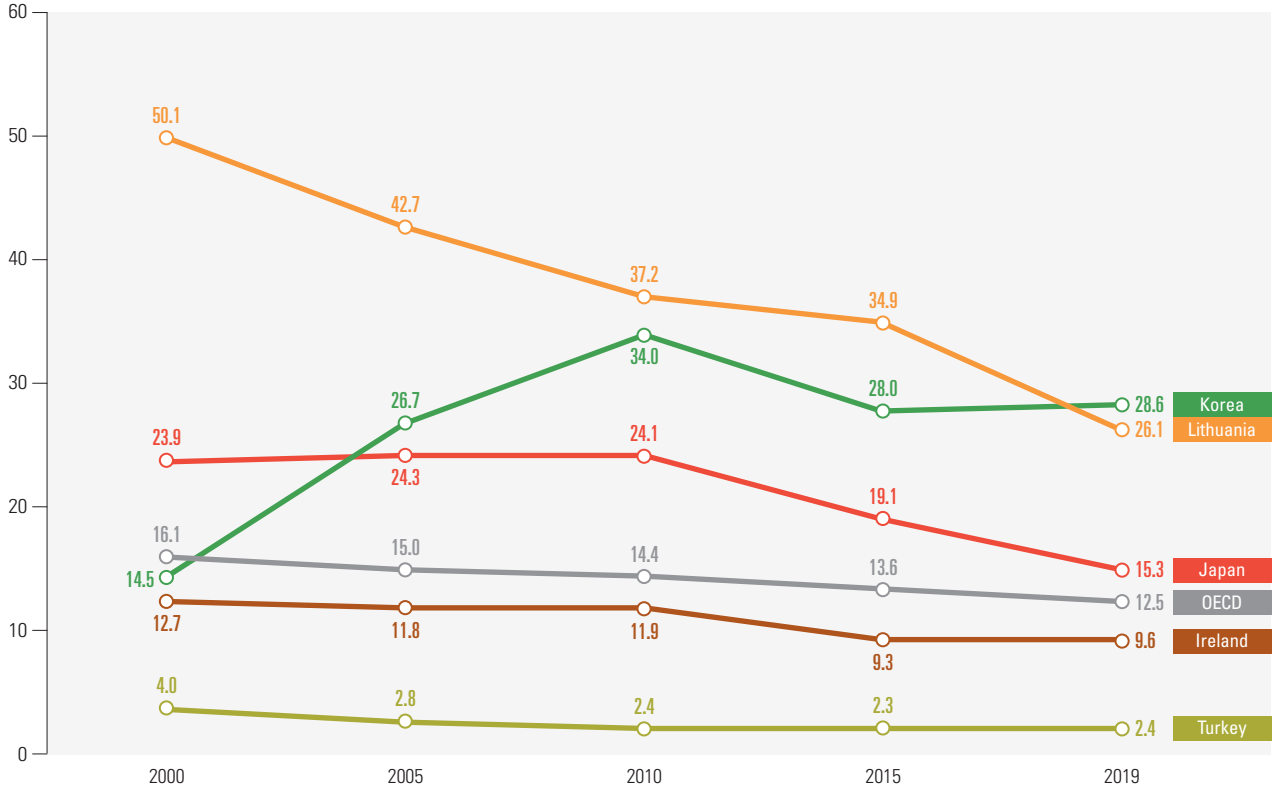
(Unit: No. of persons per 100,000)



Source: UN SDG database(https://unstats.un.org/sdgs/unsdg, retrieved on September 10, 2021)

Changes in suicide rate of major countries, 2000~2019

(Unit: No. of persons per 100,000)



Source: UN SDG database(https://unstats.un.org/sdgs/unsdg, retrieved on September 10, 2021)

4 QUALITY EDUCATION

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Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

SDG 4 aims to ensure quality education with a variety of contents throughout the life cycle. The COVID-19 Pandemic, which broke out in 2020, is having a significant impact on the education sector as well. Due to the restrictions on travel due to COVID-19, problems such as school closures, reduction of classes, and limitations of offline classes are being witnessed in many countries. In 30 OECD countries, the average number of days for school closures in 2020 was 54 days for elementary schools, 63 days for middle schools, and 67 days for high schools. In Korea, elementary schools and middle schools were closed for 59 days, high schools for 54 days. This limitation on educational opportunities threatens the basic right to education that students deserve, and as a result, many are concerned about the learning deficit. In addition, there are concerns about widening educational gaps according to household income level, region, disability and vulnerability.

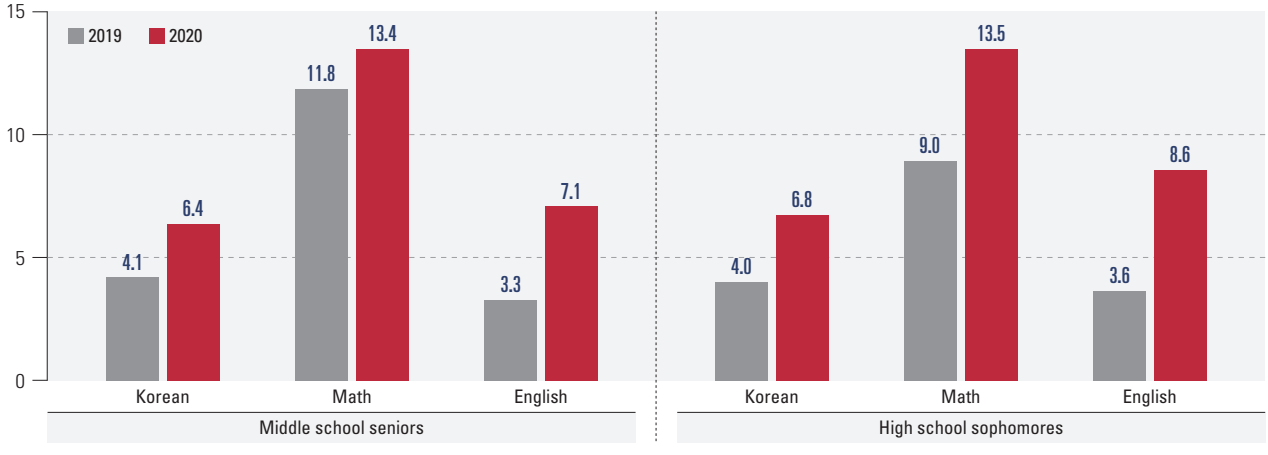
Another change that the Pandemic made in the education sector is the expansion of online classes in school education. However, students cannot benefit from the new form of classes if they do not have an adequate device(such as a desktop, tablet PC or cell phone), Internet connection and a private room or place. In addition, the learning gap may increase depending on the degree of support for learning by parents at home or the ICT capability of students. In this regard, students from low-income families or from vulnerable groups are likely to have difficulties in taking online classes. To address these problems, governments in each country are implementing various support policies, for example, by providing devices such as PCs/tablets, providing a flexible and individually tailored learning platform, expanding infrastructure for learners in remote areas, supporting students with disabilities, working with telecommunication companies, providing financial and other assistance(including study packages and vouchers) to help underprivileged students, providing special assistance to increase access to online learning for migrant and refugee students, and developing learning materials for minority language students.

Learning deficit caused by COVID-19 became a reality

The biggest concern raised in the education sector due to COVID-19 is the decline in students' academic ability caused by long-term learning deficits. The impact of COVID-19 on students' learning outcomes can be assessed through the results of the National Assessment of Educational Achievement conducted in November 2020 for middle school seniors and high school sophomores

According to the test results, the proportion of students who do not have basic academic skills(level 1) in the achievement level of each subject in 2020 significantly increased

The percentage of students below basic academic skills(Level 1); 2019, 2020 (Unit: %)

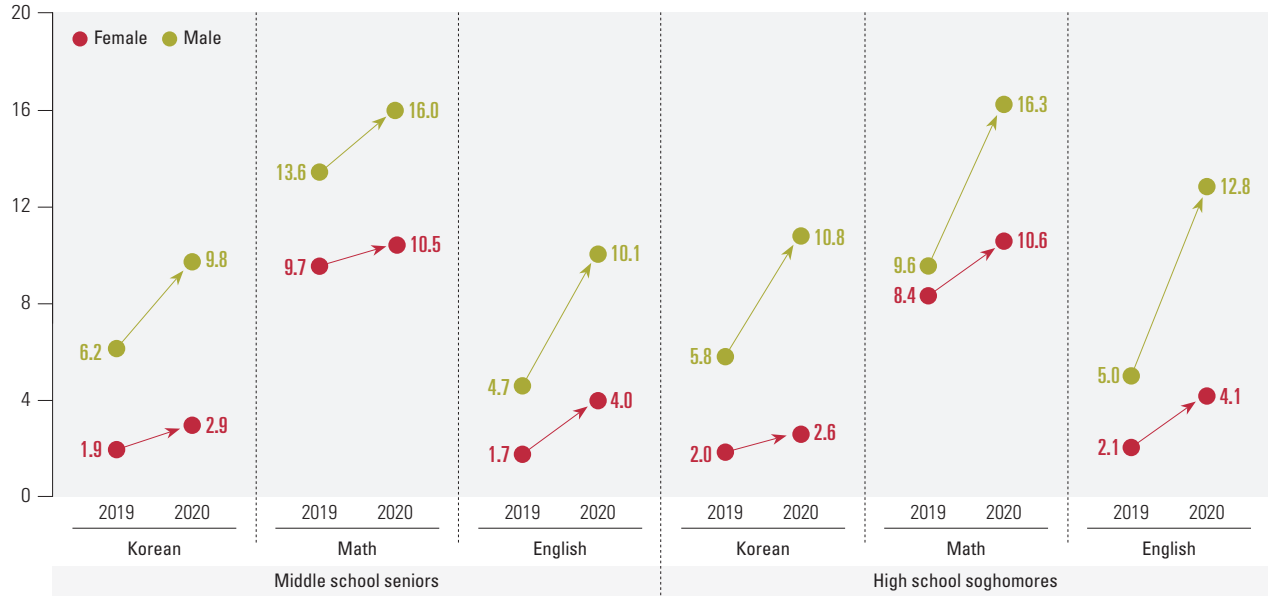


Source: Ministry of Education, Result of 2020 National Assessment of Educational Achievement and Response Strategies to Strengthen Learning Support, Press Release(June 1, 2021). p.2. <Table> was used to draw the graph.

Note 1: Achievement by subject is divided into four levels (Level 4: Excellent, Level 3: Average, Level 2: Basic, Level 1: Below Basic Academic Skills).

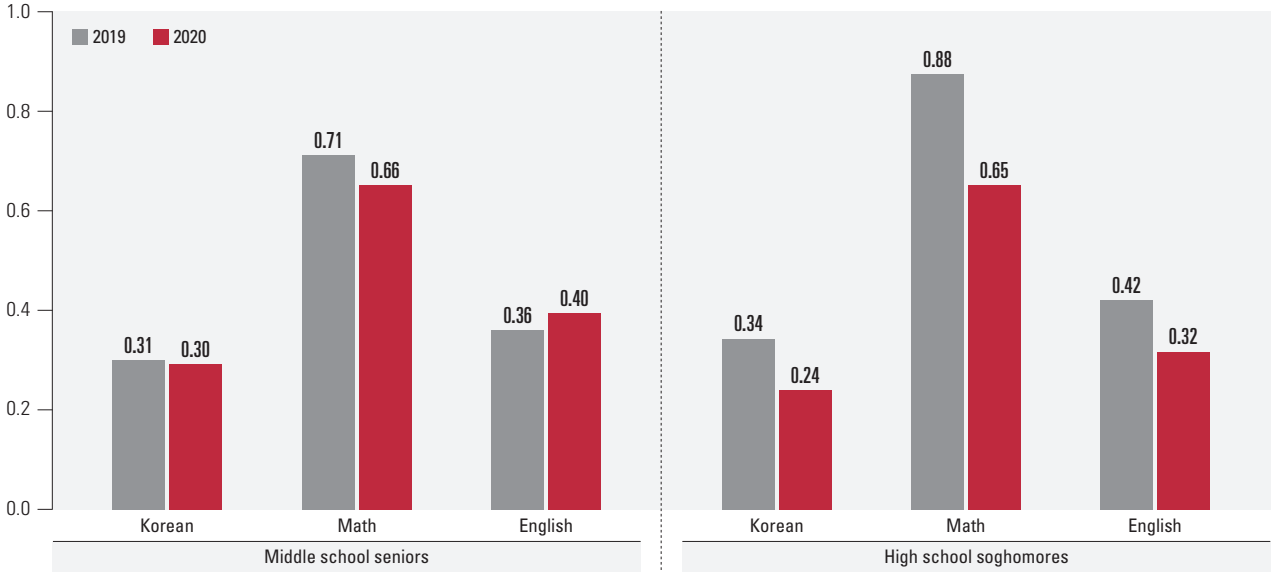
Note 2: There is no data that directly compares different countries in the impacts of COVID-19 on academic achievement. Some countries, such as the United States, Germany and Japan, did not conduct their national assessment of educational achievement in 2020 due to concerns about the spread of COVID-19.

The percentage of students below basic academic skills(Level 1) by gender; 2019, 2020 (Unit: %)



Source: Ministry of Education, Result of 2020 National Assessment of Educational Achievement and Response Strategies to Strengthen Learning Support, Press Release(June 1, 2021), Annex p.3, <Table> was used to draw the graph.
Note : It was a sample survey, and the figures are estimates of the population.

Gender parity index for the percentage of students below basic academic skills(Level 1); 2019, 2020



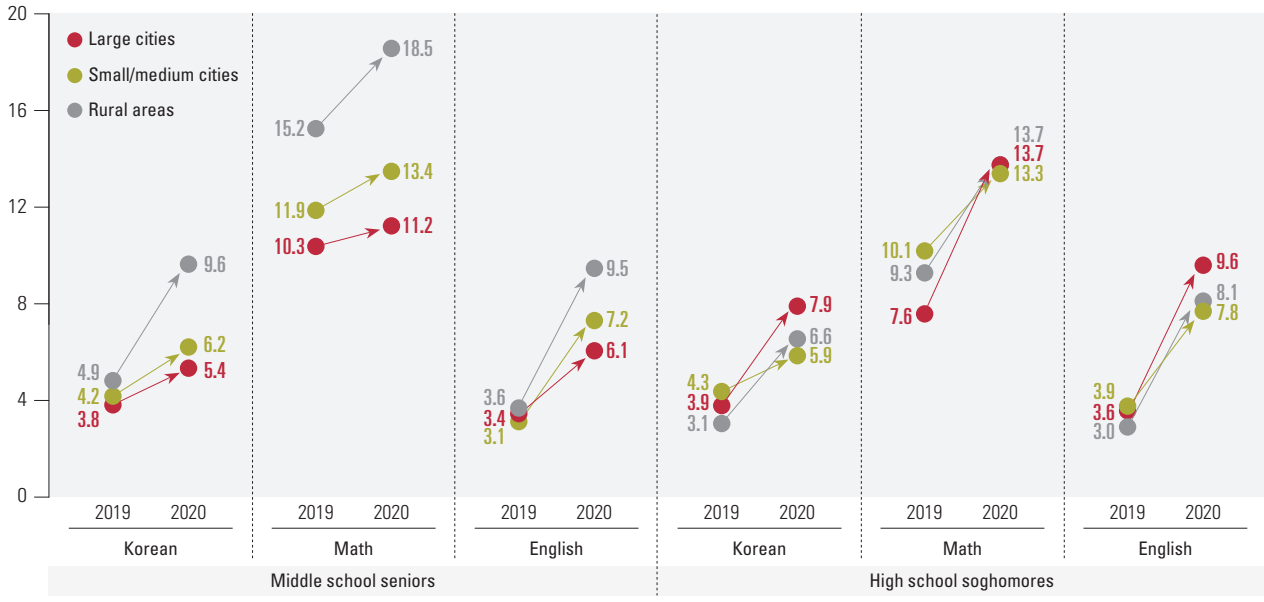
Source: Ministry of Education, Result of 2020 National Assessment of Educational Achievement and Response Strategies to Strengthen Learning Support, Press Release(June 1, 2021) was used to draw the graph.
Note : The closer the Gender parity index(The percentage of female students at level 1 ÷ The percentage of male students at level 1) is to 1, the smaller the disparity is between the two groups.

compared to the previous year in all subjects except for mathematics among middle school seniors. In particular, the percentage of Level 1 students in English increased more than those in Korean and mathematics among both middle and high schoolers. The proportion of Level 1 students in English among middle school seniors increased by 3.8%p from 2019, and high school sophomores by 5.0 percentage points. This result shows that students are actually suffering from the learning deficit due to COVID-19.

Growing gender gap in academic achievement

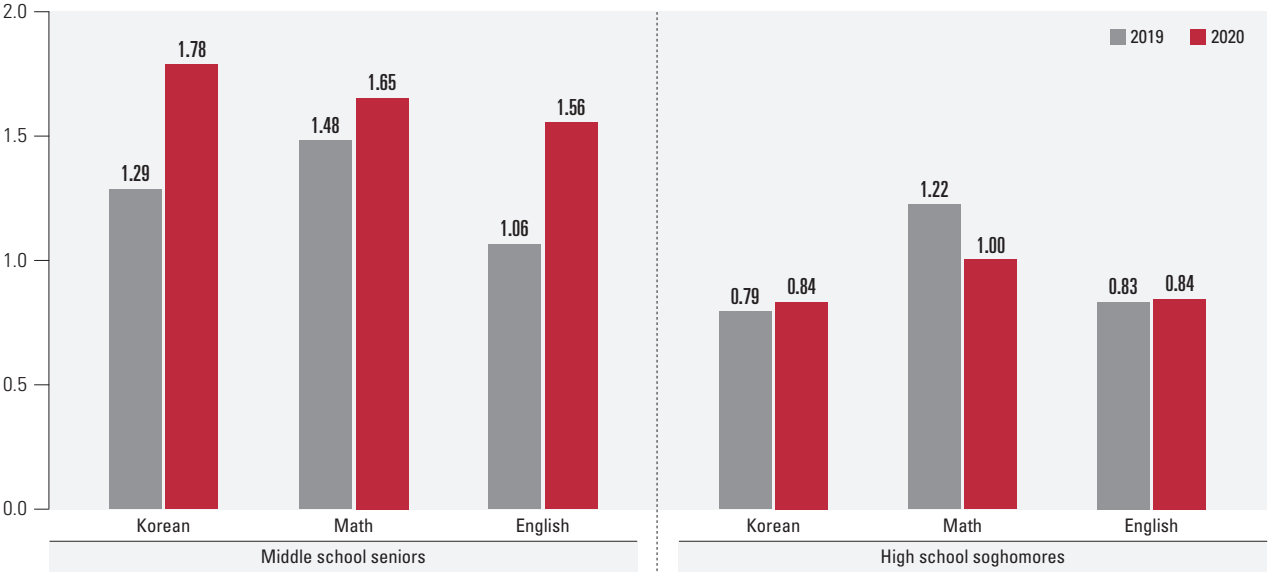
SDG 4 set the target of eliminating gender disparities in education and ensuring equal access to education for the vulnerable, including persons with disabilities and indigenous

The percentage of students below basic academic skills(Level 1) by regional size; 2019, 2020 (Unit: %)



Source: Korea Institute for Curriculum and Evaluation, Result Reports of 2019 and 2020 National Assessment of Educational Achievement were used to draw the graph. For details, please refer to Min-hee Seo, Wan-su Kim, Mi-rim Kim, Jeong-ah Han, Yun-hee Son(2020a: 32, 2020b: 33) and Nam-ok Koo, Mi-rim Kim, So-ra Lee, Min-ho Kwak(2021a: 32, 2021b: 33).

Parity index between large cities and rural areas for the percentage of students below basic academic skills(Level 1); 2019, 2020



Source: Korea Institute for Curriculum and Evaluation, Result Reports of 2019 and 2020 National Assessment of Educational Achievement were used to draw the graph.
Note : The closer the Large city-rural area parity index(The percentage of students below basic academic skills in Eup/Myeon ÷ The percentage of students below basic academic skills in large cities) is to 1, the smaller the disparity is between the two groups.

peoples(4.5), to ensure inclusive and equitable quality education for all. Indicators needed to monitor the target include parity indices(female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected).

The National Assessment of Educational Achievement also illustrates the level of academic achievement by gender and regional size. In terms of gender, the proportion of boys who did not achieve basic academic skills was higher than that of girls in all subjects in both middle and high school groups, and the increase rate was also higher for male students than their female counterparts compared to the previous year. In particular, the proportion of male students at level 1 in English in 2020 increased significantly from 2019.

To be specific, the percentage of male students at Level 1 in English among middle school seniors increased by 5.4%p from 4.7% in 2019 to 10.1% in 2020, while the number increased only by 2.3%p from 1.7% to 4.0% for female students. In the case of high school sophomores, the proportion of male students jumped by 7.8%p from 5.0% in 2019 to 12.8% in 2020, while that of female students increased merely by 2.0%p from 2.1% to 4.1%. From the perspective of parity index, gender disparity widened from 2019 to 2020, especially in Korean and English rather than mathematics.

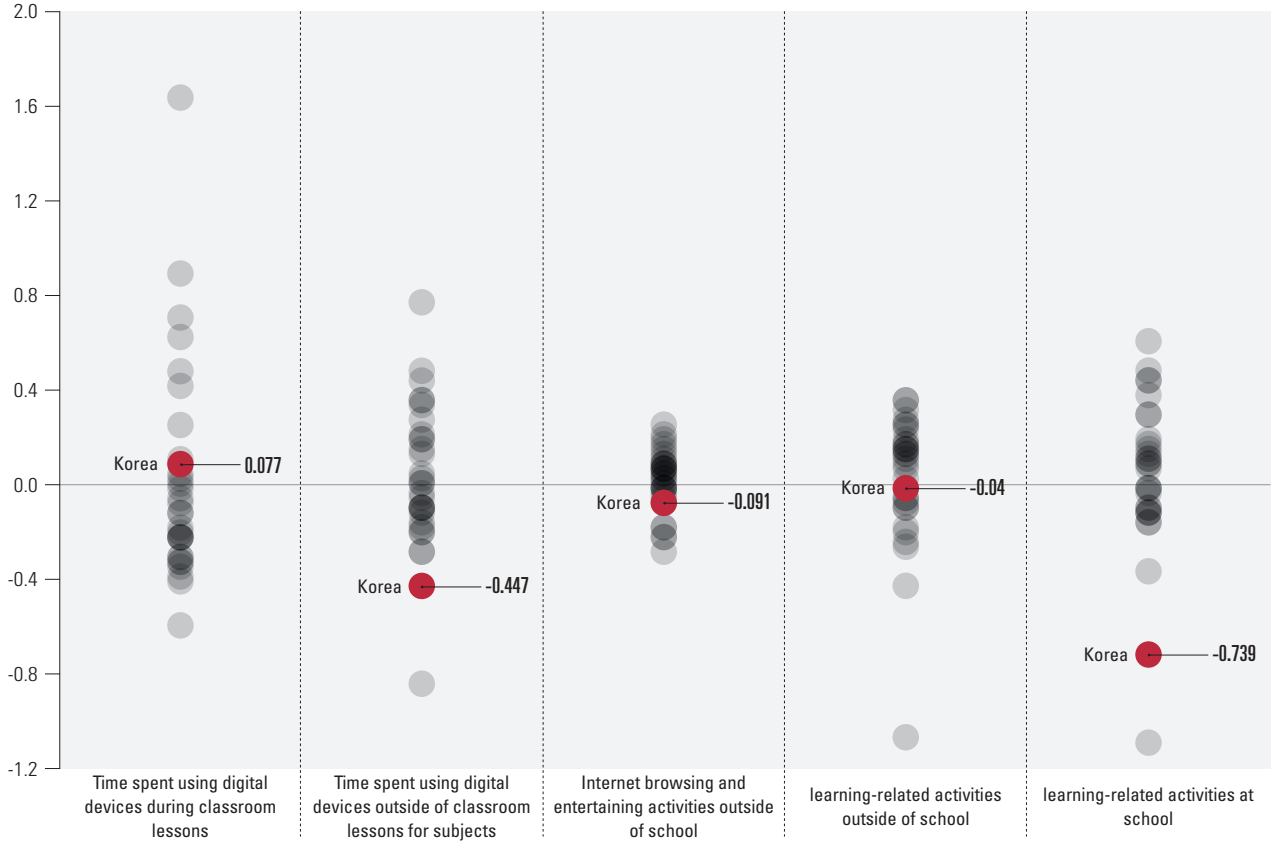
The gap is growing in academic achievement among middle schoolers living in different regions

The disparity in academic achievement by regional size shows different trends in middle school seniors and high school sophomores. In the case of the middle schooler group, the proportion of students with low academic skills in 2020 increased relatively significantly from 2019 in smaller regions, whereas the percentage grew bigger among the high schooler group who are living in large cities during the same period. The largest regional difference among middle school seniors in 2020 was found in English at 7.3%p with 11.2% for large cities and 18.5% for rural areas while the gaps among the high schoolers living in different regions were not particularly significant in a specific subject. The regional disparity was large among middle school seniors in all subjects in 2020, and saw increases from 2019. Meanwhile, no significant regional gaps were found among high school sophomores in all subjects in 2020 with small changes compared to 2019. Considering that students are allocated to a middle school near to their house, the widening disparity among middle schoolers living in large cities and rural areas might be a demonstration of growing gaps in their socio-economic status, which deserves our attention.

Low usage of ICT and not very favorable attitudes towards using computers among Korean students

In the Programme for International Student Assessment(PISA) 2018 ICT Familiarity Survey, the usage of digital devices among students can be found in two questions(Time spent using digital devices during classroom lessons, Time spent using digital devices outside of classroom lessons for subjects) in the 'Time spent using devices at school' section and three

Usage of digital devices of OECD countries(Standardized index); 2018



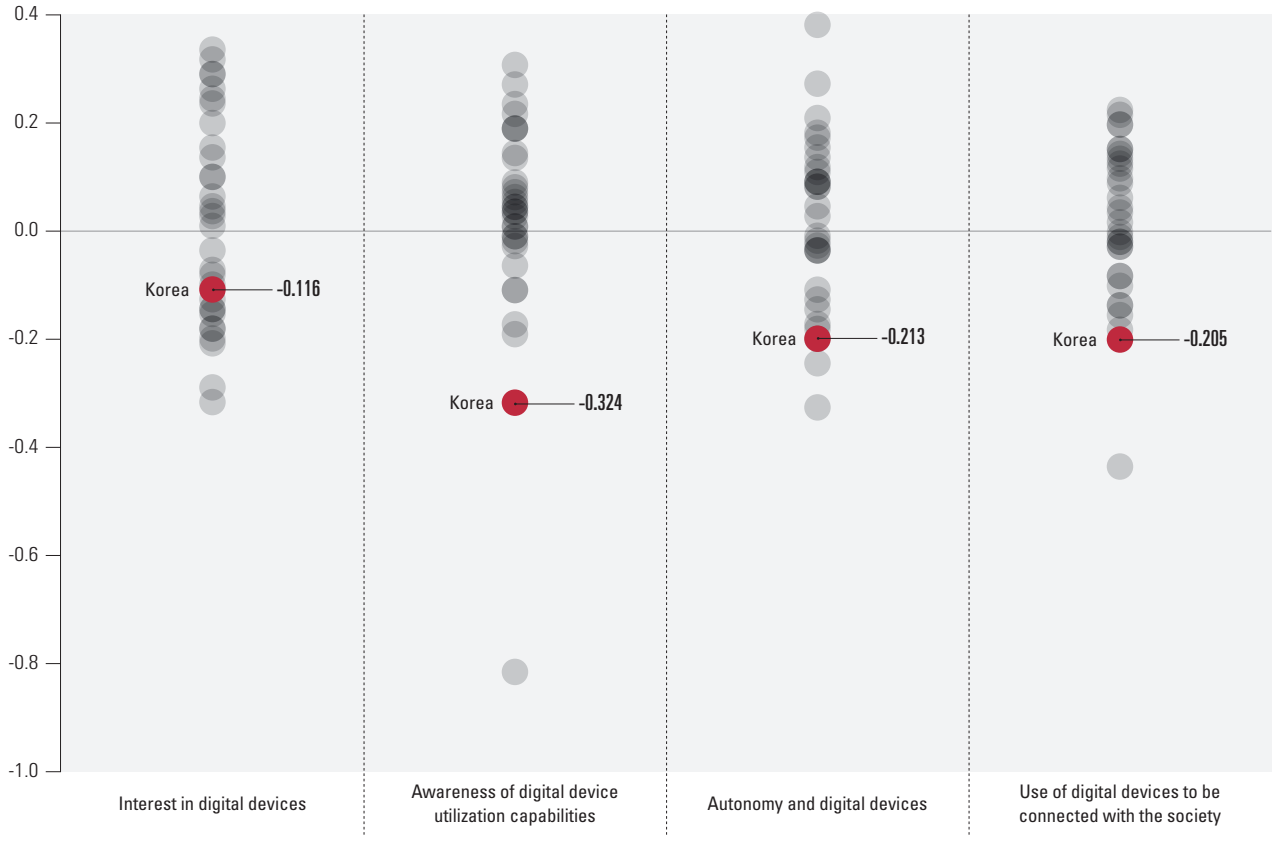
Source: Hye-sook Kim, Anna Shin, Han-seong Kim(2020) was used to draw the graph.
Note : The figures were standardized to have an OECD mean of 0 and a standard deviation of 1.

questions(Internet browsing and entertaining activities outside of school, learning-related activities outside of school, learning-related activities at school) in the 'Frequency of use of digital devices' section. Their attitudes towards using computers can be seen in 21 questions in 4 sections including 'Interest in digital devices(6 questions)', 'Awareness of digital device utilization capabilities(5 questions)', 'Autonomy and digital devices(5 questions)', 'Use of digital devices to be connected with the society(5 questions)' (Hye-sook Kim, Anna Shin, Han-seong Kim, 2020:12~13).

According to the survey, the level of digital device use and attitude toward using computers of Korean students are at the bottom in most sections. As for the usage of digital devices, the standardized index calculated for country-by-country comparison demonstrates that Korean students report scores lower than the OECD average of zero in all question items except for 'Time spent using digital devices during classroom lessons'. In particular, Korean students ranked themselves at the 30th(out of 31 countries) and the 29th(out of 30 countries) respectively for questions of 'Time spent using digital devices outside of classroom lessons for subjects(-0.447)' and 'learning-related activities at school(-0.739)'. The same goes for attitudes toward digital device use. As shown in the graph, Korean students' attitudes toward digital device use are lower than the OECD average of zero in all areas. In particular, they are ranked at the 31st (out of 32 countries), 29th(out of 31 countries) and 30th(out of 31 countries) respectively for questions of 'Awareness of digital device utilization capabilities(-0.324)', 'Autonomy and digital devices(-0.213)' and 'Use of digital devices to be connected with the society(-0.205)'. Korea has a well-established ICT infrastructure for the educational purpose including computers and Internet connection in elementary and middle schools compared to other countries(Statistics Research Institute, 2021), but frequency and capacity of using digital devices among Korean students are lower than other OECD countries.

With the rapid development of science and technology as well as the expansion of online classes due to COVID-19, digital capacity is being emphasized as a future key competency that students must have. Continuous efforts are required to create a good condition for online classes, to use digital devices for learning purposes at and outside of school, and to improve students' digital competencies.

Attitudes toward digital device use of OECD countries(Standardized index); 2018



Source: Hye-sook Kim, Anna Shin, Han-seong Kim(2020) was used to draw the graph.
Note : The figures were standardized to have an OECD mean of 0 and a standard deviation of 1.

5 GENDER EQUALITY

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Achieve gender equality and empower all women and girls

SDG 5 aims to achieve gender equality in politics, society, economy, and daily life by empowering women and girls. Gender equality has been promoted as an international development cooperation goal under the slogan of "promoting gender equality and empowering women"' even before it was adopted to be part of SDGs. Although the previous efforts expanded girls' education worldwide, there were still limitations. Accordingly, the SDG 5 was adopted to "achieve gender equality and empower all women and girls," with its targets to prevent violence against women, to value care work, and ensure women's rights and opportunities. It is important to strengthen cooperation with other SDGs as SDG 5 is highly related to other goals, such as Goal 3(Health), Goal 4(Education), Goal 8(Job), Goal 10(Inequality), and Goal 16(Human Rights, Justice, Peace).

Korea reported a poor Gender Gap Index(GGI), coming in the 102nd place out of 152 countries(as of 2021), which measures the gender gap in terms of distribution and use of resources to enhance national competitiveness, while it ranked 11th among 189 countries(as of 2020) in UNDP's Gender Inequality Index(GII), an indicator of the level of inequality in human resource development. Recently, with the spread of the MeToo movement in Korea, a growing number of people are sensitive to violence against women. However, women are still underrepresented in politics, economy and administration, and they are more likely to take care of all of the domestic work after getting married.

Intimate partner violence increased from 10 years ago

Intimate Partner Violence(IPV) is abuse that occurs in a romantic or family relationship, and it is widely used around the world as an indicator of the level of violence against women. In general, it refers to dating violence, stalking, and digital sexual violence by current or former spouses or dating partenrs. Since crime statistics based on close relationships are not officially produced in Korea, IPV can be found through the Supreme Prosecutor's Office's crime analysis.

South Korea saw 50,902 crimes in 2019 in which the offender is a partner or a family member living together with the victim, accounting for 5.1% of the total crimes that violate the criminal law, a 2.5%p increase from 2009. The number decreased from 28,733(2.6%) in 2009 to 21,887(2.3%) in 2011, and then gradually increased again. Of the IPV crimes in 2019, 13,626 cases were committed by dating partners and 37,276 by relatives living together. The share of the former did not change a lot from 1.2% in 2009 to 1.4% in 2019, but the proportion of the crimes committed by relatives increased by 2.4%p from 1.4% to 3.8% during the same period.

Different types of IPV crimes are witnessed more frequently among different types of offenders. Sexual violence crimes are committed more frequently by dating partners rather than relatives. The number sexual violence occured in 2019 amounted to 1,206, which is more than three times larger than 2009 (364 cases), taking up 3.6% of the total sexual violence crimes. The number also more than doubled the crimes committed by relatives(521 cases, 1.6%). On the other hand, in the case of violent crimes, including murder, robbery, arson, and sexual violence, 31,780 offenders(10.2%) were the relatives of the victims as of 2019, which is four times more than the number of dating partners of 7,495 people(2.4%). This is an increase of 2.6 times compared to 2009. In summary, sexual violence offenders are more likely to be dating partners, and violent offenders other than sexual assault offenders are more likely to be relatives living together.

20.7% of women experienced violence by their current spouse in their lifetime

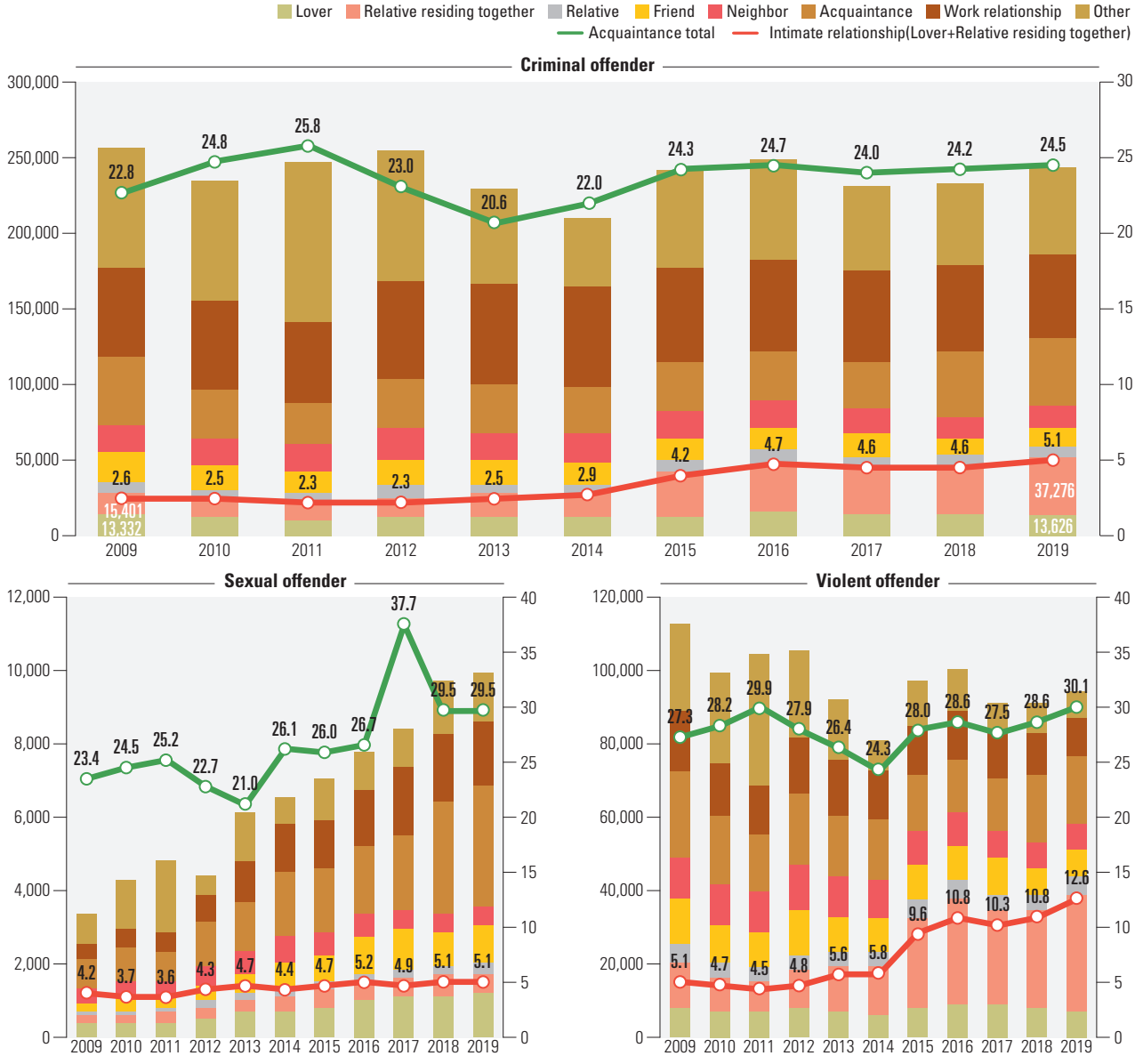
According to the 2019 Domestic Violence Survey Report by the Ministry of Gender Equality and Family, 20.7% of women experienced violence by their current spouse in their lifetime. By type of violence, emotional violence was the highest at 17.8%, and sexual, physical, and economic violence also took up 7.2%, 5.4%, and 3.2% respectively. The share of men who have the same experience is 13.9%, which is 6.8%p lower than their female counterparts. The emotional violence against men accounted for 13.1%, and physical, sexual, and economic violence 2.4%, 1.3%, and 1.2%, all of which are lower than what women experienced. Among the women who were divorced or separated from their spouse, emotional violence(66.1%) was the most common, followed by physical violence(57.4%), economic violence(42.2%), and sexual violence(27.3%). All the numbers are higher than those of women living with their partner, indicating that domestic violence is associated with divorce or separation.

Time spent on unpaid domestic work by married women remains the longest

Statistics Korea has been producing basic data that can measure people's lifestyle and quality of life by conducting the

Crimes in intimate relationship; 2009~2019

(Unit: No. of persons, %)



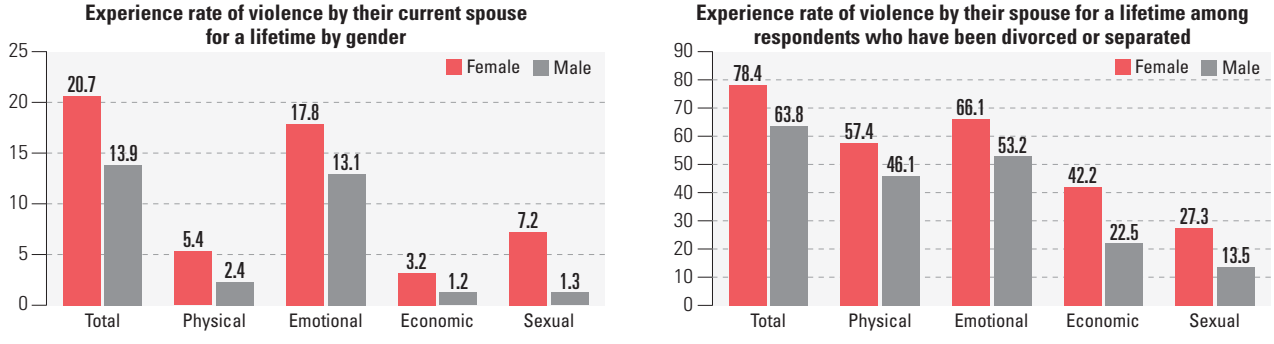
Source: Supreme Prosecutors' Office, Crime Analysis, each year

Note 1: The relationship between the offender and the victim is classified into different categories based on the suspect resource table, such as the state, public official, employer, employee, co-worker, friend, lover, relative living together, other relatives, counterparty of a transaction, neighbor, acquaintance, other person, others, and unknown. Among them, the employer, employee, co-worker, and counterparty were reclassified as those in a business relationship, and the rest as a personal relationship except for the state, public officials, others, and unknown.

Note 2: The supreme Prosecutor's Office collects statistics based on the Criminal Act and Special Act, then designs the crime names and publishes the statistics. Sexual assault crimes were classified as rape until 2013. For more information, see Supreme Prosecutors' Office(2019).

Experience rate of violence by a spouse for a lifetime ; 2019

(Unit: %)



Sourse: Ministry of Gender and Family, 2019 Domestic Violence Survey Report

Note : Experience rate of violence by their spouse for a lifetime among respondents who have been divorced or separated means that they experienced any of the violent behaviors of each type after or before divorced or separated from their spouse.

Time Use Survey since 1999. The Survey presents the following data on time spent on domestic work by men or women, and married or unmarried persons.

First, by gender, women aged 10 and older spent 2 hours 58 minutes on unpaid work at home as of 2019, 2 hours and 6 minutes longer than men(52 minutes). It consists of 2 hours and 25 minutes of doing domestic work and 33 minutes of taking care of family members, accounting for 12.4% of the 24 hours. By gender and age, for men, it increased slightly compared to 1999 in all age groups, and for women, it decreased slightly.

The difference in unpaid domestic and care work hours also varies according to marital status. Unmarried women spent 1 hour and 4 minutes on unpaid domestic and care work as of 2019, which is relatively higher than that of men, 35 minutes, but the difference is not large. However, after being married, women's unpaid domestic and care hours increased significantly to 3 hours and 45 minutes, while married men's unpaid domestic and care hours increased only slightly to 1 hour and 4 minutes. In other words, the gender gap for unpaid domestic anc care work for singles was only 29 minutes, while it was 2 hours and 41 minutes for the married.

It is only recently that the value of unpaid work has been evaluated in Korea. According to the 2019 data, the first official evaluation on unpaid work in household by Statistics Korea, the entire domestic work hours were valued at KRW 490.919 trillion, of which KRW 356 trillion was evaluated for women's unpaid household work. In other words, women account for 72.5% of the total value of unpaid housework hours. Although the contribution of men is also increasing due to the increase in men's unpaid household work, the gender gap is still wide.

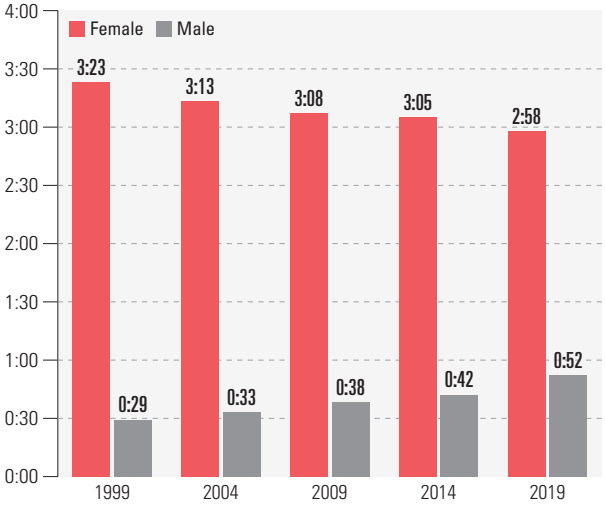
Women remain underrepresented in the economic and political fields

Under the male-centered decision-making structure, Korean women are underrepresented in the political, administrative,

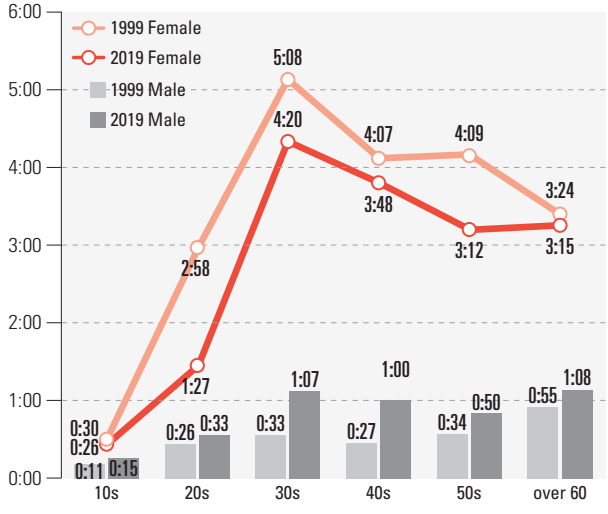
Unpaid domestic and care work hours, 1999~2019

(Unit: hours:minutes)

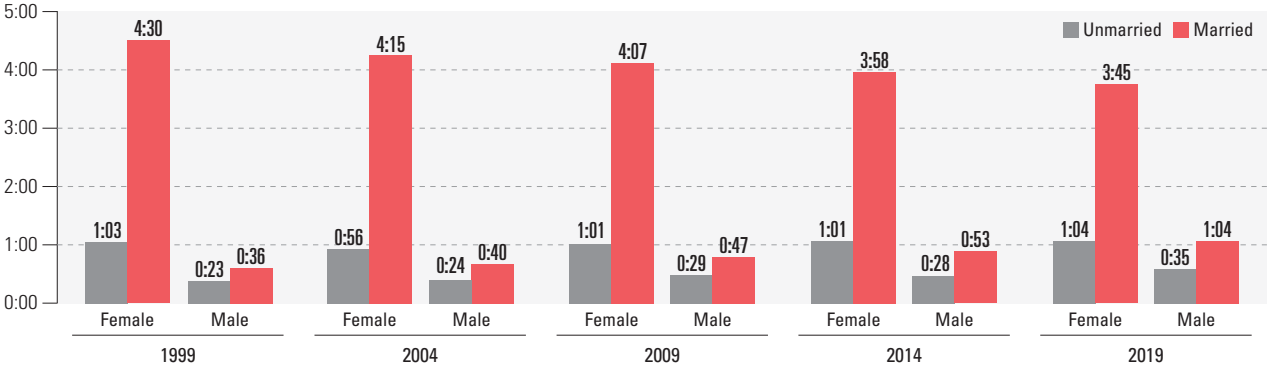
Unpaid domestic and care work hours of aged 10 and older by gender



Unpaid domestic and care work hours by age and gender



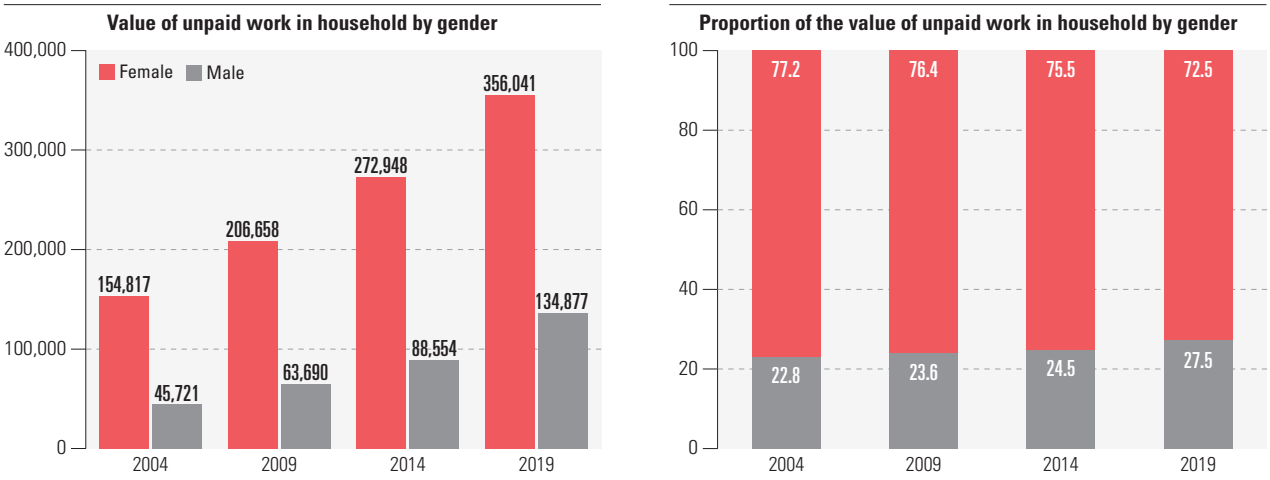
Unpaid domestic and care work hours by marriage status and gender



Sourse: Statistics Korea, Time Use Survey, each year

Evaluation of unpaid work in household: 2004~2019

(Units: KRW billion, %)



Sourse: Statistics Korea, 2019 Household Production Satellite Account Press Release (June 21, 2021.)
Note : Volunteer work hours is included in the unpaid work in household.

public and private decision-making processes, which reduces their influence in all aspects of social life. In 2020, women accounted for 15.7% of economic decision-makers. The share decreased from 11.1% in 2014 to 9.8% in 2016 and has been gradually increasing.

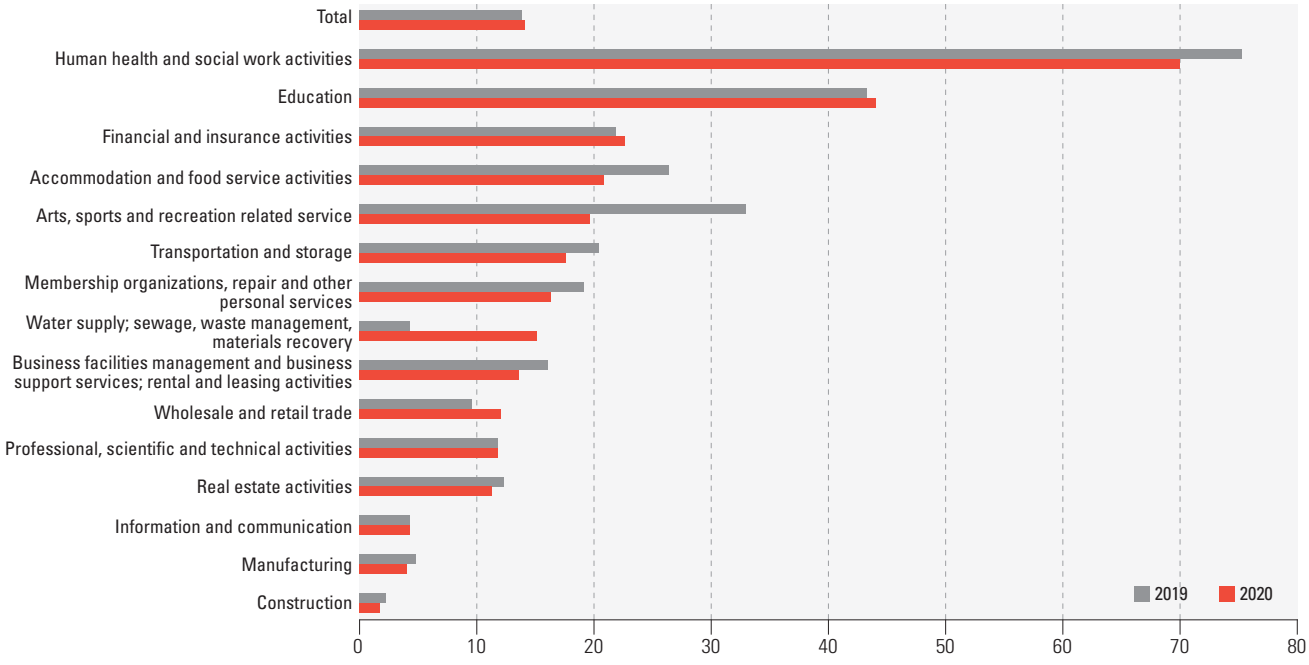
By sector, health and social work activities, and education, where the rate of female employees is high, see a relatively high proportion of female managers. In particular, as of 2020, the share in the health and social work activities stood at 70.1%, and in the education at 44.0%. Other industries with a high proportion of female managers include financial and insurance activities(22.6%), and accommodation and food service activities(20.9%).

Among OECD countries, Latvia had the highest rate of 45.8% as of 2019. Korea is in the lower ranks. The countries with more than 40% female managers are Latvia(45.8%), Poland(43.1%), Iceland(41.9%), Costa Rica(41.0%), USA(40.7%), Sweden(40.3%) and Slovenia(40.1%). The share of female decision-makers in Turkey, Japan, and Korea, is as low as about 10%.

Female share of seats in national parliaments is a representative indicator of political representation and is often

Female manager rate by Industry, 2019~2020

(Units: %)

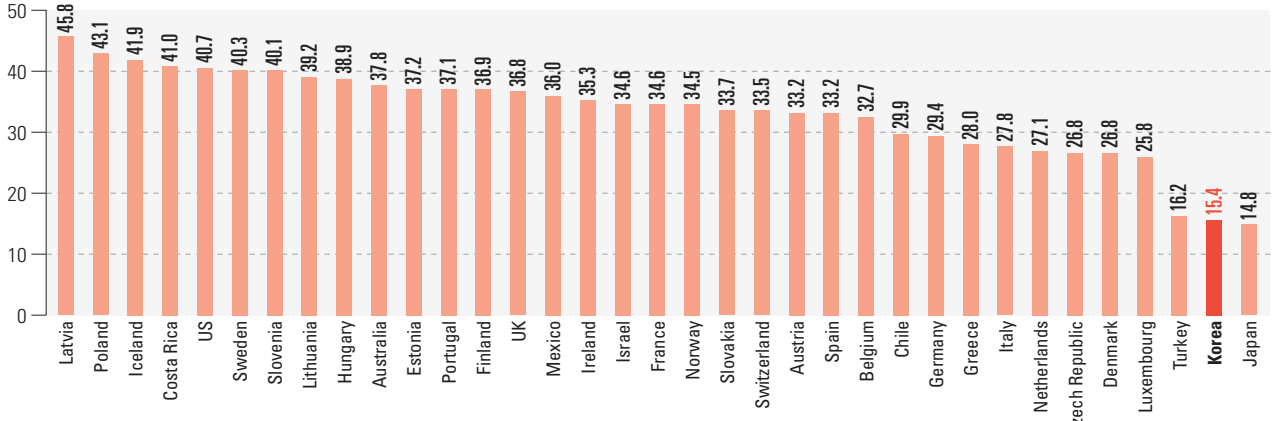


Sourse: Statistics Korea, Economically active population survey, each year
Note : Female manager rate by Industry is based on the raw data of Economically active population survey

used as an index of gender equality in the international community. Female share of seats in national parliaments in Korea stands at 19.0% as of January 2021, and has been steadily increasing since the 2000 General Election. The number was very low at 5.9% in the 16th election(2000), but rose sharply to 13.0% in the 17th(2004), because the Political Party Law was amended to allocate 50% of quota to female proportional representation candidates. Since then, the proportion of women in parliament has been on the rise, but only a gradual increase. The share in Korea is one of the lowest among OECD countries. Only Japan(9.9%), Hungary(12.6%), Turkey(17.3%) and Colombia(18.8%) were lower than Korea. New Zealand has the highest rate at 48.3%, followed by Mexico(48.2%), Sweden(47.0%), Finland(46.0%), Costa Rica(45.6%), Norway(44.4%), Spain(44.0%), Switzerland(42.0%), Belgium(42.0%) and Portugal(40.0%).

Female manager rate of OECD countries; 2019

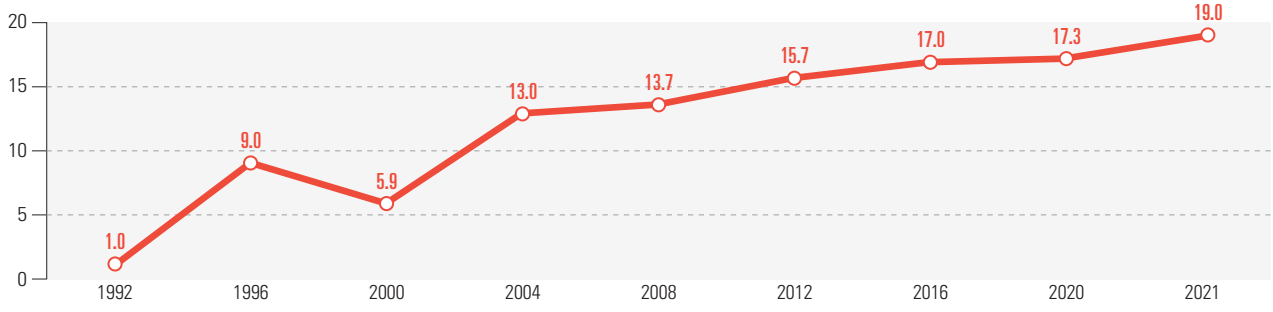
(Units: %)



Sourse: UNSD, 2019 Economically active population survey by country
Note : Israel is based on 2017 and Australia is based on 2018

Female share of seats in national parliaments; 1992~2021

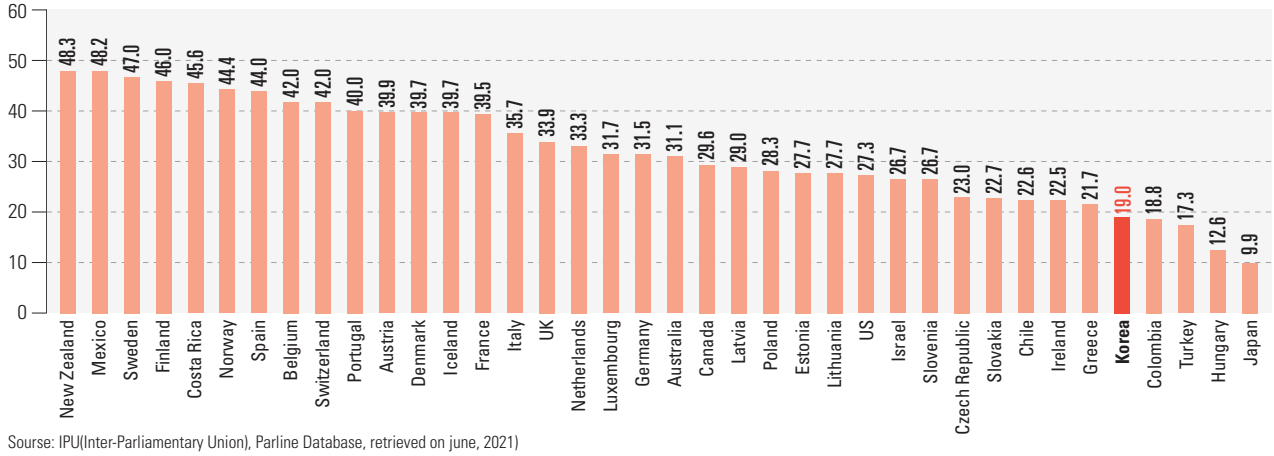
(Unit: %)



Sourse: National election commission, A general overview of the national assembly election

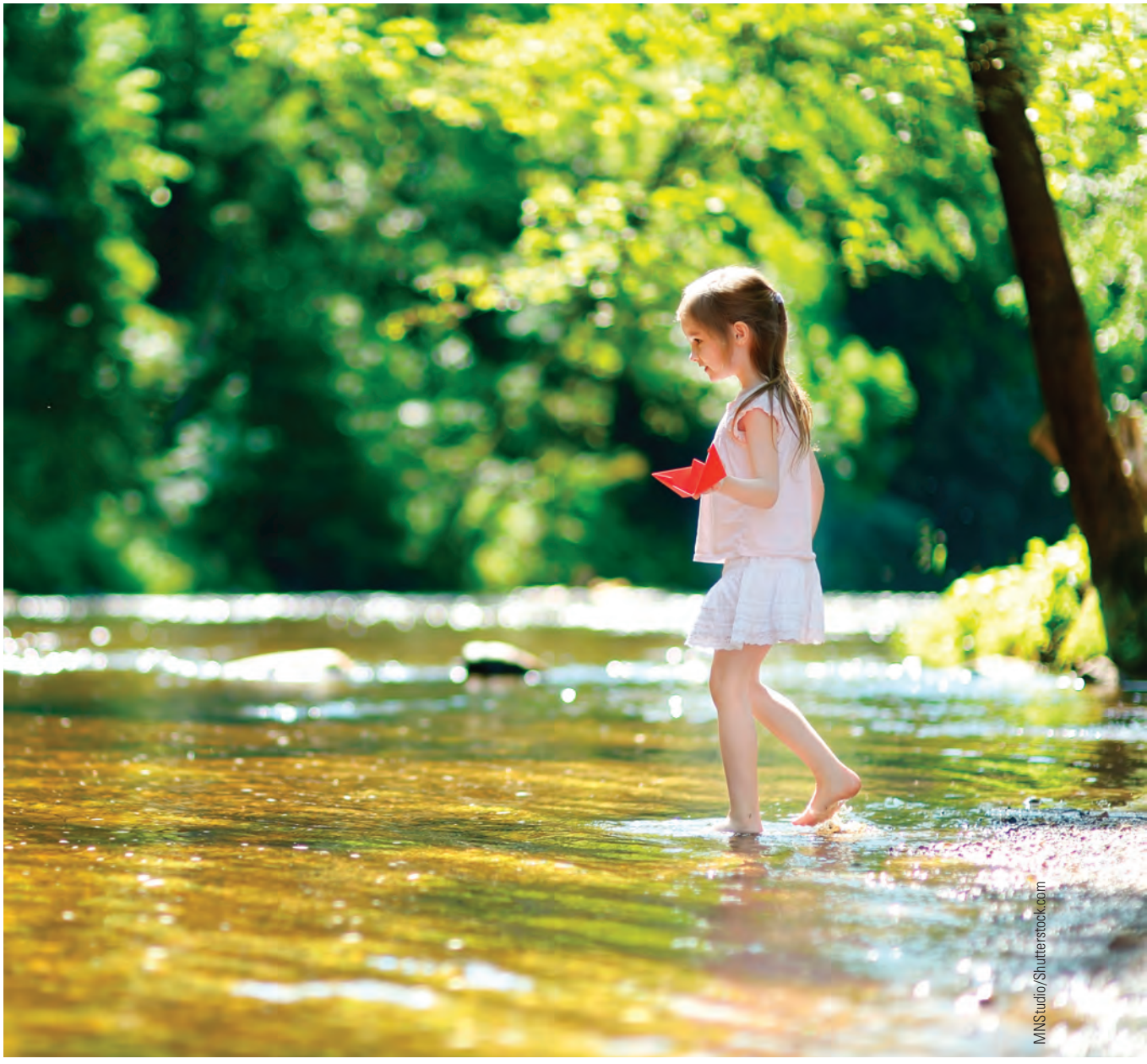
Female share of seats in national parliaments of OECD countries; 2021

(Units: %)



Sourse: IPU(Inter-Parliamentary Union), Parline Database, retrieved on june, 2021)

6 CLEAN WATER AND SANITATION



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Ensure availability and sustainable management of water and sanitation for all

SDG 6 aims to ensure safe drinking water and sanitation facilities for all, improve water quality and establish an integrated water resources management system. Korea laid a legal basis for the establishment of a national water management plan and a comprehensive watershed management plan by revising the Government Organization Act and enacting the Framework Act on Water Management. The penetration rate of drinking water supply and sanitation services has reached nearly 100%, and the sewage penetration rate is also at 94.3% as of 2019. Efforts are also being made to resolve the imbalance of benefits between urban and rural areas.

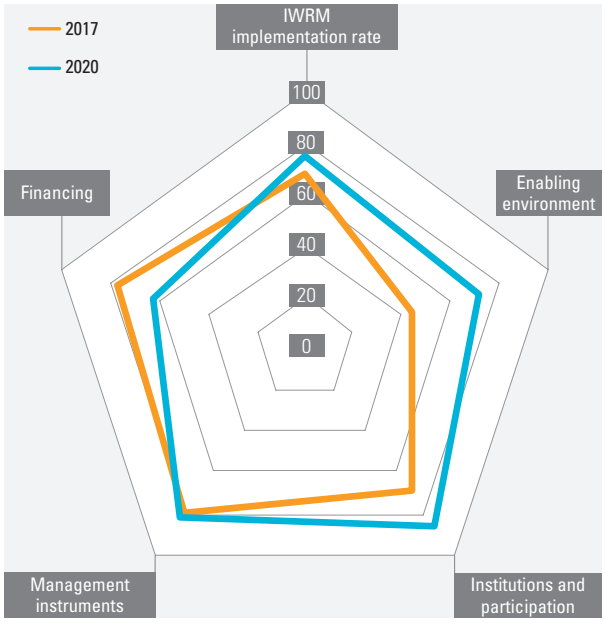
The water quality of major rivers, lakes and swamps has been improved due to intensive investment and management of environmental infrastructure. However, non-degradable hazardous substances are discharged from various types of nonpoint pollution sources due to climate change, which requires watershed-based water quality management. Efforts are also needed to restore ecological rivers damaged by environmental changes such as climate change and urbanization, to improve river structures for restoration of aquatic ecosystem connectivity, to build waterside ecological belts, and to strengthen designation and management of wetlands. In addition, the water use ratio is high while the amount of available water resources is limited, meaning that water use in Korea is not sustainable, which requires steady water demand management and water source diversification policies.

People's expectations for water welfare and equality are growing due to environmental changes caused by climate change and improved living standards, and they demand sustainable use and development of water resources and healthy, safe water management. It is important to prevent floods in urban areas that can be caused by climate change, secure stable water supply, provide equal water and sewage services for all, restore the health of the water ecosystem both for Nature and humans, and establish an integrated water management governance system that can be joined by many different stakeholders.

IWRM implementation score jumped to High

The 2020 Integrated Water Resources Management(IWRM) implementation data shows that Korea jumped from 68 points(Medium-high) in 2017 to 76 points(High) in 2020. IWRM has four key dimensions, which includes Enabling Environment, Institutions and Participation, Management Instruments, and Financing. Korea saw increases in all the three dimensions in 2020 compared to 2017, except for financing.

Korea's IWRM implementation scores for each dimension; 2017, 2020 (Unit: point)

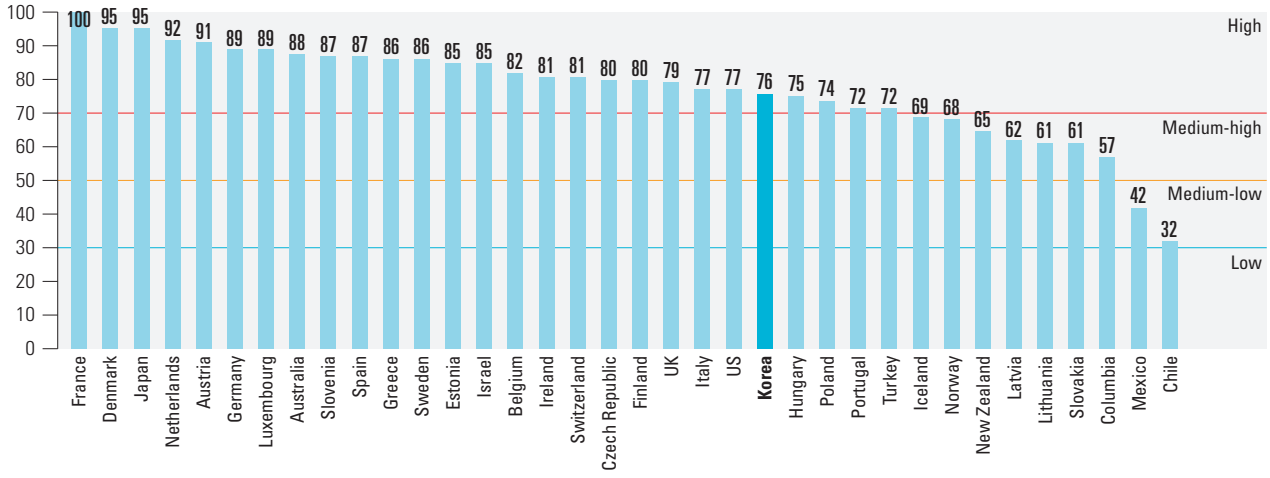


Source: http://iwrmdataportal.unepdhi.org/countrydatabase(retrieved on November 11, 2021)

In particular, its score for the Enabling Environment increased from 44 to 71 thanks to the improvement of policies and legal systems, such as the unification of water management tasks, which had been divided into two agencies(the Ministry of Land, Infrastructure and Transport and the Ministry of Environment), into the Ministry of Environment, and the first enactment of the Framework Act on Water Management that laid a good foundation for integrated water management at the national level and participatory water management centered on watersheds. In addition, its score in the dimension of Institutions and Participation jumped from 70 to 87 as the nation launched the Watershed Management Committee for watershed-based water management and set up a national support system for the organization. On the other hand, financial support and budget for integrated water management were insufficient, causing the Financing score to go down from 78 to 63.

Korea's IWRM level is the 23rd highest among 36 OECD countries. Countries such as France, Denmark, Japan, the Netherlands, and Austria reported very high implementation scores of more than 90 points while others including the United States and other major advanced countries like those in Europe also have higher scores than South Korea.

IWRM implementation scores of OECD countries; 2020 (Unit: point)



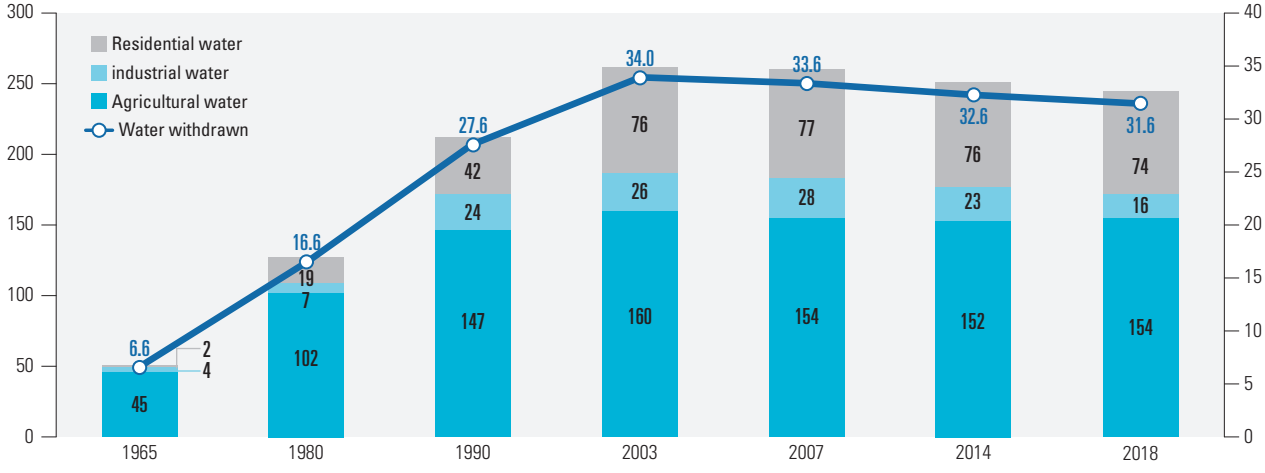
Source: UNEP(http://iwrmdataportal.unepdhi.org/countrydatabase, retrieved on November 11, 2021)

Efforts to enhance water-use efficiency and reduce water stress

The average annual precipitation in Korea is 1,252mm and the total amount of water resources considering the land area is about 126.4 billion cubic meters. The annual outflow of water resources is about 73.1 billion cubic meters, but it is 77.1 billion cubic meters including the inflowed water from North Korea through joint rivers. As of 2018, the total annual use of water resources is estimated to be 36.6 billion cubic meters, while 24.4 billion cubic meters(67%) of water is used for living, industry, and agriculture and 12.2 billion cubic meters(33%) for river maintenance. A total of 7.4 billion cubic meters of water was used for living, 1.6 billion cubic meters for industrial water and 15.4 billion cubic meters for agricultural water. Dams(53.5%) are the largest source of water, followed by river(35.0%), groundwater(7.6%), sewage reuse(2.9%), gray water(0.9%), rainwater(0.02%), and desalinated seawater(0.01%).

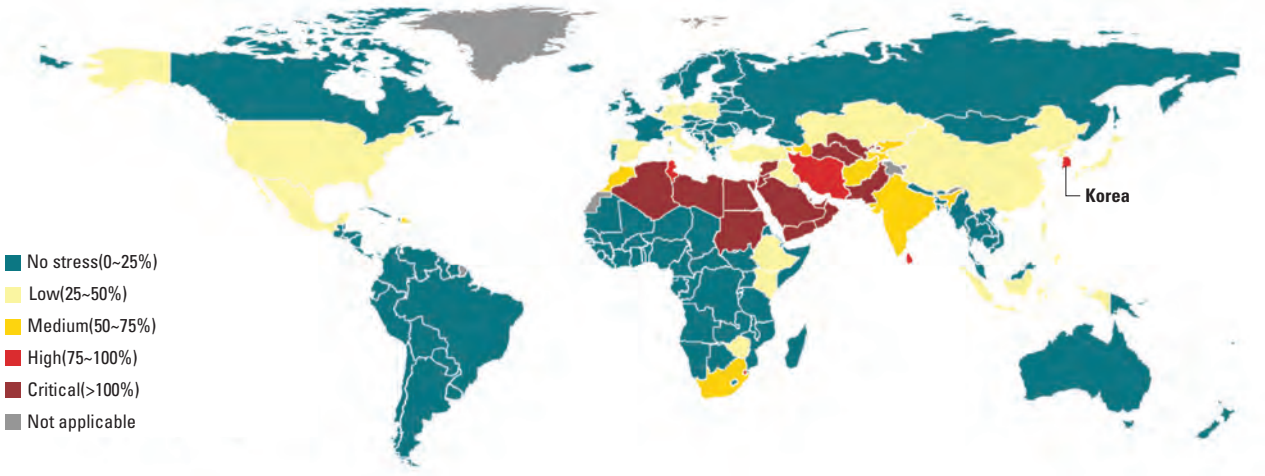
Annual water use has been stagnant or declining after reaching its peak in 2003. It peaked at 262m^3 in 2003 before gradually decreasing to 244m^3 in 2018 with water stress slightly down. However, water withdrawal rate of the total usage based on the average annual outflow increased more than five times from 6.6% in 1965 to 34.0% in 2003 over 40 years. Water stress is not low compared to other countries. On the map on the right, countries with lower water stress index are indicated as light yellow, and those with higher index as red. Water stress level of Korea is marked in red corresponding to 'High'.

Changes in the amount of water used and withdrawn; 1965~2018 (Unit: 100 million m^3/year, %)



Source: Relevant Ministries, National Water Management Master Plan, 2021~2030
Note 1: Water withdrawal rate: The author calculated the total usage ratio based on the average annual outflow of 771(billion cubic meters)
Note 2: Residential and industrial water: Reflected changes to the standards for water supply demand forecasting work manual(2018)(classifying purified water used for industrial purposes as water for domestic use)
Note 3: Agricultural water: Changed from the rough calculation method for each farming method (required quantity × cultivated area) to the actual supply amount(with some exceptions)

Global map of the level of water stress; 2018



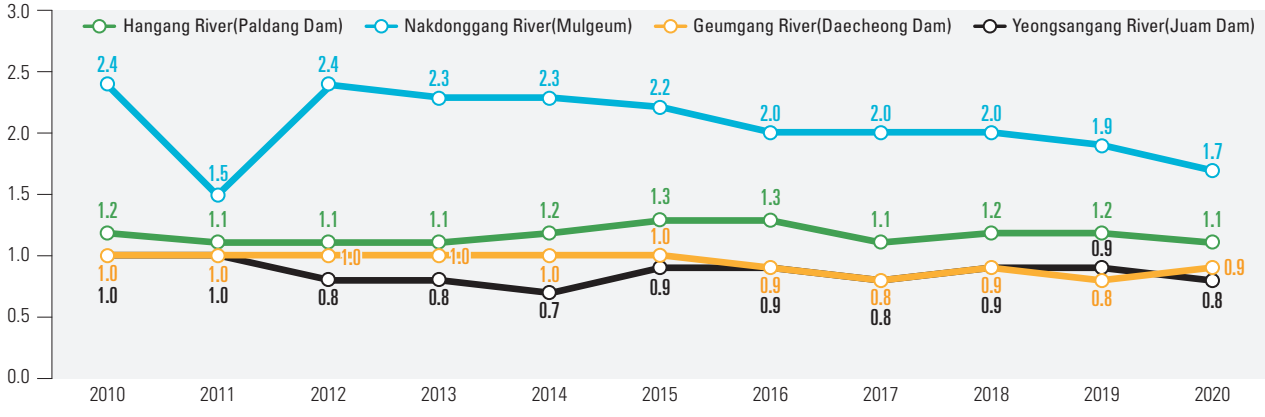
Source: FAO, 2021 Progress on level of water stress: Global Status and Acceleration needs for SDG Indicator 6.4.2, https://www.fao.org/3/cb6241en/cb6241en.pdf)
Note 1: Water stress of the indicator 6.4.2 has been defined as the total fresh water withdrawn(TFWW) divided by the difference between total renewable freshwater resources(TRWR) and the environmental water requirements(Env.) after considering the environmental flow requirements(EFR), multiplied by 100. Different threshold levels for the indicator can be used in some countries to reflect their unique goals for climate and water management. Water Stress(%) = [TWW / (TRWR – Env.)] × 100
Note 2: Water stress data in Korea available for international comparison has not been updated since the 2018 survey.

Steady improvement of water quality and ecosystems

The upstream areas of rivers and lakes where the main water withdrawal points are located are maintaining a relatively good quality, above the "slightly good(grade II)" level, which is a living environment standard that can be used as water for living or swimming after general water purification treatment. Downstream areas except for the Seomjin River saw improved biological oxygen demand(BOD) levels, a representative water quality indicator, but chemical oxygen demand(COD) levels are on the decline, requiring more comprehensive measures to reduce non-biodegradable pollutants including chemicals and nonpoint pollution sources.

According to the implementation status data in 2020 of the Water Quality Target set and announced by the Minister of Environment in accordance with the Water Environment Conservation Act, in the case of rivers, 92 of the 115 mid-regions across the country have achieved their BOD targets(80.0% met the target). The achievement rate of the Han River was the highest at 89.7%, and that of Yeongsan River and Seomjin River was the lowest at 72.7%. In the case of lakes and swamps, the achievement rate of the total phosphorus(TP) water quality target was only 16.3% in 49 lakes and swamps across the country. In particular, the Han River, Yeongsan River, and Seomjin River reported very low levels of less than 10%. Meanwhile, as of 2018, the nationwide groundwater quality test compliance rate stood at 96.9% for drinking groundwater and 85.7% for non-potable groundwater, maintaining the average level between 2008 and 2018.

BOD of four major rivers; 2010~2020 (Unit: mg/L)



Source: Ministry of Environment, National Water Quality Data(K-Indicators, http://www.index.go.kr/smart/refer.do?stts_cd=278801&idx_cd=2788&clas_cd=&period=Y&periodS=2010&periodE=2020&clas_div=&idx_clas_cd=1&m=1, retrieved on November 11, 2021)

7 AFFORDABLE AND CLEAN ENERGY

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Ensure access to affordable, reliable, sustainable and modern energy for all

SDG 7 is to ensure access to affordable and sustainable clean energy for all. All human activities require energy input. In the past, manpower and axial force were main energy sources, but technological development and growing economic activities have increased demands for energy, which in turn made humankind dependent on fossil fuels to meet most of the energy needs. However, it was later found that fossil fuels cause social costs as they emit air pollutants and greenhouse gas, increasing the need to switch to clean energy for sustainable development.

In order to achieve an effective transition toward clean energy, it is necessary to use energy in a more efficient way to reduce overall demands for energy, which would make us less dependent on fossil fuels. At the same time, it is important to replace fossil fuels with renewable energy. Korea has long focused its energy policies on enhancing energy efficiency, which led to steady decreases in energy intensity(primary energy supply divided by GDP). The reason why Korea reports a higher energy intensity than many other OECD countries is because the manufacturing sector, the energy-intensive industry, takes a large portion in its economy, which does not necessarily mean a poor energy efficiency.

The share of renewable energy sources in the final energy consumption is steadily increasing, and the speed is getting faster in recent years. Nevertheless, the share is low compared to other OECD countries. The nation has made efforts to expand renewable energy by providing various policy supports such as Feed in Tariff and Renewables Obligation. In particular, Energy-related plans, such as the Renewable Energy 3020 Implementation Plan(2017) and the Third Energy Basic Plan(2019), have been adopted to further increase the share of renewable energy.

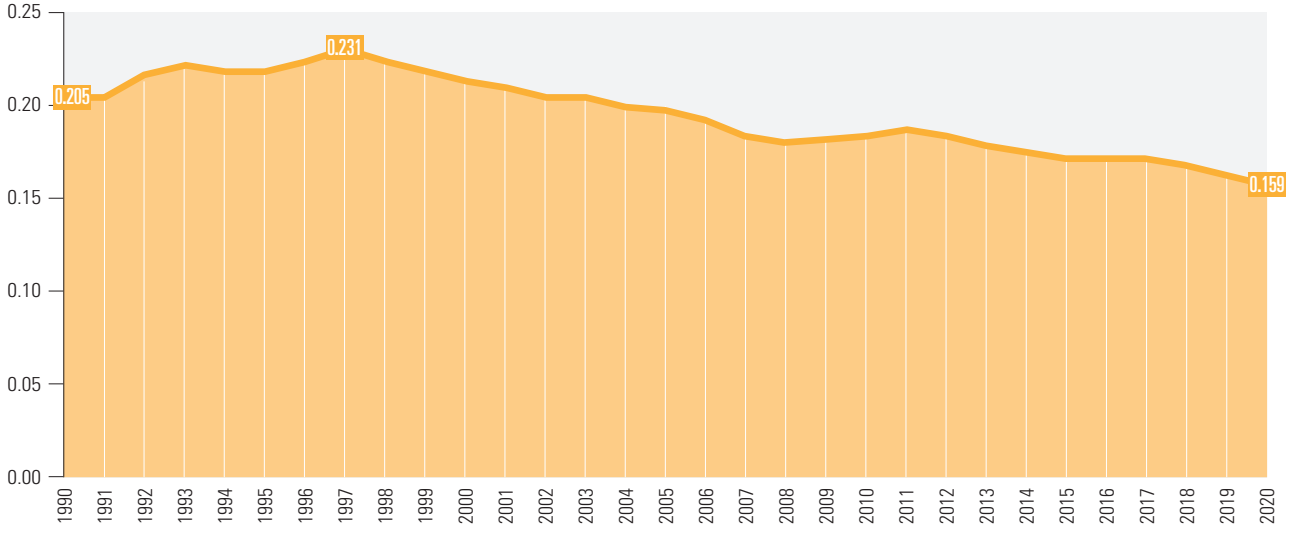
Steady improvement of Energy intensity

Energy intensity is defined as the amount of energy used to produce a given level of output or activity. It is a measure of the energy inefficiency of a given system(factories, companies and countries). Changes in the numbers can demonstrate developments of energy efficiency of a country. Korea saw a steady decline in energy intensity after reaching its peak in 1997 at 0.231 toe per KRW 1 million, thanks to efforts to improve energy efficiency and develop high value-added industries. The figure stood at 0.159 toe per KRW 1 million in 2020, a 31.2% decrease from 1997, after which drops were 1.9% to 2.6% between 2012 and 2014. Later on, the nation saw further slowdowns with drops of 0.2% to 1.2% between 2015 and 2018 before reporting sharper falls again at 3.6% in 2019 and 3.0% in 2020 from previous years.

As of 2019, Korea reported the 33rd highest energy

Changes in Korea's energy intensity; 1990~2019

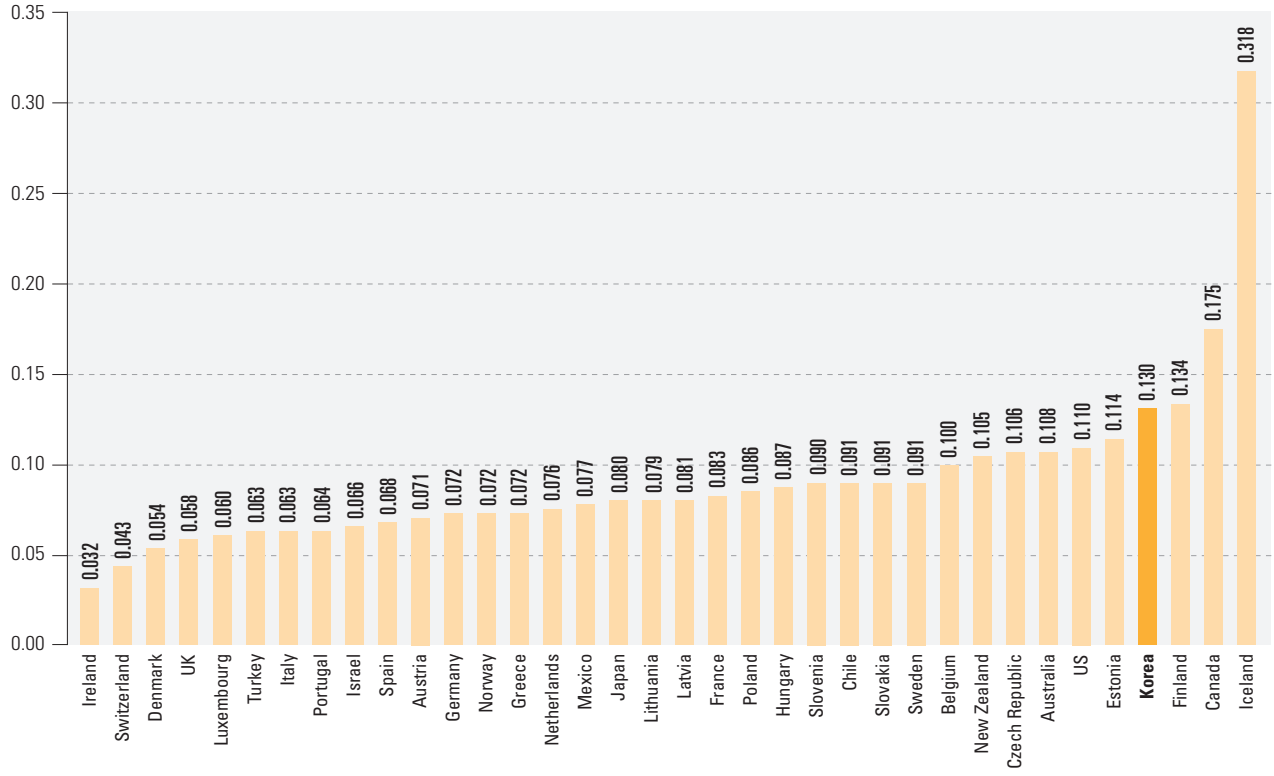
(Unit: toe/KRW million, as of 2015)



Source: Korea Energy Economics Institute, Korea Energy Statistical Information System, 2021 Yearbook of Energy Statistics(http://www.kesis.net/sub/sub_0003.jsp, retrieved on January 17, 2022)Bank of Korea, Economic Statistics System, Gross Domestic Product(raw, real)(https://ecos.bok.or.kr/, retrieved on November 22, 2021)

Energy intensity of OECD countries; 2019

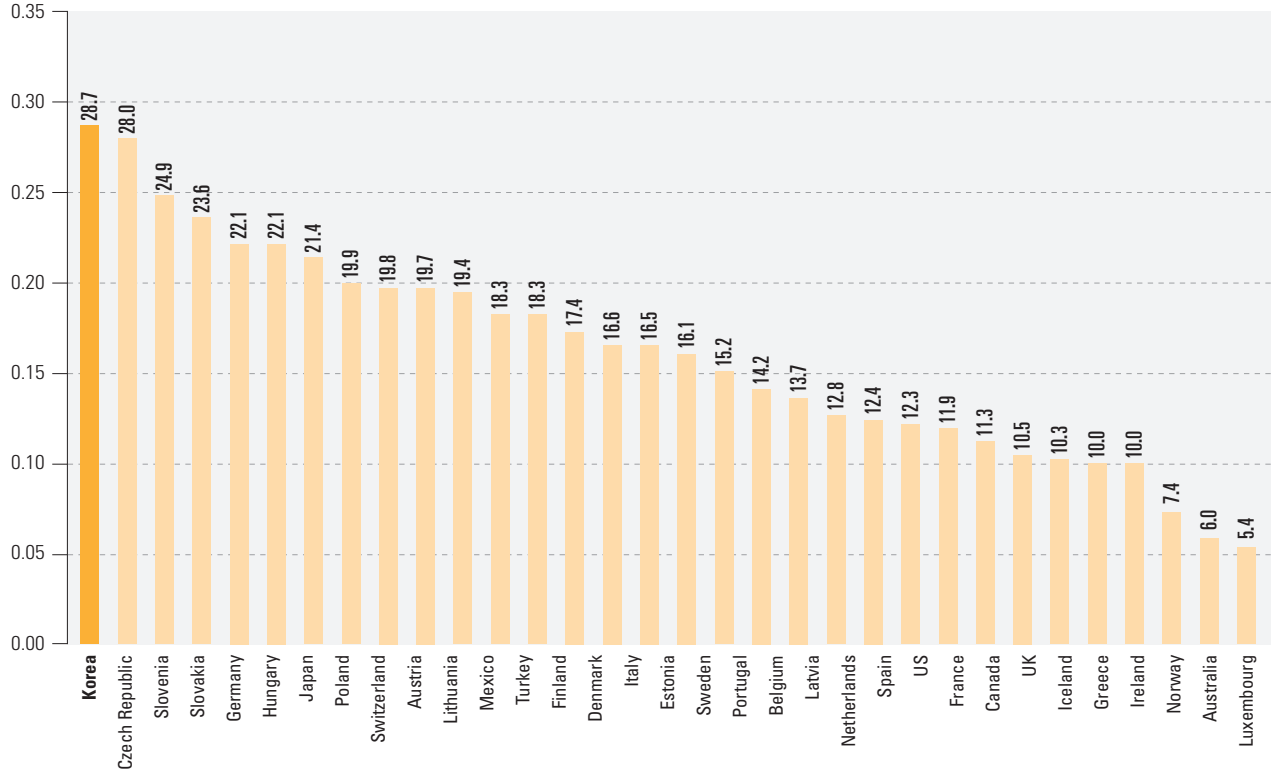
(Unit: toe/USD thousand(2015 PPP))



Source: IEA, IEA World Energy Balances(https://www.oecd-ilibrary.org/energy/data/iea-world-energy-statistics-and-balances_enestats-data-en, retrieved on November 10, 2021)

The proportion of value added by the manufacturing sector of OECD countries; 2019

(Unit: %)



Source: OECD, OECD National Accounts Statistics(https://www.oecd-ilibrary.org/economics/data/oecd-national-accounts-statistics_na-data-en, retrieved on November 10, 2021)

efficiency among the 36 OECD countries. Ireland had the lowest number at 0.032 toe/USD 1,000, which was 24.6% of that of Korea. However, the industrial structure of each country must be considered to compare energy efficiency between countries using the intensity indicator. This is because the amount of energy input required to create the same added value is different depending on the industrial structure. For example, in countries such as Korea, where energy-intensive manufacturing such as steel, petrochemicals, and oil refining are the main economic sectors, a lot of energy is required for production activities. On the other hand, countries with the light or service industry as their main sectors, which do not require a lot of energy, not as much energy is needed for economic activities for the nation as a whole. Therefore, the intensity measure can provide better or worse figures than actual energy efficiency of a country depending on its economic structure.

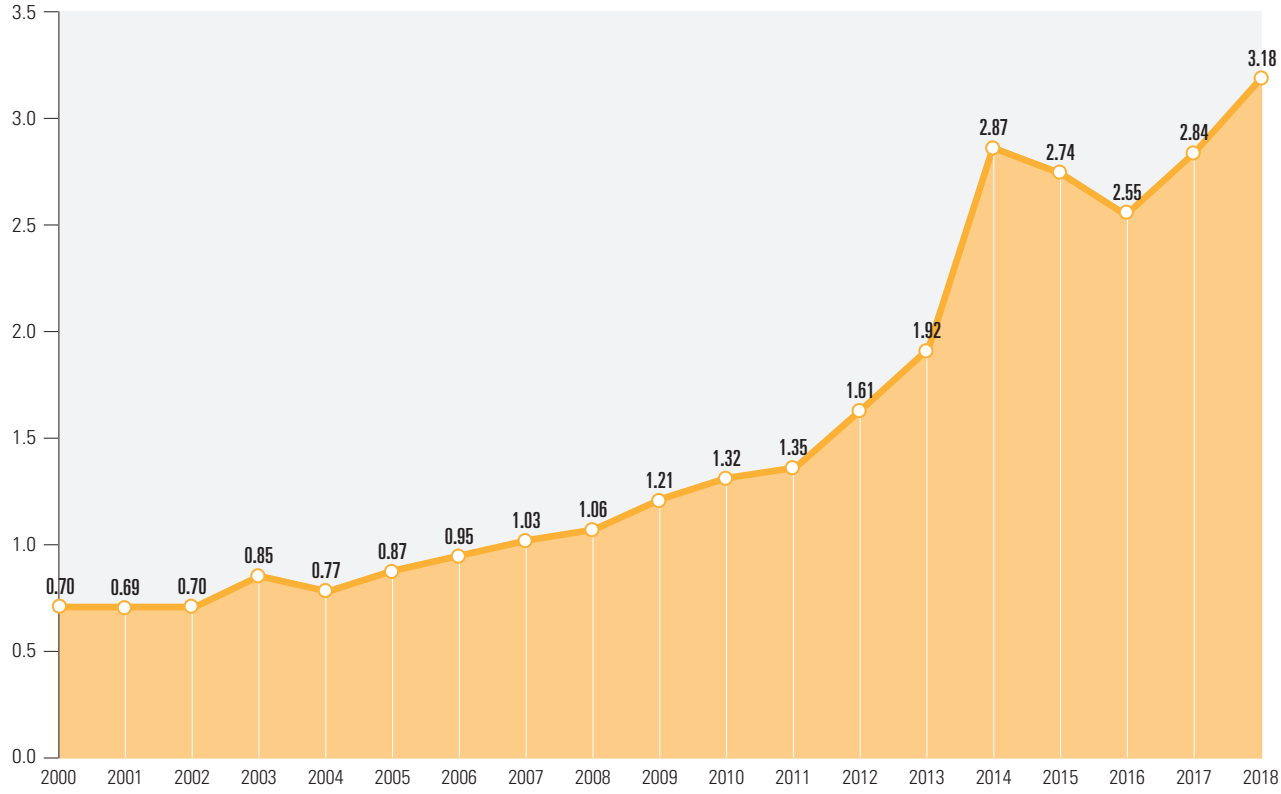
As of 2019, the added value created by the manufacturing sector in Korea accounted for 28.7% of the total added value, the highest level among 32 OECD countries. Among the manufacturing industries in Korea, steel, petrochemical and oil refining industries, which consume a lot of energy, account for a significant proportion. Korea's steel production ranks 6th in the world as of 2019, and ethylene production in the petrochemical industry ranks 4th in the world as of 2020. Due to this structure, the overall energy efficiency of the country looks not as high as the actual performance of individual industries.

The percentage of renewable energy in final energy consumption is increasing

The percentage of renewable energy in final energy consumption can be a good tool to see the level of penetration of renewable energy as a clean energy source. The share has steadily increased since 2000 in Korea, except for temporary decreases caused by the base effect in 2004 and 2015, reaching 3.18% in 2018, a 2.5%p growth from 0.70% in 2020. The growth is getting much faster in recent years. The share jumped from 0.70% in 2010 to 1.35% in 2011 with the average annual growth of 6.1%, and from 1.61% to 3.18% averaging 12.0% per year between 2012 and 2018.

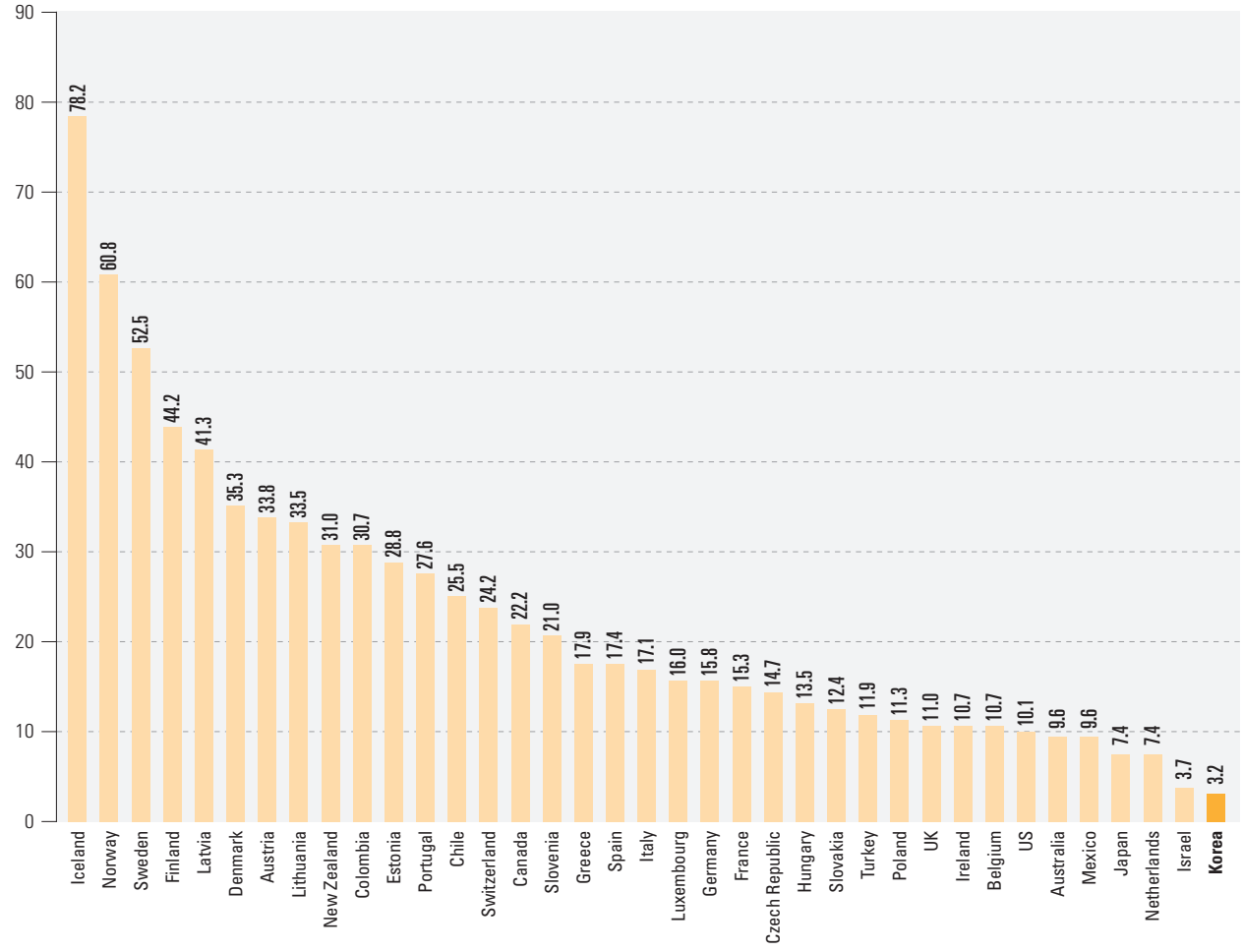
Despite the rapid growth, the share of renewable energy in Korea is still lower than other OECD countries. Iceland has the highest percentage of renewable energy among OECD member countries, at 78.2%.

The percentage of renewable energy in final energy consumption; 2000~2018 (Unit: %)



Source: Wordbank, World Development Indicators, Renewable energy consumption(% of total final energy consumption)(https://databank.worldbank.org/source/world-development-indicators, retrieved on November 10, 2021)

The percentage of renewable energy in final energy consumption of OECD countries; 2018 (Unit: %)



Source: Wordbank, World Development Indicators, Renewable energy consumption(% of total final energy consumption)(https://databank.worldbank.org/source/world-development-indicators, retrieved on November 10, 2021)

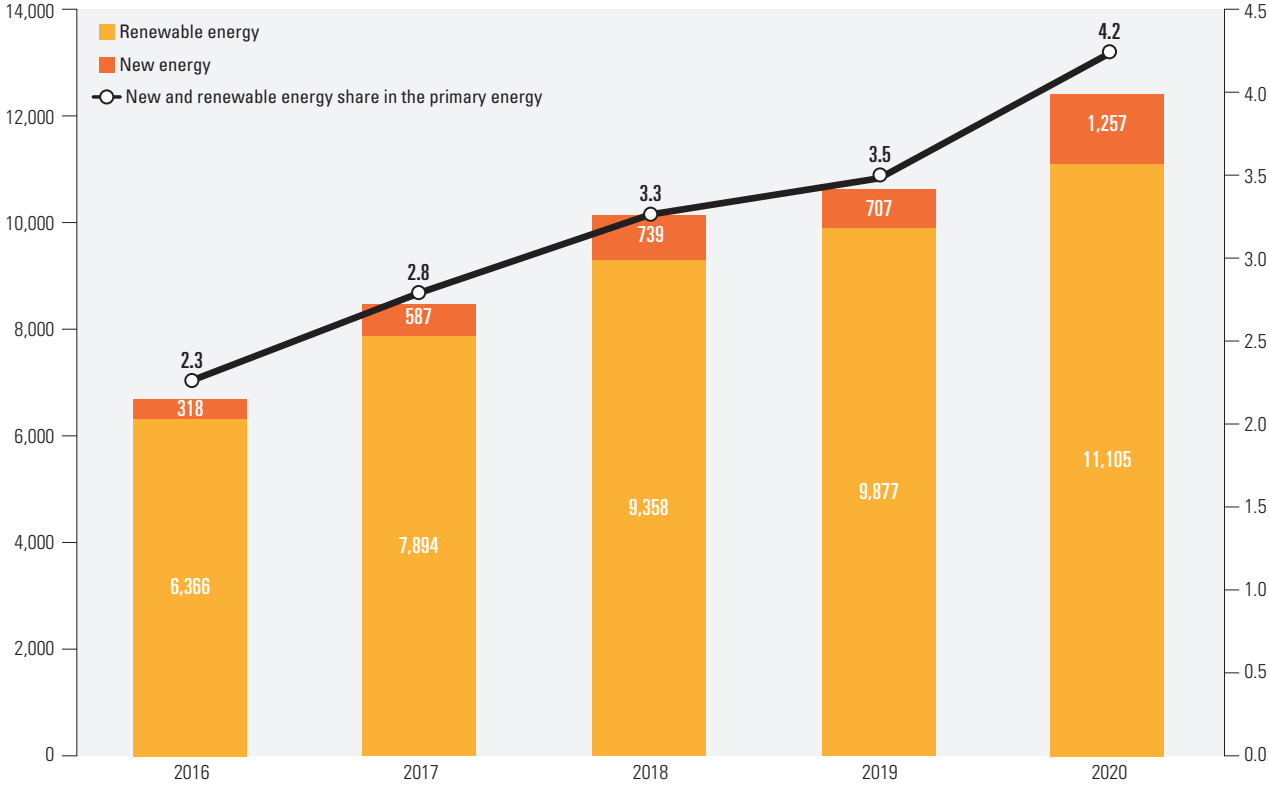
Korea is promoting the supply of new energy such as hydrogen, fuel cell, and coal gas, as well as renewable energy such as solar, wind, hydropower, ocean energy, geothermal, bioenergy, and waste-to-energy. Meanwhile, it revised a relevant law in 2019 to remove non-renewable waste-based energy from the new and renewable energy category to meet global standards. Renewable and new energy production in 2020 was 11,105,000toe and 1,257,000toe respectively, accounting for 4.2% of primary energy supply. Renewable energy production has been steadily increasing, and new energy production has slightly decreased in 2019, but increased again in 2020.

As of 2020, in terms of the proportion by sourse, photovoltaic(33.6%) and bio energy(31.5%) accounted for more than half, while renewable waste, hydro power, fuel cell and wind power accounted for less than 10% each. Compared to 2019, photovoltaic increased by 4.7%p and bio energy decreased by 7.8%p.

Korea has been making efforts to expand the share of renewable energy by adopting Feed in Tariff and Renewables Obligation, which resulted in a steady increase and sharper growth in recent years. Nevertheless, the share of renewable energy in the nation is still very low compared to other OECD countries. Accordingly, the government is making efforts to expand the proportion of renewable energy through several national plans. In 2017, by announcing the Renewable Energy 3020 Implementation Plan(Ministry of Trade, Industry and Energy, 2017), the government set a plan to increase the share of renewables in power generation from 7% in 2016 to 20% by 2030, focusing on solar and wind. In 2019, the Third Energy Basic Plan was adopted setting the target to increase the proportion of renewables in power generation to 30~35% by 2040.

Production of new and renewable energy and their shares in the primary energy; 2016~2020

(Unit: 1,000toe, %)

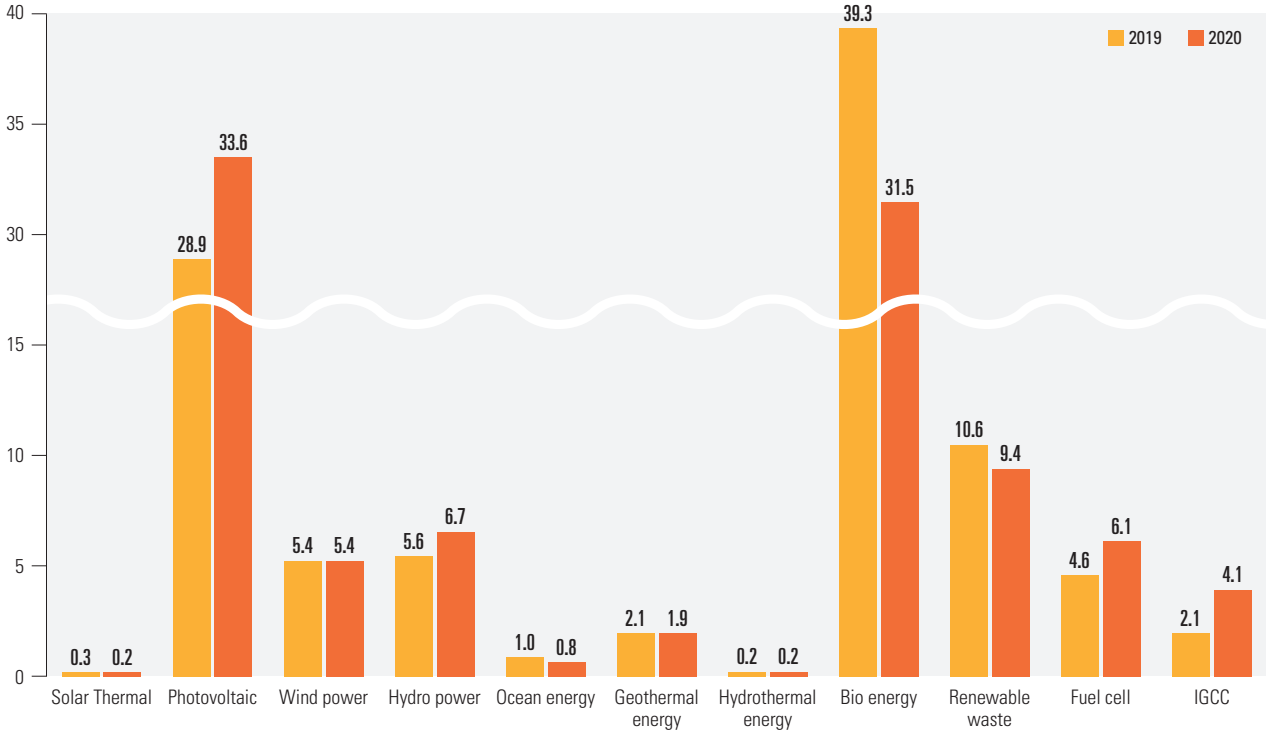


Source: Korea Energy Economics Institute, New & Renewable Energy Supply Statistics, each year

Note : Non-renewable waste was excluded from the renewable energy category in 2019 as the revised New and Renewable Energy Act took effect in October 2019. The energy was also removed from 2015~2018 data in the graph to make the figures comparable to the 2019 one. That made the numbers for the previous four years look different even though the same source as last year's report was used.

Proportion of new and renewable energy by source, 2019, 2020

(Unit: %)



Source: Korea Energy Economics Institute, New & Renewable Energy Supply Statistics, each year

8 DECENT WORK AND ECONOMIC GROWTH

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Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

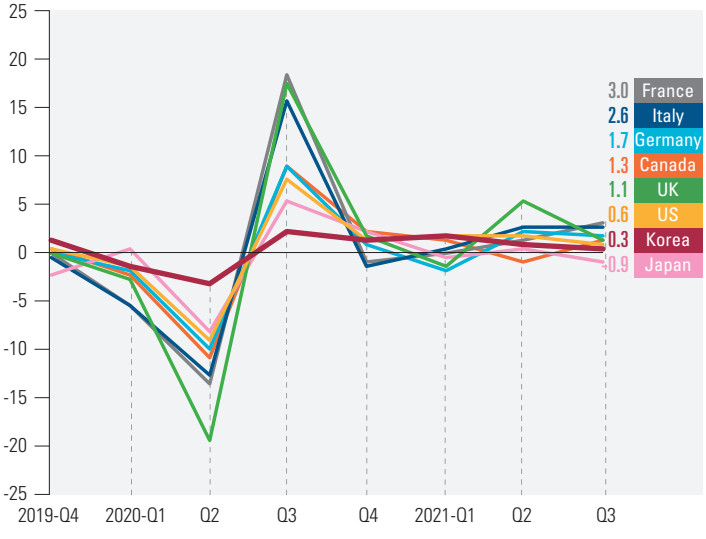
SDG 8 prompts nations to pursue an inclusive, comprehensive quality growth with three pillars: economic growth, full and productive employment and decent work. The goal encourages each nation to strengthen policies for decent jobs, accelerate the growth of SMEs and small business owners , protect the rights of vulnerable groups and workers, and establish a safe workplace. The goal emphasizes the importance of tailored sustainable economic growth for each country and policies that create jobs and support promising enterprises. To this end, the goal intends to create a safe working environment, promote youth employment, education and training, and protect vulnerable groups such as migrant workers. In order to achieve the goal, it is necessary to lay the foundation for innovative inclusive growth, strengthen labor policies for the underprivileged, expand the safety net against the COVID-19 crisis, secure competitiveness by promoting digitalization of SMEs, ventures, and small businesses, support the youth to get a job, and secure work-life balance.

It is estimated that 2.55 billion full-time jobs are lost globally due to the COVID-19 pandemic, which is four times the number of jobs lost due to the global financial crisis that broke out between 2007 and 2009. Many economies are seeing recovery, thanks to their efforts to increase vaccination and accommodative economic policies, after a prolonged recession caused by the continued pandemic. Meanwhile, recovery to the pre-pandemic level is still far away. Korea is expected to grow by 3% in 2021, a growth forecast which is lower than other countries, but this is because the economic growth of the nation in 2020 was relatively high and as a result the base effect is not as strong this year. In the job market, married women were hit especially hard. That is because demands for workers have decreased in the service sector, which involves physical interactions and a large proportion of female workers, and supply of workforce was also negatively affected by growing child care burden. In the first half of 2021, three ILO key conventions were ratified, adding to the seven key conventions that had been ratified so far out of eight. The ratification of the conventions laid a foundation for better working conditions and quality of life in Korea to meet the global standards.

The economy is growing for the five consecutive quarters after the contraction in the first half of 2020 but with large gaps between sectors

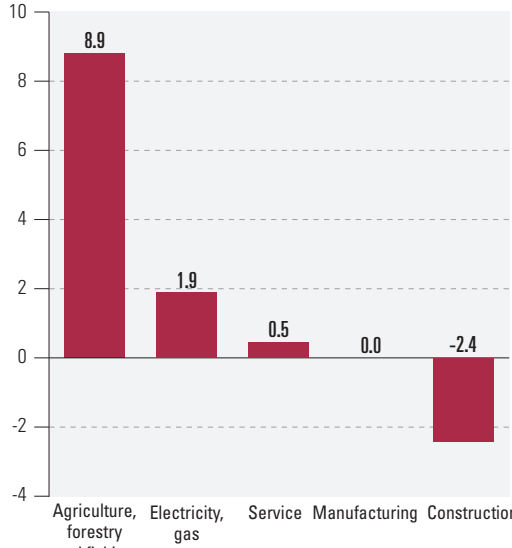
The global economy is recovering from the Pandemic after experiencing contractions in the first half of 2020. Most of the OECD countries reported high growths in the third quarter of 2020, indicating their recovery from the severe contraction seen in the first half of 2020. Korea has seen its per capita real GDP growth for the last four quarters in a row, at 2.2% and 1.1% in the third and fourth quarter of

OECD countries' real GDP growth per capita by quarter; 2019~2021 (Unit: %)



Source : United Nations, Department of Economic and Social Affairs, Statistics Division(AMA) (https://stats.oecd.org, retrieved on January 6, 2022)
Note : Korea and Germany figures are provisional

Economic growth in the third quarter of 2021 compared to the previous quarter (Unit: %)



Source : Bank of Korea, 2021 Q3 real GDP(kosis.kr, retrieved on January 5, 2022)

2020, and 1.7% and 0.8% in the first and the second quarter of 2021.

However, in the third quarter, the increase was only 0.3% compared to the previous quarter, which might be related to the situation in which private consumption and investor sentiment are contracting due to the fourth wave of COVID-19 and a bottleneck in the global supply chain.

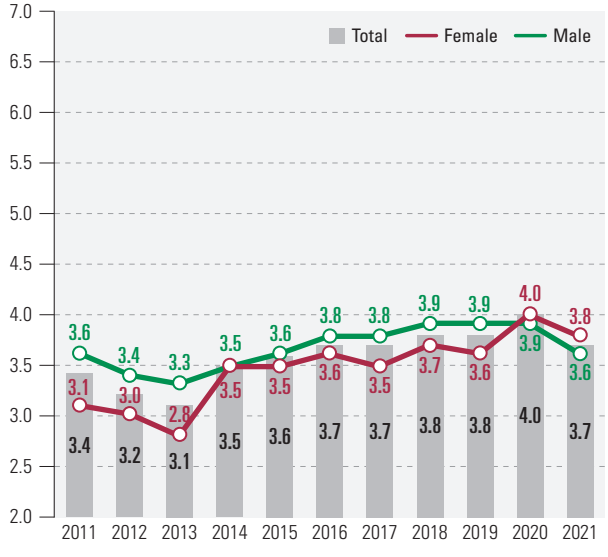
Despite the overall economic recovery, the impact of COVID-19 is very different by industry. In the third quarter of 2021, agriculture, forestry and fisheries(8.9%), electricity, gas and water(1.9%), and service(0.5%) saw increases, but the construction industry contracted by 2.4%. From the short-term perspective, the Korean economy is recovering from the COVID-19 crisis. It is necessary to create conditions for recovering from the shock caused by the COVID-19 crisis and smoothly adapting to the new economic and social environment.

Remarkable decrease in employment of women after COVID-19

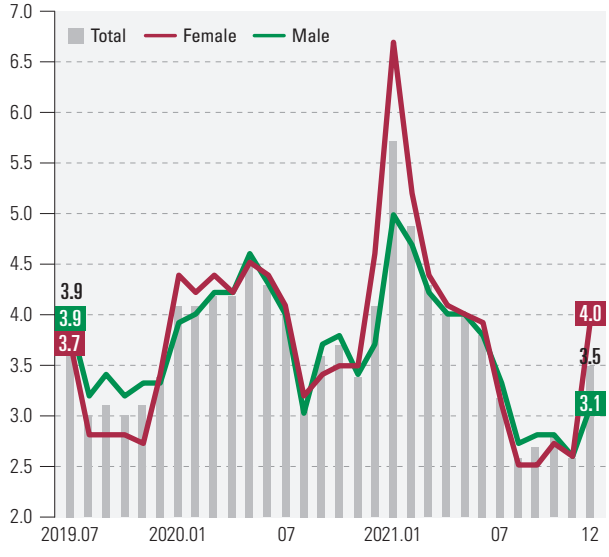
The unemployment in Korea stood between 3.5% and 4.0% since 2014, before increasing to 4.0% in 2020 due to COVID-19 pandemic. The virus has caused different shocks by sector, position and gender.

The trend of the unemployment rate by gender shows that the male unemployment rate was always higher than that of women, except for 2014, but in 2020 the number surged among female workers surpassing their male counter-

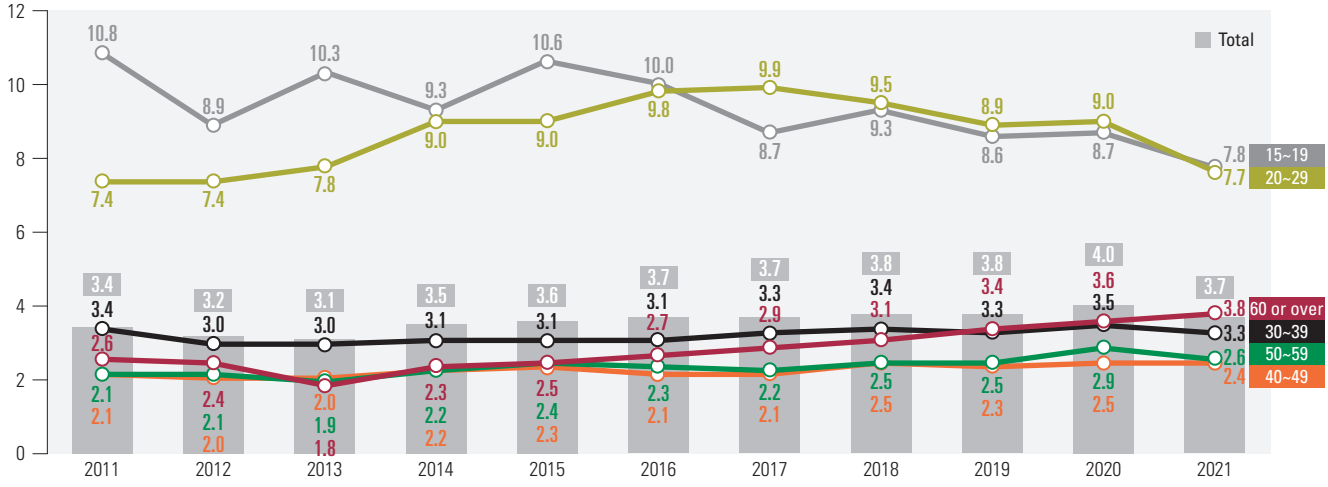
Unemployment rates; 2011~2021 (Unit: %)



Monthly unemployment rates; Jul. 2019~ Dec. 2021 (Unit: %)



Unemployment rates by age group; 2011~2021 (Unit: %)



Source: Statistics Korea, Economically Active Population Survey, each year (https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1DA7102S&conn_path=I2, retrieved on January 18, 2022)

parts, and the same trend was witnessed in 2021. A monthly unemployment data by gender shows that more jobs were lost for women in the second half of 2020 and first half of 2021. That means job recovery for female workers was slower than male workers despite the recovery of the overall economy. Unlike previous crises including Asian Financial Crisis, COVID-19 disproportionately hit women, which can be seen as the result of lost jobs for married female workers who bear more burden of taking care of their children.

The unemployment trend by age demonstrates the impact of COVID-19 as well as unique characteristics of the Korean job market. A large number of young people are unemployed as many of them work in the service sector. The unemployment rate of those in their 20s stood at 7.7% in 2021 while the number was at 2.4% and 2.6% for those in their 40s and 50s respectively. The unemployment of those aged 60 and over was also at 3.8%, much lower than the 20s, which might be related to active participation of the elderly in economic activities and government programs that create jobs for the elderly. Meanwhile, the numbers were decreasing on a yearly basis in all age groups until 2019, but started increasing in 2020 when COVID-19 hit the world.

The data mentioned above indicates that the government should consider that the pandemic had different impacts on different groups showing different trends of recovery and reflect these facts on its job creation policies. To be specific, the imbalance of supply and demand in the job market should be addressed and more efforts should be made to protect economically vulnerable populations. Life-long learning and vocational training are also needed to make sure workers are equipped with skills and meet changing demands in the market.

Less workers affected by industrial accidents but deaths increased

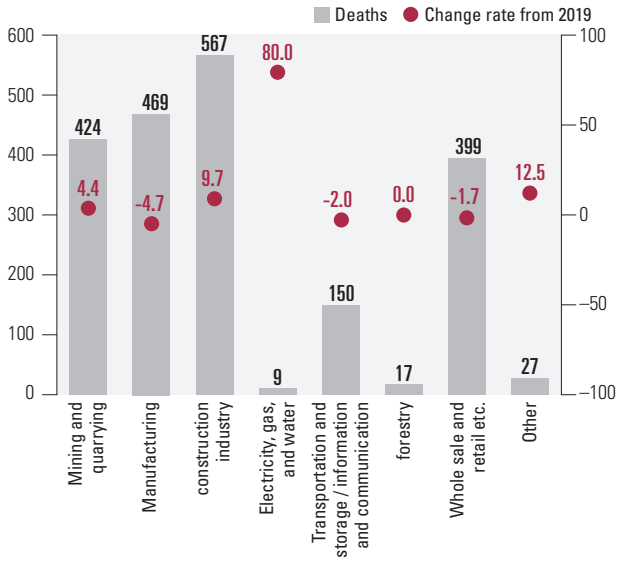
The total number of workers affected by accidents or diseases on duty in 2020 was 108,379, a decrease of 863 compared to 2019(109,242 persons). On the other hand, the number of deaths increased by 42(2.1%) from 2,020 persons in the previous year to 2,062 deaths and both accidents and disease deaths increased.

By industry and size of establishments, the highest number of deaths occurred in the construction industry(567 persons) and workplaces with from 5 to 49 employees. The same thing goes for manufacturing and other businesses, which means that more efforts for safety are required for small establishments. In response to this, recently(January 2021), the Serious Accident Punishment Act was promulgated to punish employers and compensate for victims in the event of a serious industrial accident in which at least one person dies due to violation of the duty to secure safety and health by the owner or manager of a business. The Act is expected to help the nation build a safe working environment.

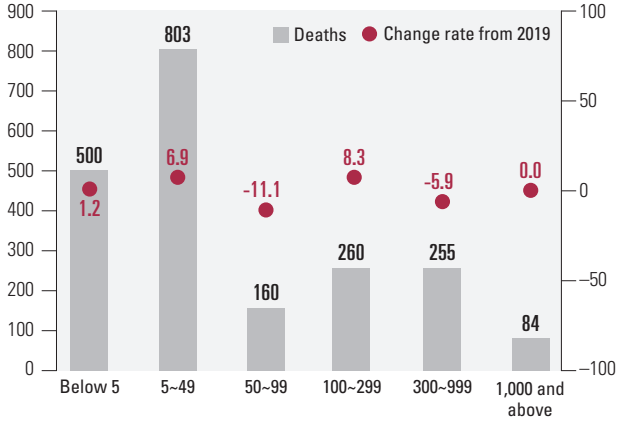
The number of industrial accidents; 2020 (Unit: person, %)

Category	2020	2019	Change in numbers	Rate of change
Victims	108,379	109,242	-863	-0.8
- Accidents	92,383	94,047	-1,664	-1.8
- Diseases	15,996	15,195	801	5.3
Deaths	2,062	2,020	42	2.1
- Deaths from accidents	882	855	27	3.2
- Deaths from disease	1,180	1,165	15	1.3

The number of deaths by industry (Unit: person, %)



The number of deaths by establishment size (Unit: person, %)



Source: Ministry of Employment and Labor, December 2021, 2020 Industrial Accident Incidence(December 2021)

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

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Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

SDG 9 aims to achieve inclusive, sustainable development by enhancing added value through industrial development and applying innovative science and technology. The United Nations has been discussing international industrial cooperation by establishing the United Nations Industrial Development Organization(UNIDO). The Organization adopted the 1975 Lima Declaration: The Path to Inclusive and Sustainable Industrialization, which is in the same line with the SDG 9. The goal set targets to expand the contribution of industries for employment and GDP.

The spread of COVID-19 is having a profound impact on the industry as a whole. The chapter illustrates sales trends and the number of employed persons by industry to understand the impact of the virus. Meanwhile, travel bans and strengthened social distancing have increased demands for online activities across the country, which resulted in surges in online and virtual transactions. Increases in the number of online transactions does not simply mean a change in the form of transactions, but also a change in the way we work. A rapid digitalization is being witnessed across industries as companies are swiftly adapting to changing consumer demands. Although no statistical data directly illustrates the increasing trends of digitalization and non-face-to-face transactions, numbers on the growth of the online shopping industry(sales growth) can be a good tool to see the overall picture in an indirect way. Investments in technology development plays a key role in making industrialization sustainable, which is demonstrated by the share of R&D expenditure in total GDP and the number of researchers compared to the size of total population.

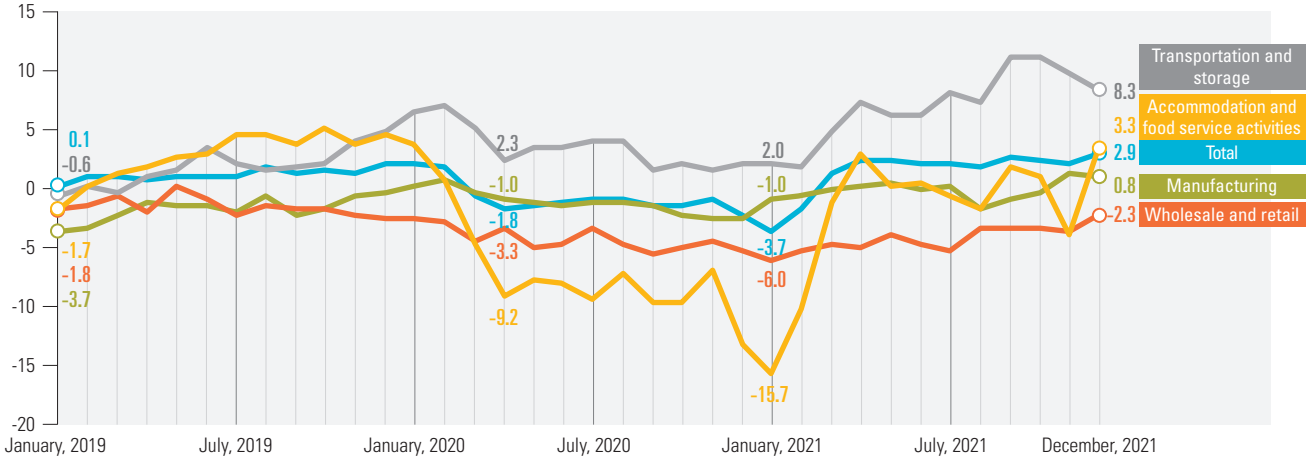
The number of employees did not change significantly in the manufacturing sector, but a sharp decrease was observed in the accommodation, restaurant and wholesale/retail businesses due to the impact of COVID-19. The largest declines in sales were seen in hotels, restaurants, and airlines as well as manufacturers. In particular, the air transportation industry has been hit the hardest since the beginning of the pandemic due to restrictions on cross-border travel.

The number of employees back to the pre-pandemic level

The spread and continuation of COVID-19 has shocked the job market. It was 2020 when the impact of COVID-19 became visible, and the number of employees decreased significantly during this period. In particular, profound drops were witnessed in March and April 2020 compared to the same months of the previous year. The decline in the accommodation and restaurant industries was remarkable. Compared to the same months of the previous year, the decrease in the number of employees in the accommodation and restaurant industry recorded –4.9% in March and –9.2% in April, and then remained in the -7~–9% range until November, before dropping further to -13.4% in December 2020. The number gradually went up after peaking at -15.7% in January 2021. On the other hand, the number of employees in transportation and warehousing did not decrease significantly despite COVID-19, and has rather increased significantly since Feb-

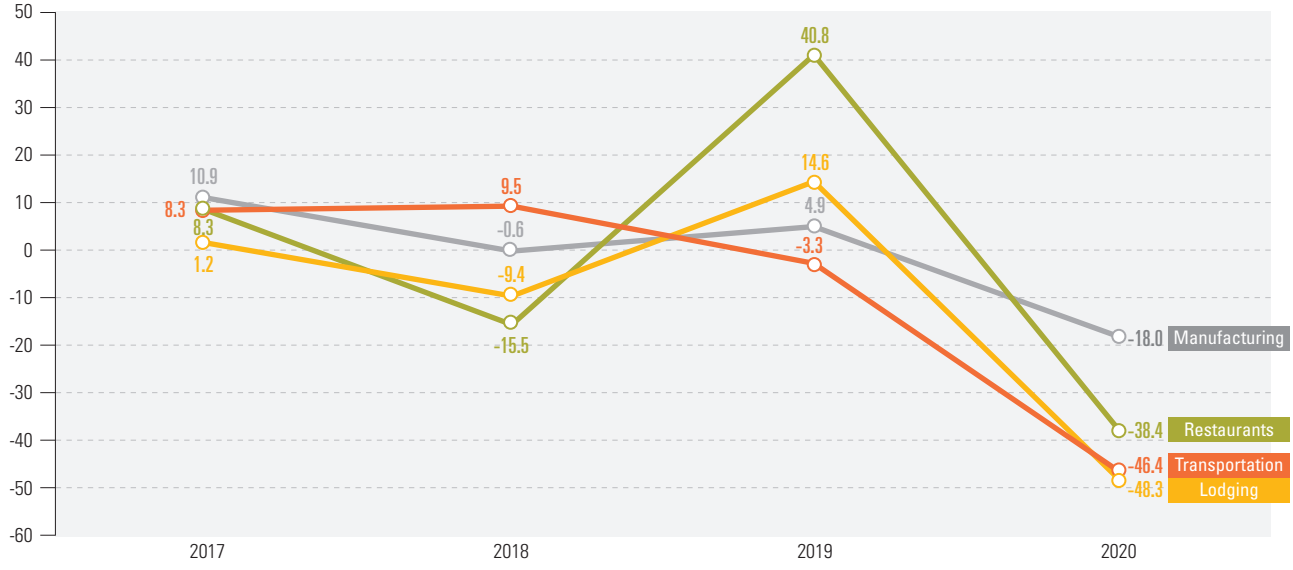
Changes in the number of employees by industry; 2019~2021

(Unit: %, year-over-year)



Source: Statistics Korea, Economically Active Population Survey (https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1DA7E06S&conn_path=I3, retrieved on January 18, 2022)

Changes in sales by industry; 2017~2020 (Unit: %)



Source: KISVALUE DB(www.kisvalue.com, retrieved on September 25, 2021) The graph was drawn by the author based on the data.

ruary 2021 due to increasing online transactions.

From March 2021, the total number of employed people began to increase. The accommodation and restaurant business saw considerable increases from January to April in 2021, and the growth in December 2021 compared to the same month of the previous year was 3.3%. As of December 2021, the number of employed persons has almost recovered to the pre-pandemic level in most industries.

Sales are one of the most reliable indicators of the business condition of a company. Due to the disruption of the global supply chain in the early stages of the outbreak of COVID-19, sales in the face-to-face service industry were severely affected. Later on, the prolonged pandemic led to a growing number of companies in almost all of the industries experiencing a decrease in sales. The industry with the biggest drop in sales was the air transportation industry, with a decrease of more than 46% in 2020, the year of the outbreak of COVID-19, compared to the previous year. In addition, the restaurant and the accommodation industry also saw drops of 38.4% and 48.3% respectively. The manufacturing sector also contracted by 18% in 2020 compared to 2019, but the decline was less severe than those of face-to-face service industries such as restaurants, lodging, and air transportation.

Volume of air passenger and freight traffic are recovering

Air passenger and cargo traffic, which had sharply decreased due to COVID-19, is showing signs of recovery in 2021 due to the supply of vaccines and the development of therapeutics. International passenger traffic was more affected by COVID-19 than domestic one. Cross-border passenger traffic in February 2020 decreased by 46.6% from the same month of the previous year. Since then, the rate of decrease of about 97% continued every month from March 2020 to February 2021. International passenger traffic turned to an upward trend from April 2021, probably due to a base effect, but actual passenger traffic is also increasing.

Cargo traffic shows a different trend from passenger one, which has decreased by about 33% compared to the same month of the previous year from April 2020, right after the outbreak of COVID-19, which is not as significant as the drops in passenger traffic, and the decrease has steadily slowed down since then. The cargo volume in March 2021 was about 293,000 tonnes, which is 83% of about 351,000 tonnes in December 2019, just before the outbreak of the pandemic.

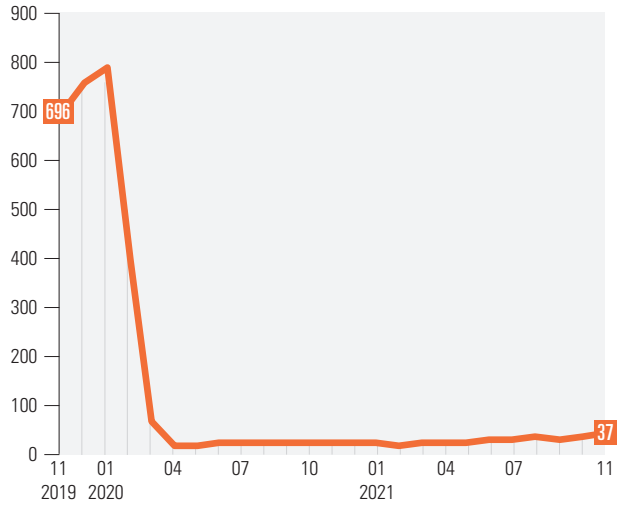
Dramatic growth in online shopping transactions

Online shopping transactions were on the rise even before COVID-19. The total amount of online shopping transactions in the first quarter of 2017 was KRW 22.2 trillion, and it increased to KRW 36.8 trillion in the first quarter of 2020. The online shopping transaction amount was estimated to be about KRW 48.3 trillion in the third quarter of 2021 as demands for non-face-to-face transactions have surged since the outbreak of COVID-19. The actual number stood at KRW 48.3 trillion, an increase of 19.7% compared to the same period last year.

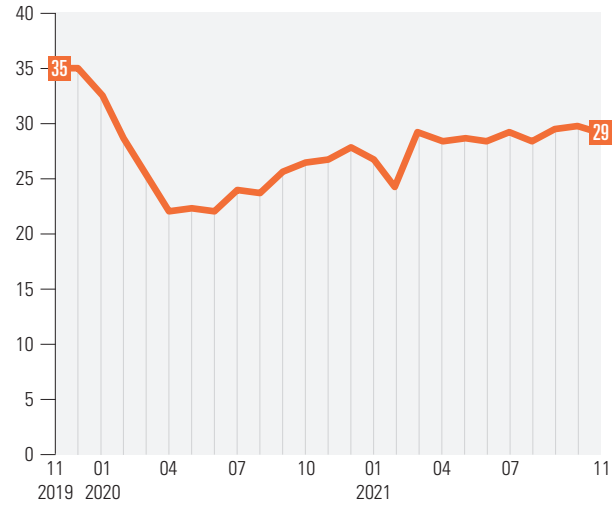
Developments of the amount of online shopping transactions vary according to product categories. The number of transactions of travel and transportation services fell sharply from KRW 4.6 trillion in the fourth quarter of 2019 to

Cross-border air passenger volume; 2019~2021

(Unit: 10,000 persons)

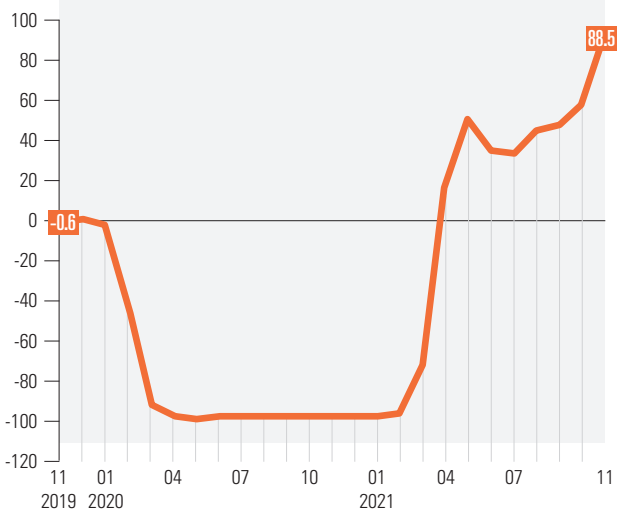


Cross-border air freight volume; 2019-2021 (Unit: 10,000 tonne)



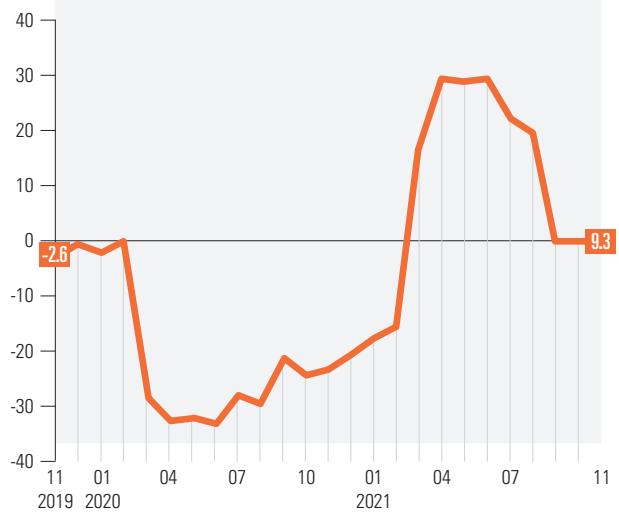
Change rate of cross-border air passenger volume; 2019~2021

(Unit: %, year - over- year)



Change rate of cross-border air freight volume; 2019~2021

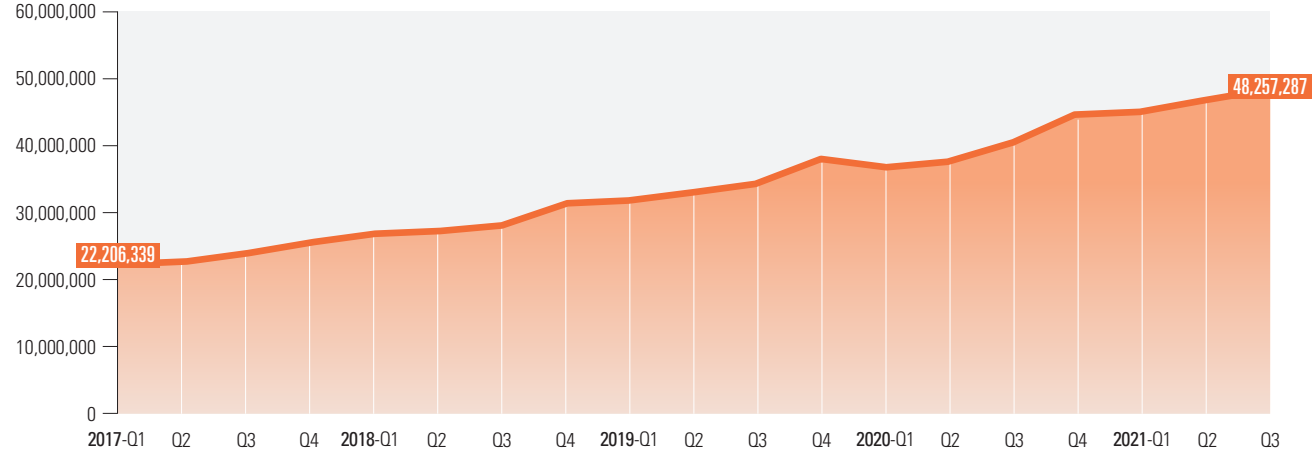
(Unit: %, year - over- year)



Source: Ministry of Land, Infrastructure and Transport, Air Traffic Statistics (www.airport.go.kr/knowledge/statsnew/air/general.jsp#, retrieved on January 7, 2022)

Trend of online shopping transaction amount(all items); 2017~2021

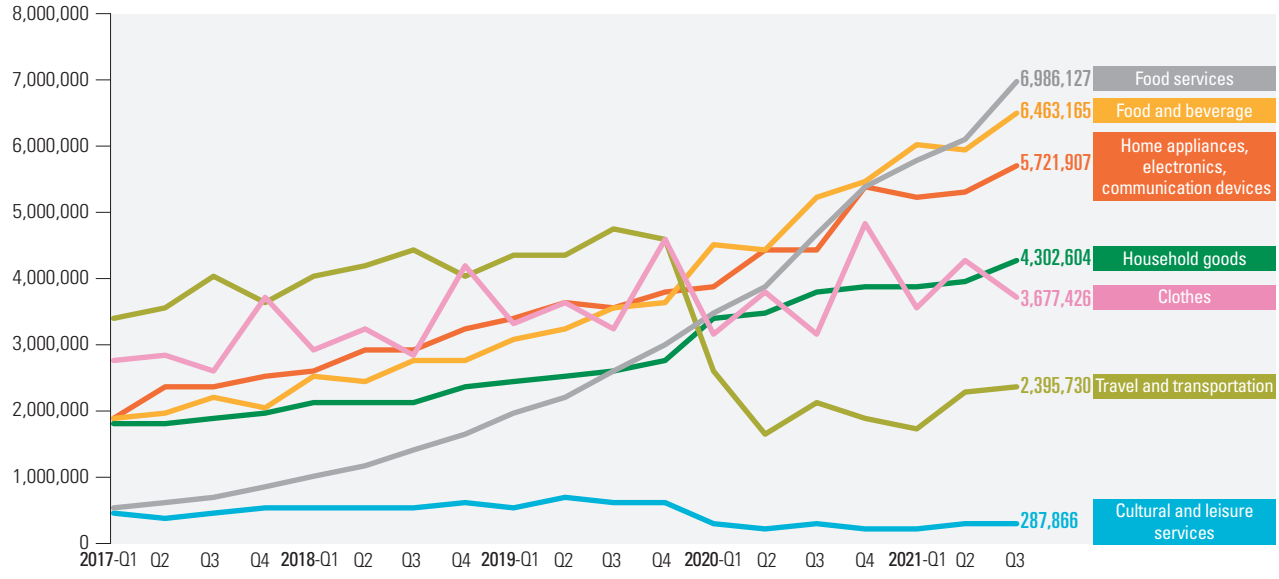
(Unit: KRW million)



Source: Statistics Korea, Online Shopping Trend Survey(kosis.kr, retrieved on January 7, 2022)

Trend of online shopping transaction amount by category; 2017~2021

(Unit: KRW million)



Source : Statistics Korea, Online Shopping Trend Survey(https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1KE10041&conn_path=I3, retrieved on January 7, 2022)
Note : Only some of the 23 categories are used.

KRW 2.6 trillion in the first quarter of 2020, and the same thing goes for the cultural and leisure services. However, food services saw a growth from KRW 3.5 trillion in the first quarter of 2020 to about KRW 7 trillion in the third quarter of 2021. The transaction amount of home appliances, electronics, communication devices and household goods is also increasing steadily.

Korea is among the top countries in R&D expenditure and the number of researchers

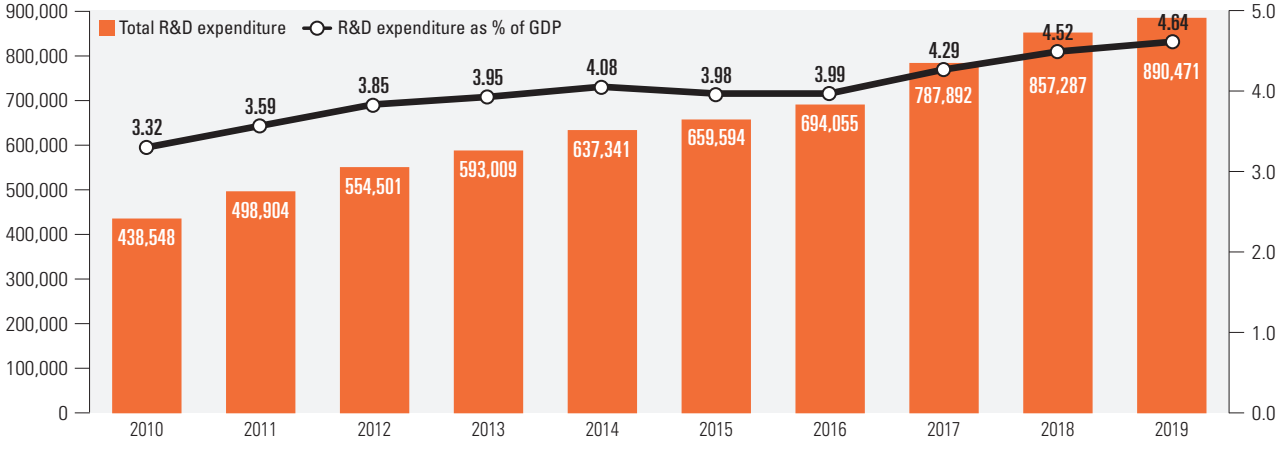
Investment in technology development is important for sustainable industrialization. R&D expenditure in Korea has been steadily increasing every year, at KRW 89.471 trillion in 2019, an increase of 3.9% compared to 2018. Korea's R&D expenditure as a percentage of gross domestic product(GDP) has also been increasing every year, except for a slight decrease in 2015, taking up 4.6% of the GDP.

Korea has the highest percentage of R&D expenditure in GDP in the world following Israel(4.93%). This figure is higher than 3.19% of Germany and 3.07% of the US.

The number of human resources in R&D is also increasing in Korea. The number of full-time equivalent researchers(FTE), an indicator calculated based on one's contribution to research, stands at 430,690, which is the fourth largest following China, Japan and Germany. The number of researchers per 1,000 economically productive population is at 15.4 for South korea, which is the highest among the 34 countries that submitted data in 2019, followed by Finland, Denmark and Spain.

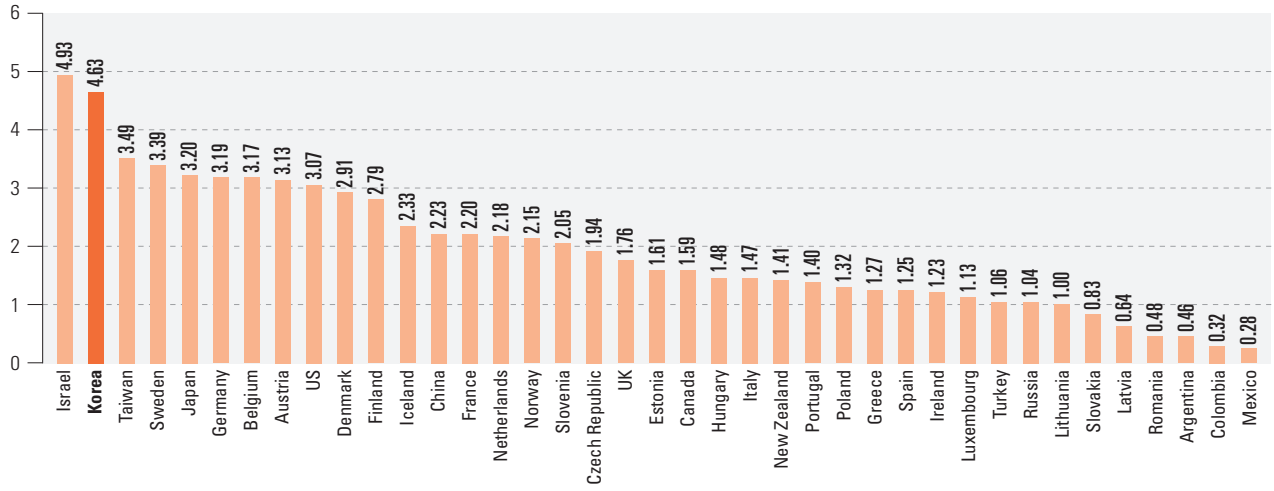
Total R&D expenditure and its share in GDP; 2010~2019

(Unit: KRW 100 million, %)



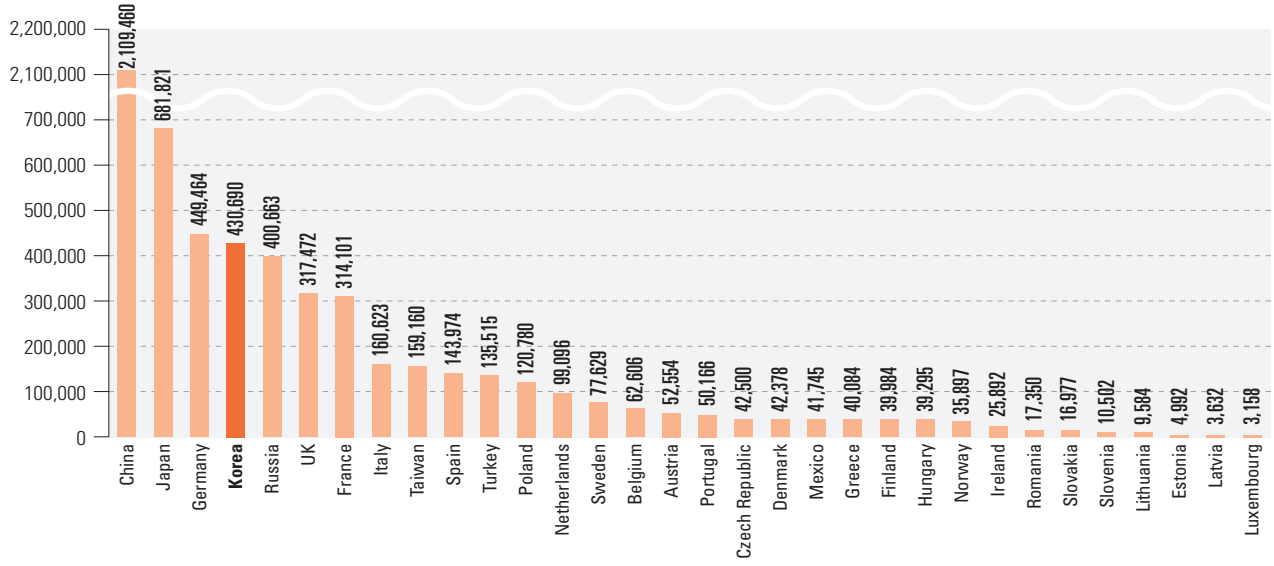
Source: Ministry of Science and ICT, 2019 R&D Activities Survey Report

Global comparison of R&D expenditure as a percentage of GDP; 2019 (Unit: %)



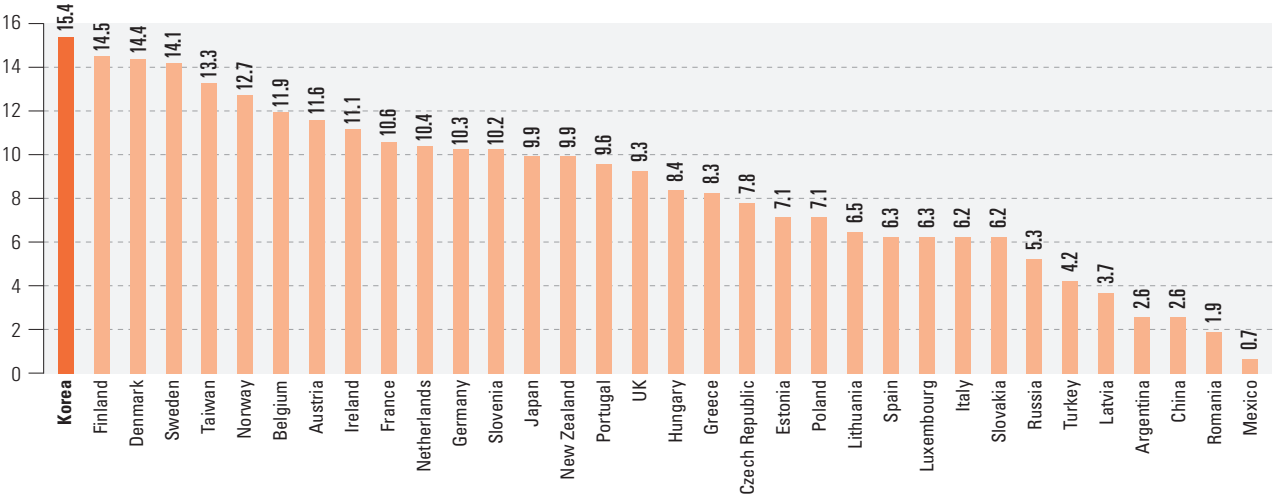
Source: Ministry of Science and ICT, KISTEP, Science & Technology Statistics(https://www.ntis.go.kr/rndsts)(https://www.ntis.go.kr/rndsts/selectStatsDivIdctVo.do, retrieved on November 21, 2021)

The number of full-time equivalent researchers by country; 2019 (Unit: No. of persons)



Source: Ministry of Science and ICT, KISTEP, Science & Technology Statistics(https://www.ntis.go.kr/rndsts, retrieved on November 21, 2021)

The number of researchers per 1,000 economically active population by country (Unit: No. of persons)



Data: Ministry of Science and ICT, KISTEP, Science & Technology Statistics(https://www.ntis.go.kr/rndsts, retrieved on November 21, 2021)

10 REDUCED INEQUALITIES

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Reduce inequality within and among countries

SDG 10 aims to reduce all forms of inequality within and among countries. Domestically, it aims not only to reduce income inequality, but also to abolish laws and institutions that cause inequality in opportunities, processes and outcomes. Internationally, it seeks to reduce inequality between countries through free movement of labor and aid from developed countries to underdeveloped nations.

The COVID-19 pandemic has great potential to exacerbate inequality within and between countries, therefore, the international community and governments are working to prevent inequality from worsening. Fortunately, income inequality has not widened significantly, both among and within countries. According to a report released by the United Nations in 2021, per capita income of 60 countries has increased more than the overall national average, and favorable conditions are being created for exports of less developed countries.

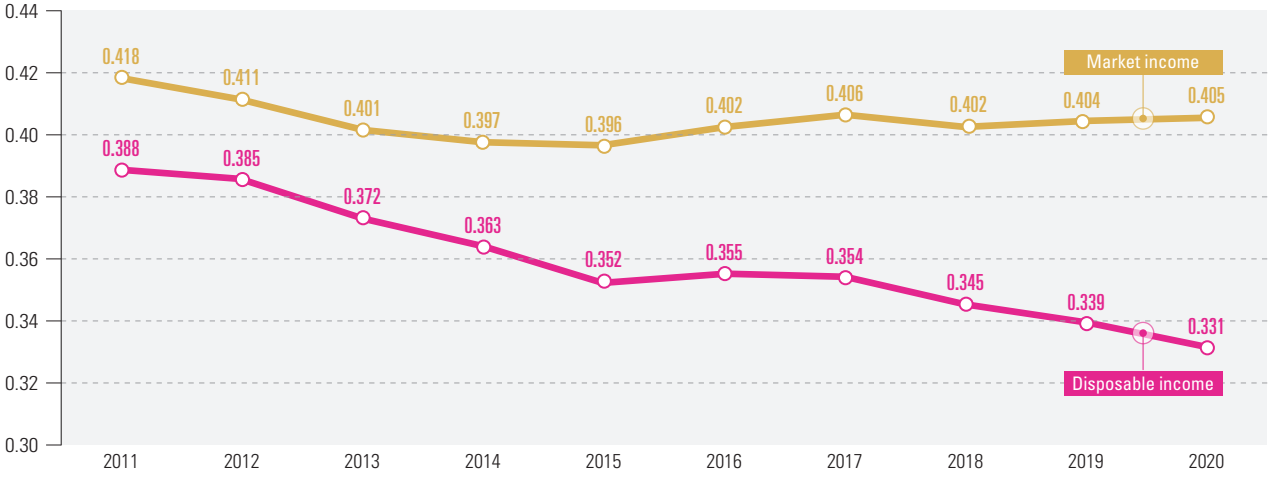
Income inequality in Korea is also steadily easing despite the COVID-19 pandemic. This can be attributed to the policy efforts made by the government to reduce income inequality. However, the difference between Gini coefficients based on market and disposable income, which is an indicator of the redistribution effect of policies, is significantly smaller in Korea than in other OECD countries. Although Korea's income inequality has steadily eased since 2010, it is still higher than that of other countries. Policy interventions and achievements for income redistribution in Korea are not sufficient to meet the global level. That means the Korean government should make more efforts to reduce inequality. Meanwhile, the inflow of migrant workers and foreign students decreased due to decreasing international migration and the COVID-19 pandemic.

Income inequality is on the steady decline with policy redistribution effect moderately improving

The Gini coefficient is one of the most commonly used indicators that present income inequality. The index represents income disparity and the degree of income inequality between classes and market and disposable income are separated when it is calculated. It ranges from 0 to 1. The closer to 0, the more equal, and the closer to 1, the more unequal. Inequality of Korea in terms of disposable income is gradually improving. After recording 0.388 in 2011, it decreased to 0.352 in 2015, slightly increased to 0.355 in 2016, and then recorded an all-time low of 0.331 in 2020. The difference between the market income-based Gini coefficient and the disposable income-based one, which indicates the effect of redistribution of income, has continued to widen since 2012, indicating the effects of income redistribution policies, which has been strengthened recently.

Based on equivalised disposable income, the Gini coefficients for the 18~65 years old(working age) and 66 years old or older(retirement age) groups were 0.312 and 0.376 respectively, as of 2020, down by 0.005 and 0.013 from the previous year. That means reduction in inequality is sharper in the

Gini coefficient in Korea; 2011~2020



Source: Statistics Korea, Survey of Household Finances and Living Conditions, each year

Gini coefficients by age group in Korea; 2019~2020

	Total			18~65(Working age)			66 or older(Retirement age)		
	2019	2020	Change	2019	2020	Change	2019	2020	Change
Market income	0.404	0.405	0.001	0.362	0.365	0.003	0.554	0.554	0
Disposable income	0.339	0.331	-0.008	0.317	0.312	-0.005	0.389	0.376	-0.013
Improvement	0.065	0.074	-	0.045	0.053	-	0.165	0.178	-

Note 1: Gini coefficient: a representative indicator of income inequality. "0" means perfect equality and "1" means perfect inequality.
Note 2: Market income = earned income + business income + property income + private transfer income - private transfer expenditure
Note 3: Disposable income = market income + public transfer income - public transfer expenditure
Note 4: Improvement= Market income – Disposable income

elderly group. There is great concern that the damage and loss caused by the COVID-19 pandemic will have a stronger impact on the socially and economically disadvantaged. In particular, it is assumed that temporary and daily workers are experiencing the triple challenge of unemployment, reduced income, and reduced assets. Therefore, it is a time for careful review, monitoring, and policy management of the level of inequality with a focus on vulnerable groups.

According to the 2018 data of disposable income-based and market income-based Gini coefficients of selected OECD countries, Korea has the disposable income Gini coefficient of 0.345, which is higher than Sweden(0.275), Hungary(0.280), Poland(0.281), Germany(0.289), France(0.301), Canada(0.303), Japan(0.339), Italy(0.334) and Australia(0.325), and lower than the United Kingdom(0.366) and the United States(0.390). The difference between the two figures, an indicator of the redistribution effect of policies, is significantly smaller in Korea than in other OECD countries. These results suggest that although Korea's income inequality has steadily eased since 2010, it is still higher than that of other countries.

Disposable income-based and market income-based Gini coefficients of selected OECD countries

	Disposable income-based	Market income-based
Sweden	0.275	0.428
Hungary	0.280	0.464
Poland	0.281	0.452
Germany	0.289	0.500
France	0.301	0.529
South Korea	0.345	0.402
Canada	0.303	0.427
Japan	0.339	0.504
Italy	0.334	0.516
Australia	0.325	0.454
UK	0.366	0.513
US	0.390	0.505

Source : OECD, Social Protection and Well-being
Note : The data is based on 2018 data excluding Japan(2015), Germany, Italy and the United States(2017).

In addition, although it is true that the redistribution effect has improved compared to the past, it is still not enough to meet the global standard, requiring more active policy interventions for income redistribution.

Economic growth failed to drive income growth of workers and the self-employed

Labour share of GDP represents the relative share of the final output produced in a country for a given period of time to labor as a percentage of capital. The real income distribution must be strengthened at the same time to make sure economic growth can increase the quality of life of individuals. Labour share of GDP, the total compensation of employees and the self-employed given as a percent of GDP, at least in part, is a measure of whether economic growth leads to an increase in the income of workers and the self-employed. The ratio in Korea rose to 56.4% in 2006, but fell to 52.6% and 52.9% in 2010 and 2011 respectively. Since then, it has been fluctuating around 54% until recently.

Considering that the Korean economy has grown steadily despite several crises and constant recessions, the stagnant labour share of GDP, which means that national economic growth did not increase the share, is a result contrary to the belief that national economic growth and more wealth in the society would lead to reduced inequality and higher quality of life.

In fact, Korea's labour share of GDP of 53.8% is similar to Japan's 54.2%, but it is significantly lower than other OECD countries, including Switzerland(70.7%), the Netherlands(63.9%), and Belgium(62.5%). Meanwhile, Ireland(36.6%), Turkey(36.2%) and Mexico(34.6%) are among the OECD countries with the lowest labour share of GDP.

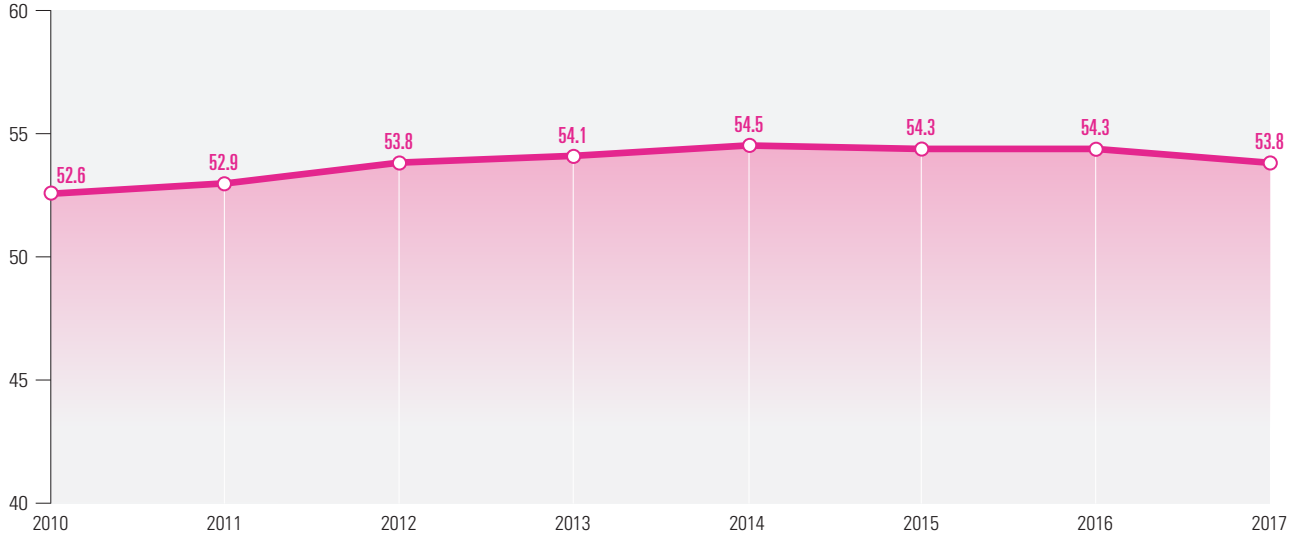
Reduced foreign workers and students due to COVID-19

SDG 10 sees labor movement and migration as one of the essential mechanisms to reduce inequality between countries

and to pursue a better life for individuals in underdeveloped countries. Therefore, it emphasizes issues at the individual level, such as the proportion of employment costs paid by migrant workers working in the host country, and at the institutional level, such as the existence of policies that promote orderly, safe and responsible migration and mobility. The goal also put its focus on the safety and refugee issues that migrant workers face in the harsh environment of the migration and labor process. This is because international migration can be an opportunity for individuals to change their lives, but it can also cause irreversible scars. Risks here include both those related to physical safety and the socio-economic risks, for example, exposure to poverty and inequality in the host country.

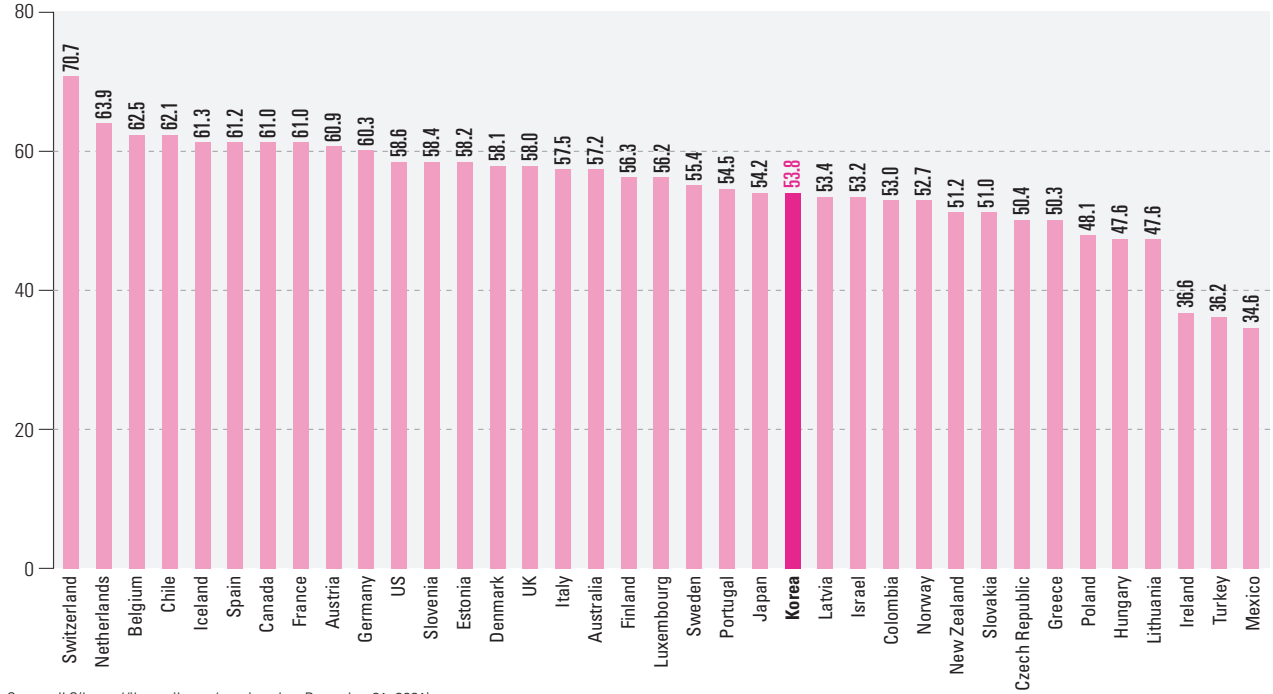
As movement between countries is restricted due to the COVID-19 pandemic, the number of migrant workers who perform the most dangerous, difficult, and arduous work in the Korean labor market is shrinking. The number of non-profes-

Labour share of GDP of Korea; 2010~2017 (Unit: %)



Source: ILO(https://ilostat.ilo.org/, retrieved on September 26, 2021)

Labour share of GDP of OECD countries; 2017 (Unit: %)



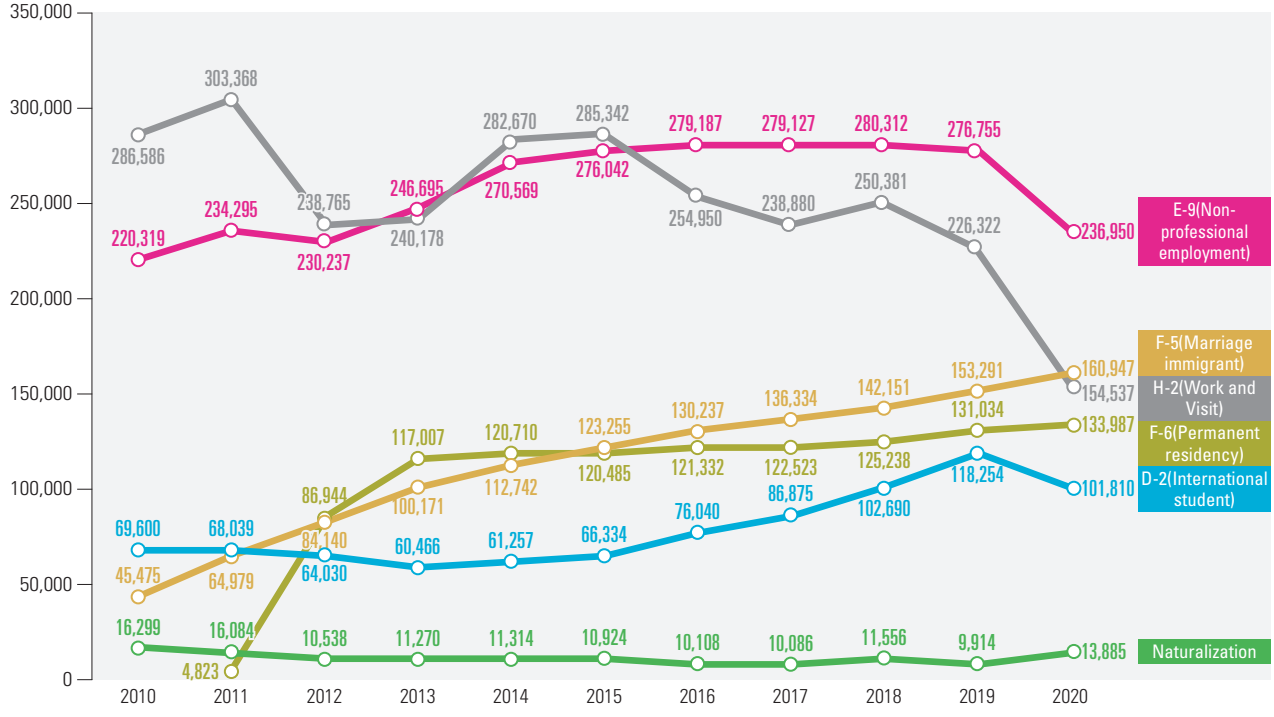
Source: ILO(https://ilostat.ilo.org/, retrieved on December 21, 2021)

sional workers(E-9), who are the majority of foreign workers residing in Korea, remained at about 270,000 or 280,000 from 2014 to 2019, and then dropped below 240,000 in 2020. Since then, it has been on a steady increase, but the growth was halted for the first time in 2020. Social discrimination and inequality experienced by migrant workers can be ignored at a time when all citizens are concerned about the risk of being infected with COVID-19, which requires special attention.

The majority of foreign workers residing in Korea are migrant workers from China and Southeast Asia. As of 2020, a majority of them came from China(including Korean-Chinese), followed by Vietnam and Thailand. The proportion of Korean-Chinese, who are not restricted by the length of stay, is expected to increase as they have permanent residency at a time when the growth rate of foreigners staying in Korea has slowed since the COVID-19 outbreak. On the other hand, the number of non-professional migrant workers from Southeast Asia, whose stay period is strictly managed according to the principle of short-term circular labor, is expected to be stagnant or decline.

The number of foreign residents by sojourn status; 2010~2020

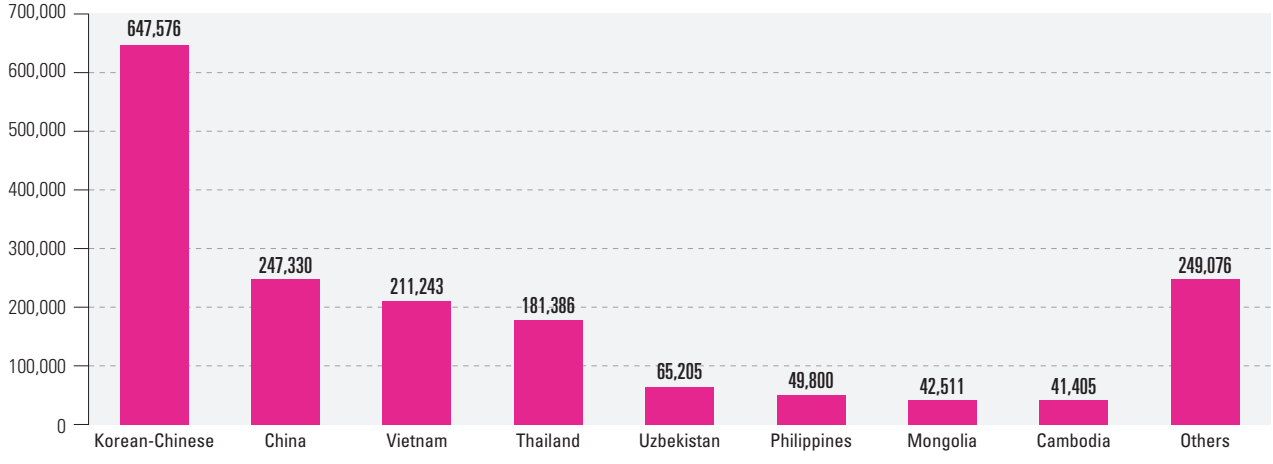
(Unit: No. of persons)



Source: Ministry of Justice, Korea Immigrtion Service Statistics, each year

The number of foreign residents in Korea by nationality; 2020

(Unit: No. of persons)



Source: Ministry of Justice, Korea Immigrtion Service Statistics, each year
Note : Other countries are Japan, Indonesia, Nepal, Taiwan, Kazakhstan, Myanmar, Sri Lanka, Hong Kong, Bangladesh, Malaysia, Pakistan and India.

The number of foreign residents in Korea by year; 2016~2020 (Unit: No. of persons)

	2016	2017	2018	2019	2020
Foreigners residing in Korea	2,049,441	2,180,498	2,367,607	2,524,656	2,036,075
Illegal sojourners	208,971	251,041	355,126	390,281	392,196

Source: Ministry of Justice, Korea Immigrtion Service Statistics, each year
Note 1: Migrants and foreign residents statistics are managed together.
Note 2: Foreign residents in Korea are based on the number of foreigners living in Korea as of the end of every year.
Note 3: Foreign residents in Korea are divided into long-term and short-term stays, and illegal sojourners are those who are undocumented among the foreigners living in Korea.

The number of employed foreigners by sojourn status; 2019~2020 (Unit: 1,000 persons, %)

	The employed	Non-professional employment(E-9)	Work and Visit (H-2)	International student (D-2, D-4-1·7)	Permanent residency (F-5)	Marriage immigrant (F-6)
2019.05.	863.2	260.8	158.1	23.0	76.7	56.2
2020.05.	847.9	251.1	117.2	27.2	79.7	61.9
Change	-15.3	-9.7	-40.9	4.2	3.0	5.7
Change rate	-1.8	-3.7	-25.9	18.3	3.9	10.1

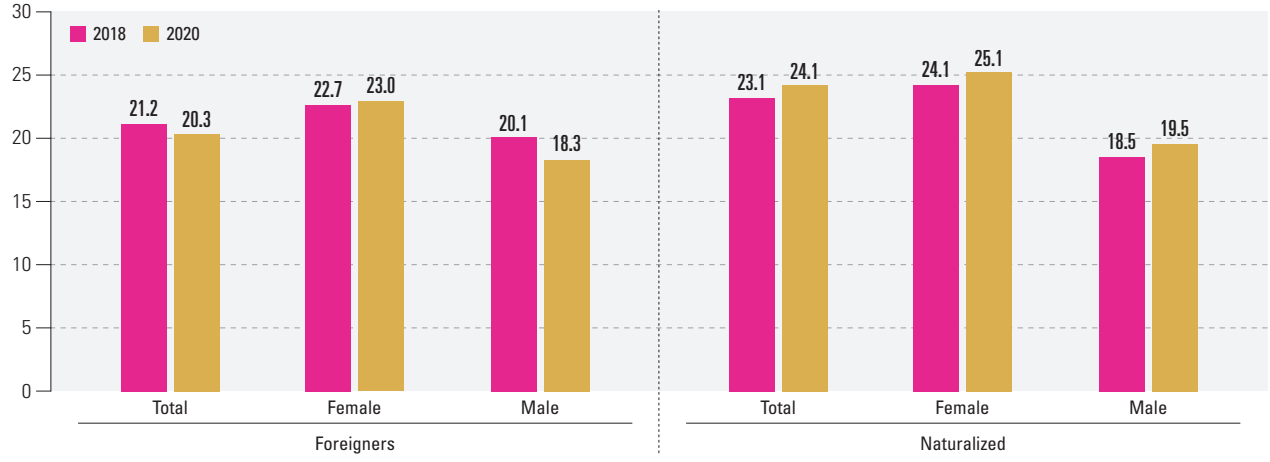
Source: Statistics Korea and Ministry of Justice, Survey on Immigrants' Sojourn and Employment, each year

Among foreigners staying in Korea, the number of undocumented sojourners staying in Korea even after their visa expired has increased significantly since 2018. The number of undocumented foreigners increased continuously from 208,971 in 2016, reaching 392,196 in 2020. Considering that the number of foreigners residing in Korea has drastically decreased due to the impact of COVID-19, the increase in the number of undocumented sojourners is a problem that requires constant attention with policies for minority groups and the vulnerable.

Several numbers show that the ongoing COVID-19 is affecting the lives of foreigners residing in Korea. The number of employed foreigners used to be 863,200 people in 2019, which was before the Pandemic, but the number decreased by 1.8% to about 847,900 people in 2020, which is after the outbreak of the pandemic. In particular, the decrease was remarkable in the groups with the visa of Work and Visit(H-2) and non-professional employment(E-9). These two groups are usually classified as foreign workers in Korean society, and most of them are engaged in the 3D(Difficult, Dirty, and Dangerous) and service industries.

According to the data on discrimination against foreigners and naturalized people regarding their hometown country, Korean language ability and appearance, the share of foreigners who experience such discrimination decreased from the pre-pandemic level of 21.2% in 2018 to 20.3% in 2020, but the number increased from 23.1% in 2018 to 24.1% in 2020 among naturalized citizens.

Experience of being discriminated against in the previous 1 year; 2018, 2020 (Unit: %)



Source: Statistics Korea and Ministry of Justice, Survey on Immigrants' Sojourn and Employment, each year

11 SUSTAINABLE CITIES AND COMMUNITIES

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Make cities and human settlements inclusive, safe, resilient and sustainable

SDG 11 aims to make cities and human settlements inclusive, safe, resilient and sustainable. The goal includes ensuring adequate housing and basic services; providing access to safe transport systems; ensuring access to public green spaces; preparing for natural disasters and catastrophes; protecting cultural and natural heritage; and paying attention to waste management and air quality.

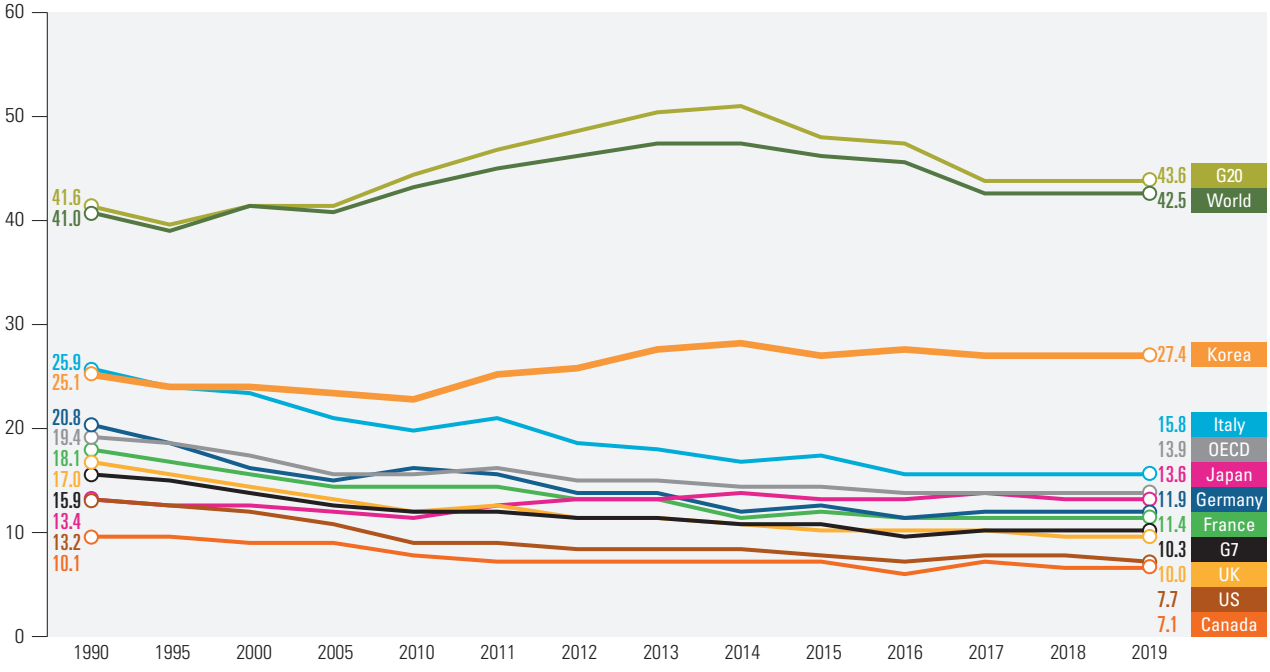
The urban environment is deteriorating, and the survival and quality of life of urban residents are threatened. Recently, heavy rains, floods, droughts, wildfires and heat waves pose risks to cities. Today, 60% of cities with a population of 300,000 or more are exposed to at least one natural disaster(including typhoon, drought, flood, earthquake, landslide, and volcanic eruption). Cities have been the epicenter of COVID-19 with 90% of the confirmed cases from cities. With the COVID-19 pandemic, cities have shown their vulnerabilities regarding lack of affordable housing, public health systems, services and infrastructure. Those without adequate housing were especially hit hard. In the midst of the COVID-19 pandemic, a house has become a space not only for the residence, but also for work, study, and leisure. However, that was not true for slum dwellers with poor living conditions. The COVID-19 pandemic has deepened the disparity between classes not only in housing but also in transportation. As of 2019, only half of the world's urban population has access to public transport(living within 500 meters from a bus stop, or within 1000 meters from a railway station or dock).

In Korea, those without adequate housing are also facing increasing difficulties, which is evident in the fact that the increase in a large proportion of households in cities do not meet the minimum housing standard. The rights to travel are compromised for those who do not have their own car as the operation or use of public transport have also decreased amid the pandemic. Korea not only has a lower area of parks and green spaces per capita, but also has large regional disparities in access to parks in residential areas. Due to the impact of COVID-19, the annual average ultrafine dust concentration(19μg/m³) in 2020 decreased by 17.4% compared to 2019, recording the lowest level ever recorded.

Korea suffers from a serious air pollution compared to other OECD countries

Environmental issues occurring in cities threaten the sustainability of cities. In particular, the threat to health caused by air pollution directly affects the survival and quality of life of city dwellers. Ultrafine dust($PM_{2.5}$) is a fine particle and when inhaled into the human body, it directly penetrates into the alveoli, causing asthma or lung disease and increas-

The ultrafine dust concentration of selected OECD countries; 1990~2019 (Unit: μg/m³)



Source: OECD Environment Database(Stats.oecd.org, retrieved on September 11, 2021)

ing premature mortality.

The ultrafine dust concentration in Korea decreased to 22.9μg/m³ in 2010 and then continued to increase, recording 27.4μg/m³ in 2019. Although this figure is lower than the global average of 42.5μg/m³, it is about twice the OECD average of 13.9μg/m³. The concentration of ultrafine dust in major OECD countries is less than half that of Korea.

While the concentration in major OECD countries has been on a continuous decline since 1990, Korea is in a stagnant state. Korea needs to reduce the domestic ultrafine dust concentration to the OECD average or WHO recommended level of 10μg/m³. In order to improve air quality, it is necessary not only to identify air pollutants but also to continuously manage air pollutants with urban planning.

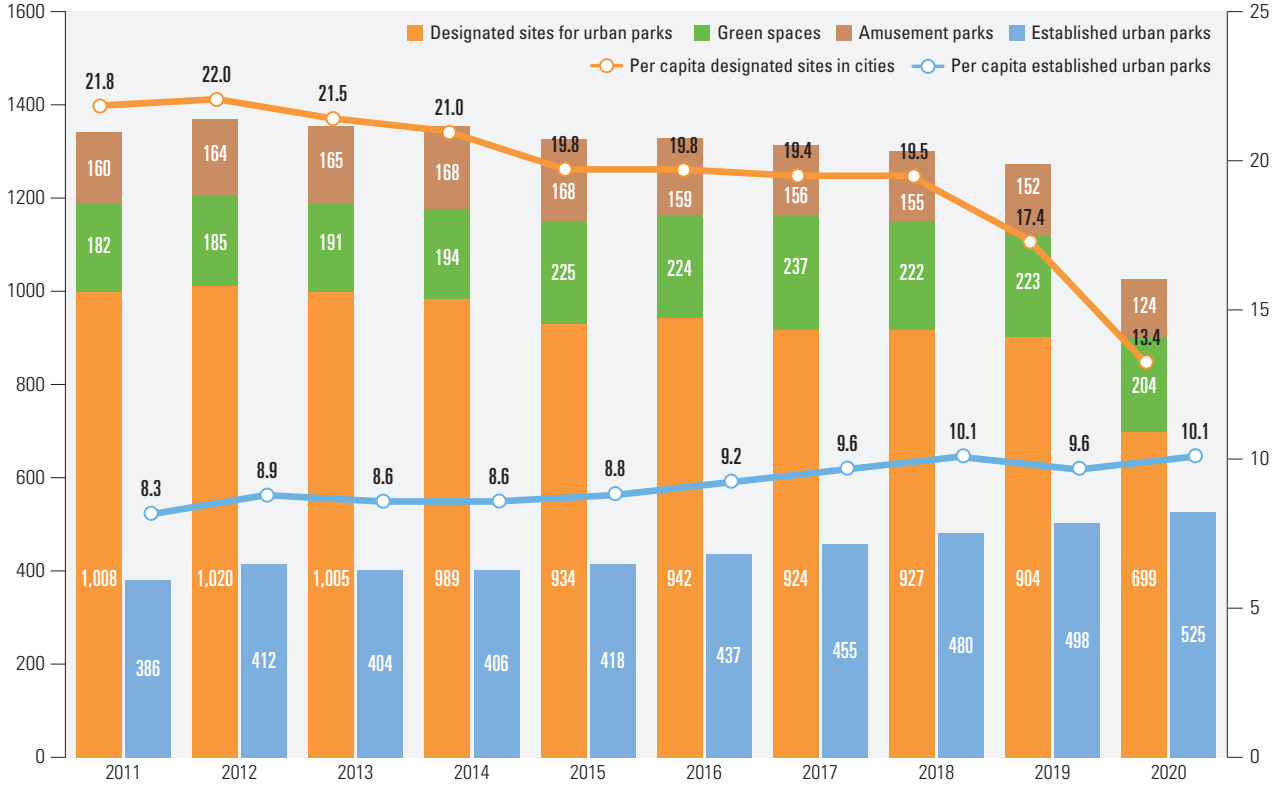
Gaps in plans and actions remain large in creating urban public green spaces

Creating public green spaces has an important impact on the city's sustainability and the quality of life of city residents. The park area per capita can be used to measure the quantity of green spaces and access to parks to figure out the quality aspect.

When evaluating the quantitative aspect of public green spaces of a city, it is necessary to distinguish between the originally planned spaces and the spaces actually created. The total area of urban parks and green spaces planned in Korea remained around 1,300km² in the 2010s, but fell to 1,027km² due to the cancellation of long-term unexecuted park plans in 2020. The planned urban park area per capita also decreased from 21.8m²/person in 2011 to 13.4m²/person in 2020.

In fact, the area of urban parks created has continuously increased since 2011, and the area of urban parks created per capita also increased from 8.3m²/person in 2011 to 10.1m²/person in 2020. It meets the WHO recommended minimum standard of 9m²/person. However, this figure is lower than that of major cities in OECD countries. The urban park creation rate slightly increased, which is an indicator calculated in consideration of the decrease following the release of the planned urban park area(699km²) and the increase in the created urban park area(525km²). However, 24.9% of planned city parks are still not being built.

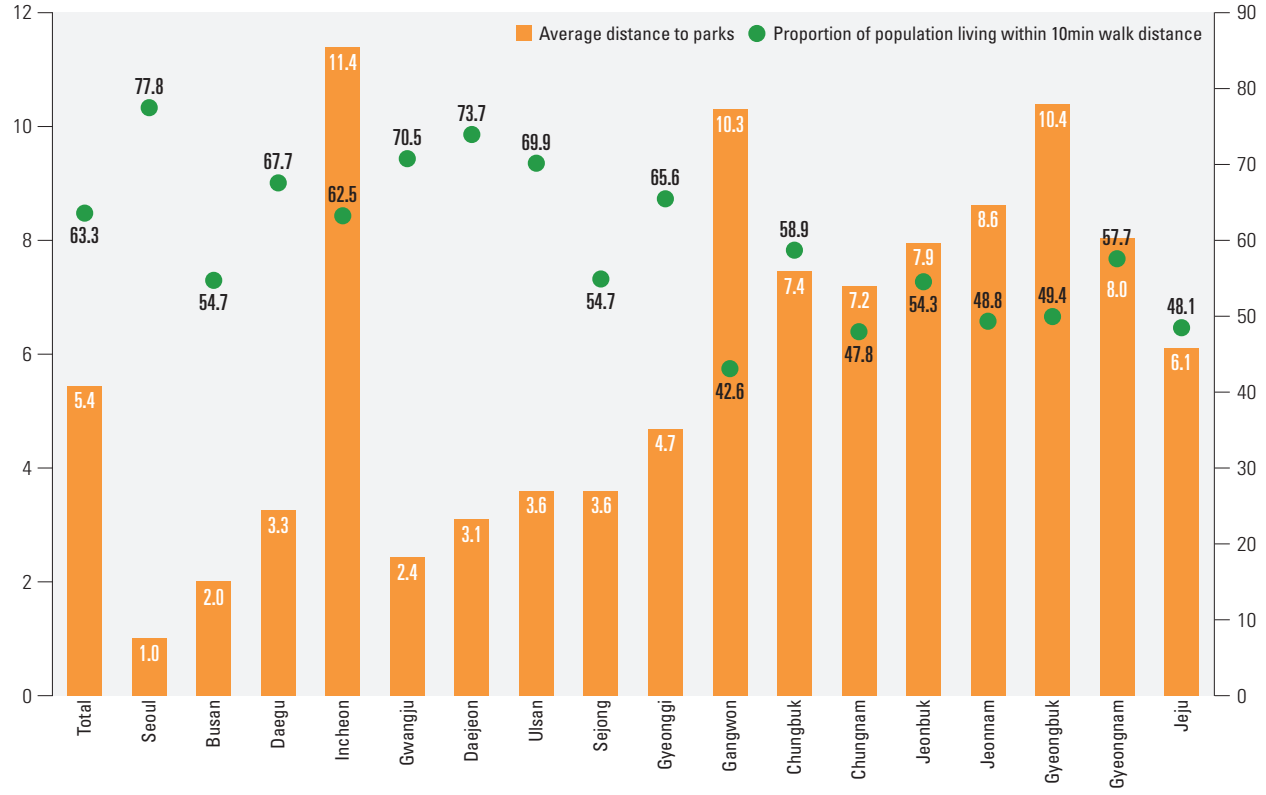
Changes in the area of urban parks, green spaces and amusement parks; 2011~2020 (Unit: km², km²/person)



Source: Ministry of Land, Infrastructure and Transport, Statistics of Urban Planning, each year(http://www.index.go.kr/potal/main/EachDtlPageDetail.do?idx_cd=1205, retrieved on September 22, 2021)
Note 1: Urban parks is spaces located in cities that protect the urban natural landscape and enhance physical and emotional health, and entertainment.
Note 2: Green spaces: spaces designed to improve the urban landscape by conserving or improving the natural environment in an urban area and preventing pollution or disasters
Note 3: Amusement parks: facilities for entertainment and recreation installed to enhance the well-being of residents
Note 4: Determined area for urban parks: The designated area to develop an urban park according to the city plan
Note 5: Any determined area for urban parks designated according to the urban planning would have the decision lifted after being left unchanged without any park being built for 20 years, an action that intends to protect the property rights of the land owner. With the amendment of the related law in 2000, a number of sites had their designation completely lifted in 2020.

Accessibility to parks by city and province; 2020

(Unit: km, %)



Source: Ministry of Land, Infrastructure and Transport, Land Monitoring Report, 2020(http://map.ngii.go.kr/ms/pblictn/nationalYearBook.do, retrieved on September 22, 2021)

The Land Monitoring Report published by the Ministry of Land, Infrastructure and Transport involves data on the proportion of the population living within the park service area and the average distance, indicating accessibility of parks. The national average distance to parks in 2020 is 5.4 km. By city and province, Seoul Metropolitan City(1km) and Busan Metropolitan City(2km) have the highest accessibility, while Incheon Metropolitan City(11.4km), Gyeongsangbuk-do(10.4km), and Gangwon-do(10.3km) have least accessible parks. Seoul dwellers have 11.4 times more access to parks than those living in Incheon, indicating a huge accessibility gap between regions.

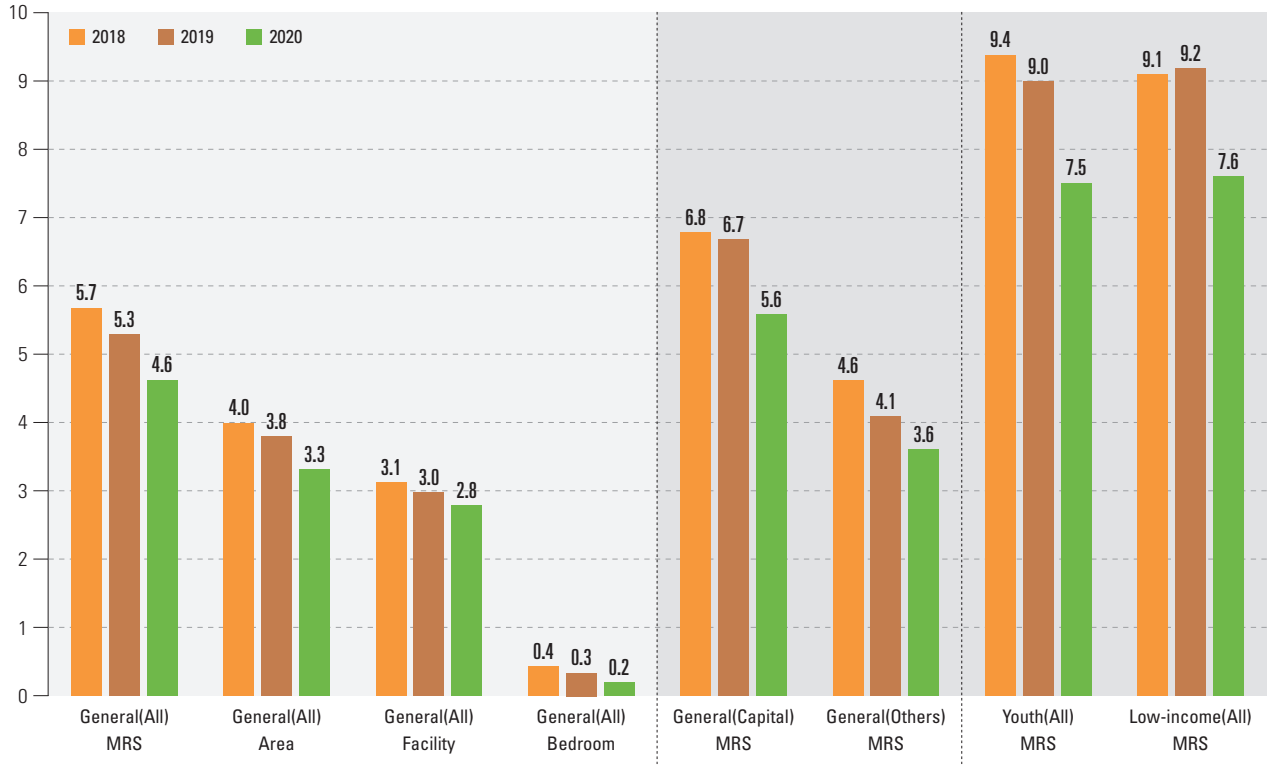
The data on the proportion of the population within the park service area in 2020 shows that 63.3% of the total population lives within a 10-minute walk distance(750m) to parks. By province, Seoul has the highest rate of 77.8%, and Gangwon has the lowest rate of 42.6%. Since public green spaces play a key role in enhancing urban sustainability, more efforts are needed to systematically create public green spaces in consideration of accessibility within the city.

Vulnerable groups in cities are more likely to live under the minimum residential standards

Households living under the minimum residential standards(MRS) are those living in places that do not meet the residential area, bedroom, or facility standards. According to the 2020 Housing Survey, the proportion under the standards among general households was 4.6%, a decrease of 0.7%p from the previous year. The percentage was 3.3% for the residential area standard, 2.8% for facility, and 0.2% for bedroom, all of which dropped from the previous year. By region, 5.6% of households living in the capital area do not meet the minimum residential standard, which is 2%p higher than the 3.6% of households living outside the metropolitan area. By household characteristics, the percentage of youth and low-income households not meeting the minimum residential standard was 7.5% and 7.6% respectively, which is higher than that of general households. In particular, 10.4% and 10.1% of the two types of households living in the metropolitan area were under the minimum standards, which is higher than those living outside the capital area.

Overall, the living environment is improving while the impact of the COVID-19 pandemic on housing is not significant. However, 4.6% of vulnerable households under the minimum residential standards are more likely to be exposed to infection due to poor ventilation and lighting conditions, and they also find it hard to work or study at home amid the pandemic(Mina Kang, Hubin Lee, 2021). In addition, it is

Households living under the minimum residential standards; 2018~2020 (Unit: %)



Source: Ministry of Land, Infrastructure and Transport, Housing Survey, each year(http://stat.molit.go.kr/portal/cate/statView.do?hRsId=327&hFormId=6033&hSelectId=6033&sStyleNum=1&sStart=2020&sEnd=2020&hPoint=00&hAppr=1&oFileName=&rFileName=&midpath=, retrieved on September 22, 2021)

noteworthy that the percentage of youth and low-income households living under minimum residential standards is higher than that of general households.

Worsening housing conditions for the vulnerable due to the prolonged COVID-19 pandemic prompts governments in each country to strengthen public housing systems such as social rental housing. 'Social rental housing' refers to the stock of residential rental accommodation provided at submarket prices(Salvi, 2016). They function as affordable housing that low-income families can afford, and provide diversity to the national housing market. Therefore, social rental housing above a certain percentage is closely related to the housing stability of low-income groups.

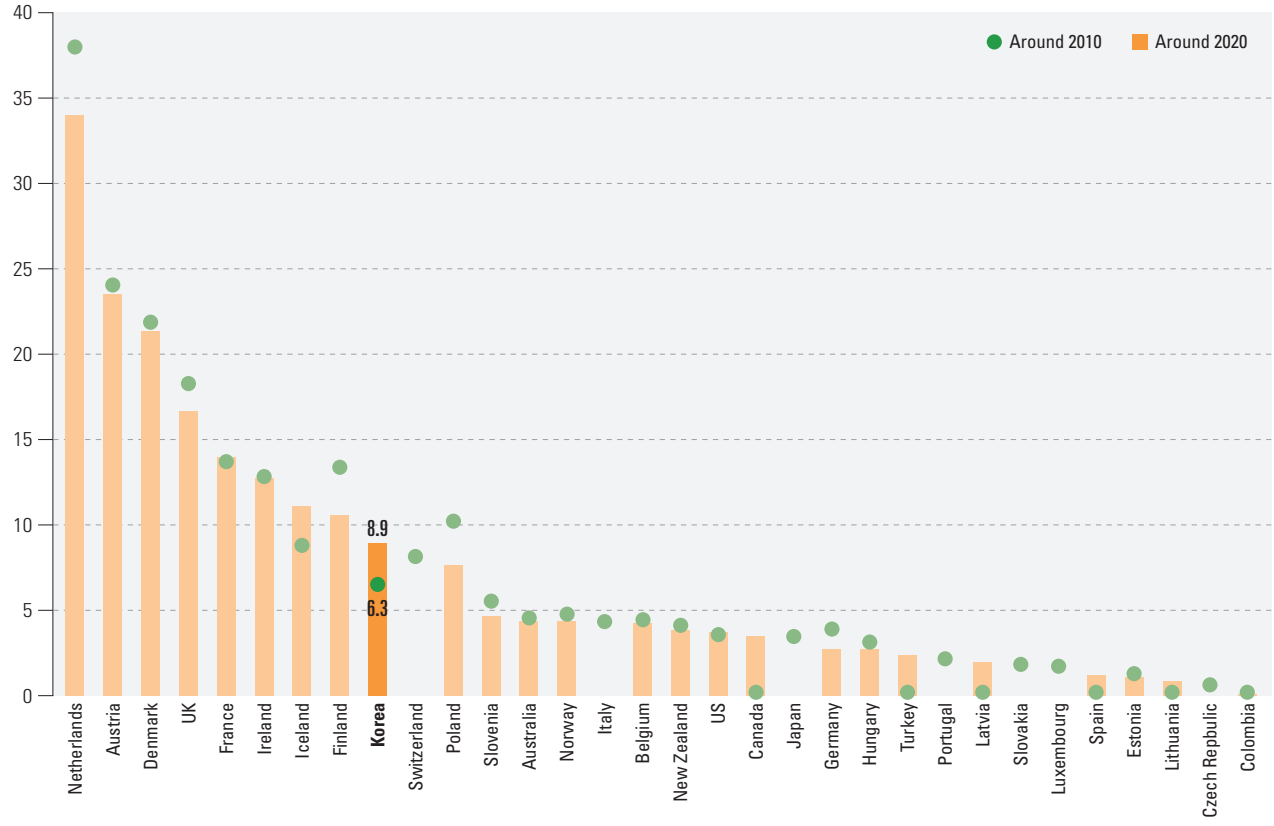
Social housing represents about 28 million dwellings and accounts on average for around 6.9% of the total housing stock in the OECD as of 2020. The size of the sector varies considerably across countries. Accounting for over 20% of the total housing stock, the sector is largest in the Netherlands, Denmark and Austria. At less than 10% of the overall housing stock, the sector is relatively small in most countries except for some European countries. Korea is among them with the sector taking up about 8.9% of the total stock, which is about 2% higher than the OECD average, and the 9th highest. Poland(7.6%) has a similarly-sized social rental housing sector as Korea.

Access to inclusive public transportation varies significantly across regions

SDG 11 aims to provide access to safe, affordable and sustainable transport systems for all, with special attention to the needs of those in vulnerable situations, older persons and children. The share of low-floor buses can be an indicator of the level of inclusiveness for the vulnerable population in transport systems. Being first introduced in 2004, the number of the buses increased from 4,215 in 2012 to 9,840 in 2020, and its share more than doubled from 12.8% in 2012 to 27.8% in 2020. By region, the adoption rate is highest in Seoul at 57.8% and 32.9% in Jeju Island among eight cities. On the other hand, the share is only about 10% in some regions including Chungnam at 10.0%, Jeonnam at 11.5% and Ulsan at 12.3%, indicating gaps between regions. It is also noteworthy that the gap between Seoul and other regions increased in 2020 compared to 2012. Therefore, it is important to provide basic means of transportation for the vulnerable groups in all regions.

Share of social rental dwellings as a % of total dwellings of OECD countries

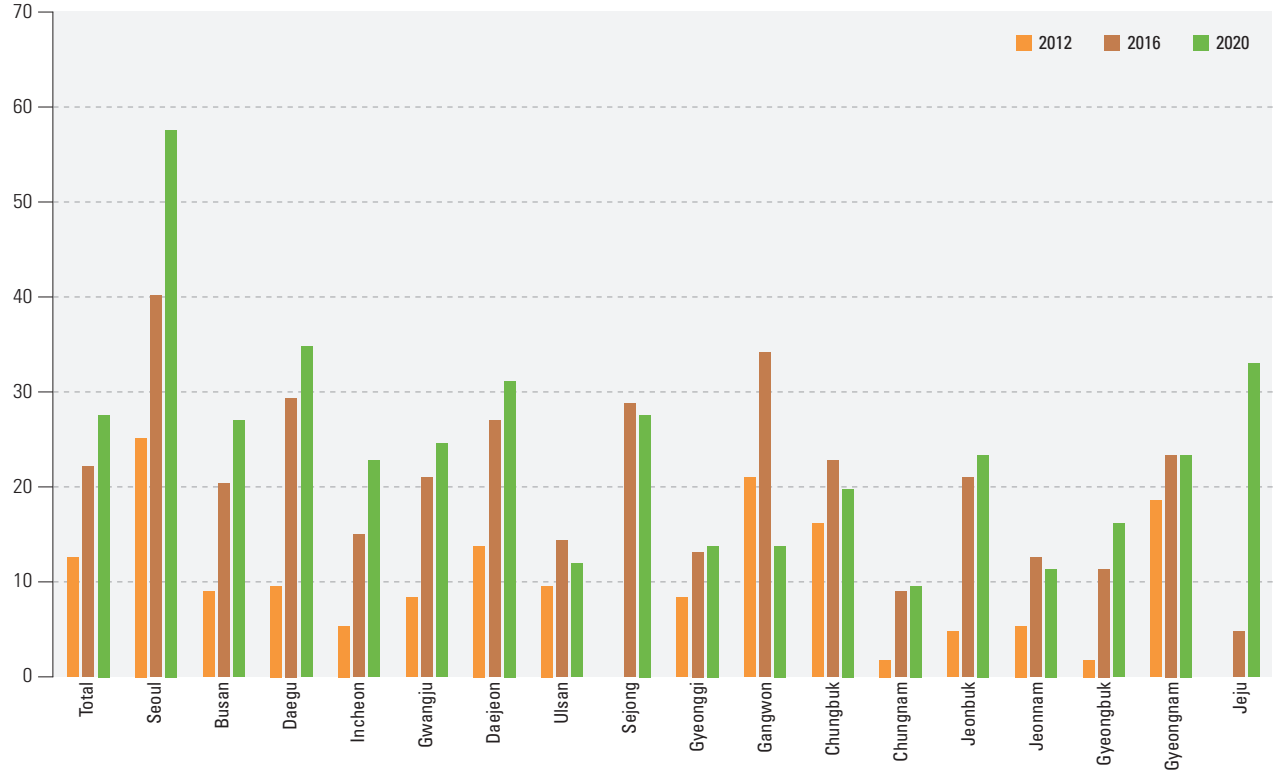
(Unit: %)



Source: OECD, Public policies towards affordable housing (https://www.oecd.org/housing/data/affordable-housing-database/housing-policies.htm, retrieved on September 22, 2021)
Note : For the Korea, data reference is 2010 and 2018

The share of low-floor buses by region; 2012~2020

(Unit: %)



Source: Ministry of Land, Infrastructure and Transport, Statistics of Low-floor Bus, each year(http://stat.molit.go.kr/portal/cate/statView.do?hRsId=354&hFormId=5250&hSelectId=5250&hPoint=00&hAppr=1&hDivEng=&oFileName=&rFileName=&midpath=&month_yn=N&sFormId=5250&sStart=2012&sEnd=2020&sStyleNum=1&EXPORT=EXCEL, retrieved on September 2, 2021)

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

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Ensure sustainable consumption and production patterns

SDG 12 emphasizes efforts to change the unilinear economic structure of production and consumption into a cyclical system by efficiently using resources and reducing pollutant emissions in the entire process of production, distribution and consumption of products or services. There are many global efforts being made to transition toward a resource-circulating society in which waste is reduced and resources and energy are circulated through sustainable consumption and production. Many countries are reviewing their institutional frameworks from the perspective of a circular economy from production to consumption. Based on the Framework Act on Resource Circulation enacted in 2018, Korea established the 1st National Resource Circulation Basic Plan(2018~2027) and 17 metropolitan cities and provinces also set up Resource Circulation Implementation Plans and 2021 K-Circular Economy Innovation Implementation Plans, pursuing a society in which the material circulation of the entire society, such as transition, industry, transportation, buildings, agriculture, and forests.

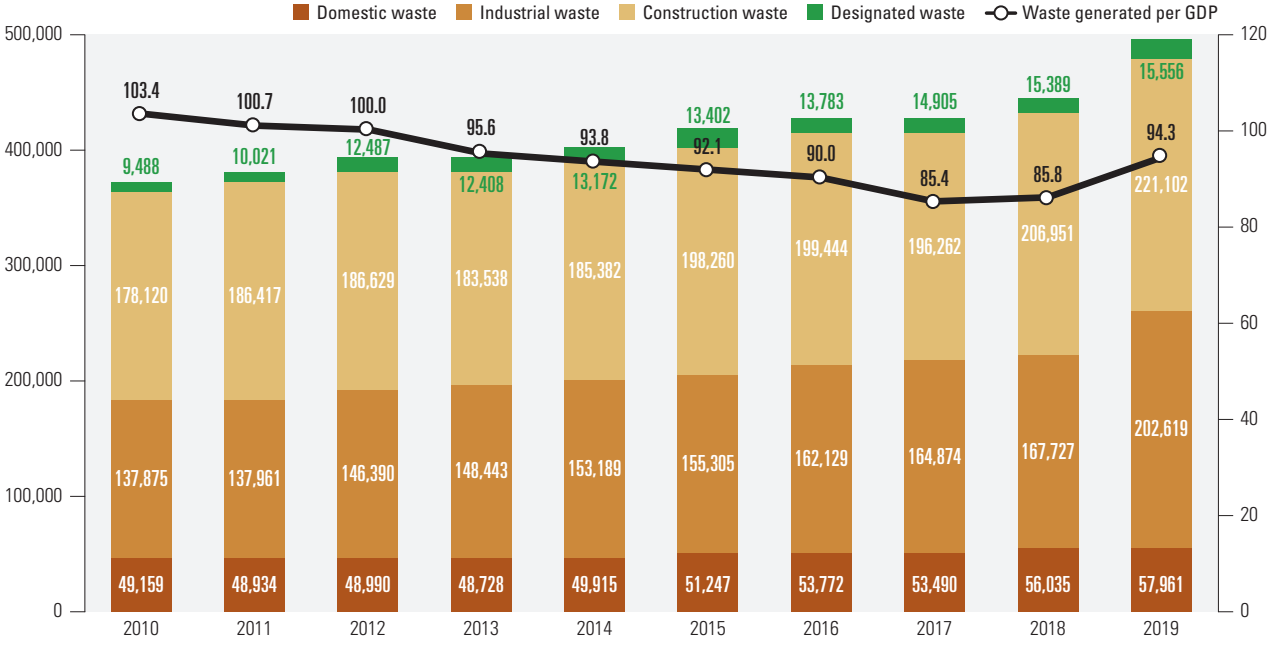
Waste generation is the key to a smooth operation of resource circulation and the circular economy. The World Bank(2018) predicted that the world's waste generation will reach 3.4 billion tonnes by 2050, an increase of about 60% from today. Korea is expected to generate 65.8% more waste in 2050 than it did in 2018, slightly higher than the global average(Korea Environment Institute, 2020). In Korea, the total amount of waste generated as a percentage of GDP has decreased overall, decoupling with economic and social factors. However, the amount of domestic waste generated per capita continues to increase, which means the country is being affected by growing consumption. In addition, packaging waste such as plastic has increased rapidly in 2020 due to COVID-19, and there is a change in the amount of specific waste such as medical waste, which requires everyone's attention.

The amount of waste generated has increased more rapidly than the recent economic growth

As of 2019, the average daily amount of total waste generated was 497,238 tonnes/day, an 11.5% increase from 2018(446,102 tonnes/day). The number has been on an overall increase: it decreased slightly in 2013 compared to the previous year before increasing again since 2014. The total amount of waste per GDP peaked in 2010 at 103.4 tonnes/KRW billion, showing a decreasing trend from 2010 to 2017, and then increasing again from 2018. In 2019, waste

Waste generation by waste type; 2010~2019

(Unit: tonne/day, tonne/KRW billion)



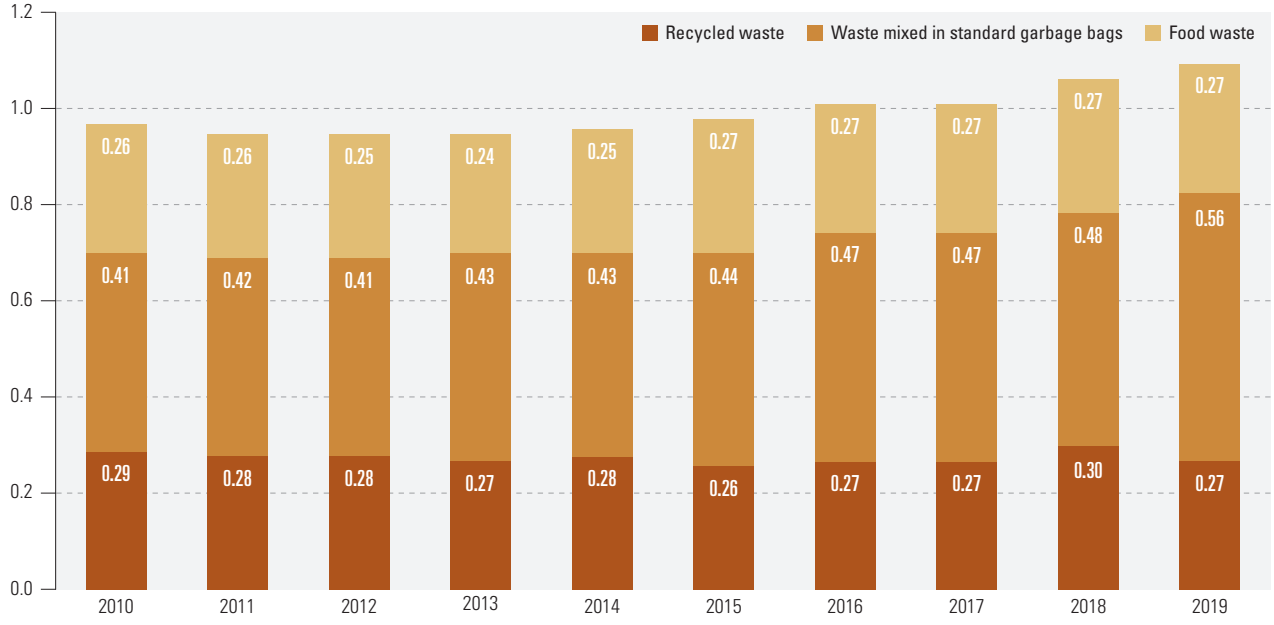
Source: Ministry of Environment, Korea Environment Corporation, 2010~2019 National Waste Generation and Disposal, 2010~2017 Designated Waste Generation and Disposal; Bank of Korea, National Income
Note 1: Total waste is the sum of domestic waste, industrial waste, construction waste, and designated waste.
Note 2: The amount of waste generated per GDP is calculated based on the formula of 'total waste generated/GDP'.
Note 3: Designated Waste Generation and Disposal has been integrated into the National Waste Generation and Disposal since 2018.

generation per GDP increased by 9.9% from 85.8 tonnes/KRW billion in 2018 to 94.3 tonnes/KRW billion

The amount of domestic waste per capita continuously increased from 0.96kg in 2010 to 1.09kg in 2019 on average per day. By type, the amount of recycled and food waste generated per person maintained their trend without big changes, but the volume of waste mixed in standard garbage bags increased gradually. This can be seen as the effect of the increase in the number of products that are difficult to separate and sort out for recycling and increasing consumption. Meanwhile, the average waste generation of 34 OECD countries in 2018 was 1.47kg/day/person, and Korea generated the 6th smallest amount of waste with 1.10kg/day/person, following Colombia(0.67), Costa Rica(0.80), Poland(0.90),

Daily domestic waste generation per capita 2010~2019

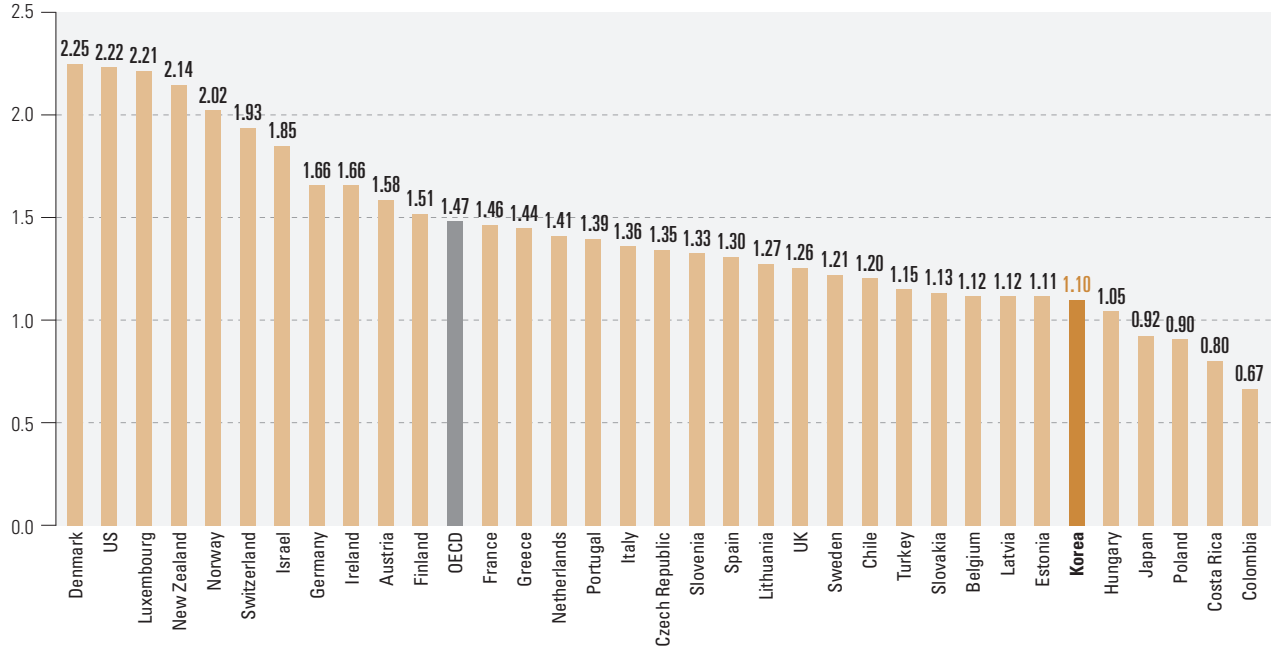
(Unit: kg/day/person)



Source: Ministry of Environment, Korea Environment Corporation, 2010–2019 National Waste Generation and Disposal
Note : Domestic waste has different categories depending on the disposal method, including for recycling, mixed in standard plastic garbage bags, and food waste.

Daily domestic waste generation per capita of OECD countries; 2018

(Unit: kg/day/person)



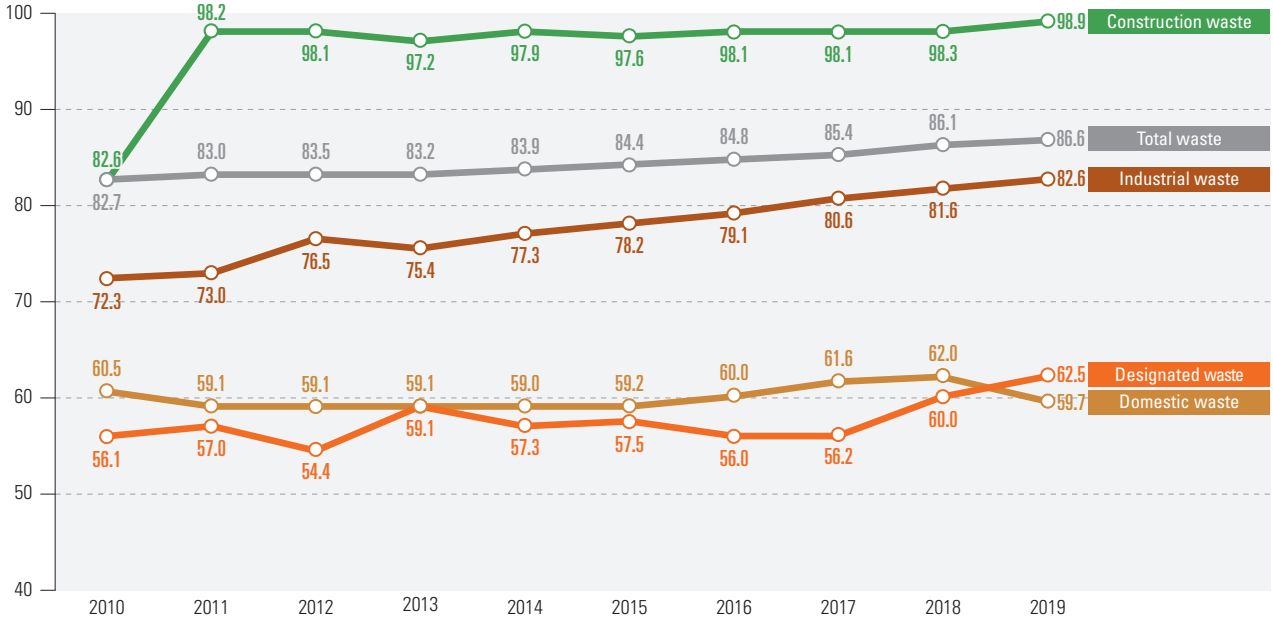
Source: OECD Statistics, Environment(https://stats.oecd.org/#, retrieved on September 10, 2021)

Japan(0.92) and Hungary(1.05).

The recycling rate is relatively high in Korea compared to other OECD countries

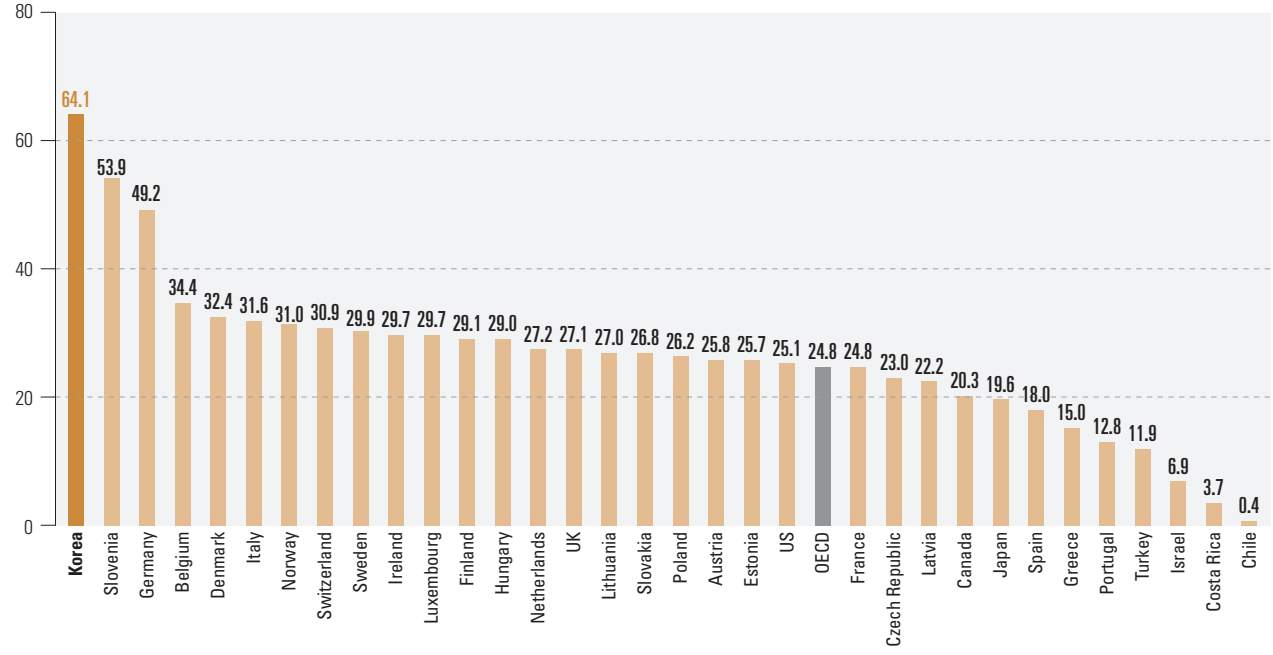
The recycling rate of total waste continued to increase from 82.7% in 2010 to 86.6% in 2019, while the industrial and designated waste(hazard waste) witnessed significant increases of 10.3%p and 6.4%p, respectively. This is because most of the garbage was transitioned to recycling from landfill for industrial waste and from incineration for designated waste. Meanwhile, the recycling rate of domestic waste in 2019 stood at 59.7%, a slight decrease from the previous year(62.0%), but the number is still relatively high compared to other OECD countries.

Recycling rate by waste type; 2010~2019 (Unit: %)



Source: Ministry of Environment, Korea Environment Corporation, 2010~2019 National Waste Generation and Disposal, 2010~2017 Designated Waste Generation and Disposal

Recycling rate of domestic waste of OECD countries; 2018 (Unit: %)



Source: OECD Statistics, Environment(https://stats.oecd.org/#, retrieved on September 10, 2021)

The amount of food waste generated and the share of each disposal type; 2010~2019 (Unit: tonne/day, %)

Source: Ministry of Environment, Korea Environment Corporation, 2010~2019 National Waste Generation and Disposal

As of 2018, the average recycling rate of domestic waste in OECD countries was 24.8%, and Korea ranked first among 33 countries at 64.1%, followed by Slovenia(53.9%), Germany(49.2%), Belgium(34.4%) and Denmark(32.4%).

All of the food waste should be recycled as a resource and energy

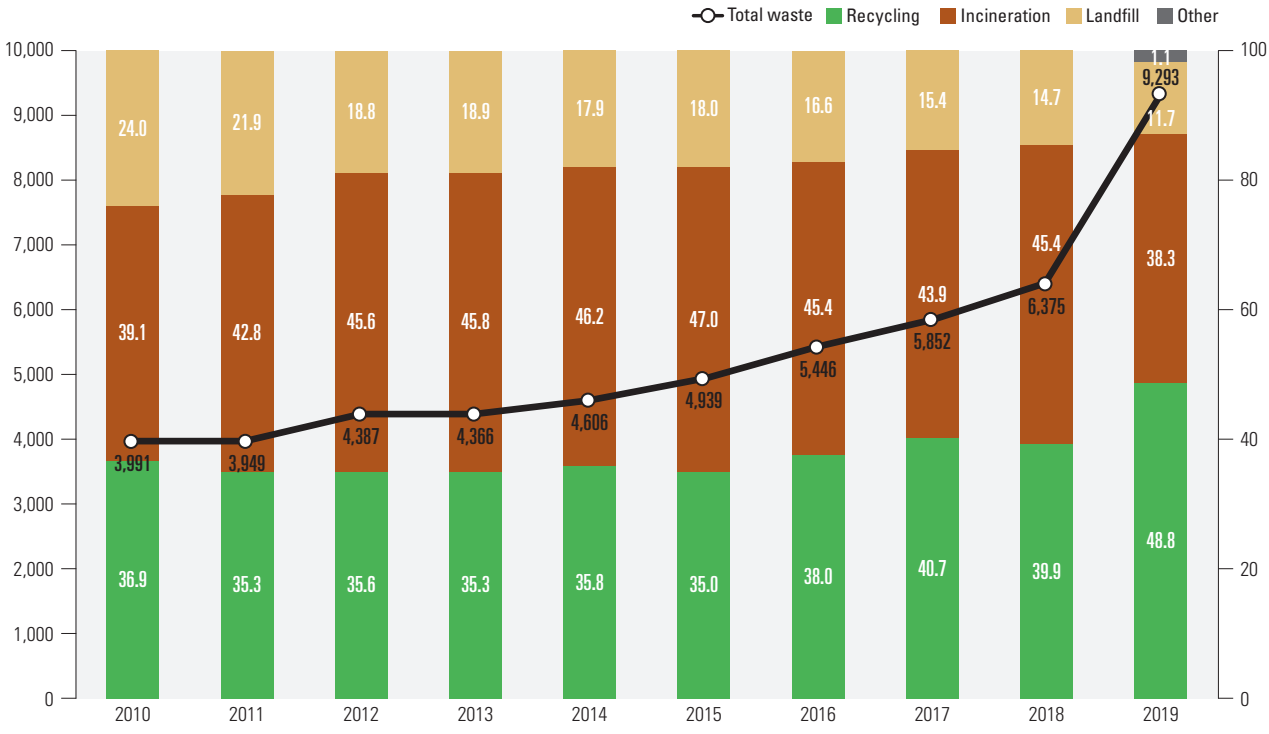
The amount of food waste among domestic waste has gradually decreased since 2010 when the pilot program for a volume-rate disposal system was introduced, before increasing significantly in 2015, when the volume-based system was implemented nationwide, and in 2019, an average of 15,999 tonnes/day was generated per day. At the pilot stage, many people threw away food waste along with general waste or recyclable items due to the expansive plastic bag for food waste, resulting in temporary drops from 2010 to 2014. However, as the system was fully implemented, the amount of food waste generated per person has been maintained at the level of 0.30 to 0.31kg/day. Of the food waste generated, 88.3% was recycled in 2019 after experiencing a continued decrease with 8.1% incinerated, 3.0% buried, and 0.6% addressed in other ways.

A ban on direct landfill of food waste was introduced in 2005, and since then, it has been recycled into animal feed. However, another ban was introduced on feeding cattle with leftovers in the early 2000s due to the outbreak of foot-and-mouth disease and restrictions on giving chickens and ducks food scrap as feed in the mid-2000s due to the spread of avian influenza(AI). After the outbreak of African Swine Fever(ASF), which occurred in the late 2010s, food waste feed is no longer an option for farmers. More facilities are being built to turn them into energy, but much of the waste is being incinerated in cities, increasing the proportion of incineration among food waste.

Plastic waste is surging, but there is not enough capacity for recycling

The amount of plastic waste surged from 3,991 tonnes/day in 2010 to 6,375 tonnes/day in 2018 and 9,293 tonnes/day in 2019. The recycling rate increased from 36.9% in 2010 to

The amount of plastic waste generated and the share of each disposal type; 2010~2019 (Unit: tonne/day, %)



Source: Ministry of Environment, Korea Environment Corporation, National Waste Generation and Disposal, each year
Note 1: Expanded Polystyrene(EPS) was newly included in recycling in 2016.
Note 2: The data was collected based on two categories until 2018: plastic and waste synthetic resins. In 2019, plastic was divided into PET and others to be included in recycled waste synthetic resins. The data is based on the previous version of the categories used until 2018. Please refer to the separated data for detailed categories.
Note 3: According to the national waste generation and treatment status in 2019, recycled waste synthetic resins are classified only as foamed resins, vinyls, PET, and others.
Note 4: Among waste synthetic resins in 2019, pet + other = classified as recycled plastics.
Note 5: In the case of combustible plastics, synthetic resins, which were classified as volume-based waste and other items, were added to the category of combustible synthetic resins in 2019, but there is no basis for accurately knowing the numerical value of the detailed items.

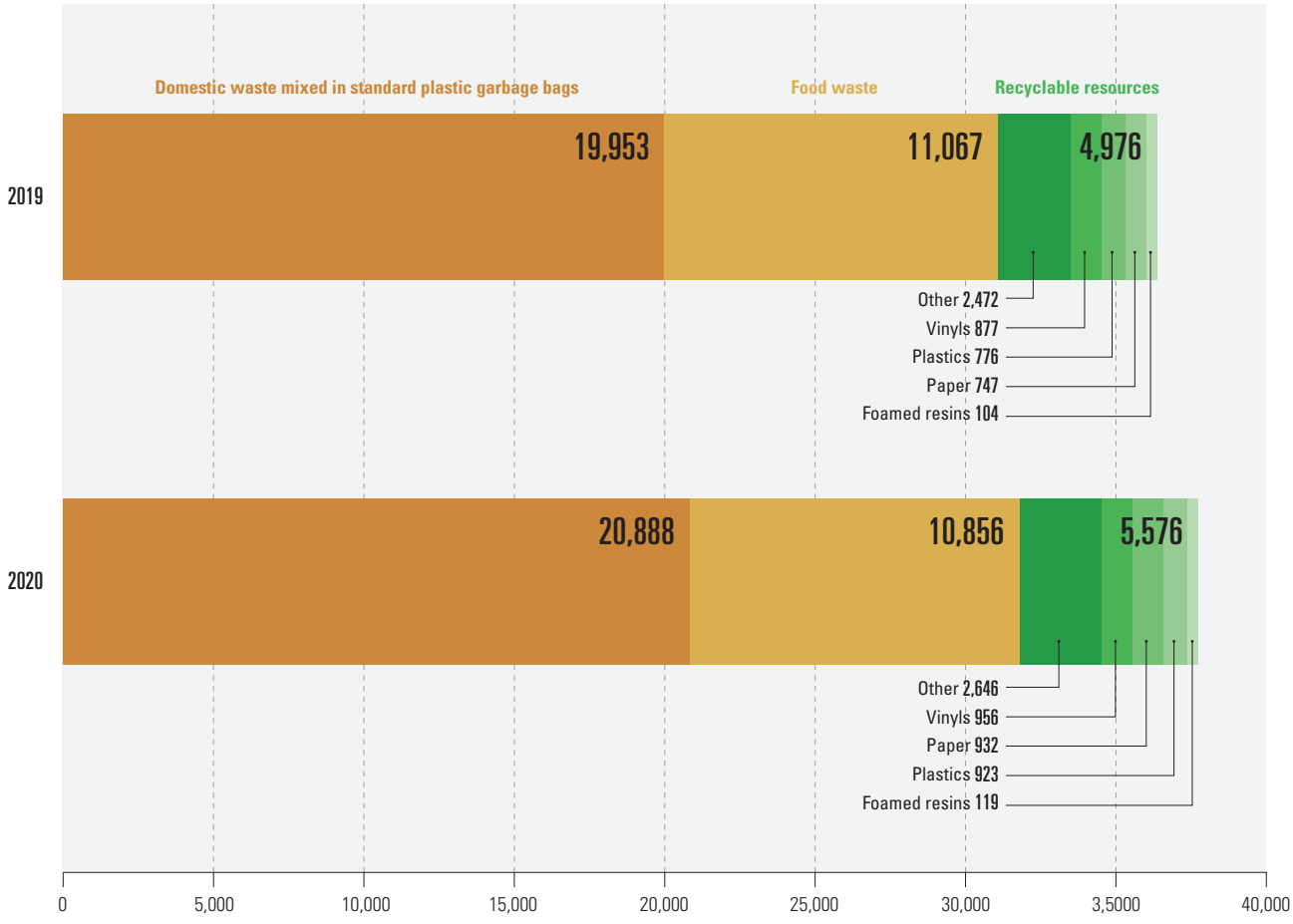
40.7% in 2017, and after a slight decrease(39.9%) in 2018, it rose again to 48.8% in 2019. The decrease in 2018 was the result of recycling companies refusing to collect plastic waste and China's ban on plastic waste imports. In 2019, the amount of plastic waste soared and the recycling rate also increased, which was also affected by the reform of the statistical classification system. Meanwhile, 38.3% of plastic waste was incinerated and 11.7% landfilled in 2019. As direct landfill of combustible domestic waste will be banned in the metropolitan area by 2026 and nationwide by 2030, a significant amount of landfill disposal is expected to be converted to recycling or incineration.

Recycling waste related to packaging has increased significantly due to COVID-19

Among the amount of waste generated per day of recyclable items, paper stood at about 4,330 tonnes/day on average for 10 years(2010~2019) before COVID-19, and the rate of change from the previous year was –3.0% on average. During the same period, 1,345 tonnes of plastic waste was generated per day, and the rate of change from the previous year until 2018 was an average of 4.2%. On the other hand, the waste classification was reorganized in 2019, and among household wastes in 2019, 11,014 tonnes of waste synthetic resins(including volume-based and recycling) was generated per day. This is 124.9% of the amount generated in 2010(4,875 tonnes/day), indicating a huge increase. In other words, before the pandemic, the amount of waste generated from recycled papers and plastics, except for synthetic resins, did not increase significantly.

However, COVID-19 has changed the pattern. According to a survey conducted by the Ministry of Environment, the total amount of waste brought into public treatment facilities amounted to 35,996 tonnes/day in 2019, and 37,320 tonnes/day in 2020, an overall increase of 3.7%. Among them, paper(24.8%), plastics(18.9%), and foamed resins(14.4%) increased sharply in the order, which seems to be due to the growing non-face-to-face consumption culture, for example, by using courier service and food delivery. On the other hand, the amount of food waste has decreased, which seems to be the result of preference for convenience food.

Patterns of waste brought into public treatment facilities before and after COVID-19; 2019, 2020 (Unit: tonne/day)



Source: Ministry of Environment, 2021 Data on Domestic Waste Generation Before and After COVID-19(Internal data)

COVID-19 medical waste management system is gradually stabilized

Medical waste in Korea is classified and managed as isolated medical waste, hazardous medical waste(tissue logistics waste, pathological waste, destructive waste, biological/chemical waste, blood medical waste), and general medical waste. After the outbreak of COVID-19, a new category of COVID medical waste was newly introduced in January 2020, and from March of the same year, medical waste generated at community treatment centers is also treated as COVID medical waste. At this time, waste generated during the operation and support process without contact with a confirmed person is treated as general medical waste(Ministry of Environment, 2020).

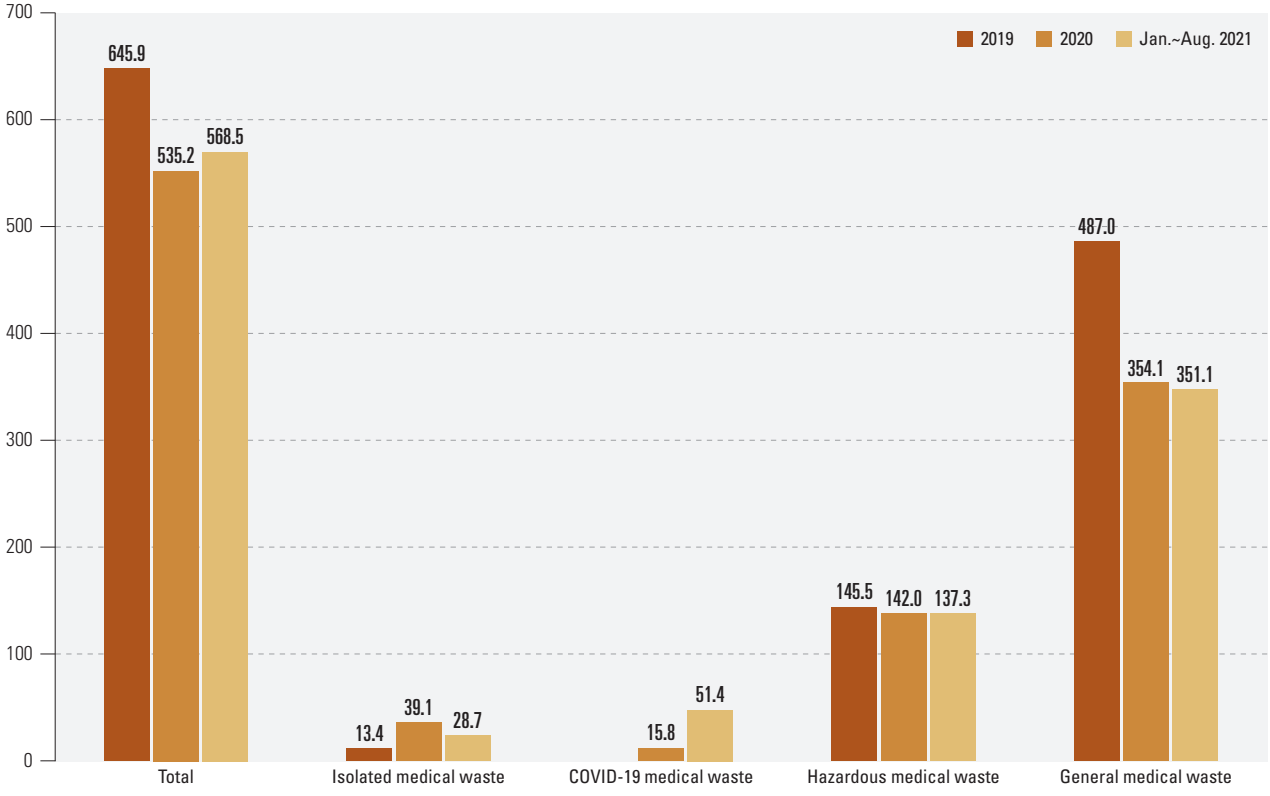
Medical waste is on the rise every year, and in 2019 it was 645.9 tonnes/day, a 104.9% increase from the amount generated in 2010(315.2 tonnes/day). Among them, general medical waste accounts for 75.4%. On October 29, 2019, the Enforcement Decree of the Waste Management Act was amended and disposable diapers with low infectivity were excluded from medical waste. As a result, the amount of medical waste in 2020 decreased to 535.2 tonnes/day. That is why the treatment capacity of 110.7 tonnes/day was added compared to the previous year.

COVID medical waste generated due to the continuous spread of COVID-19 stood at 15.8 tonnes/day in 2020, accounting for 2.9% of the total medical waste. From January to August 2021, the amount of COVID medical waste generated was 51.4 tonnes/day, an increase of 9.0%. The number between January 2020 and August 2021 is at 30.0 tonnes/day, and the monthly amount of COVID medical waste per person is 72.7kg/person/month, which is 2.4kg/person/day.

Meanwhile, the proportion of other medical wastes(the sum of hazardous and general medical waste) amounted to 97.9% in 2019, but decreased to 92.7% in 2020 and 85.9% in 2021(as of August).

Patterns of medical waste generation before and after COVID-19; 2019~2021

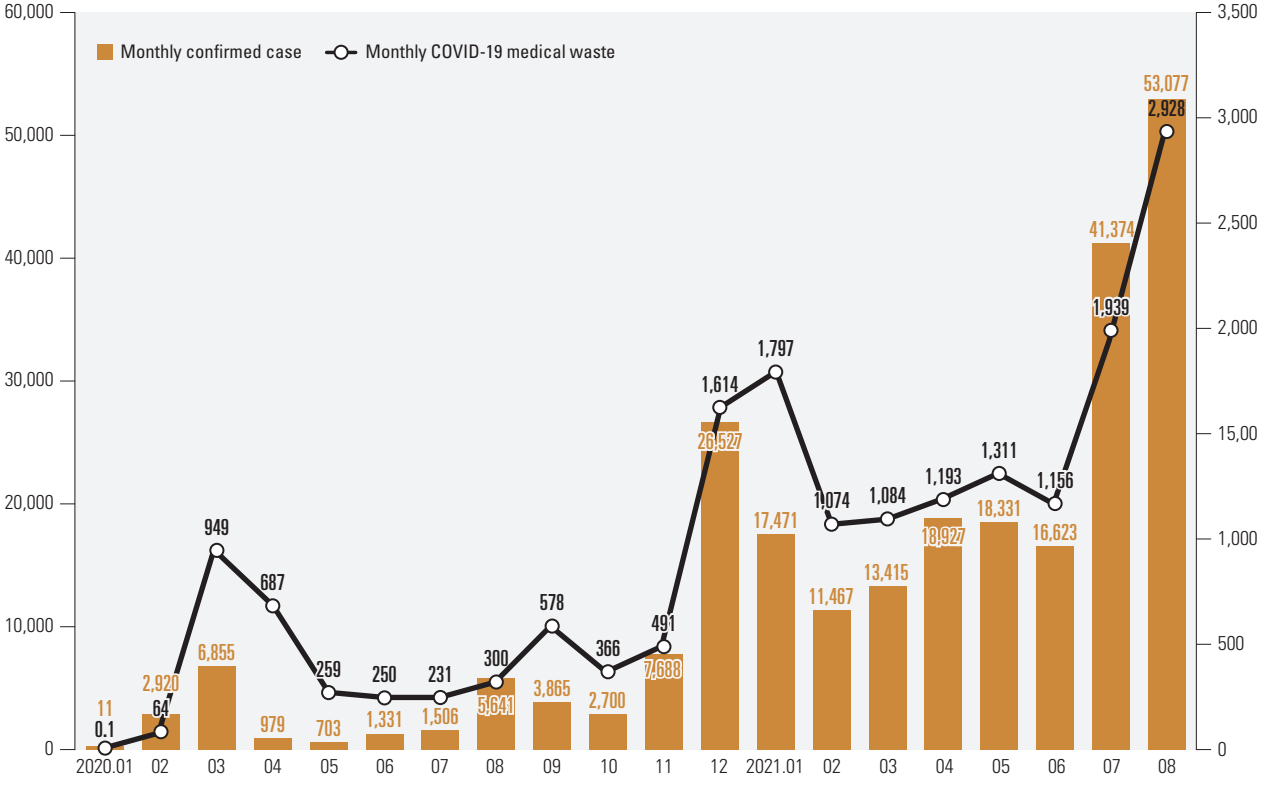
(Unit: tonne/day)



Source: Ministry of Environment, Korea Environment Corporation 2019 National Waste Generation and Disposal, Medical and COVID Waste Data(Jan 2020~Aug 2021) internal data

Monthly COVID-19 confirmed cases and medical waste generation; 2020~2021

(Unit: person/month, tonne/month)



Source: Ministry of Environment, Korea Environment Corporation Medical and COVID Waste Data(Jan 2020-Aug 2021) internal data, Korea Centers for Disease Control and Prevention, Integrated Disease Management System(http://ncov.mohw.go.kr, retrieved on September 10, 2021

13 CLIMATE ACTION

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Take urgent action to combat climate change and its impacts

SDG 13 aims to cut greenhouse gas emissions caused by human activities and reduce the global average temperature to minimize its impacts. According to the 6th Assessment Report(August 2021) of the 1st Working Group of the Intergovernmental Panel on Climate Change(IPCC), the time of reaching global warming of 1.5°C compared to before the industrial revolution is predicted to be 2021~2040. This is about 10 years earlier than the 2030~2052 period suggested in the 2018 Global Warming 1.5°C Special Report, which shows that global warming has accelerated. Along with such scientific evidence, the recent rapid increase in global extreme climate events and their damage is urging us to take climate actions.

To respond to this, the Korean government is taking swift actions. The 2050 Carbon Neutrality Commission was launched(May 2021) and the Carbon Neutrality Green Growth Framework Act(August 2021) was enacted, followed by the establishment of the Declaration of 2050 Carbon Neutrality by the President in December 2020. Korea became the 14th country to adopt a law regarding carbon neutrality. It also increased its ambition for greenhouse reduction to cut 40% by 2030 compared to the 2018 level in its new Nationally Determined Contribution(October 2021). The government also held the Carbon Neutrality Week event(December 2021) to celebrate the 1st anniversary of the Carbon Neutrality Vision Declaration to raise awareness of a carbon neutral society and to promote an active carbon neutral life practice campaign. Along with these policy trends, the declaration of RE100 and the introduction of ESG management in the private sector are garnering a lot of attention.

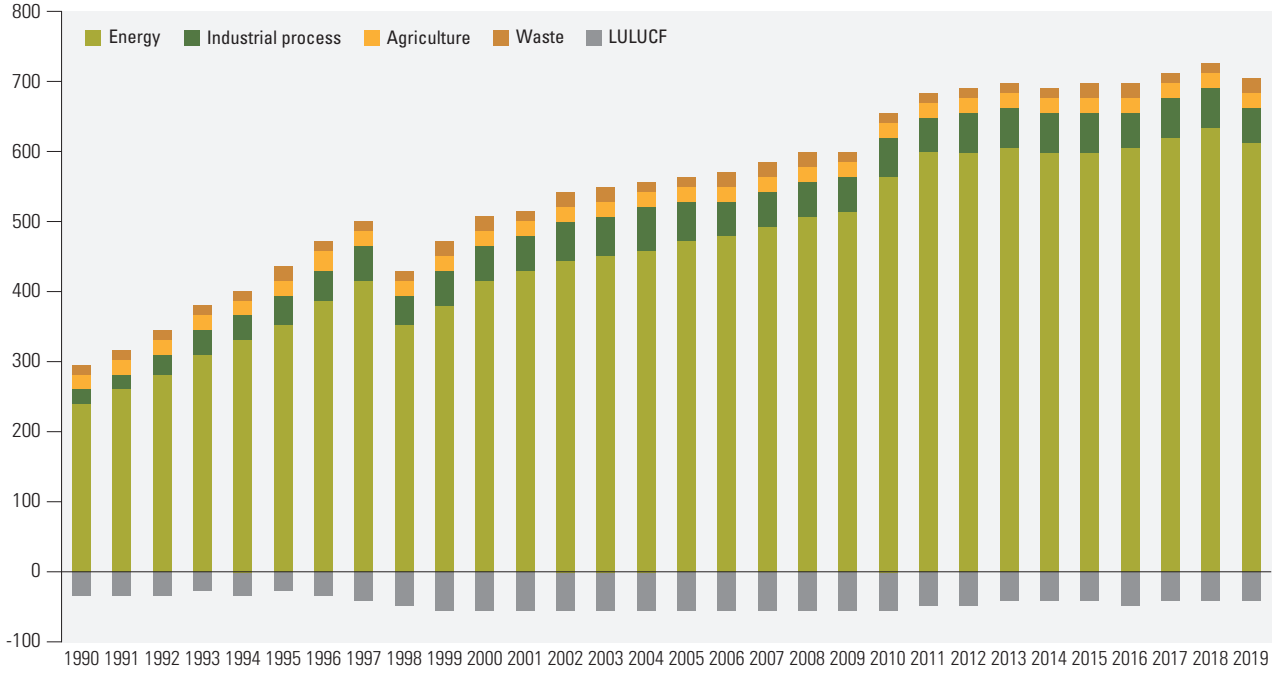
- **RE100**: RE100 is a global initiative bringing together the businesses committed to 100% renewable electricity by 2050. Korean enterprises are also joining the Korean-version RE100, which is a voluntary campaign.
- **ESG**: ESG stands for Environmental, Social, and Governance. Investors are increasingly applying these non-financial factors as part of their analysis process to identify growth opportunities of businesses, along with financial factors. The standard focuses on environmental protection, socially responsible investment, and improvement of governance in corporate management.

Greenhouse gas emissions decreased from the previous year

Even if we immediately reduce greenhouse gas emissions, we cannot prevent the various damages caused by climate change. Therefore, we need to make efforts to adapt to climate change. The 3rd National Climate Change Adaptation Measures(2021~2025) were established, and in the first year of implementation in 2021, practice for climate change ad-

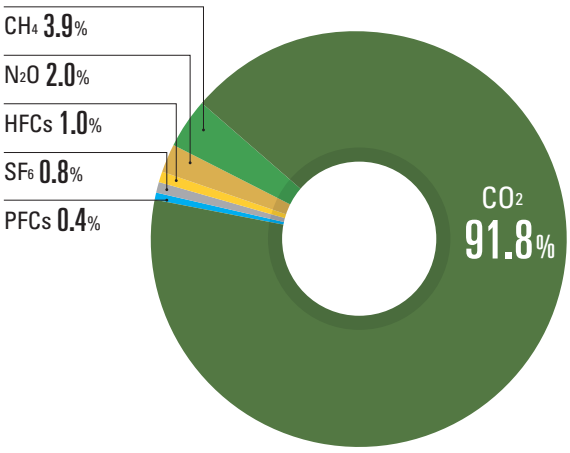
GHG emissions; 1990~2019

(Unit: million tonnes of CO_2eq.)



Source: Ministry of Environment/Greenhouse Gas Inventory and Research Center, 2020 National Greenhouse Gas Inventory Report(https://www.index.go.kr/potal/stts/idxMain/selectPoSttsIdxSearch.do?idx_cd=1464, retrieved on January 10, 2022)

Proportion of emission by gas type; 2019



Source: Ministry of Environment/Greenhouse Gas Inventory and Research Center, 2020 National Greenhouse Gas Inventory Report(https://www.index.go.kr/potal/stts/idxMain/selectPoSttsIdxSearch.do?idx_cd=1464, retrieved on January 10, 2022)

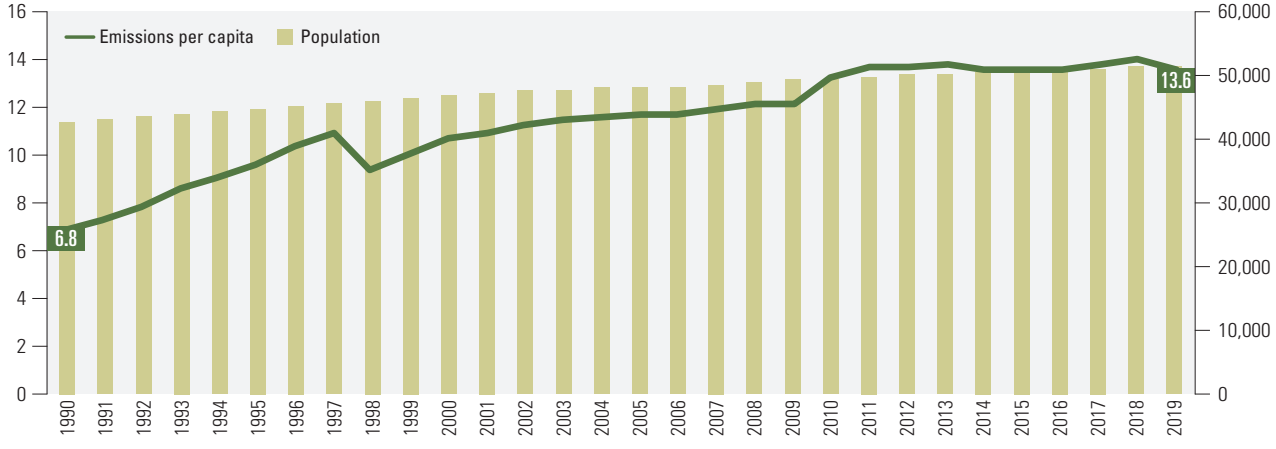
aptation is being carried out in all walks of life. The detailed implementation plans(2021) of regional governments were adopted, and adaptation measures for all public institutions and climate change impact assessment are planned in accordance with the Carbon Neutrality Framework Act.

Many believe that the reduction in greenhouse gas emissions due to COVID-19 is temporary. Rather, increased single-use items and waste are likely to have a negative impact on climate change mitigation. It is necessary to find adaptation measures from various directions.

Korea's total greenhouse gas emission in 2019 is 701.4 million tonnes CO_2eq., and the net emission including LULUCF is 661.8 million tonnes CO_2eq. The total emission has been steadily increasing since 2000, but the growth is gradually slowing down. In particular, total emissions decreased by 3.5% compared to the previous year in 2019 after

Total GHG emissions per capita; 1990~2019

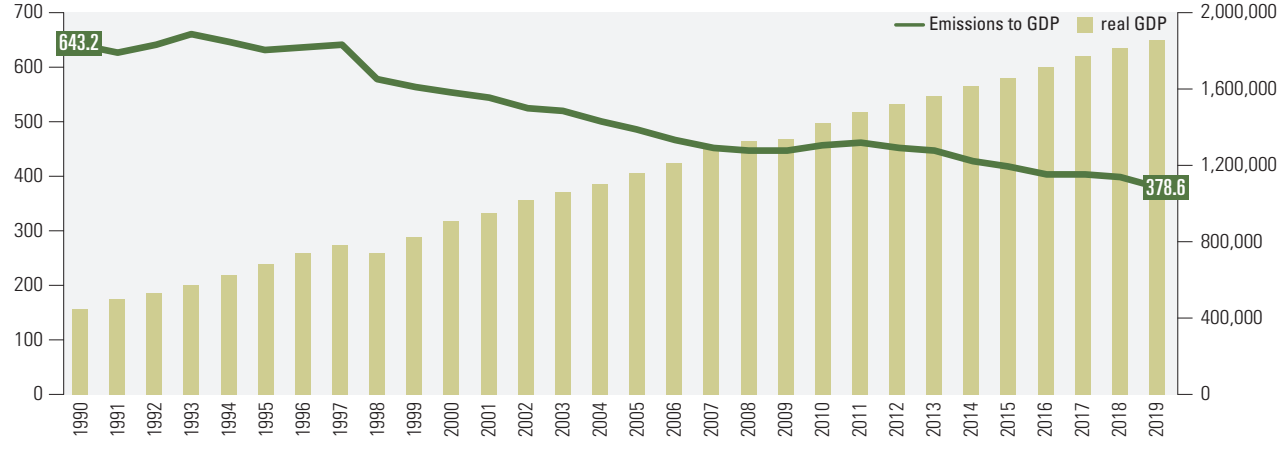
(Unit: tonnes of CO_2eq./person, 1,000 persons)



Source: 2021 National Greenhouse Gas Inventory(1990~2019)(www.gir.go.kr/home/index.do?menuId=36, retrieved on January 10, 2022)
Note : Population numbers are based on future population projections by city and province in 2017.

Total GHG emissions to real GDP; 1990~2019

(Unit: tonnes of CO_2eq./KWR billion, billion)



Source: 2021 National Greenhouse Gas Inventory(1990~2019)(www.gir.go.kr/home/index.do?menuId=36, retrieved on January 10, 2022)
Note : Real GDP is based on 2015 constant prices.

peaking in 2018.

The sector with the largest amount of greenhouse gas emissions was the energy sector, which emitted 611.5 million tonnes CO_2eq.(87.2%), followed by industrial process(52.0 million tonnes CO_2eq., 7.4%), agriculture(21.0 million tonnes CO_2eq., 3.0%), and waste(16.9 million tonnes CO_2eq., 2.4%). The LULUCF sector includes both emissions and absorption, with emissions of -39.6 million tonnes CO_2eq., absorbed more gas than the emitted.

By gas type, in 2019, carbon dioxide(CO_2) emissions stood at 643.8 million tonnes CO_2eq., accounting for 91.8% of total emissions. The proportion of non-CO_2 greenhouse gasses in total emissions is 3.9% for methane(CH_4), 2.0% for nitrous oxide(N_2O), 1.0% for hydrofluorocarbons(HFCs), 0.8% for sulfur hexafluoride(SF_6), and 0.4% for Perfluorocarbons(PFCs).

Korea's GHG emissions per capita, calculated using the total GHG emissions in 2019, stood at 13.6 tonnes CO_2eq., a decrease of 3.7% compared to 2018 and an increase of 99.1% from 1990. The reason for the increase is because industrial development, which led to emission increases, has been faster than population growth. The growth of GHG emissions between 1990 and 2018 was 140.1%, which was much higher than the population growth of 20.4%.

The total GHG emissions to GDP in 2019 stood at 378.6 tonnes CO_2eq. per KRW 1 billion, a decrease of 41.1% compared to 643.2 tonnes CO_2eq. per KRW 1 billion in 1990. The total GHG emissions and GDP increased at a similar rate from 1990 to 1997, but GHG emission increase was slower than the GDP growth in 1998, resulting in the decrease in GHG emission to GDP. The amount of GHG emissions per GDP was rather high during the period from 2010 to 2011 due to the financial crisis in 2009, but the number started decreasing again in 2012.

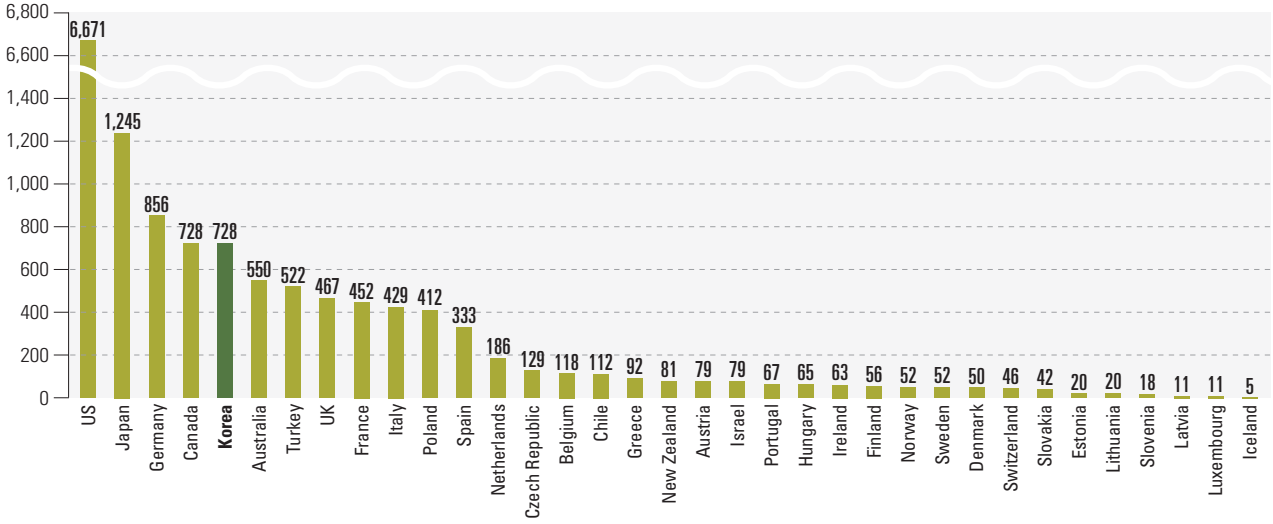
The total GHG emissions of Korea was the 5th largest among OECD countries in 2018, following the United States(6,671.4 million tonnes CO_2eq.), Japan(1,245.0 million tonnes CO_2eq.), Germany(855.9 million tonnes CO_2eq.), and Canada(728.5 million tonnes CO_2eq.). Korea's GHG emission per capita was the 8th largest following Australia(22.1 tonnes CO_2eq.), USA(20.4 tonnes CO_2eq.), Canada(19.6 tonnes CO_2eq.), Luxembourg(17.5 tonnes CO_2eq.), New Zealand(17.0 tonnes CO_2eq.), and Estonia(15.3 tonnes CO_2eq.). Korea's GHG emissions per GDP USD thousand also ranked 6th following Estonia(0.46 tonnes CO_2eq.), Australia(0.45 tonnes CO_2eq.), Canada(0.43 tonnes CO_2eq.), New Zealand(0.41 tonnes CO_2eq.) and Poland(0.35 tonnes CO_2eq.).

In 2021, 1,376 people with heat illness and 11.8 heatwave days were reported

Efforts are being made to reduce vulnerability to climate change across all sectors of society by implementing detailed implementation plans for national adaptation measures announced by local and regional governments for the past 10 years. The Abnormal Climate Report is published every year to present abnormal weather events and damage caused by those disasters at home and abroad. The Disaster Annual Report collects and reports damage to life and property caused by typhoons, heavy rains, heavy snow, heatwaves, storms

Total GHG emissions of OECD countries; 2018

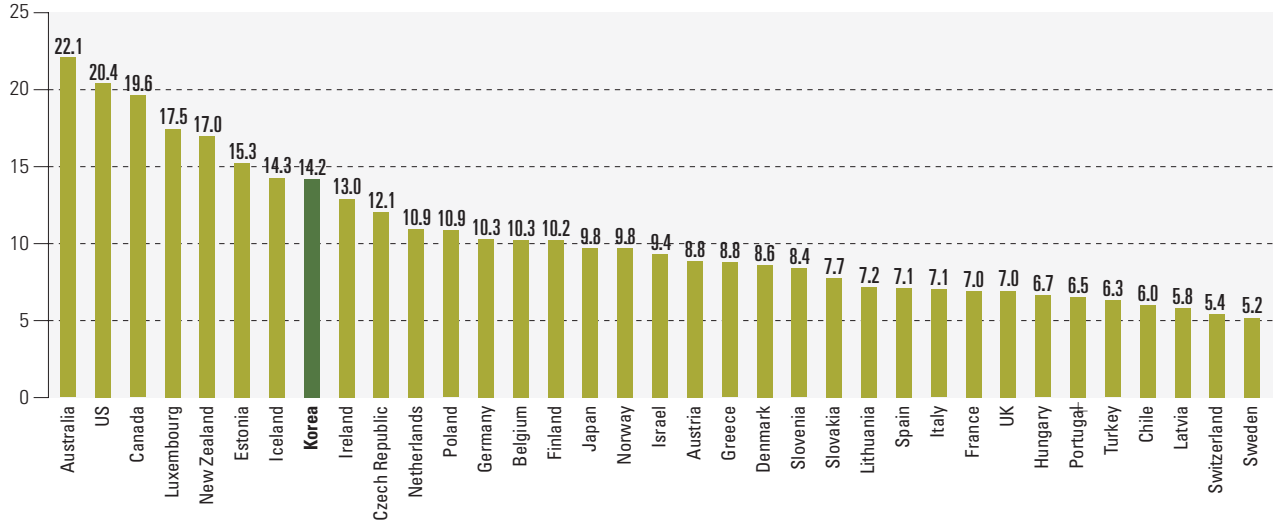
(Unit: million tonnes CO_2eq.)



Source: OECD Stats, Environment(retrieved on January 10, 2022)

Total GHG emissions per capita of OECD countries; 2018

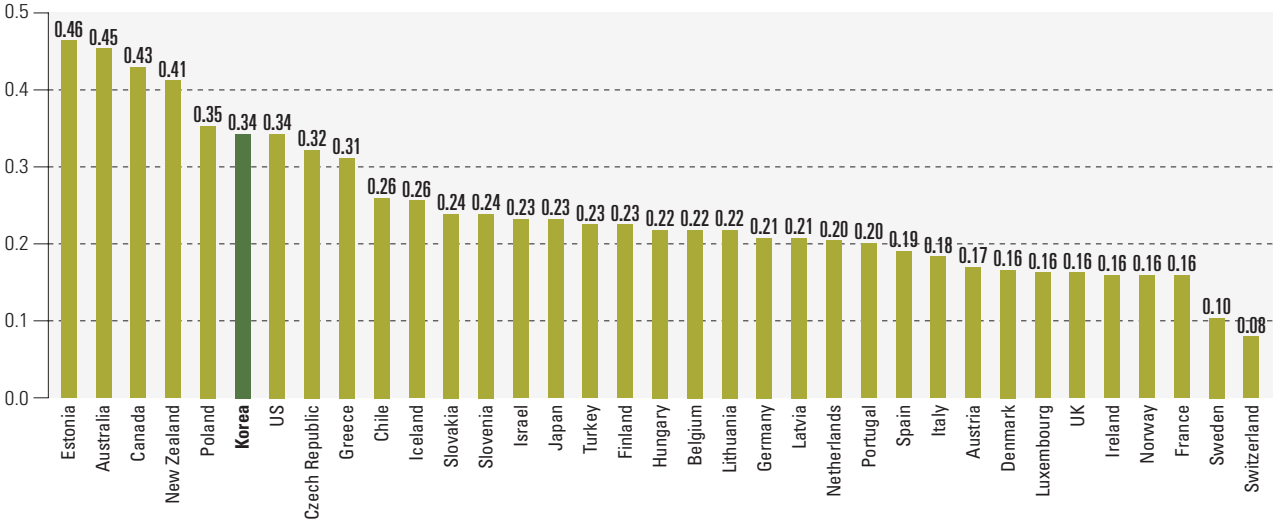
(Unit: tonnes of CO_2eq./person)



Source: OECD Stats, Environment(retrieved on January 10, 2022)

Total GHG emissions to GDP of OECD countries; 2018

(Unit: tonnes of CO_2eq./USD 1,000(2015 PPP))



Source: OECD Stats, Environment(retrieved on January 10, 2022)

and strong winds every year. The reports show that abnormal weather events that hit the world every year continue to cause damage to human life and property. That is why preventing deaths from extreme weather events is one of the priorities in the climate adaptation strategy.

Human casualties caused by heat waves are managed through the ER Monitoring System for Heat Illness of KCDC. In 2021, 1,376 people with heat illness, including the estimated 20 deaths, were reported during the heatwave of about 11.8 days. Of them, 79.7%(1,096 persons) occurred outdoors, specifically, at workplaces(40.3%, 555 persons), agricultural fields(11.6%, 159 persons), and roads(10.0%, 137 persons). While the government has mainly taken indoor or face-to-face adaptation measures, such as shelters from extreme heat and visiting consultations so far, more focus now should be placed on outdoor and contactless measures, for example, by building outdoor shelters for outdoor workers, farmers, and pedestrians.

The number of deaths and missing persons due to disasters per 100,000 people stood at 0.21 on average between 2017 and 2020, which is the 9th smallest along with Australia among 22 OECD countries. Turkey(0.03), the Czech Republic(0.05), Ireland(0.06), Finland(0.07), and Austria(0.09) reported smaller numbers than Korea. The harm of climate risk results from the interaction of three factors: risk(abnormal climate), exposure(damaged population) and vulnera-

Illnesses and deaths from heatwaves; 2011~2021

(Unit: day, person)

Category		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Heatwave days(day)		6.5	14	16.6	6.6	9.6	22	13.5	31	12.9	7.7	11.8
Heat illness monitoring system(KCDC)	Heat illness patients(person)	443	984	1,189	556	1,056	2,125	1,574	4,526	1,841	1,078	1,376
	Deaths(person)	6	15	14	1	11	17	11	48	11	9	20

Source: Korea Disease Control and Prevention Agency(KDCA), 2021 Annual Report on Heat Illnesses Caused by Heatwave
Note 1: Heat illness patients include presumed death from heat illnesses.
Note 2: The number of heatwave days is the number of days with a daily maximum temperature of 33.0°C or higher, calculated using the data from 62 locations across the nation.

bility(sensitivity and adaptive capacity). That means that increases in frequency and intensity of extreme weather events can lead to more damage even if we successfully reduce our vulnerability to climate change. Reducing the damage caused by climate change is essential for social and economic development and for a sustainable future, and there has been active discussions on climate resilience to prevent damage and to overcome it earlier.

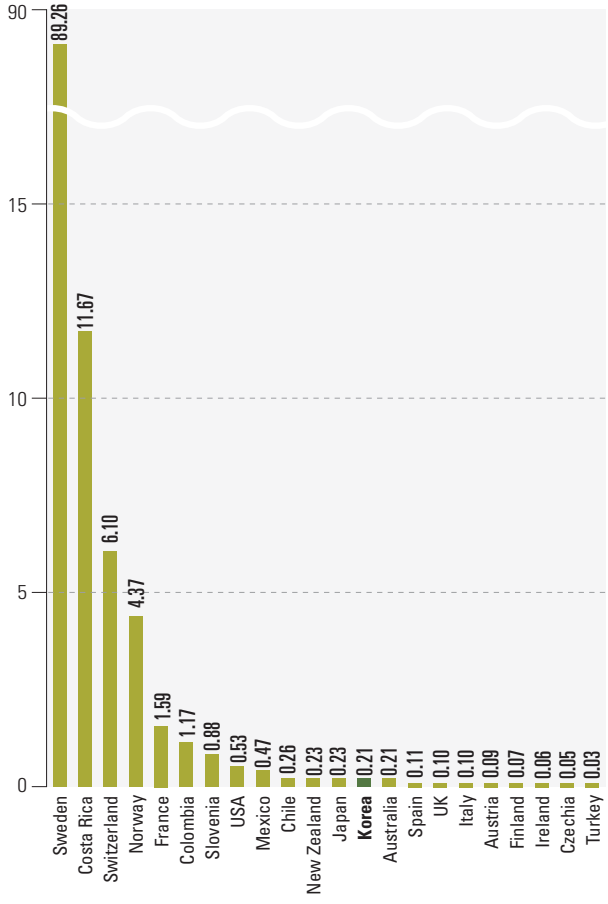
Adaptation measures are needed to protect the nation from climate risks

Climate actions include two policy directions: GHG emission reduction(mitigation) and adaptation. Climate adaptation policies refer to efforts to reduce the negative impacts of climate change on various sectors(including water, ecosystem, agriculture/fisheries, land/coastal, industry/energy, health) and to promote the climate action industry and utilize its opportunity. Korea's adaptation policies include the 3rd National Climate Change Adaptation Measure(2021~2025), which started to be implemented in 2021, and detailed implementation plans of metropolitan and regional governments across the country are being promoted. According to the recently prepared Climate Change Response Act, it is mandatory for public institutions to establish climate change adaptation measures, and an information management system for climate change adaptation measures will be established at the national level. The international society emphasizes the need for an M&E(Monitoring & Evaluation) system to monitor and evaluate the input effects of adaptation measures, and Korea is working on policy research for this purpose. Currently, the effect of adaptation policies is limited to a qualitative evaluation of project implementation, and it is difficult to confirm the continuity of statistical data as the plan budget changes significantly due to the change of standards when establishing the five-year plan.

The Ministry of Environment and the National Climate Change Adaptation Center continue to support the establishment of climate change adaptation measures for public institutions operating important infrastructure, and a total of 39 measures(28 in 2018 → 34 in 2020) were adopted by 2021. As adaptation measures have become a legal duty for public institutions, more measures are expected to be released in the future. It is urgently needed to expand education and consulting, develop climate change risk assessment tools, establish an integrated management and service system for climate change adaptation information, and improve Adaptation Measure Guidelines(adopted in December 2016) to help the institutions introduce science-based adaptation measures.

Average number of deaths and missing people caused by disasters per 100,000 persons of OECD countries

(Unit: No. of persons)



Source: United Nations Office for Disaster Risk Reduction(https://unstats.un.org/sdgs/indicators/database, retrieved on Sep.,22, 2021) was used to draw the graph.
Note : The figure was average from 2017 to 2020. For the Korea, 3years of data from 2017 to 2019 were used.

14 LIFE BELOW WATER

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Conserve and sustainable use the oceans, seas, and marine resources for sustainable development

In 1997, as the existence of the Great Pacific Garbage Patch was revealed by Charles Moore, an American marine environmental activist, marine debris emerged as a global issue. The garbage patch, located in the eastern Pacific, is about six times the size of the Korean Peninsula. UNEP has selected plastic marine debris as an emerging global environmental problem, and the United Nations Educational, Scientific and Cultural Organization(UNESCO) has also selected marine microplastics as one of the four major issues that should be addressed to protect the health of marine ecosystems. The impact of marine debris, which was limited to marine life, was then extended to the marine ecosystem. Marine garbage has various effects such as reduction of fishery resources, obstacles to vessel operation, damage to landscapes and marine industry, and conflicts between neighboring countries.

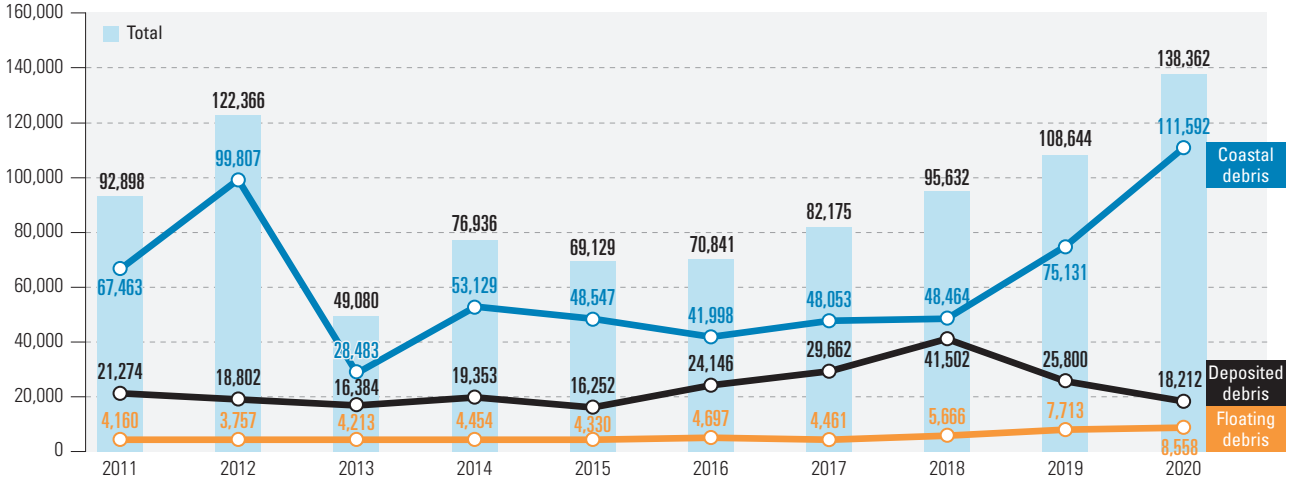
Accordingly, SDG 14 emphasizes the importance of efforts to prevent marine pollution to maintain marine ecosystems and use marine resources sustainably. Conservation and sustainable use of marine resources are closely linked to each other. This is because we can ensure sustainability only when we use marine resources based on a healthy marine ecosystem.

Achieving this goal requires a sustainable fishing industry by keeping fishing activities sustainable and eliminating illegal, unregulate, unreported(IUU) fishing. In addition, the impact of ocean acidification should be minimized by expanding the area of marine protected areas and strengthening scientific cooperation at all levels. In particular, along with the problem of marine debris, the goal also emphasizes the importance of designation of marine protected areas to maintain the marine ecosystem, sustainable use of marine resources in small island countries, and enhancing market access for small-scale fishermen. To achieve this goal, the Korean government is implementing policies such as blocking land pollutants, collecting marine debris, protecting marine ecosystems and habitats, eradicating illegal fishing, and expanding marine protected areas.

The amount of marine debris collected has increased continuously

In the last 10 years(2011~2020), the amount of marine debris collected in Korea was 906,062 tonnes. By type of garbage, it was composed of 622,667 tonnes of coastal debris, 231,386 tonnes of deposited debris, and 52,009 tonnes of floating debris. In terms of the amount collected by region, Jeonnam(272,658 tonnes), Gyeongnam(158,131 tonnes), and Jeju(104,229 tonnes) collected the most. The amount of marine debris generated by each region is affected by the regional characteristics of aquaculture and fishing grounds. The total amount of marine debris collected in 2020 was 138,362 tonnes, an increase of about 27.4%(29,718) from 2019. Efforts to reduce marine debris must be continued in order to restore the health of the marine ecosystem and to use marine resources sustainably. This is because reducing marine debris is a global task that should be completed in order for humans to coexist with nature.

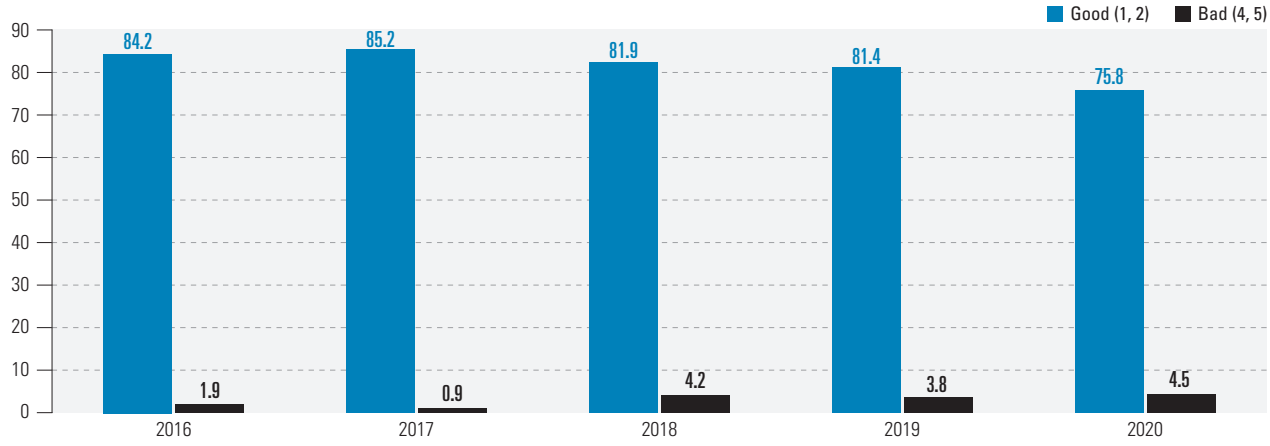
Collected marine debris by type; 2011~2020 (Unit: tonne)



Source: Marine Environment Information Portal of Korea Marine Environment Management Corporation(https://www.meis.go.kr/mli/business/collectStat.do#, retrieved on January 12, 2022)

The share of seawater quality grades; 2016~2020

(Unit: %)



Source : Ministry of Oceans and Fisheries & Korea Marine Environment Management Corporation, 2019 Annual Report on the Korean Marine Environment

Note : Considering the characteristics of the marine environment for each sea area, scores are calculated based on substances causing eutrophication(dissolved inorganic nitrogen concentration in the surface layer, dissolved inorganic phosphorus concentration), primary reactant(chlorophyll a, transparency) and secondary reactant(dissolved oxygen saturation in the low layer) and different grades are given[grade 1(very good), grade 2(good), grade 3(normal), grade 4(bad), grade 5(very bad)].

In Korea, the Marine Waste and Marine Pollution Sediment Control Act, a law specific to marine debris, has been in effect since 2020. Various policies are being pursued to collect or retrieve waste at an early stage at the national level to prevent the effects of marine debris from spreading. Among them are waste-collection vessels, debris-collection spots in villages, a recovery system that brings waste back to the land without dumping it into the sea, and marine environment keepers to collect beach garbage. The 1st Marine Waste and Marine Pollution Sediment Master Plan(2021~2030) aims to reduce the amount of marine waste by 60% by 2030 and to achieve zero by 2050 with the vision of 'a healthy future shared by all by creating a clean marine environment'.

Seawater quality is overall good, but the rate of bad grades has been increasing since 2018

The target 14.1 is to establish a management system to conserve the marine environment from pollutants on land and at sea. The Seawater Quality Standard, which uses the Water Quality Index(WQI), can be an indicator of the target. The Seawater Quality is evaluated seawater quality of different sea areas(East Sea, Korea Straits, Southwest Sea, Central West Sea, and Jeju Ecological Zone) by categorizing them into 5 grades (very good to very bad). Over the past 5 years(2016~2020), the average share of good(grade 1 + 2) is 81.7%, and that of the bad(grade 4 + 5) is 3.1%. Coasts with good grade over the last 5 years account for more than 76% across the nation. However, the proportion of bad grades has been increasing in some areas since 2018, including the Korea Strait Ecological Zone, the Geum River Estuary, and the Han River Estuary.

Marine forest creation has been expanding

Marine forest creation is to restore coastal ecosystems by transplanting seaweeds, installing natural stones or marine

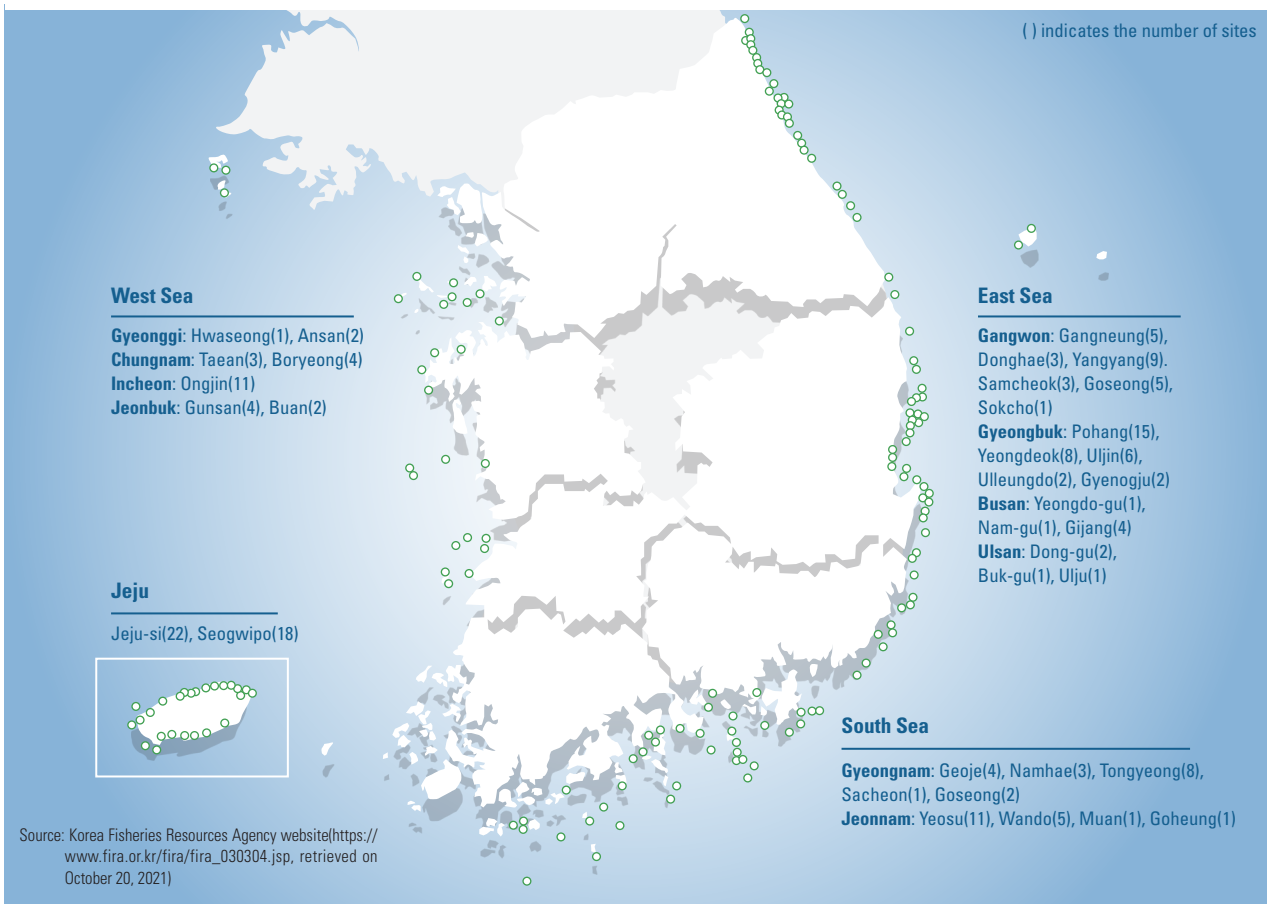
Process of the marine forest creation

The number and size of marine forest; 2009~2021

Category	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Number	7	10	11	10	9	19	21	24	18	20	24	21	17	211
Size(ha)	121	250	715	860	1,388	2,575	3,236	3,064	3,043	3,108	3,130	2,768	2,386	26,644
Budget(KRW100M)	100	150	130	159	183	327	357	347	352	352	352	334	300	3,443

Source: Korea Fisheries Resources Agency, Marine Forest Project White Paper(Released in August 2020)

Marine forest development map of East Sea



Source: Korea Fisheries Resources Agency website(https://www.fira.or.kr/fira/fira_030304.jsp, retrieved on October 20, 2021)

reefs, managing natural seaweeds, and improving natural rock formations in the sea area where albinism(sea desertification) has taken place. The Ministry of Oceans and Fisheries is aiming to create 54,000 hectares of sea forest, equivalent to 75% of the nation's coastal bedrock, by 2030. A total of 26,644 hectares was built from 2009 to 2021, and 9,006 hectares more will be built by 2024.

Fish species subject to TAC; 1999~2021

Year	Number of species	Fish species
1999	4	Mackerel, horse mackerel, sardine, red crab
2001	7	Mackerel, horse mackerel, sardine, red crab, Jeju spiny turban shell, butter clam, comb pen shell
2002	8	Mackerel, horse mackerel, sardine, red crab, Jeju spiny turban shell, butter clam, comb pen shell, snow crab
2003	9	Mackerel, horse mackerel, sardine, red crab, Jeju spiny turban shell, butter clam, comb pen shell, snow crab, blue crab
2007	10	Mackerel, horse mackerel, sardine, red crab, Jeju spiny turban shell, butter clam, comb pen shell, snow crab, blue crab, squid
2009	11	Mackerel, horse mackerel, red crab, Jeju spiny turban shell, butter clam, comb pen shell, snow crab, blue crab, squid, sailfin sandfish, mottled skate
2019	14	Mackerel, horse mackerel, red crab, Jeju spiny turban shell, butter clam, comb pen shell, snow crab, blue crab, squid, sailfin sandfish, mottled skate, Manila clam, hairtail*, yellow corvina*
2020 to today	15	Mackerel, horse mackerel, red crab, Jeju spiny turban shell, butter clam, comb pen shell, snow crab, blue crab, squid, sailfin sandfish, mottled skate, Manila clam, hairtail*, yellow corvina*, spanish mackerel*

Source: Korea Fisheries Resources Agency website(https://www.fira.or.kr/fira/fira_030601.jsp) (retrieved on October 18, 2021), restructured by the author
Note : * means fish species subject to pilot procjects

Fish species subject to TAC expands to 15

It is important to manage fishery resources to ensure sustainable use. If fishery resources, which serve as a public good, are used without management, they will inevitably be depleted, which would in turn lead to a tragedy of public goods. Resource management can involve input regulation, output regulation, and technical regulation. Output regulation includes the Total Allowable Catch(TAC) system. TAC is a fishery resource management system that sets the annual catchable amount for each fish species. Among the 12 fish species, the eight species subject to the management of the Minister of Oceans and Fisheries are Mackerel, horse mackerel, red crab, comb pen shell, snow crab, blue crab, squid, and sailfin sandfish; and four species managed by local government heads are utter clam, mottled skate, Jeju spiny turban shell and Manila clam. The share of TAC target species in the total coastal fishery catch was 20% in 2018, and the goal is to increase the number to 50% by 2022 and 80% by 2030.

15 LIFE ON LAND

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Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

SDG 15 emphasizes global cooperation to protect terrestrial ecosystems, promote sustainable use, and prevent biodiversity loss. The Food and Agriculture Organization of the United Nations(FAO) and the World Wide Fund for Nature(WWF) attribute zoonotic diseases to deforestation and conversion of forest. It is said that the reduction of forest area causes the loss of biological habitat, increasing contact between animals and humans, thereby accelerating the spread of various infectious diseases including COVID-19. In other words, conserving forests is very important as they can serve as a buffer. Therefore, understanding changes in forest area and analyzing the cause of the reduction, if any, in a consistent manner is key to forest policies and sustainable development plans.

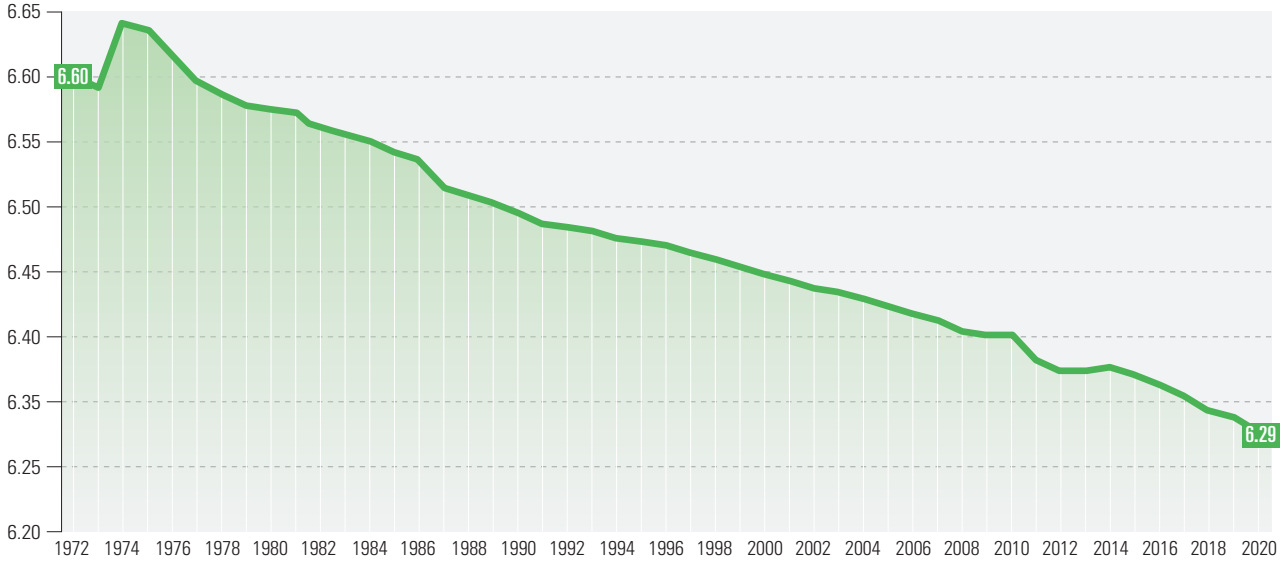
Wildfires are one of the causes of forest area reduction. In 2021, large-scale wildfires occurred in Europe, including Turkey, North America, and Africa due to unprecedented heat and dry weather. Wildfires are caused by climate change, but they also accelerate climate change. According to data from Greenpeace, there were more than 300 wildfires in Siberia as of August 2021, and the damage area reached about 170,000km^2 as of August 16. The problem is that the climate crisis will worsen as the carbon-rich frozen Siberian soil is melted by wildfires. The frequency of wildfires in Korea and the area damaged have also been increasing recently. Concerns about biodiversity loss due to the reduction of forest area are becoming a reality. The Red List Index, which indicates the degree of extinction risk, is on a downward trend worldwide. Of course, it is important to maintain or increase the forest area through reforestation and afforestation, but it is also necessary to protect and preserve the existing forest from being damaged by human intervention or natural disasters so that the forest area does not decrease.

Long-term decline in forest area in Korea

Korea's forest area was temporarily expanded in 1974 and 1976 based on the national reforestation project carried out in the 1970s, but since then it has gradually decreased by 310,290 hectares since 1972 to reach only 6,286,438 hectares in 2020.

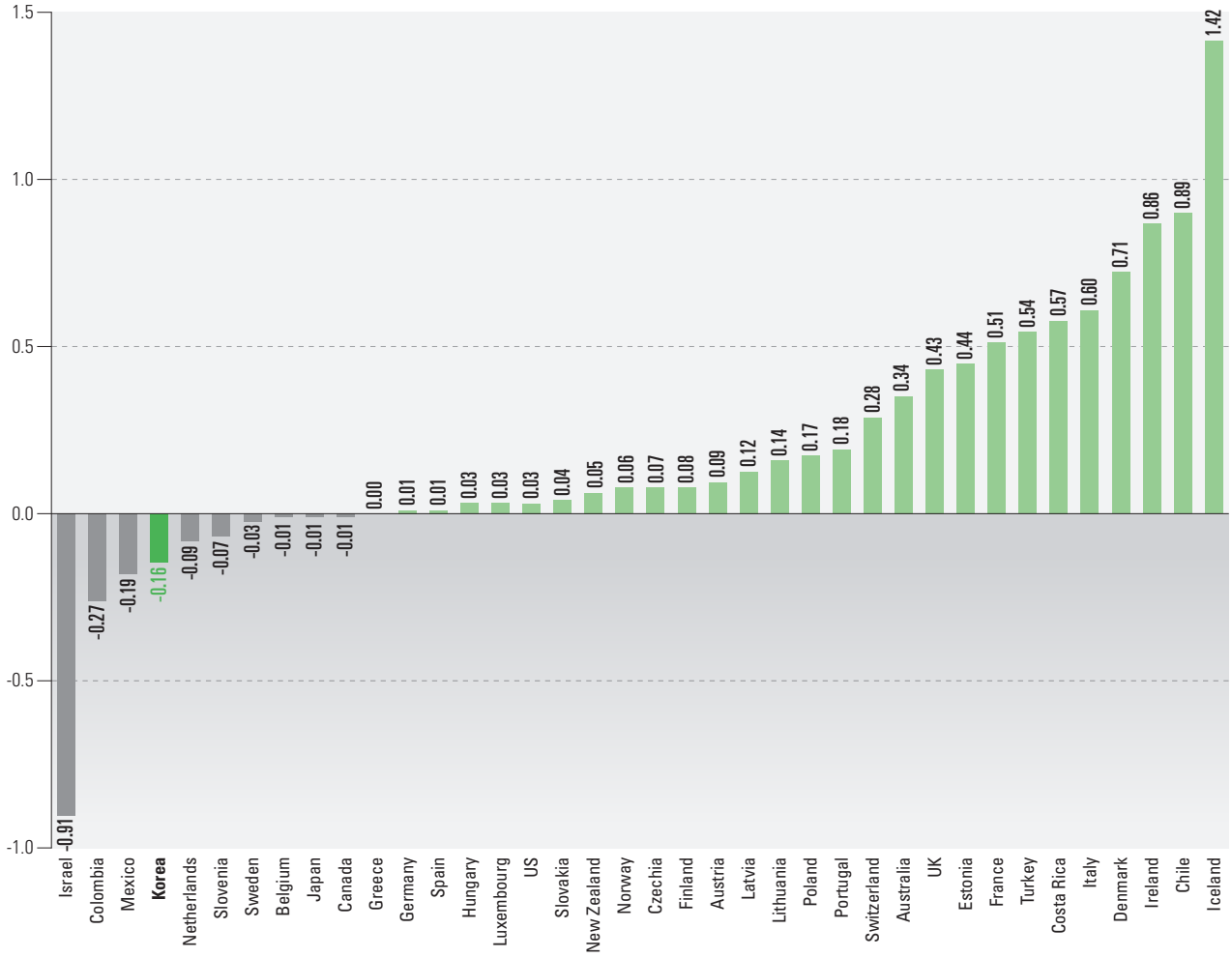
According to international statistics, forest area in many countries is decreasing. According to FAO, only 73 countries out of 236 reported an increase in forest area, while 91 countries showed a decreasing trend. Of the 236 countries, most

Forest area in Korea; 1972~2020 (Unit: million ha)



Source: Korea Forest Service, No. 51 Forestry Statistical Yearbook(2021) - II. Forest Resources(https://www.forest.go.kr/, retrieved on November 5, 2021)

Annual net change rate of forest, 2010~2020 (Unit: %))



Source: FAOSTAT, Land Use(http://www.fao.org/faostat/en/#data/RL, retrieved on September 14, 2021); FRA 2020

of the OECD member countries saw a moderate increase. Iceland recorded the largest increase in forest area with an average annual growth rate of 1.42% between 2010 and 2020, while the country with the steepest decline in forestry was Israel, in which the annual average rate of reduction stood at 0.91% during the same period.

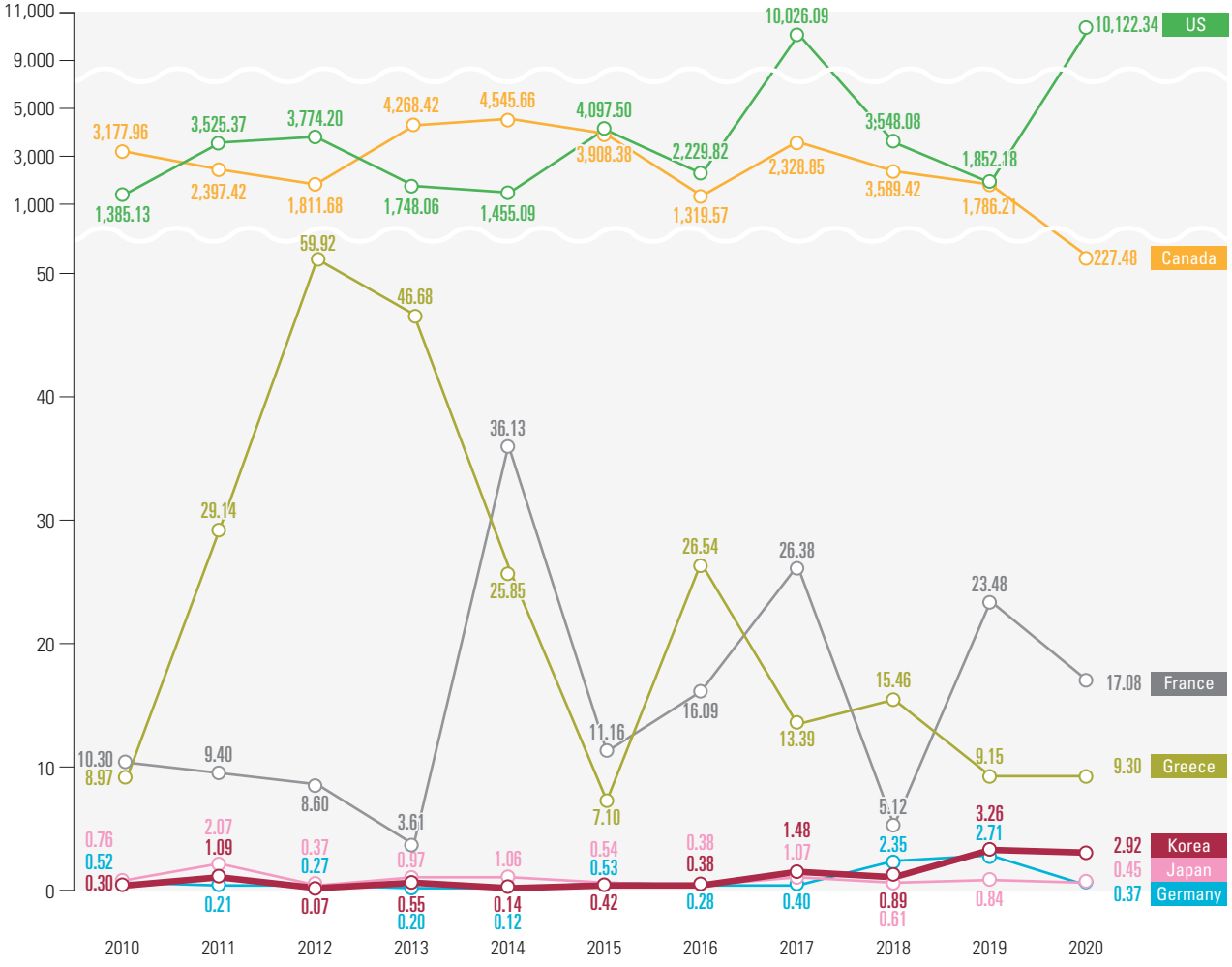
Risk of reducing forest area due to increased wildfires

Forest fires also have an impact on the reduction of forest area. The International Forest Resource Assessment Report by the FAO(2020) suggests a significant decrease in forests due to forest fires. According to the report, changes in forests are not necessarily confined only to conversion of forests, and forest fires, which are not part of the conversion, also cause major changes in forests. In the case of Korea, unlike the past, when the number of domestic wildfires was once declining, it has recently been increasing, and the area affected is also going up. The size of the damaged area in Korea due to wildfires from 2010 to 2014 was 429.6 hectares per year, but from 2015 to 2020 it reached 1,557.5 hectares per year. Korea used to see a large decrease between 2002 and 2003, but after showing large and small fluctuations, it rose again significantly in 2019 and 2020, which played a decisive role.

Recently, large-scale wildfires occurring all over the world cause even greater environmental damage as an unexpected disaster. According to a report by the Korea Forest Service(2021), as of October 2020, simultaneous wildfires occurred in California, the United States, burning 3,131,283 hectares of forest land. Of the 33 ongoing wildfires, nine were classified as the most dangerous, followed by 12 of the highest-risk forest fires, and out of a total of 8,872 forest fires witnessed as of 2020, 21 large-scale wildfires were identified. Australia experienced an unprecedented large-scale forest fire that lasted for a long period of time from September 2019 to February 2020, causing about 19 million hectares of land

Domestic and major countries' wildfires; 2010~2020

(Unit: 1,000ha)



Source: Korea Forest Service, Forest Fire Occurrence(General)(https://kosis.kr/statisticsList/statisticsListIndex.do?menuId=M_01_01&vwcd=MT_ZTITLE&parmTabId=M_01_01&outLink=Y&entrType=#content-group, retrieved on September 14, 2021), Korea Forest Service, 2020 Forest Fire Statistical Yearbook

loss. In Sichuan, China, a forest fire destroyed 80 hectares of forest in March 2020. Continued heat waves and dry weather from the temperature rise, caused by climate change, are increasing the scale and frequency of the recent wildfires, leading to a vicious cycle of large-scale reduction of forest area.

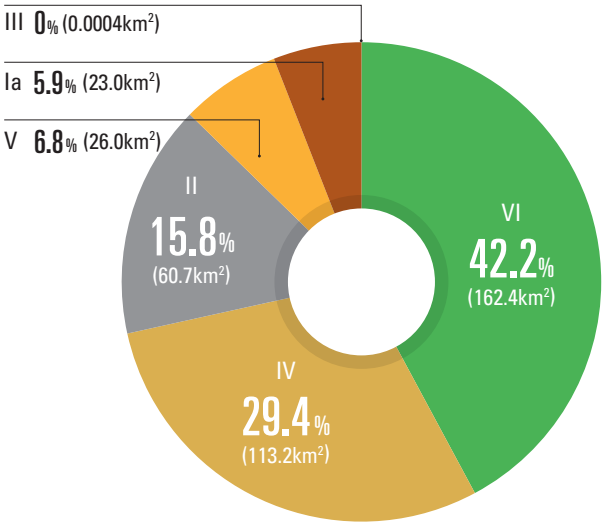
A steady increase in the proportion of protected areas

The International Union for Conservation of Nature(IUCN) defines a protected area as an area specially designated for the protection and maintenance of biodiversity and natural and cultural resources, which are managed by law or other effective means. IUCN developed protected area categories by dividing them into seven types. They include: Strict Nature Reserve(Ⅰa), Wilderness Area(Ⅰb), National Park(Ⅱ), Natural monument or feature(Ⅲ), Habitat/Species Management Area(Ⅳ), Protected Landscape/Seascape(Ⅴ), and Managed Resource Protected Area(Ⅵ). Among them, the most dominant type in Korea is Habitat/Species Management Area(Ⅳ), claiming 2,885 out of a total of 3,409 protected areas as of 2021. The second largest one is Managed Resource Protected Area(Ⅵ), but the number is only 301, which is a lot lower than the most common type Ⅳ. However, by land size, Managed Resource Protected Areas take up 42.2% of the total protected areas, meaning that protected areas of type Ⅳ have a relatively small area. The most rare type in Korea is Natural monument or feature(Ⅲ) as only two protected areas fall into this category, accounting for almost 0% in land size.

National efforts for sustainable forest management is bearing fruits

The FAO monitors Sustainable Forest Management(SFM) and releases relevant numbers after collecting data from each country on the basis of five indicators: forest area net change

Size and share of protected areas; 2021



Source: UNEP-WCMC and IUCN(2021), Protected Planet: The World Database on Protected Areas(WDPA) [Online], September 2021, Cambridge, UK: UNEP-WCMC and IUCN(www.protectedplanet.net, retrieved on September 14, 2021)

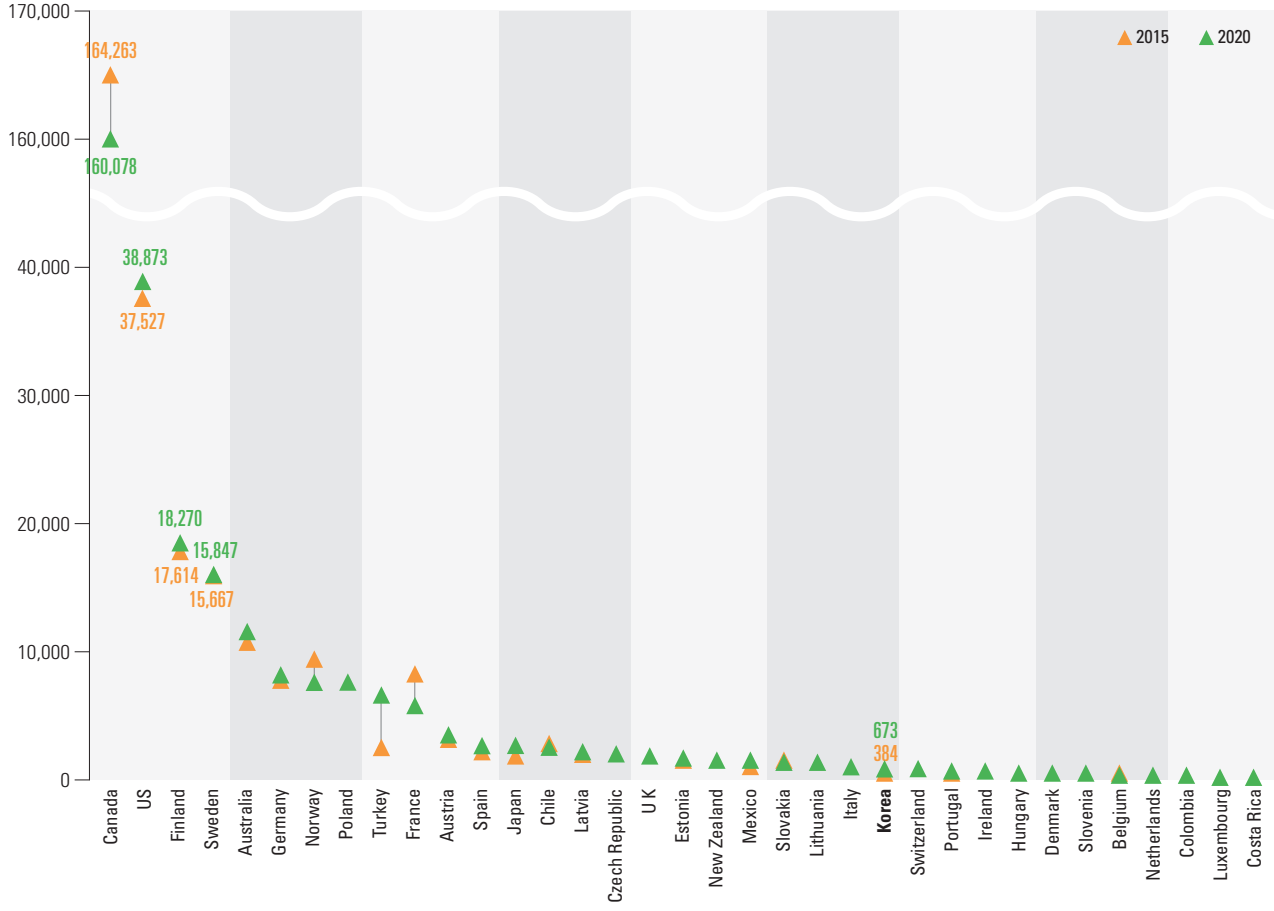
rate; total aboveground biomass of forests; protected forest rate; rate of forests with a long-term forest management plan; and forest area certified for forest management. In Korea, forest area certified for forest management increased by 289,000 hectares from 2015 to 2020. The growth is the 10th largest among OECD countries which reported a similar level of increase. Considering that the land area of the top eight countries, excluding Austria, is much larger than that of Korea, the increase in Korea is an indicator of robust national efforts for sustainable forest management.

On the other hand, the rate of forests with long-term forest management plan in Korea decreased from 51.7% in 2015 to 39.3% in 2020. This is in contrast to the increase in most OECD countries for which data are available. It is noteworthy that the figures for 2020 exceed 100% in the Czech Republic, Latvia, Lithuania, Slovakia and Turkey. Since the rate is calculated based on 2015 forest area, it is safe to say that these countries have increased their forest area compared to what they had at least in 2015.

However, whether it is forest area certified for forest

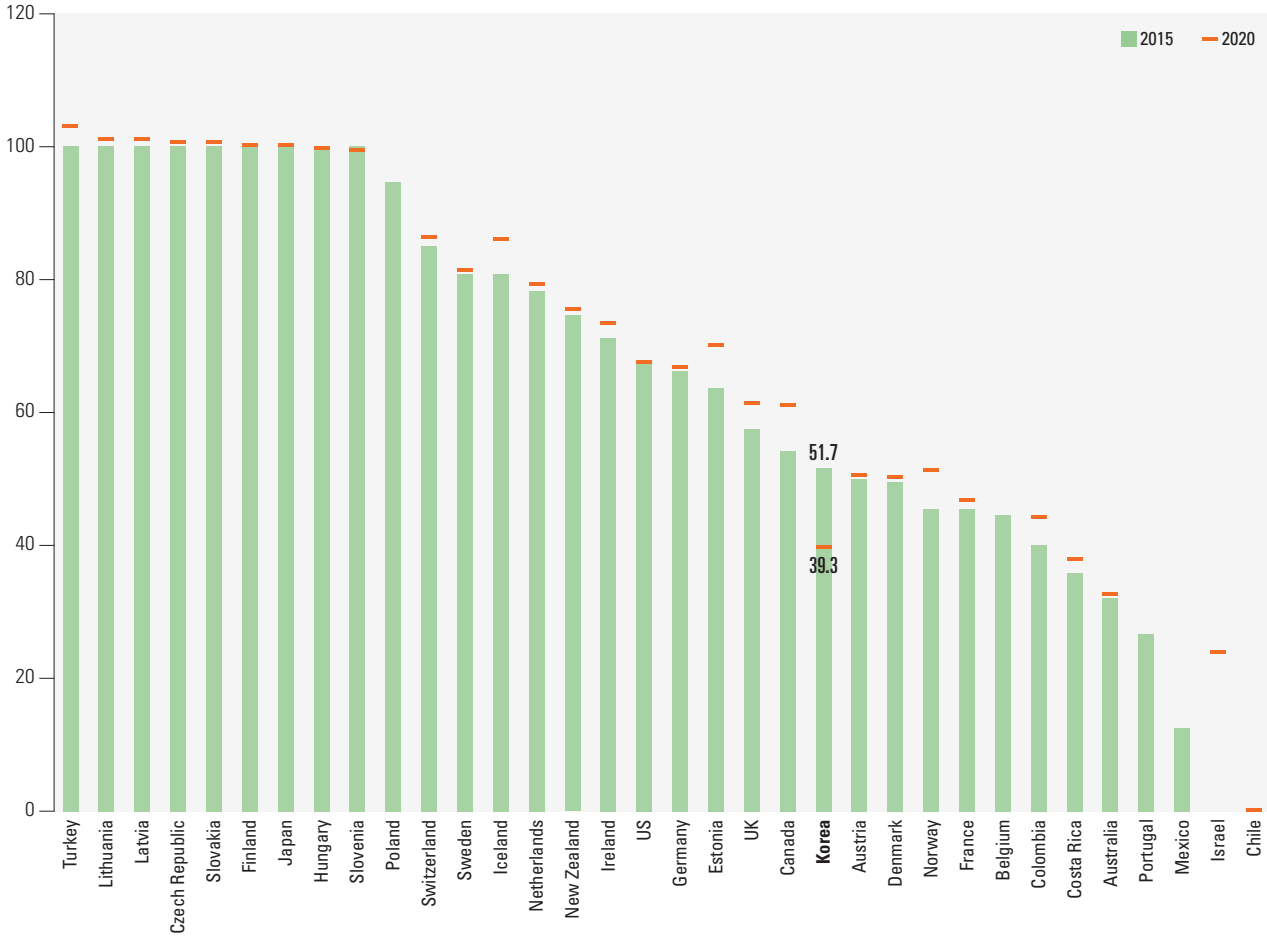
Forest area certified for forest management of OECD countries; 2015, 2020

(Unit: 1,000 ha)



Source: FAO, Sustainable Development Goals(https://www.fao.org/sustainable-development-goals/indicators/1521/en/, retrieved on October 26, 2021)
Note : Iceland, Israel and Greece excluded due to lack of data

The share of forests with long-term forest management plan among OECD countries; 2015, 2020 (Unit: %)



Source: FAO, Sustainable Development Goals (https://www.fao.org/sustainable-development-goals/indicators/1521/en/, retrieved on October 27, 2021)
Note : Greece, Luxembourg, Spain and Italy excluded due to lack of data for the year

management or rate of forests with long-term forest management plan, it is hard to figure out implementation status of the SFM at the global level as not enough data is available. In other worlds, the organization is required to update indicator numbers and collect adequate data to make the index more sustainable.

Mountain Green Cover Index is decreasing

The Mountain Green Cover Index(MGCI) measures the share of green vegetation in mountain areas(forest, cropland and pasture land).

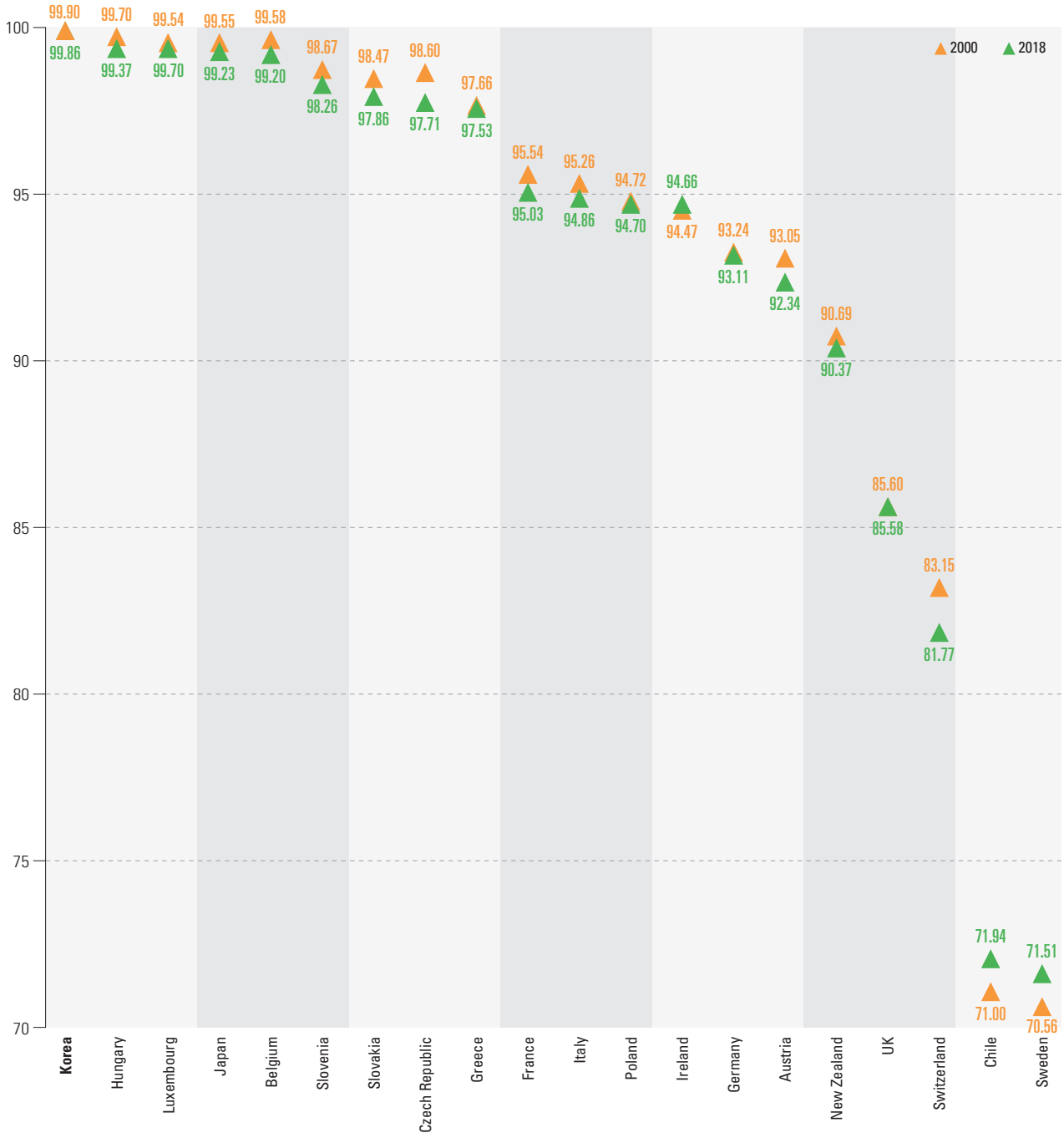
According to the MGCI results analyzed by the FAO, among the 20 OECD member countries with data at two or more time points, only Chile, Ireland, and Sweden increased their MGCI index in 2018 compared to the previous period, while most countries including Korea saw drops. Korea's MGCI is relatively high at about 99%, but it decreased by about 0.039% from 99.897% in 2000 to 99.858% in 2018. Although it is a small decrease in numbers, it should be noted that it is showing a continuous decrease. That is why Korea is establishing its own MGCI statistics to present MGCI results reflecting the national situation and to regularly monitor the data.

Higher Red List Index should be achieved through immediate and continuous monitoring

The Red List Index(RLI) shows trends in overall extinction risk for species, measuring risks not only at the global level but also at the regional level. Korea is also evaluating and classifying the “National Biological Red List” by applying the IUCN Regional Red List criteria at the regional level as a country.

After the National Institute of Biological Resources published the data book in 2012, 126 species that remained unevaluated at the time and species that were already listed have been reviewed for a gradual revision of categories. As for vascular plants, it was found that 554 species, or about 12.5% of the number of species currently registered on the National

Mountain Green Cover Index of OECD countries; 2000, 2018 (Unit: %)



Source: UN SDG database, indicator 15.4.2(https://unstats.un.org/sdgs/UNSDG/IndDatabasePage, retrieved on October 26, 2021)
Note : Countries without data are excluded. For the Germany and Poland, year of 2015 and 2018 data are used.

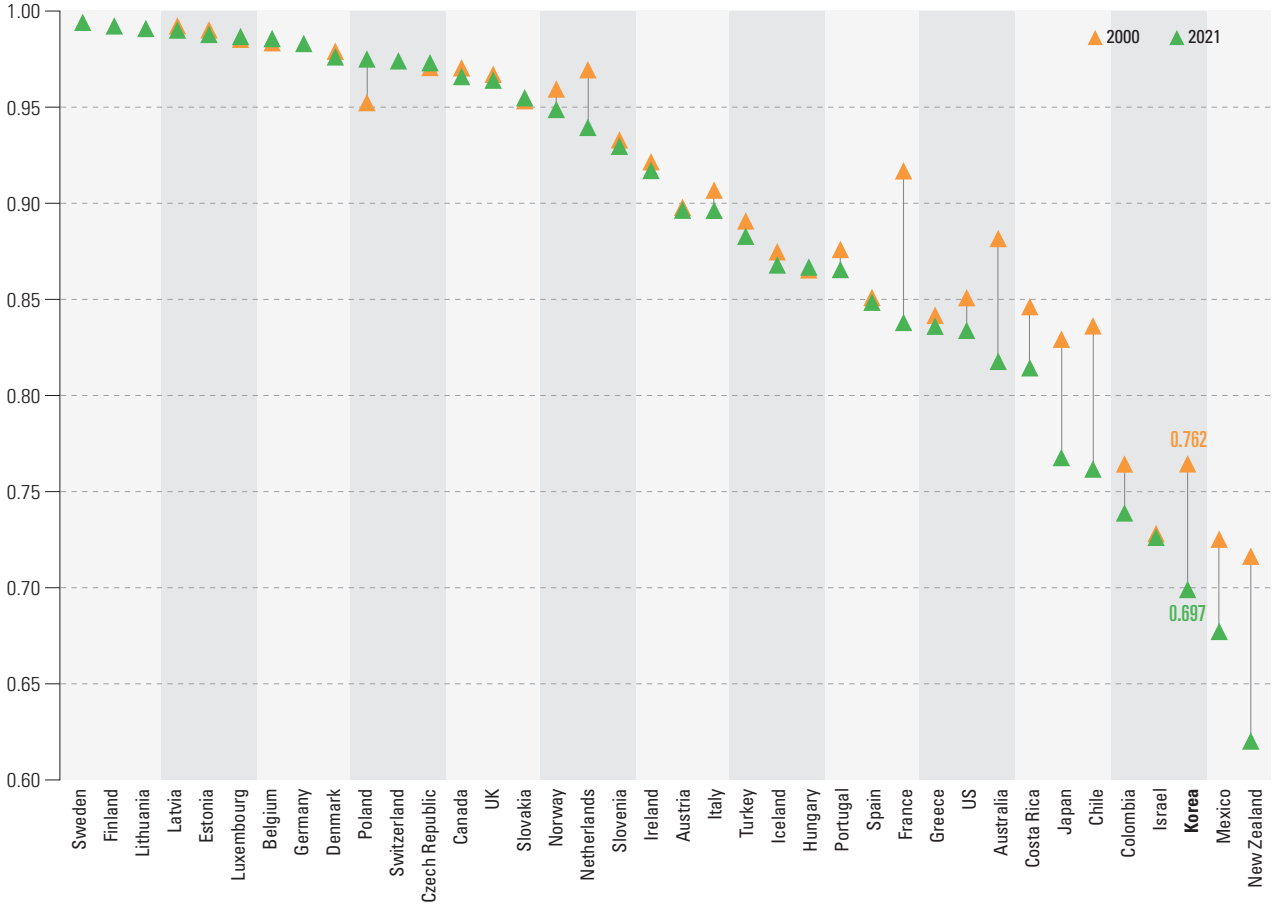
Species List, were included in the National Bio-Red List. No vascular plants were 'Regionally Extinct(RE)' in 2012 data, but 5 species were recategorized as RE in 2021(Nadopungran, Old world adder's tongue, Mudeung nutrush, Waterwheel plant, and Siebold's clubmoss). Nadopungran was 'Critically Endangered(CR)' in 2012, and the rest of four species were recorded as Data Deficient(DD), which are now regionally extinct. The update indicates that it is necessary to conduct continuous research on 47 vascular plants(as of 2021) under the 'DD' category. Categories of the Red List can also be updated according to changes in habitat and ecosystem. Therefore, it is important to immediately identify changes and continuously monitor each species.

The Red List Index (Red List Index) is derived from the Red List. The closer the number is to 1, the less severe biodiversity loss is. According to the UN's SDGs database, Korea

was at 0.762 in 2000, but it decreased to 0.697 in 2021, requiring improvement.

Most countries around the world, including OECD member countries, are showing a downward trend. Eight OECD member countries showed some modest upward trend, including Germany, Luxembourg, Belgium, Slovakia, Austria, Czech Republic, Poland and Hungary. The trend can be seen as an indicator that requires global improvement, and at the same time a demonstration of practical difficulties facing modern society.

Red List Index of OECD countries; 2000, 2021



Source: UN SDG database, Indicator 15.5.1(https://unstats.un.org/sdgs/indicators/database/, retrieved on September 13, 2021)

16 PEACE AND JUSTICE

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Peace, justice, inclusive institutions

SDG 16 pursues sustainable development through effective and inclusive institutions for a peaceful and just society. To this end, the goal set targets to reduce violence and corruption and to establish a transparent and open system. COVID-19, which started in 2019 and still exists today in 2021, is affecting the lives of all people around the world. Amid the unprecedented pandemic, the role of institutions in effectively controlling the spread of disease, allocating social resources and resolving conflicts is becoming more important than ever.

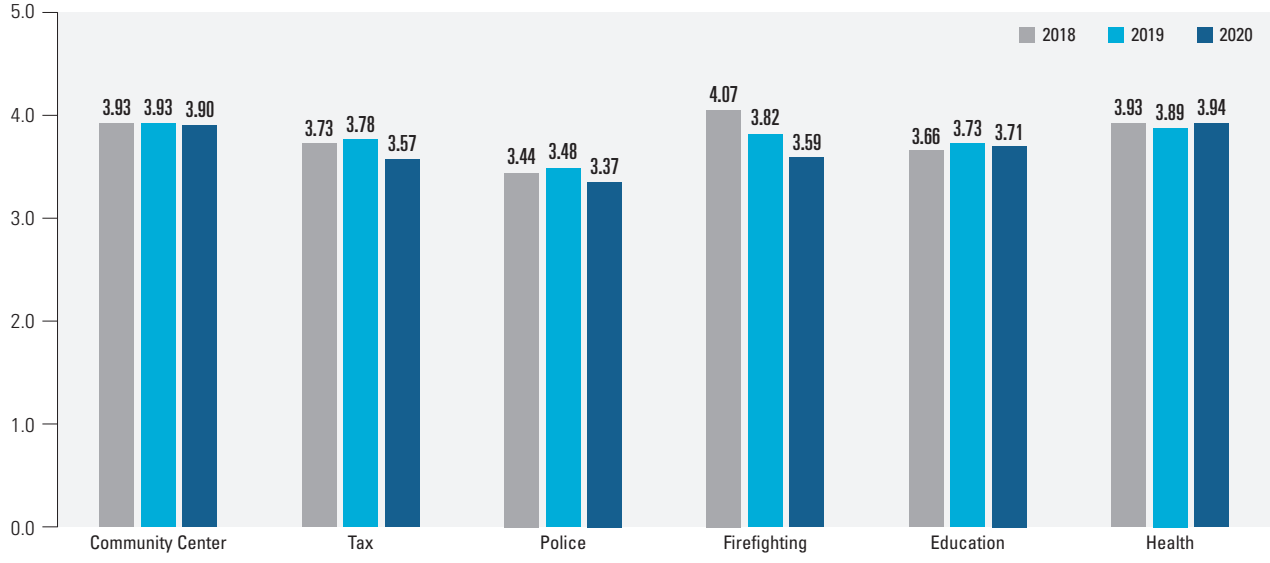
In this regard, it is important to provide physical and psychological safety for citizens through a stable system even in this disaster situation. It is also necessary to examine whether institutions are buffering the uneven effects of disasters. As already shown in data from the United Nations and other countries, COVID-19 is having a disproportionate impact on socially disadvantaged groups such as the disabled, migrants, and low-income groups. The uneven impact is likely to affect the vulnerable groups for a long period of time even after recovery from COVID-19. A global collective effort is needed to prevent COVID-19 from disproportionately affecting some groups. In addition, the world should make institutional efforts to ensure a fair recovery between groups in the post-COVID-19 period.

Inclusive and strong institutions have the duty to protect citizens from violence and oppression from different groups of people in society. In addition, it should contribute to guaranteeing practical freedom of citizens by enhancing the inclusiveness and fairness of the system itself. To this end, the social institutions must be reviewed and upgraded, and in particular, the government needs to provide satisfactory public services through smooth communication with the people and provide sufficient political efficacy to individuals.

High satisfaction with health services among public services

According to a survey asking about whether they are satisfied with public services for the past year, Community Center and health services earned high scores. In particular, satisfaction points for health services were the highest among public service categories in 2020 when COVID-19 hit the nation. By contrast, the scores for police and tax services are relatively low. Police services reported the lowest points for three years from 2018 to 2020, especially at 3.37 points in 2020. Despite that, all categories scored more than 3 points, indicating that people are generally satisfied with public services. The firefighting service showed the highest satisfaction with 4.07 in 2018, but it sharply decreased in 2019 and 2020.

Satisfaction with services provided by public institutions; 2018~2020 (Unit: Point)



Source: Korea Institute of Public Administration, Social Integration Survey, each year
Note : The satisfaction scores of public services experienced over the past year presented on the graph are the average numbers of respondents on a 5-point scale(1 not at all satisfied, 5 very satisfied).

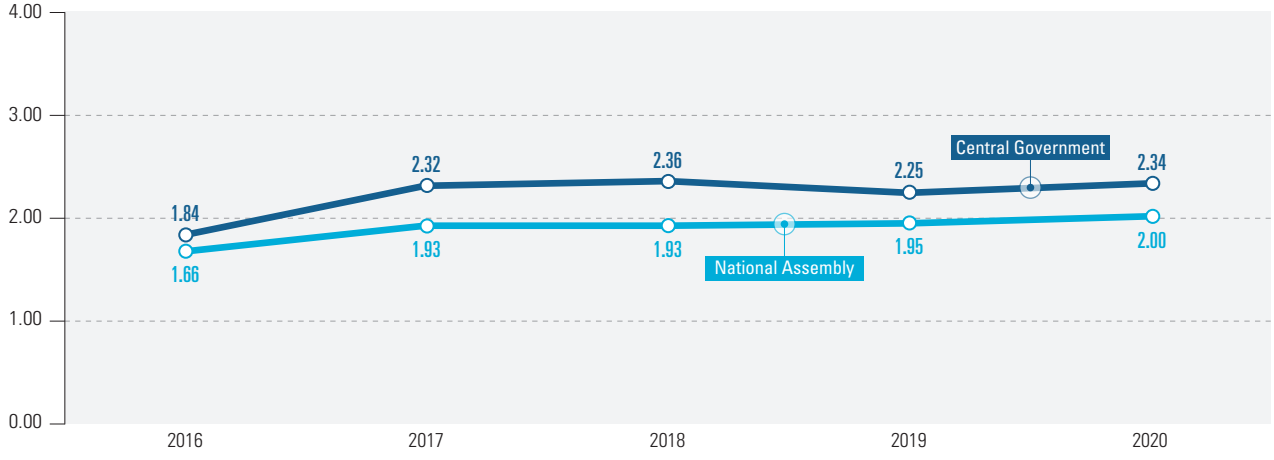
More responsive decision-making and increasing political efficacy

The SDGs aim to ensure responsive, inclusive, participatory and representative decision-making at all levels.

The level of communication between the state and the public is an important indicator of the inclusiveness of institutions. The communication level has been on a moderate increase for years. For the central government, the score was low at 1.84 in 2016, but it increased to 2.32 in 2017 before reaching 2.34 in 2020. Meanwhile, interactions between the National Assembly and the public are at a lower level. The number stood at 1.66 in 2016 before moderately increasing to 2.00 in 2020, which is still lower than that of the central government. The score is also hovering below 2.0, the midpoint of the scale, demonstrating that the Assembly has failed to be responsive to the public when evaluated based on the absolute score.

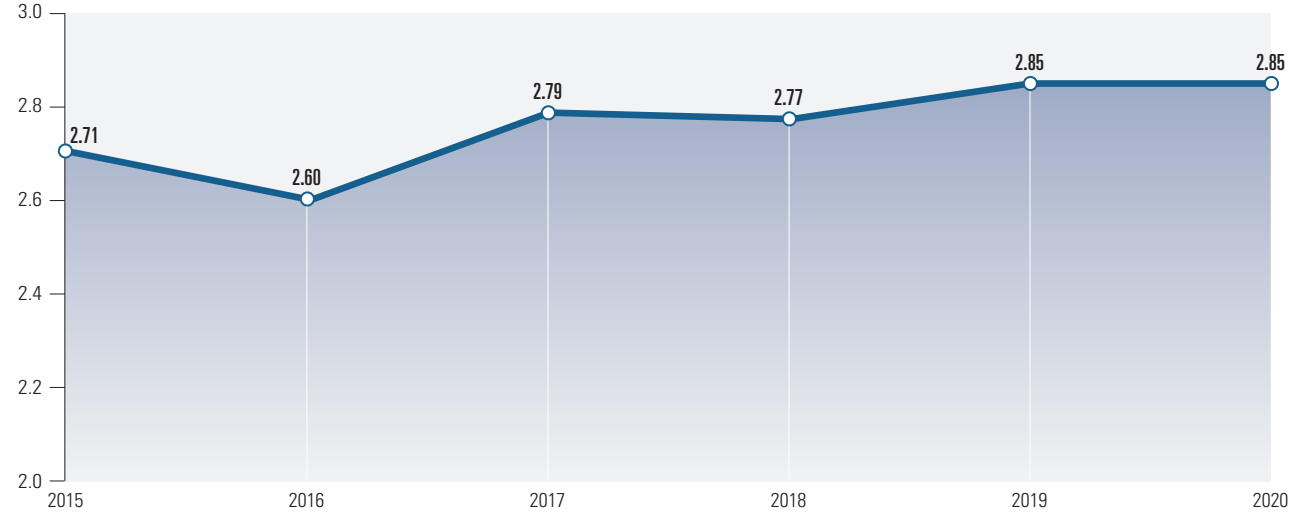
As institutions become more responsive, people affected by the system increasingly believe that they can have a substantial impact on them and make changes. Thus, political efficacy is an indirect measure of a responsive decision-making structure. The score of political efficacy felt by Koreans

The level of communication between the state and the public; 2016~2020 (Unit: point)



Source: Korea Institute of Public Administration, Social Integration Survey, each year
Note : Respondents were asked about whether they have good communication with the central government and the National Assembly based on a 4-point scale(1 not done at all, 4 very well), and the average value was calculated.

Evaluation of political efficacy; 2015~2020 (Unit: Point)



Source: Korea Institute of Public Administration, Social Integration Survey, each year
Note : Political efficacy(external efficacy) is measured by asking respondents if they agree or disagree with the following two sentences: 'People like me have no influence on what the government does' and 'The government is not interested in the thoughts or opinions of people like me'. They can choose scores on a 5-point scale from 1 meaning 'strongly disagree' to 5 'strongly agree'. The answers were coded in a reversed manner before calculating the average score of the two items.

fell from 2.71 points in 2015 to 2.60 points in 2016. However, it rose to 2.79 points in 2017, and has maintained a generally stable level.

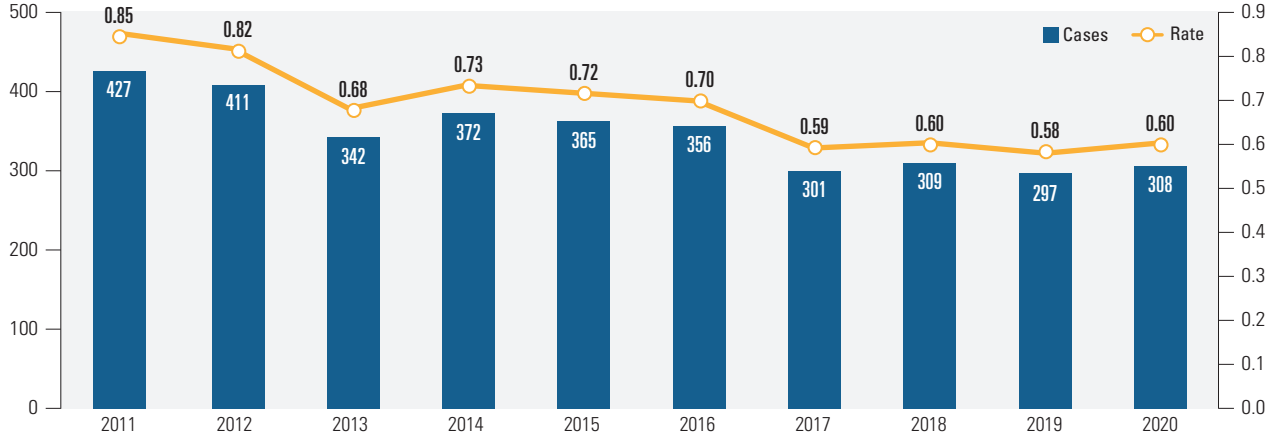
Steady decline in homicide rate

The number of homicides in Korea decreased from 427 in 2011 to 301 in 2017, and has been steadily hovering around 300 since then. The homicide rate per 100,000 people recorded 0.60 in 2020. The rate has dropped from 0.85 in 2011, to 0.70 in 2016, and to 0.59 in 2017, indicating that the number of homicide crimes has decreased considerably in the long term. However, there has been no significant change since 2017. Although the decline is slowing down, the number is much lower than the average murder rate of OECD countries of 2.4 according to the lastest statistics.

Among the perpetrators of homicide crimes in 2020, men accounted for 75.1% and women 24.9%, indicating that male are much more common, and the nation has seen similar patterns for the past several years. On the other hand, as for the number of victims of homicide, women recorded a higher rate than men. In 2011, the proportion of female victims was 52.5%, which increased to 54.4% in 2016. Howev-

Homicide Rate; 2011~2020

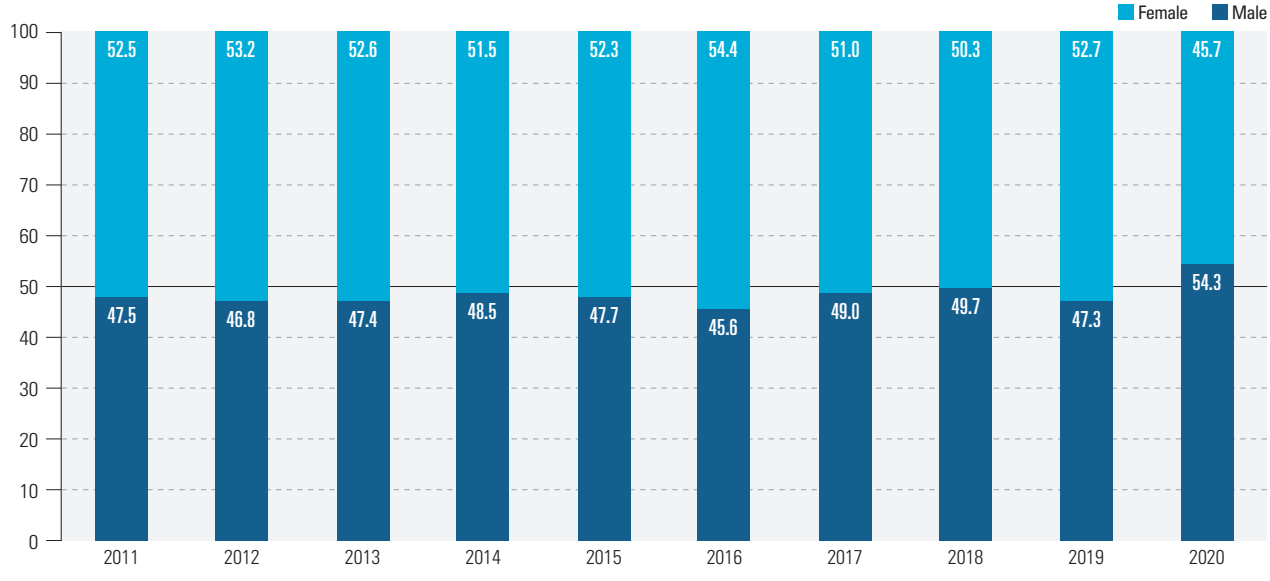
(Unit: Cases , No. of cases per 100,000 persons)



Source: National Police Agency, Crime Statistics Data, each year (https://stat.kosis.kr/statHtml_host/statHtml.do?orgId=132&tblId=DT_13204_2011_211&dbUser=NSI_IN_132)
Note 1: Mid-year population was used for murder rates(Statistics Korea, Population Trend Survey)
Note 2: The homicides includes actually committed(except for attempted ones) according to the definition of SDG indicators.

Trend of the gender ratio of victims of homicide by year; 2011~2020

(Unit: %)



Source: National Police Agency, Crime Statistics Data, each year
Note 1: According to Korea's crime victimization statistics, only the data for on e representative victim among the case.
Note2 : Cases with gender of the victim not identified are excluded.

er, in 2020, while the percentage of murders against women decreased to 45.7% of the total, murders against men increased to 54.3%, indicating the majority gender group has changed.

Gender and age gaps in fear of crime

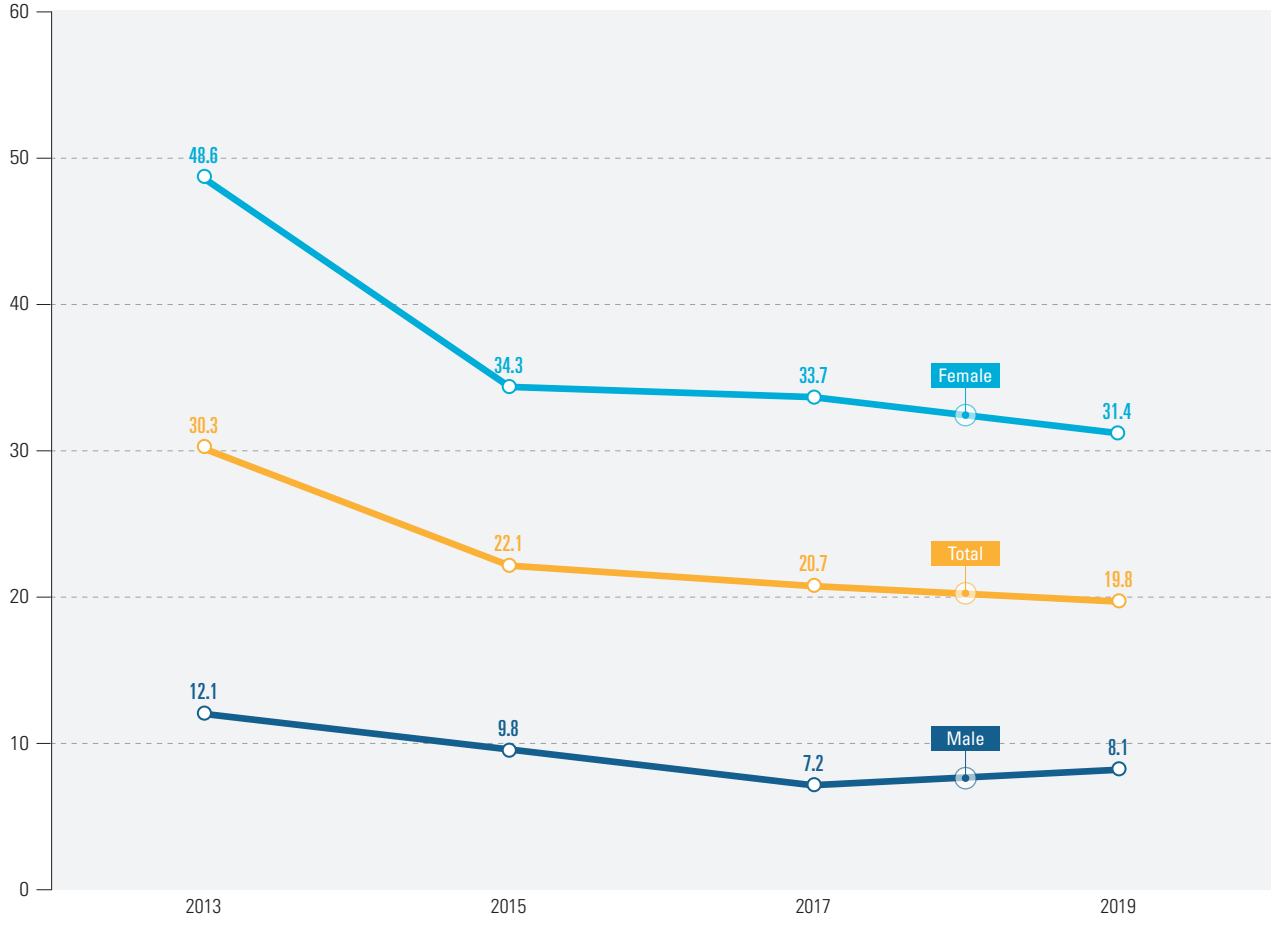
According to the National Life Safety Survey conducted by the Korean Institute of Criminology and Justice in 2019, about 19.8% of people responded that they were 'quite afraid' or 'very afraid' when walking alone in a neighborhood alley at night. The share has decreased from 30.3% in 2013 to 22.1% in 2015, and to 20.7% in 2017.

However, to be more specific, the socially disadvantaged groups feel greater fear. For female, 48.6%, which is nearly half the respondents, answered that they were afraid of walking alone in a neighborhood alley at night in 2013, and this number has continued to decline, dropping to 31.4% in 2019. However, only 12.1% of male felt fear in the same situation in 2013, and it decreased slightly in the 2019 survey, with 8.1% saying that they felt fear when walking alone in an alley at night. This shows that the overall security situation in Korean society has improved, and that fears, especially for female, are decreasing. However, the share is almost four times higher among women than men, showing a significant gender gap.

By age, it was found that the fear of falling victim to crimes is gradually decreasing across all age groups. In particular, in the 2013 survey, 39.0% of teenagers, 37.6% of those in their 20s and 34.9% of those in their 30s responded that they were afraid of crimes, but the share decreased to 28.2%, 23.0% and 22.3%, respectively, in 2019. In 40s and 50s, fear of crime rate was decreased about 10%p in 2019 compared to 2013. This year-by-year decrease is also observed in the elderly, if not as significant as the youth.

It was also found that older citizens felt less fear about crimes. The age gaps are getting smaller, but according to the latest survey in 2019, 28.2% of teenagers felt fear when walking alone in a neighborhood alley at night, which is almost twice as high as 14.8% of those in their 70s.

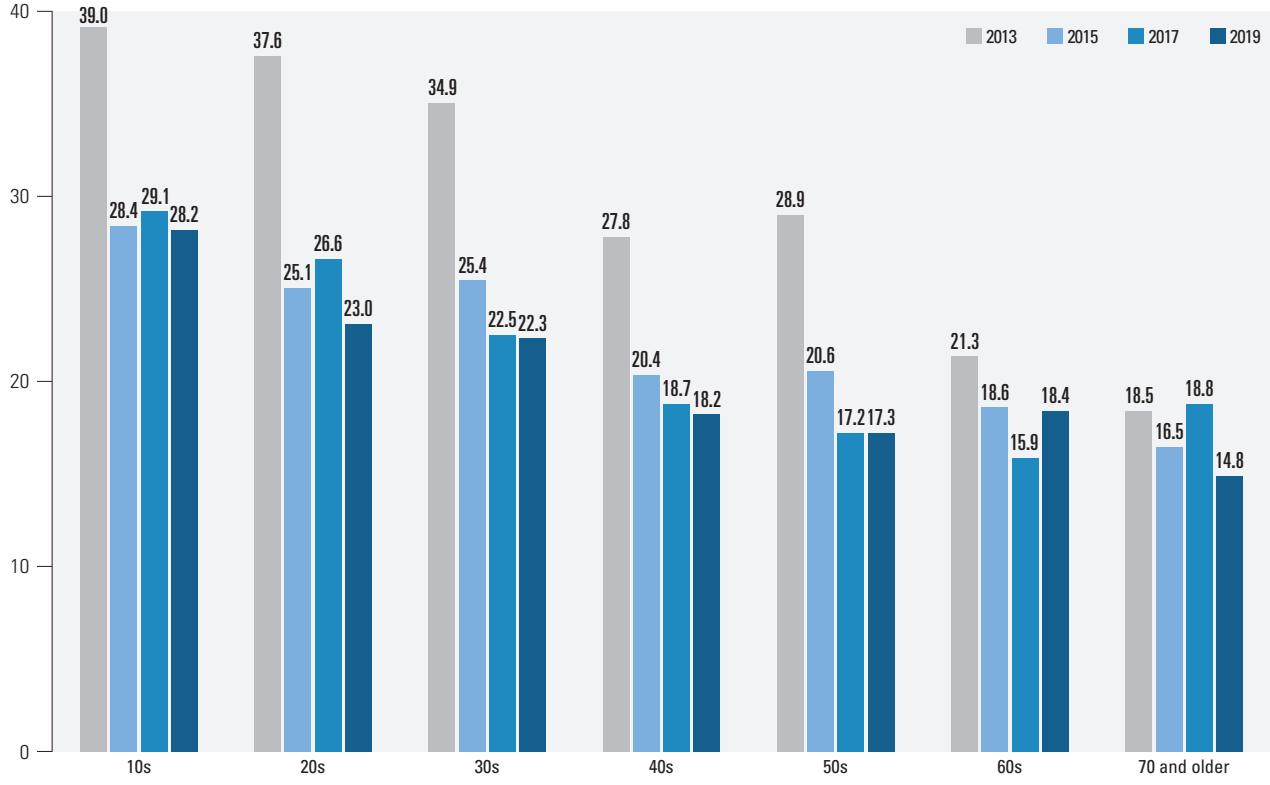
Fear of crime by gender; 2013~2019 (Unit: %)



Source: Korean Institute of Criminology and Justice, National Life Safety Survey, each year
Note : Fear of crime victimization is the proportion of those who answered 'I am quite afraid' or 'I am very afraid' when walking alone in a neighborhood alley at night.

Fear of crime by age group ; 2013~2019

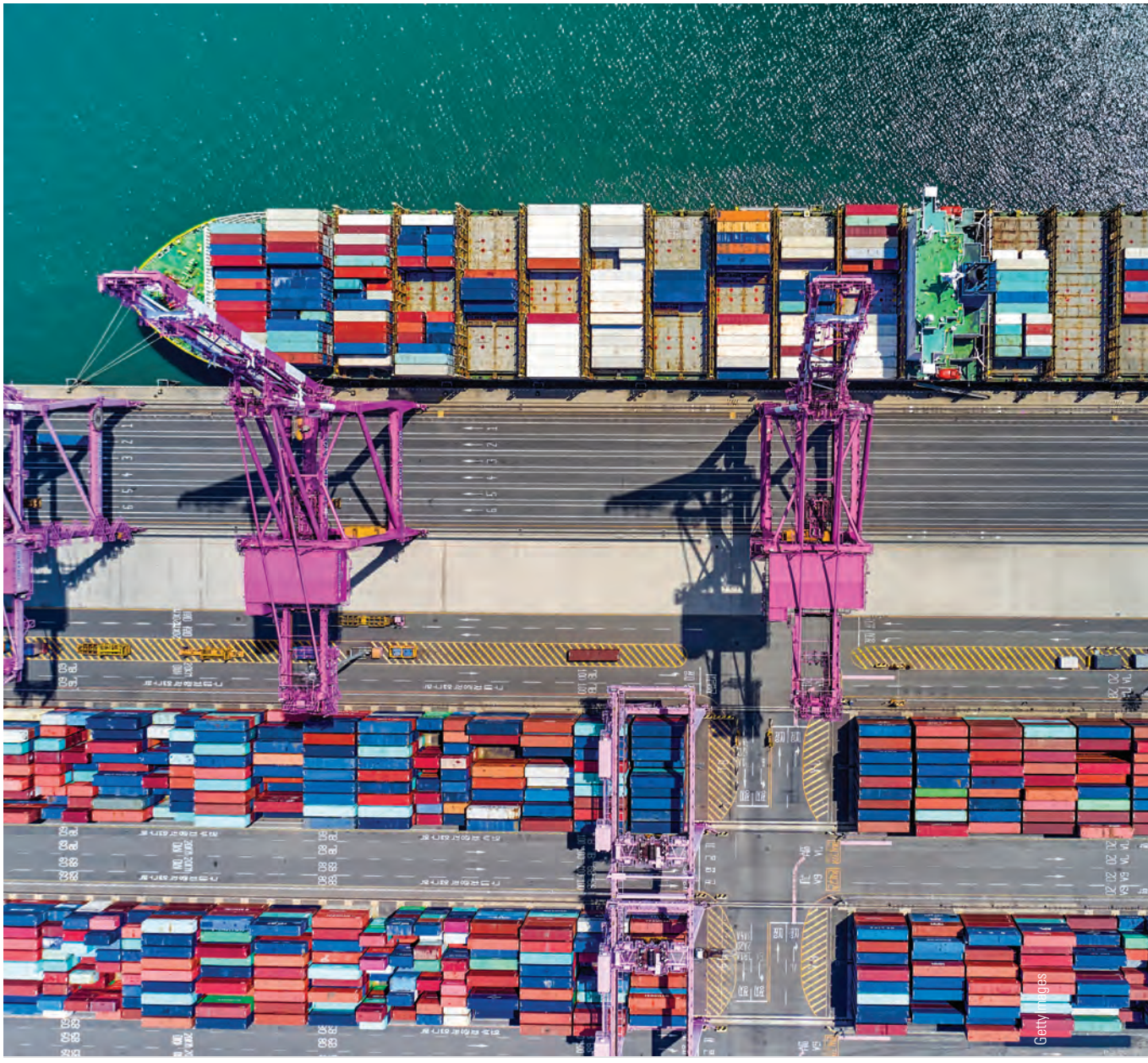
(Unit: %)



Source: Korean Institute of Criminology and Justice, National Life Safety Survey, each year

Note : Fear of crime victimization is the proportion of those who answered 'I am quite afraid' or 'I am very afraid' when walking alone in a neighborhood alley at night.

17 PARTNERSHIPS FOR THE GOALS



Getty Images

Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

The goal 17 focuses on the role of the international community for the successful achievement of the SDGs, and emphasizes the importance of active partnerships and extensive participation of governments, civil society, the private sector and other stakeholders. In particular, at a time when we are facing an important turning point due to COVID-19, it is necessary to review changes in international cooperation and examine its direction to identify places or aspects that require more support and cooperation to successfully implement the SDGs in the future.

In 2020, despite a sharp drop in global GDP due to the COVID-19 pandemic, total official development assistance(ODA) reached an all-time high of USD 161.2 billion. By contrast, Korea's total ODA in 2020 decreased slightly despite its active participation in health and medical support to fight against COVID-19. The numbers suggest that support from donor countries differs depending on the socio-economic situation in each country, which means that consistent support is not being provided to recipient countries. A joint effort is needed to provide more stable and equal ODA to recipient countries so that they can be prepared for the long-term impact of COVID-19. In particular, countries around the world, including developing countries, should be given fair access to COVID-19 testing and development and production of therapeutics and vaccines. At the same time, in the long term, it is necessary to set a consistent development agenda and provide ODA focusing on sustainable development.

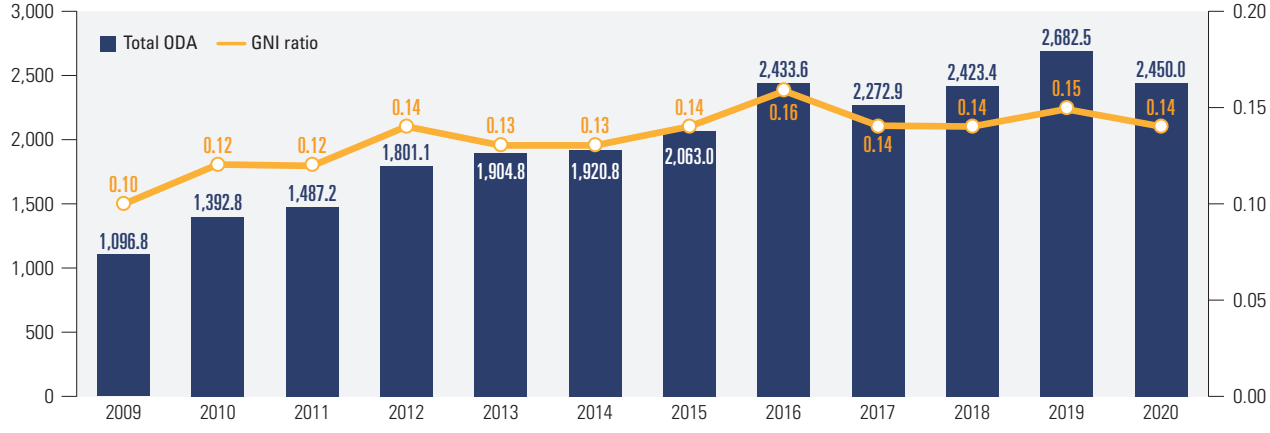
Trade, along with ODA, is a very important factor in reducing poverty and driving economic growth in developing and least-developed countries, but the lockdown measures, taken to prevent the spread of COVID-19, have severely affected the exports of the least-developed countries in 2020. This indicates that the least developed countries, which are highly dependent on export of goods, are very vulnerable to global crises. The trade crisis of the least developed countries is expected to have a negative impact on their economic growth in the long term, so global attention and efforts to prepare for this are more important than ever.

Korea's ODA reached USD 2.4 billion, but GNI ratio remained at 0.14%

Korea provided about USD 2.4 billion of ODA in 2020(preliminary figure), which is more than double the 2009 ODA of USD 1.1 billion. After joining the OECD Development Assistance Committee(DAC) in 2009, Korea has steadily increased its ODA at the average growth rate of 11.9% from 2010 to 2018, which is the highest among DAC member states with an average growth of 2.4%. However, Korea's ODA in 2020 decreased by 8.6% compared to the previous

Korea's ODA and ODA/GNI ratio; 2009~2020

(Unit: USD million, %)



Source: OECD, Development Co-operation Profiles 'Korea', Korea - ODA volume(https://www.oecd-ilibrary.org/sites/d919ff1a-en/index.html?itemId=/content/component/5e331623-en&_csp_=b14d4f60505d057b456dd1730d8fcea3&itemIGO=oecd&itemContentType=chapter&_ga=2.197826223.1279694035.1628080677-192542855.1608730099#endnotea1z88, retrieved on November 12, 2021)

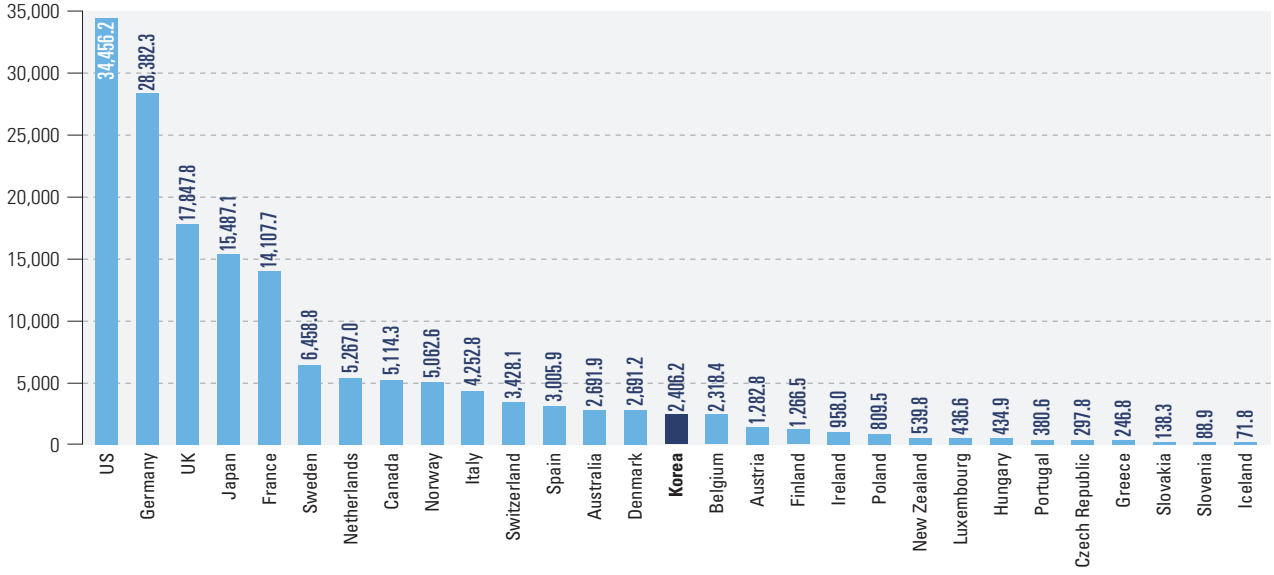
Note 1: The figures for 2020 are preliminary

Note 2: Net ODA flows as a percentage of GNI; 2018~2020: ODA grant equivalent as a percentage of GNI

year, and the ODA as a percentage of gross national income(GNI) in 2020 stood at 0.14%, ranking 27th among 29 members of the OECD DAC. Korea committed itself to 0.20% of ODA compared to GNI by 2020, but the ambition was not met.

In 2020, the ODA of all donors belonging to the OECD DAC was USD 161.2 billion(preliminary), an increase of 3.5% from the previous year, with an average of 0.32%(preliminary) as a percentage of GNI. The largest donor countries for ODA are the United States(USD 34.456 billion), Germany(USD 28.382 billion), the United Kingdom(USD 17.847 billion), Japan(USD 15.487 billion), and France(USD 14.07 billion). The donor countries with the highest ratio of ODA to GNI were Sweden(1.14%), Nor-

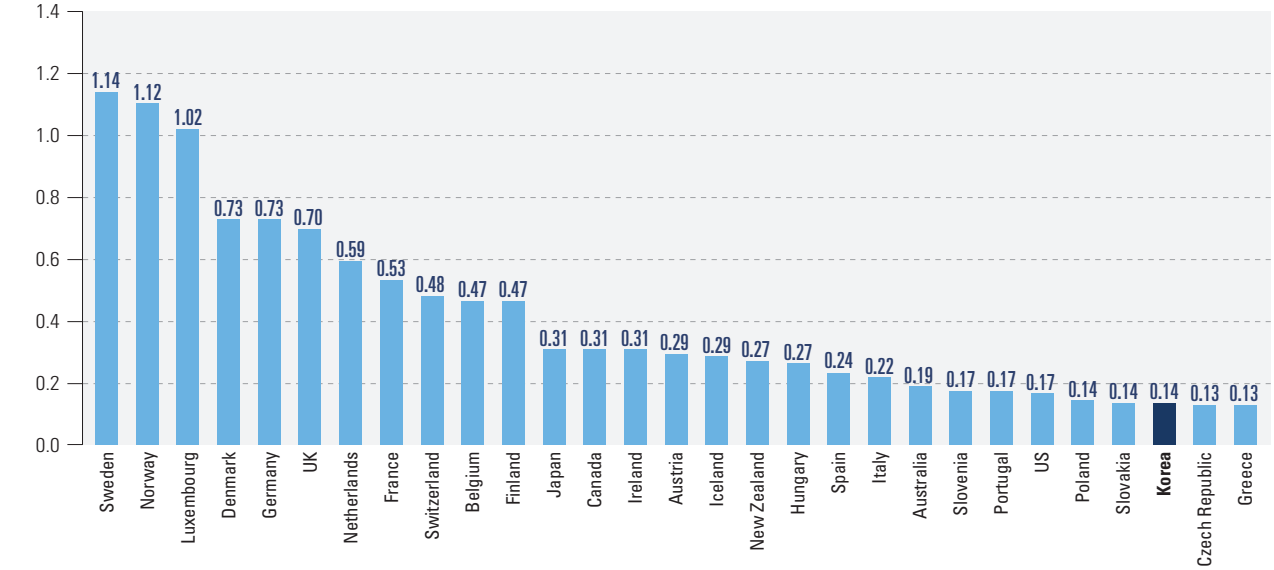
ODA grant by OECD DAC members(based on expenditure); 2020 (Unit: USD million)



Source: Wilcks, J., N. Pelechà Aigües and E. Bosch (2021), "Development co-operation funding: Highlights from the complete and final 2019 ODA statistics", in Development Co-operation Profiles, OECD Publishing, Paris(https://www.oecd-ilibrary.org/sites/401f9a42-en/index.html?itemId=/content/component/5e331623-en&_csp_=b14d4f60505d057b456dd1730d8fcea3&itemIGO=oecd&itemContentType=chapter&_ga=2.197826223.1279694035.1628080677-192542855.1608730099, retrieved on November 12, 2021)

Note : Out of the total DAC 30 member states, 29 countries were analyzed, excluding the EU.

ODA/GNI ratio of OECD DAC Members(based on expenditure); 2020 (Unit: %)



Source: Wilcks, J., N. Pelechà Aigües and E. Bosch (2021), "Development co-operation funding: Highlights from the complete and final 2019 ODA statistics", in Development Co-operation Profiles, OECD Publishing, Paris(https://www.oecd-ilibrary.org/sites/401f9a42-en/index.html?itemId=/content/component/5e331623-en&_csp_=b14d4f60505d057b456dd1730d8fcea3&itemIGO=oecd&itemContentType=chapter&_ga=2.197826223.1279694035.1628080677-192542855.1608730099, retrieved on November 12, 2021)

Note : Out of the total DAC 30 member states, 29 countries were analyzed, excluding the EU.

way(1.11%), and Luxembourg(1.02%). Countries with a similar ratio to Korea are Poland(0.14%), Slovakia(0.14%), and the Czech Republic(0.13%).

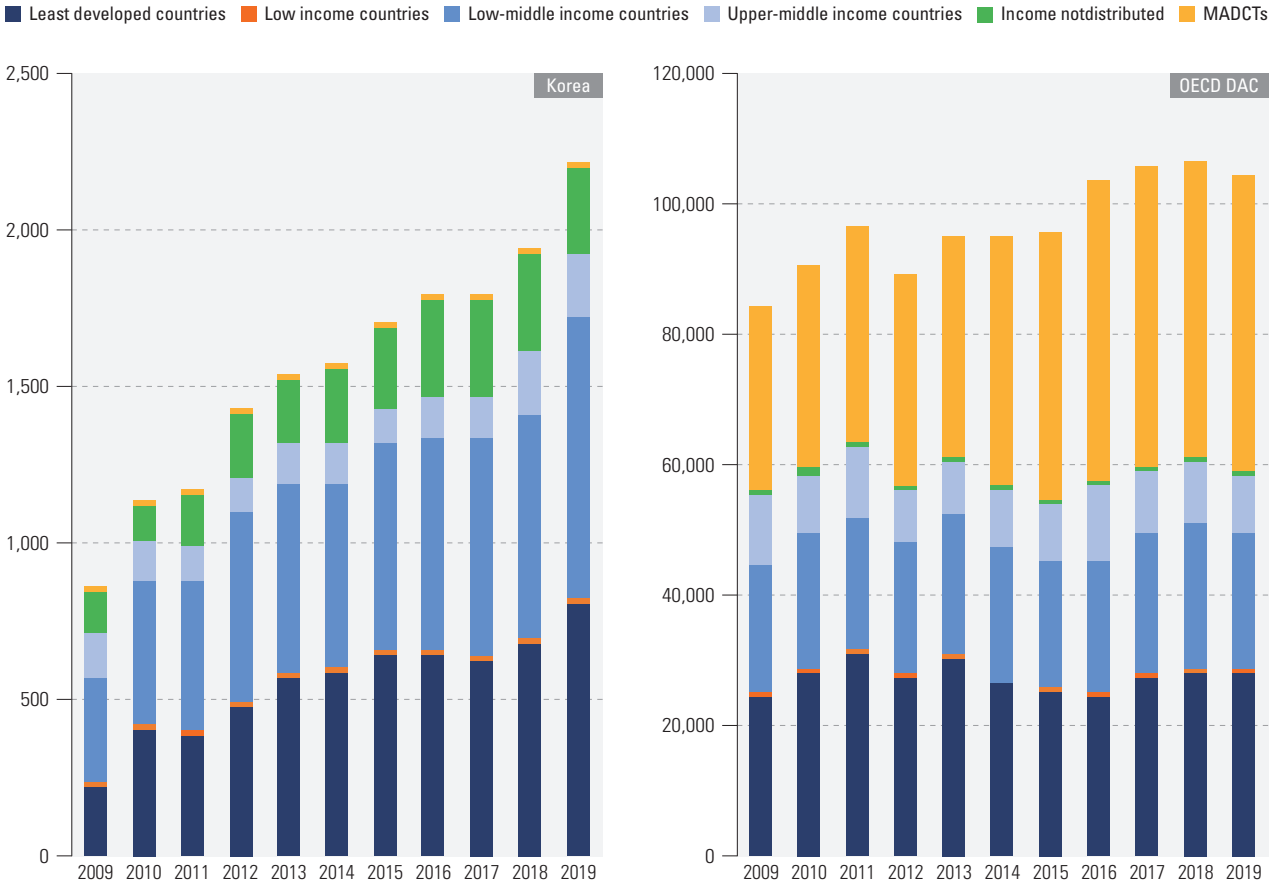
Bilateral aid is for LDCs increased to 37.1%

As of 2019, bilateral aid provided to individual countries among Korea's ODA increased by 14.2% from the previous year to USD 2.18 billion based on gross disbursement, accounting for 77.1% of the total ODA(64.7% bilateral, 12.5% earmarked multilateral). Multilateral aid provided through multilateral organizations, such as international organizations, amounted to USD 645 million, taking up 22.9% of the total ODA. As of 2019, total bilateral aid expenditures of OECD DAC member countries amounted to USD 117.6 billion, accounting for an average of 75.5%(bilateral 59.9%, earmarked multilateral 14.7%), and multilateral aid was USD 46.339 billion, accounting for an average of 25.5%. The share of bilateral aid in the total ODA by Korea is higher than the average of OECD DAC member countries(75.5%).

In 2019, by recipient countries' income, lower-middle-income countries(LMICs) accounted for the largest share at 40.9%(USD 891 million) out of the total bilateral aid provided by Korea, followed by the least developed countries(LDCs) at 37.1%(USD 809 million), income undistributed at 13.1%(USD 285 million), and upper middle-income countries(UMICs) at 8.8%(USD 191 million), which means that 78% of total bilateral aid was given to LMICs and LDCs. In particular, the share for LDCs in 2019 increased moderately from 35.1%(USD 671 million) in 2018.

As for OECD DAC member countries, MADCTs accounted for 43.7%(USD 45.111billion) of the total bilaterla

Bilateral ODA from Korea and OECD DAC by recipient countries' income(based on expenditure); 2009~2019 (Unit: USD million)



Source1 : OECD, Development Co-operation Profiles 'Korea', Korea - Bilateral ODA by income group(https://www.oecd-ilibrary.org/sites/401f9a42-en/index.html?itemId=/content/component/5e331623-en&_csp_=b14d4f60505d057b456dd1730d8fcea3&itemIGO=oecd&itemContentType=chapter&_ga=2.197826223.1279694035.1628080677-192542855.1608730099, retrieved on November 12, 2021)

Source2 : OECD stats, Aid(ODA) disbursements to countries and regions

Note : Bilateral aid presented in the graph includes two different categories: 'bilateral grant' in which a donor country directly supports a specific country; and 'earmarked multilateral'(also referred to as 'multi-bi' aid), donor contributions to multilateral organizations earmarked for specific purposes, for example, by designating a specific country. On the other hand, multilateral aid refers to core multilateral aid.

aid, followed by LDC AT 27.3(USD 28.128 billion), LMICs at 20.4%(USD 21.055 billion), UMICs at 8.1%(USD 8.368 billion), and other low-income countries at 0.5%(USD 550 million). In 2019, the share of grant that Korea provided to LDCs in bilateral aid was higher than that of DAC member countries.

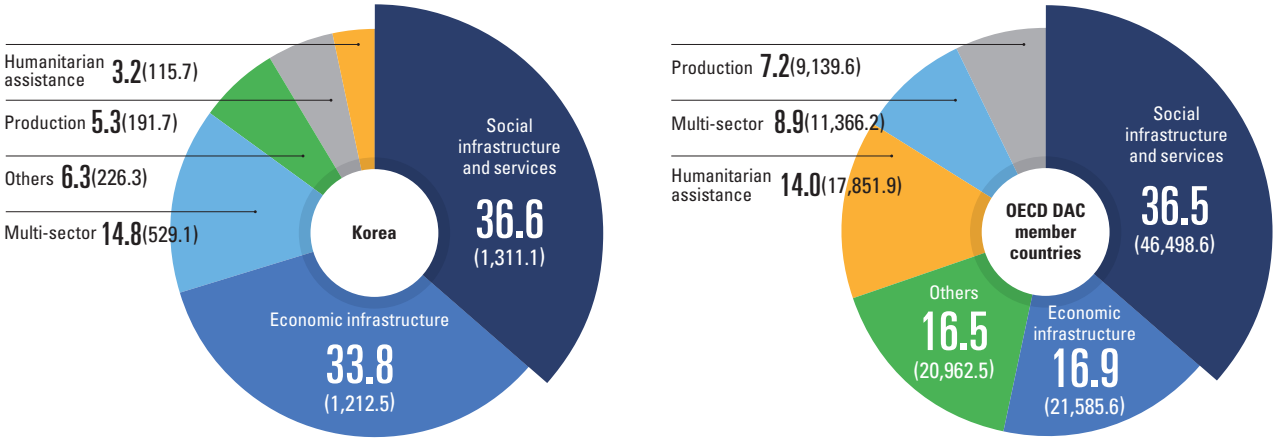
36.6% of bilateral aid is for social infrastructure and services, and 33.8% for economic infrastructure

As of 2019, Korea committed USD 1.311 billion(36.6%) to social infrastructure and services as bilateral aid, USD 1.212 billion(33.8%) to economic infrastructure, USD 529 million(14.8%) to multi-sector, USD 191 million(5.3%) to production, USD 226 million(6.3%) to others, and USD 115 million(3.2%) to humanitarian assistance. Of the aid for social infrastructure and services, USD 516 million was committed to the health sector, taking up 39.4%. According to a provisional estimate, aid provided by Korea in relation to COVID-19 in 2020 amounted to about USD 586 million, of which USD 463 million was for health care-related aid.

As of 2019, OECD DAC member countries committed USD 46.498 billion(36.5%) to social infrastructure

Bilateral aid by sector from Korea and OECD DAC member countries (based on the amount committed); 2019

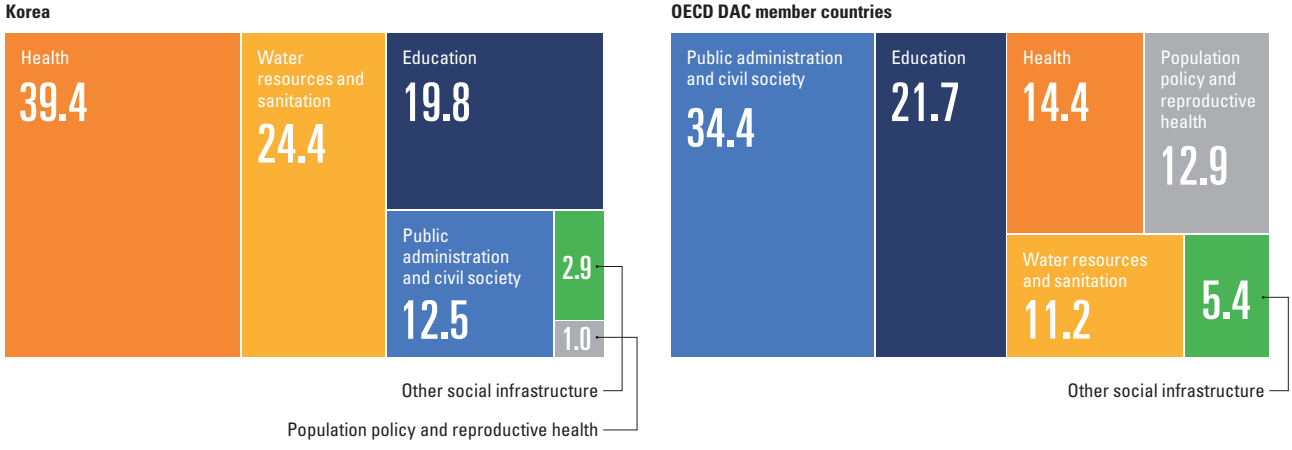
By all sector (Unit: %, USD million)



Source: OECD, Development Co-operation Profiles Bilateral ODA by sector(https://www1.compareyourcountry.org/dev-coop-profiles-2021/en/0/2548/default/all/20001+20006+20008?embed=noHeader-DAC)

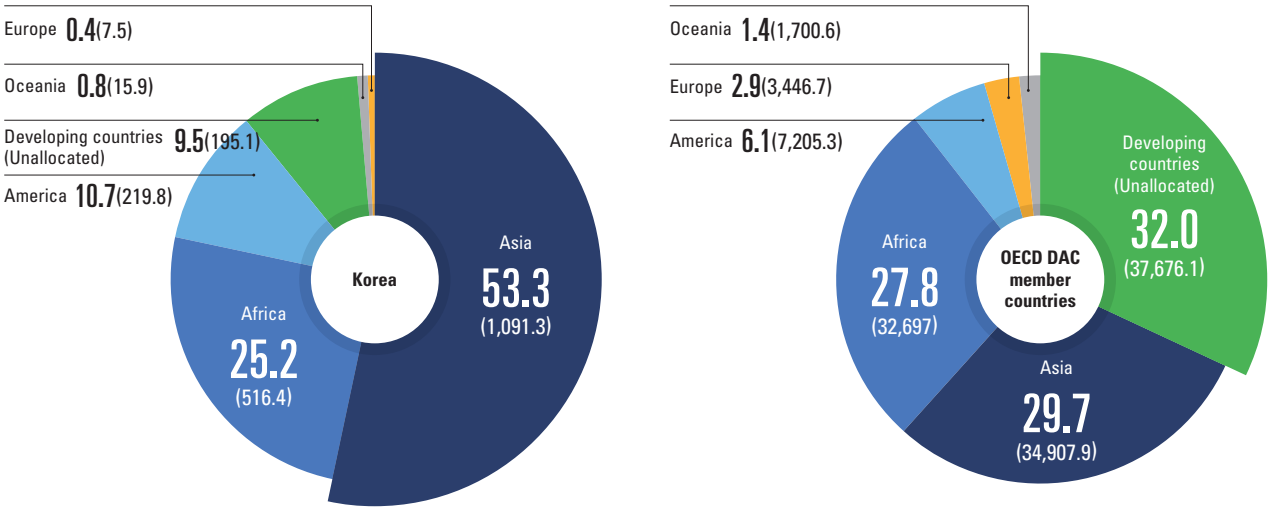
Note : Health sector ODA provided by OECD DAC is collected from '120: I.2. Health, Total', which includes Health General(120:I.2.a), Basic Health(122:I.2.b), and Non-communicable diseases(NCDs, 123:I.2.c).

The share of sub-sectors of social infrastructure and services (Unit: %)



Source: OECD.stat(https://stats.oecd.org/Index.aspx?DataSetCode=TABLE2A#, retrieved on November 12, 2021)

Bilateral aid by region from Korea and OECD DAC member countries; 2019 (Unit: %, USD million)



Source: OECD stats, Aid (ODA) disbursements to countries and regions(https://stats.oecd.org/Index.aspx?DataSetCode=TABLE2A, retrieved on November 12, 2021)

and services as bilateral aid, USD 21.585 billion(16.9%) to economic infrastructure, USD 20.962 billion(16.5%) to multi-sector, USD 17.851 billion(14.0%) to humanitarian assistance, USD 11.366 billion(8.9%) to multi-sector and USD 91.3 million(7.2%) to production. Of the aid for social infrastructure and services, USD 6.682 billion was committed to the health sector, which is 14.4% of the total aid for social infrastructure and services.

53.3% of bilateral aid is for Asia and 25.2% for Africa

As of 2019, in terms of total expenditure, Korea provided USD 1.091 billion(53.3%) of bilateral aid for Asia and USD 516 million(25.2%) for Africa. In total, the two continents accounted for 78.5% of bilateral aid from Korea. In addition, USD 219 million(10.7%) was given to America, USD 7.5 million(0.4%) to Europe, and USD 16 million(0.8%) to Oceania. As of 2019, in terms of total expenditure, OECD DAC member countries provided USD 34.907 billion(29.7%) of bilateral aid for Asia, USD 32.697 billion(27.8%) for Africa, USD 7.205 billion(6.1%) for America, USD 3.446 billion(2.9%) for Europe, and USD 1.7 billion(1.4%) for Oceania. Unallocated grants that do not specify a region also amounted to USD 37.676 billion, accounting for 32% of the total bilateral aid.

LDCs' share of global exports remains at 0.94%

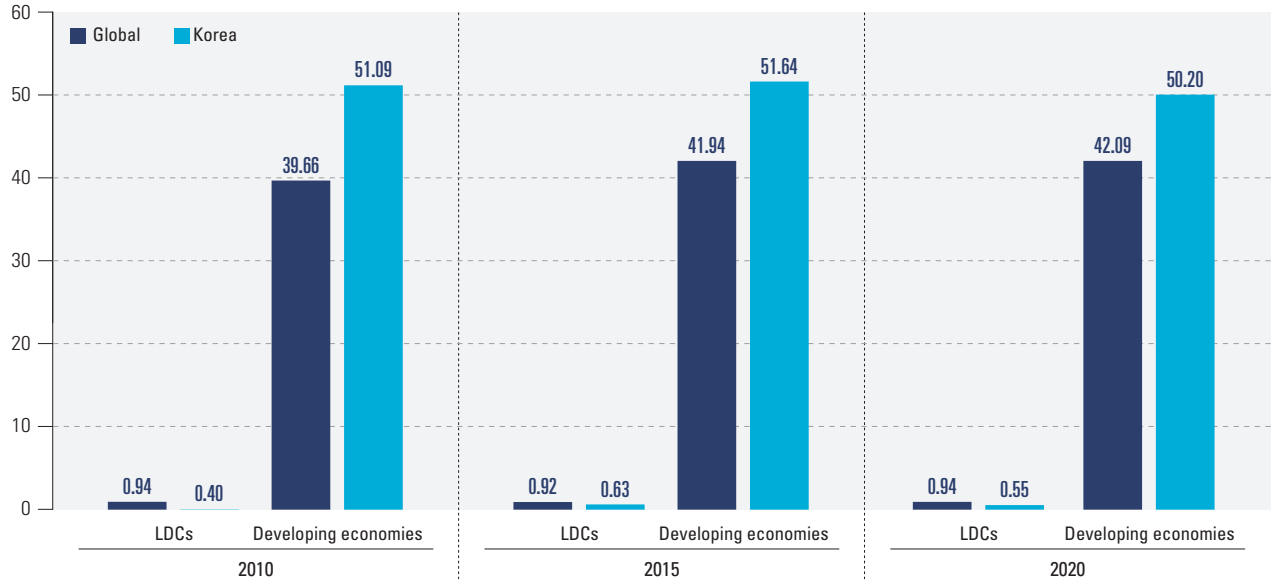
Target 17.11 sets the goal of significantly increasing the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020. Its indicator is developing countries' and least developed countries' share of global exports.

The share of the LDCs of global exports was 0.94% in 2010, 0.92% in 2015, and 0.94% in 2020, increasing only by 0.02%p between 2015 and 2020, the targeted period, which is below the goal of two times increase(1.84%). In addition, the share of developing countries of global exports was 39.66% in 2010, 41.94% in 2015, and 42.09% in 2020, an increase of 0.15%p from 2015 to 2020, which cannot be seen as a 'significant increase'.

According to an analysis of the share of LDCs and developing countries of the total imports to Korea, LDCs accounted for 0.40% in 2010, 0.63% in 2015, and 0.55% in 2020. The share in 2020 is 0.39%p lower than the world average of 0.94%, and also a 0.08%p decrease from 2015. On the other hand, developing countries took up 51.09% in 2010, 51.64% in 2015, and 50.20% in 2020, which is higher than the global average of 42.09% in 2020, but also a 1.44%p decrease from 2015, indicating that Korea failed to significantly increase the share of developing countries of its imports.

For Korea, the five LDCs taking up the largest share in the total imports to Korea were Yemen(24.7%), Zambia(22.1%), Myanmar(9.4%), Bangladesh(8.2%), and Angola(6.7%) in 2010; Myanmar(18.3%), Yemen(13.1%), Zambia(12.6%), Bangladesh(12.1%) and DRC(10.9%) in 2015; and Myanmar(18.2%), DRC(17.3%), Bangladesh(15.4%), Cambodia(12.5%), and Angola(5.9%) in 2020

The share of LDCs and developing countries of global exports and imports to Korea; 2010, 2015, 2020 (Unit: %)

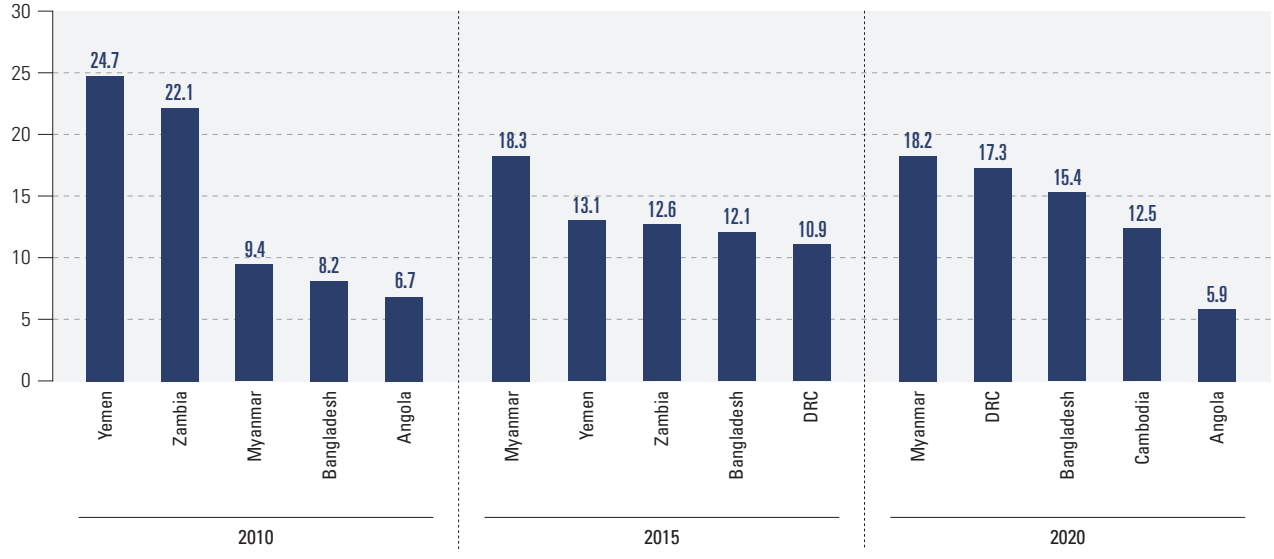


Source: Global data(https://sdgpulse.unctad.org/trade-developing-economies/#Ref_8IVYHP88); Korea's data(https://comtrade.un.org/data/) was used to draw the graph
Note 1: Exports for services and goods were combined for global data.
Note 2: Only goods exports were calculated for Korea's data(service data is excluded as it is not available).
Note 3: For international comparison, the country classification system provided by UNCTAD is used to identify least developed countries and developing countries. A total of 176 countries, including 46 LDCs and 130 developing countries(LDCs excluded), are included in the data. However, countries that were not Korea's trading partners in the three analysis years are excluded.

As for the target 17.11 to double the LDCs' share of global exports by 2020, the three LDCs' share of the Korean import market reached the goal by increasing their share by more than two times from 2010 to 2020, and they are: Cambodia(2.5% in 2010 to 12.5% in 2020), Mozambique(0.4% in 2010 to 5.3% in 2020), and Madagascar(0.1% in 2010 to 2.1% in 2020).

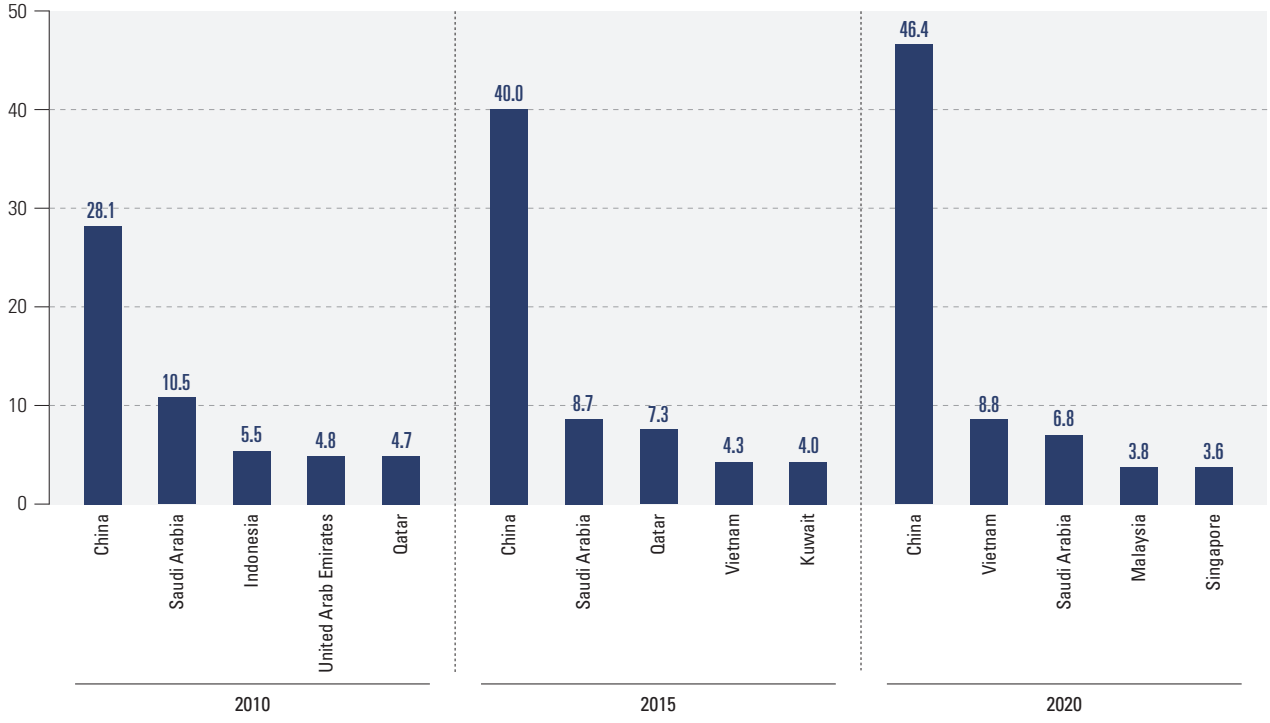
The top five developing countries in their share of total imports to Korea were China(28.1%), Saudi Arabia(10.5%), Indonesia(5.5%), UAE(4.8%), and Qatar(4.7%) in 2010; China(40.0%), Saudi Arabia(8.7%), Qatar(7.3%), Vietnam(4.3%), and Kuwait(4.0%) in 2015; and China(46.4%), Vietnam(8.8%), Saudi Arabia(6.8%), Malaysia(3.8%), and Singapore(3.6%) in 2020.

Top 5 LDCs in the share of total imports; 2010, 2015, 2020 (Unit: %)



Source: UNSD website(https://comtrade.un.org/data/, retrieved on November 12, 2021) was used to draw the graph
Note : Only goods exports were calculated(service data is excluded as it is not available).

Top 5 developing countries in the share of total imports; 2010, 2015, 2020 (Unit: %)



Source: UNSD website(https://comtrade.un.org/data/, retrieved on November 12, 2021) was used to draw the graph
Note : Only goods exports were calculated(service data is excluded as it is not available).

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World Steel Association(https://www.worldsteel.org)

Abbreviations

ASF African Swine Fever
BOD Biochemical Oxygen Demand
COD Chemical Oxygen Demand
DAC Development Assistance Committee
ENV Environmental Water Requirements
ESG Environmental, Social and Governance
FAO Food and Agriculture Organization of the United Nations
GDP Gross Domestic Product
GGI Gender Gap Index
GII Gender Inequality Index
GNI Gross National Income
HLPF High-level Political Forum on Sustainable Development
ICT Information and Communication Technology
IEA International Energy Agency
IGCC Integrated Gasification Combined Cycle
IPCC Intergovernmental Panel on Climate Change
ILO International Labour Organization
IUCN International Union for Conservation of Nature
IUU Illegal, Unreported and Unregulated Fishing
IWRM Integrated Water Resources Management
LULUCF Land Use, Land-use Change, and Forestry
MDGs Millennium Development Goals
MGCI Mountain Green Cover Index
NDC Nationally Determined Contribution
ODA Official Development Assistance
OECD Organization for Economic Cooperation and Development
PISA Program for International Student Assessment
$PM_{2.5}$ Particulate Matter
RE100 Renewable Energy 100%
SDGs Sustainable Development Goals
SFM Sustainable Forest Management
TAC Total Allowable Catch
TP Total Phosporus
TRWR Total Renewable fresh Water Resources
TWW Total fresh Water Withdrawn
UHC Universal Health Coverage
UNDP United Nations Development Programme
UNEP United Nations Environment Programme
UNESCO United Nations Education, Scientific and Cultural Organization
UNIDO United Nations Industrial Development Organization
UNSD United Nations Statistics Division
WHO World Health Organization
WQI Water Quality Index
WWF World Wide Fund for Nature

1.The data are based on the UN Global SDG database and the SDG data platform of Korea, which may differ from the figures used in the text.

2. Sourse: The indicator values with red dot are from the UN Global SDG database, and those with green dot are extracted from domestic statistics similar to global indicators.

Goal 1 End poverty in all its forms everywhere

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	**1.1.1** Proportion of the population living below the international poverty line, by sex, age, employment status and geographical location (urban/rural)•	2014	0.2%	2016	0.2%	World Bank, Development Research Group
1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	**1.2.1** Proportion of population living below the national poverty line, by sex and age					
	1.2.2 Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions					
1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	**1.3.1** Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons with disabilities, pregnant women, newborns work-injury victims and the poor and the vulnerable•	2019	67.0%	2020	77.3%	ILO Social Security Inquiry(SSI)
1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	**1.4.1** Proportion of population living in households with access to basic services •	2019	100%	2020	100%	WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene(2021)
	1.4.2 Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation and (b) who perceive their rights to land as secure, by sex and by type of tenure•			2016	(a)100% (b)96%	Census & Administrative Data
1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	**1.5.1** Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population• • Deaths and missing persons: • Directly affected persons:	2018	 0.28 person 25.6 persons	2019	 0.21 person 17.8 persons	United Nations Office for Disaster Risk Reduction(2021)
	1.5.2 Direct economic loss attributed to disasters in relation to global gross domestic product(GDP)•	2018	0.000015%	2019	0.000026%	United Nations Office for Disaster Risk Reduction(2021)
	1.5.3 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030•	2018	0.95	2019	1	Sendai Framework Monitoring System as provided by designated national focal points(2021)
	1.5.4 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies•	2018	100%	2019	100%	Sendai Framework Monitoring System as provided by designated national focal points(2021)
1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions	**1.a.1** Total official development assistance grants from all donors that focus on poverty reduction as a share of the recipient country's gross national income•	2017	0.01%	2018	0.01%	OECD, CRS database, 2021
	1.a.2 Proportion of total government spending on essential services (education, health and social protection)					
1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions	**1.b.1** Pro-poor public social spending					

Goal 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	**2.1.1** Prevalence of undernourishment•	2018	< 2.5	2019	< 2.5	FAO
	2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)•	2018	5.2%	2019	5.1%	FAO

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	**2.2.1** By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons•	2003	2.5%	2009	2.5%	Joint Child Malnutrition Estimates(2021 Edition), United Nations Children's Fund(UNICEF), World Health Organisation(WHO) and the World Bank Group
	2.2.2 Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type(wasting and overweight)•	2003	(Underweight) 0.9% (Overweight) 6.2	2009	(Underweight) 1.2% (Overweight) 7.3%	The Korea National Health and Nutrition Examination Survey(KNHANES). International Journal of Epidemiology 2014;43:69~77
	2.2.3 Prevalence of anaemia in women aged 15 to 49 years, by pregnancy status (percentage)•	2018	13.2%	2019	13.5%	WHO Global Health Observatory(https://www.who.int/data/gho/)
2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	**2.3.1** Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size•	2019		2020		Statistics Korea, Farm Household Economy Survey
	• 0.5 ha or less:		7.0 KRW thousand /hour		7.0 KRW thousand /hour	
	• 0.5-1.0 ha:		12.0 KRW thousand /hour		12.0 KRW thousand /hour	
	• 1.0-1.5 ha:		13.0 KRW thousand /hour		15.0 KRW thousand /hour	
	• 1.5-2.0 ha:		16.0 KRW thousand /hour		18.0 KRW thousand /hour	
	• 2.0-3.0 ha:		20.0 KRW thousand /hour		22.0 KRW thousand /hour	
	• 3.0-5.0 ha:		25.0 KRW thousand /hour		28.0 KRW thousand /hour	
	• 5.0-7.0 ha:		30.0 KRW thousand /hour		31.0 KRW thousand /hour	
	• 7.0-10.0 ha:		32.0 KRW thousand /hour		32.0 KRW thousand /hour	
	• 10.0 ha or more:		44.0 KRW thousand /hour		42.0 KRW thousand /hour	
	2.3.2 Average income of small-scale food producers, by sex and indigenous status•	2019		2020		Statistics Korea, Farm Household Economy Survey
	• 0.5 ha or less:		2,022 KRW thousand		2,136 KRW thousand	
	• 0.5-1.0 ha:		5,574 KRW thousand		6,722 KRW thousand	
	• 1.0-1.5 ha:		9,450 KRW thousand		11,991 KRW thousand	
	• 1.5-2.0 ha:		14,928 KRW thousand		17,225 KRW thousand	
	• 2.0-3.0 ha:		19,354 KRW thousand		20,712 KRW thousand	
	• 3.0-5.0 ha:		23,335 KRW thousand		29,350 KRW thousand	
	• 5.0-7.0 ha:		37,016 KRW thousand		37,707 KRW thousand	
	• 7.0-10.0 ha:		34,741 KRW thousand		38,676 KRW thousand	
	• 10.0 ha or more:		65,494 KRW thousand "		57,790 KRW thousand	
2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	**2.4.1** Proportion of agricultural area under productive and sustainable agriculture					
2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed	**2.5.1** Number of plant and animal genetic resources for food and agriculture secured in either medium or long-term conservation facilities•	2020	26 species	2021	26 species	DAD-IS http://www.fao.org/dad-is/
	2.5.2 Proportion of local breeds classified as being at risk of extinction•	2020	86%	2021	86%	DAD-IS http://www.fao.org/dad-is/
2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	**2.a.1** The agriculture orientation index for government expenditures•	2017	0.71	2018	0.77	FAO Questionnaire. UNSD national account estimates
	2.a.2 Total official flows (official development assistance plus other official flows) to the agriculture sector					
2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round	**2.b.1** Agricultural export subsidies•	2016	USD 31.64 million	2017	USD 35.03 million	World Trade Organization
2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	**2.c.1** Indicator of food price anomalies•	2019	105.42	2020	104.85	Statistics Korea, Consumer Price Survey

Goal 3 Ensure healthy lives and promote well-being for all at all ages

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3.1.1 Maternal mortality ratio• (per 100,000 live births)	2019	9.9 persons	2020	11.8 persons	Statistics Korea, Cause of Death Statistics
	3.1.2 Proportion of births attended by skilled health personnel•	2015	70.6%	2018	80.7%	Korea Institute for Health and Social Affairs, National Fertility and Family Health and Welfare Survey
3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births	3.2.1 Under-5 mortality rate• (per 100,000 population)	2019	55.141 persons	2020	48.803 persons	Statistics Korea, Vital Statistics
	3.2.2 Neonatal mortality rate• (per 1,000 live births)	2019	1.5 persons	2020	1.3 persons	Statistics Korea, Cause of Death Statistics
3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	3.3.1 Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations•	2019	1006 persons (The total number)	2020	818 persons (The total number)	Korea Disease Control and Prevention Agency, (HIV/AIDS) Annual Report on Notified Cases
	3.3.2 Tuberculosis incidence per 100,000 population•	2019	46.4 persons	2020	38.8 persons	Korea Disease Control and Prevention Agency, Annual Report on Notified Tuberculosis Cases
	3.3.3 Malaria incidence per 1,000 population•	2019	1.08 persons/100,000 population	2020	0.74 person/100,000 population	Korea Disease Control and Prevention Agency, Infectious Disease Surveillance Yearbook
	3.3.4 Hepatitis B incidence per 100,000 population•	2019	0.75 person	2020	0.74 person	Korea Disease Control and Prevention Agency, Infectious Disease Surveillance Yearbook
	3.3.5 Number of people requiring interventions against neglected tropical diseases•	2019	277persons	2020	45persons	Korea Disease Control and Prevention Agency, Infectious Disease Surveillance Yearbook
3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease• (per 100,000 population)	2019		2020		Statistics Korea, Cause of Death Statistics
	• Cancer: • Cardiovascular disease: • Respiratory system: • Diabetes:		158.2 persons 0.4 person 12.848 persons 15.8 persons		160.1 persons 0.3 person 13.442 persons 16.5 persons	
	3.4.2 Suicide mortality rate• (per 100,000 population)	2019	26.9 persons	2020	25.7 persons	Statistics Korea, Cause of Death Statistics
3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	3.5.1 Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance use disorders					
	3.5.2 Alcohol per capita consumption (Aged 15 years and older) within a calendar year in litres of pure alcohol•	2017	8.652 liters per person	2018	8.477 liters per person	Korea Health Promotion Institute
3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents	3.6.1 By 2020, halve the number of global deaths and injuries from road traffic accidents•	2019	3349 persons	2020	3081 persons	National Police Agency, Road traffic accident reports received by the police
3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	3.7.1 Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods•	2015	90.7%	2018	91.3%	Korea Institute for Health and Social Affairs ,National Survey on Family and Fertility
	3.7.2 Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group•	2019	0.8 person (15~19)	2020	0.7 person (15~19)	Statistics Korea, Vital Statistics
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	3.8.1 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all•	2017	86	2019	87	WHO
	3.8.2 Proportion of population with large household expenditures on health as a share of total household expenditure or income•	2014		2015		WHO
	• More than 10% of expenditure: • More than 25% of expenditure:		21.76% 3.42%		21.78% 3.85%	
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3.9.1 Mortality rate attributed to household and ambient air pollution• (per 100,000 population)			2016	20 persons	WHO, Global Health Observatory(GHO)
	3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)• (per 100,000 population)			2016	1.8 persons	WHO, Global Health Observatory(GHO)
	3.9.3 Mortality rate attributed to unintentional poisoning (per 100,000 population)•	2015	0.3 person	2019	0.2 person	WHO
3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	3.a.1 Age-standardized prevalence of current tobacco use among persons aged 15 years and older•	2017	22.6%	2018	22.0%	World Health Organization(WHO) Department of the Prevention of Noncommunicable Diseases; Secretariat of the WHO Framework Convention on Tobacco Control

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all	3.b.1 Proportion of the target population covered by all vaccines included in their national programme•	2018		2019		WHO/UNICEF coverage estimates 2019 revision, July 2020
	• Diphtheria, Tetanus, Pertussis Vaccine(DTP3):		98%		98%	
	• Pneumococcal vaccine(PCV3):		97%		98%	
	• Measles secondary vaccine(MCV2):		97%		96%	
	3.b.2 Total net official development assistance to medical research and basic health sectors					
	3.b.3 Proportion of health facilities that have a core set of relevant essential medicines available and affordable on a sustainable basis					
3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States	3.c.1 Health worker density, by type of occupation (per 10,000 population)•	2017		2018		Global Health Workforce Statistics database, Global Health Observatory, WHO
	• Nurse:		71.482 persons		74.625 persons	
	• Doctor:		23.608 persons		24.082 persons	
	• Dentist:		4.951 persons		5.04 persons	
	• Pharmacist:		7.237 persons		7.394 persons	
3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	3.d.1 International Health Regulations (IHR) capacity and health emergency preparedness•	2019	• SPAR01:100% • SPAR02: 80% • SPAR03:100% • SPAR04:100% • SPAR05:100% • SPAR06:100% • SPAR07:100% • SPAR08:100% • SPAR09:100% • SPAR10: 80% • SPAR11:100% • SPAR12:100% • SPAR13:100%	2020	• SPAR01:100% • SPAR02: 80% • SPAR03:100% • SPAR04:100% • SPAR05:100% • SPAR06:100% • SPAR07:100% • SPAR08:100% • SPAR09:100% • SPAR10:100% • SPAR11:100% • SPAR12:100% • SPAR13:100%	IHR National Self-Assessment and reports received and registered at WHO e-SPAR database
	3.d.2 Percentage of bloodstream infections due to selected antimicrobial-resistant organisms					

Goal 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes	4.1.1 Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex•	2015 2015	a) Elementary Math : 96.85 b) Secondary • Reading, All: 86.34 • Math, All: 84.54	2019 2018	a) Elementary Math : 95 b) Secondary • Reading, All: 84.89 • Math, All: 84.54	TIMSS, PISA
	4.1.2 completion rate(primary education, lower secondary education, upper secondary education)					
4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education	4.2.1 Proportion of children aged 24-59 months of age who are developmentally on track in health, learning and psychosocial well-being, by sex•	2013	Langage development 3.41 points Cognitive development 3.43 points	2018	Langage development 2.25 points Cognitive development 2.23 points	Ministry of Health and Welfare, National Survey of the Child
	4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex•	2017	95.9%	2018	98.6%	UNESCO Institute for Statistics
4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex•	2019	41.7%	2020	40.0%	Korea Education Development Institute, National Lifelong Learning Survey for Individual Learners
4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill•	2018		2019		Ministriy of Sceience and ICT(MSIT)
	• Doing basic arithmetic using spreadsheets:		43.13%		45.72%	
	• Copying and moving files and folders:		83.7%		84.97%	
	• Copying and moving information in documents:		78.83%		84.97%	
	• Sending e-mail with file attachment:		68.05%		76.82%	
	• Written using presentation software:		36.9%		39.32%	
	• Connecting and installing devices such as modems, cameras, and printers:		52.53%		55.68%	
	• Writing computer programs using programming languages:		5.56%		6.13%	
	• Browse, find, download and install software:		51.03%		61.29%	
	• Converting and moving files between computers and other devices:		50.32%		57.54%	
4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations	4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated•	2015		2018		OECD, PIAAC/TIMMS
	1) Gender Equality Index:		• Reading: 1.125 • Math: 1.055		• Reading: 1.085 • Math: 1.014	
	2) Socioeconomic Equality Index:		• Reading: 0.832 • Math: 0.785		• Reading: 0.816 • Math: 0.799	

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex•			2012	• Literacy 87.1% • Numeracy 81.0%	OECD, PIAAC
4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies, (b) curricula, (c) teacher education, and (d) student assessment•			2020	(a)1.0 (b)0.883 (c)1.0 (d)0.833	UNESCO
4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all	4.a.1 Proportion of schools offering basic services, by type of service•	2015	100%	2016	100%	UNESCO
4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries	4.b.1 Volume of official development assistance flows for scholarships by sector and type of study•	2019	USD 70.7 million	2020	USD 69.8 million	Ministry of Economy and Finance, Official Development Assistance Statistics
4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States	4.c.1 Proportion of teachers with the minimum required qualifications, by education level					

Goal 5 Achieve gender equality and empower all women and girls

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
5.1 End all forms of discrimination against all women and girls everywhere	5.1.1 Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex• • Area 1 (legal system and public life): • Area 2 (violence against women): • Area 3 (employment and economic benefits) : • Area 4 (marriage and family):			2020	 90.0% 91.7% 70.0% 90.9%	UN Women
5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation	5.2.1 Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age•			2019	27.5%	Ministry of Gender Equality and Family, Domestic Violence Survey
	5.2.2 Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence•	2016	0.8%	2019	0.4%	Ministry of Gender Equality and Family, Sexual Violence Survey
5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation	5.3.1 Proportion of women aged 20-24 years who were married or in a union before age 15 and before age 18•	2015	0.098%	2020	0.107%	Statistics Korea, Population Census
	5.3.2 Proportion of girls and women aged 15-49 years who have undergone female genital mutilation/cutting, by age					
5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate	5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location•	2014	Female : 13.96% Male : 3.3%	2019	Female : 13.6% Male : 4.2%	Statistics Korea, Time Use Survey
5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	5.5.1 Proportion of seats held by women in (a) national parliaments and (b) local governments•	2020	(a)17.3%	2021 2018	(a)19.0% (b)28.3%	(a)Inter-Parliamentary Union (b)UN Women, ESCAP
	5.5.2 Proportion of women in managerial positions •	2019	15.4%	2020	15.7%	Statistics Korea, Economically Active Population Survey
5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences	5.6.1 Proportion of women aged 15-49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care					
	5.6.2 Number of countries with laws and regulations that guarantee full and equal access to women and men aged 15 years and older to sexual and reproductive health care, information and education					

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	5.a.1 (a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure					
	5.a.2 (a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure					
5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women	5.b.1 Proportion of individuals who own a mobile telephone, by sex•	2018	96.0%	2019	96.1%	Ministry of Science and ICT, Survey on the Use of the Internet
5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	5.c.1 Proportion of countries with systems to track and make public allocations for gender equality and women's empowerment					

Goal 6 Ensure availability and sustainable management of water and sanitation for all

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1 Proportion of population using safely managed drinking water services•	2018	97.0%	2020	97.3%	Ministry of Environment, Statistics of Waterworks
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	6.2.1 Proportion of population using (a) safely managed sanitation services and (b) a handwashing facility with soap and water•	2019	100%	2020	100%	WHO/UNICEF
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1 Proportion of domestic and industrial wastewater flows safely treated•			2020	99.5%	WHO
	6.3.2 Proportion of bodies of water with good ambient water quality•	2017	87.3%	2020	93.3%	World Environment Situation Room
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.1 Change in water-use efficiency over time•	2017	52.45USD/m^3	2018	53.81USD/m^3	FAO
	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources•	2017	85.2%	2018	85.2%	FAO
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	6.5.1 Degree of integrated water resources management•	2017	67.9	2020	76.0	UNEP, IWRM Data Portal
	6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation•	2017	0%	2020	0%	UNECE
6.6 By 2020 protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	6.6.1 Change in the extent of water-related ecosystems over time•	2019	0.00442%	2020	0.00445%	UN Environment
6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	6.a.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan					
6.b Support and strengthen the participation of local communities in improving water and sanitation management	6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management					

Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity•	2018	100%	2019	100%	World Bank
	7.1.2 Proportion of population with primary reliance on clean fuels and technology•	2018	> 95%	2019	> 95%	WHO, Global Health Observatory
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption•	2018	3.9%	2019	3.9%	Korea Energy Economics Institute, Energy Supply and Demand Statistics
7.3 By 2030, double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and GDP•	2017	5.61MJ/USD	2018	5.47MJ/USD	IEA
7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	7.a.1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems					
7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	7.b.1 Installed renewable energy- generating capacity in developing countries (in Watts per capita)•	2018	235.5 watt per person	2019	305.6 watt per person	IRENA

Goal 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 percent gross domestic product growth per annum in the least developed countries	8.1.1 Annual growth rate of real GDP per capita•	2018	2.8%	2019	1.9%	UN
8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	8.2.1 Annual growth rate of real GDP per employed person•	2018	2.6%	2019	1.2%	ILOSTAT
8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	8.3.1 Proportion of informal employment in total employment, by sector and sex					
8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead	8.4.1 Material footprint, material footprint per capita, and material footprint per GDP					
	8.4.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP•	2016		2017		Environment Live / Global Material Flows Database
	• Total consumption: • Consumption per person: • Consumption per GDP:		8.04 billion tons 15.83 tons 0.616kg/USD		8.09 billion tons 15.86 tons 0.601kg/USD	
8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	8.5.1 Average hourly earnings of employees, by sex, age, occupation and persons with disabilities•	2018	21,922 won	2019	23,069 won	Ministry of Employment and Labor, Survey Report on Labor Conditions by Employment Type
	8.5.2 Unemployment rate, by sex, age and persons with disabilities•	2020	4.0%	2021	3.7%	Statistics Korea, Economically Active Population Survey
8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training	8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training					
8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	8.7.1 Proportion and number of children aged 5-17 years engaged in child labour, by sex and age					
8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	8.8.1 Fatal and non-fatal occupational injuries per 100,000 workers, by sex and migrant status•	2019	0.46‰	2020	0.46‰	Ministry of Employment and Labor, Industrial Accident Analysis
	8.8.2 Fatal and non-fatal occupational injuries per 100,000 workers, by sex and migrant status					
8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	8.9.1 Tourism direct GDP as a proportion of total GDP and in growth rate					
8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all	8.10.1 (a) Number of commercial bank branches per 100,000 adults and (b) number of automated teller machines (ATMs) per 100,000 adults•	2018 2017	(a)15.3 (b)272.59	2019 2018	(a)15.11 (b)266.97	IMF
	8.10.2 Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider•	2014	94.4%	2017	94.9%	Global Financial Inclusion Database, World Bank.
8.a Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-related Technical Assistance to Least Developed Countries	8.a.1 Aid for Trade commitments and disbursements•	2018		2019		OECD, CRS database
	• Commitment: • Payment:		USD 1452.2 million USD 608 million		USD 1402.9 million USD 687 million	
8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization	8.b.1 Existence of a developed and operationalized national strategy for youth employment, as a distinct strategy or as part of a national employment strategy•			2020	3 points	ILO

Goal 9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	9.1.1 Proportion of the rural population who live within 2 km of an all-season road					
	9.1.2 Passenger and freight volumes, by mode of transport•	2018		2019		Airline: International Civil Aviation Organization(ICAO) Railroad: the International Transport Forum at the OECD (ITF-OECD)
	• Airline - Passengers: - Freight:		178,239,190,042(P_KM) 11,929,556,028(T_KM)		189,826,294,057(P_KM) 10,664,378,230(T_KM)	
	• Railroad - Passengers: - Freight:		138,305,470,213(P_KM) 17,775,221,048(T_KM)		119,610,800,000(P_KM) 25,696,000,000(T_KM)	
9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	9.2.1 Manufacturing value added as a proportion of GDP and per capita•	2019	26.6%	2020	26.1%	UNIDO
	9.2.2 Manufacturing employment as a proportion of total employment•	2018	16.8%	2019	16.3%	Statistics Korea, Economically Active Population Survey

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	9.3.1 Proportion of small-scale industries in total industry value added•	2016	8.0%	2017	7.9%	OECD Structural and Demographic Business Statistics
	9.3.2 Proportion of small-scale industries with a loan or line of credit					
9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	9.4.1 CO_2 emission per unit of value added•	2017	0.17kg/USD	2018	0.16kg/USD	UNIDO MVA 2021 Database
9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	9.5.1 Research and development expenditure as a proportion of GDP•	2018	4.5%	2019	4.6%	Ministry of Science and ICT, Research and Development Activities Survey
	9.5.2 Researchers (in full-time equivalent) per million inhabitant•	2018	79.1 persons/ population 10,000	2019	83.1persons/ population 10,000	Ministry of Science and ICT, Research and Development Activities Survey
9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	9.a.1 Total official international support (official development assistance plus other official flows) to infrastructure					
9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities	9.b.1 Proportion of medium and high-tech industry value added in total value added•	2017	66.2%	2018	63.8%	UNIDO CIP 2020 Database
9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020	9.c.1 Proportion of population covered by a mobile network, by technology•	2018	99.9%	2019	99.9%	Ministry of Science and ICT

Goal 10 Reduce inequality within and among countries

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average	10.1.1 Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population					
10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	10.2.1 Proportion of people living below 50 per cent of median income, by sex, age and persons with disabilities•	2019	16.3%	2020	15.3%	Statistics Korea, Survey of Household Finances and Living Conditions
10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard	10.3.1 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law•			2019	Experienced discrimination due to gender 13.9%	National Human Rights Commission of Korea, Survey of Human Rights Conditions
10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	10.4.1 Labour share of GDP•	2016	54.3%	2017	53.8%	ILOSTAT
	10.4.2 Redistributive impact of fiscal policy•	2019		2020		Statistics Korea, Survey of Household Finances and Living Conditions
	• Gini coefficient based on disposable income:		0.339		0.331	
	• Based on market income:		0.404		0.405	
10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations	10.5.1 Financial Soundness Indicators•	2018		2019		IMF
	• Non-performing loan to total gross loan:		0.25%		0.25%	
	• Return on assets:		0.78%		0.71%	
	• Regulatory capital to assets:		7.96%		7.82%	
	• Non-performing loans net of provision to capital:		1.28%		1.20%	
	• Regulatory Tier 1 capital to risk-weighted assets:		13.25%		13.22%	
	• Liquid assets to short-term liabilities:		114.49%		109.96%	
	• Net open position in foreign Exchange to capital:		0.04%		0.11%	
10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions	10.6.1 Proportion of members and voting rights of developing countries in international organizations•	2019		2020		Individual international organizations
	Ratio of voting rights (Stake ratio)					
	• UN Economic and Social Council		1.85%(1.85%)		1.85%(1.85%)	
	• IMF		1.73%(0.53%)		1.73%(0.53%)	
	• FSB		3.51%(4.17%)		3.51%(4.17%)	
10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies	10.7.1 Recruitment cost borne by employee as a proportion of monthly income earned in country of destination•	2018		2021		Statistics Korea, Survey on Immigrant's Living Conditions and Labour Force
	• Percentage of migrant workers who pay		12.7%		14.0%	
	10.7.2 Number of countries with migration policies that facilitate orderly, safe, regular and responsible migration and mobility of people					
	10.7.3 Number of people who died or disappeared in the process of migration towards an international destination•	2019	0	2020	0	IOM Missing Migrant Project
	10.7.4 Proportion of the polulation who are refugees, by country of origin• (per 100,000 population)	2019	0.351 person	2020	0.304 person	UNHCR refugee statistics

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
10.a Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements	**10.a.1** Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff• • Industrial products • Agricultural products	2018	 51.4% 51.9%	2019	 53.3% 53.9%	ITC/UNCTAD/WTO database
10.b Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes	**10.b.1** Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment and other flows)•	2018	USD 12.62 billion	2019	USD 12.16 billion	OECD
10.c By 2030, reduce to less than 3 percent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 percent	**10.c.1** Remittance costs as a proportion of the amount remitted• • Korea→China: • Korea→Vietnam:	2018	 5.2% 4.9%	2019	 5.0% 4.8%	Remittance Prices Worldwide database, World Bank

Goal 11 Make cities and human settlements inclusive, safe, resilient and sustainable

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	**11.1.1** Proportion of urban population living in slums, informal settlements or inadequate housing•	2019	5.3%	2020	4.6%	Spatial Information Division, Korea Land and Housing Corporation, Korea Housing Survey
11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situation, women, children, persons with disabilities and order persons	**11.2.1** Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities					
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	**11.3.1** Ratio of land consumption rate to population growth rate					
	11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically					
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	**11.4.1** Total per capita expenditure on the preservation protection and conservation of all cultural and natural heritage, by source of funding(public and private), type of heritage (cultural, natural), level of government (national, regional and local/municipal)					
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	**11.5.1** Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population• • Deaths and missing persons: • Directly affected persons	2018	 0.28 person 25.6 persons	2019	 0.21 person 17.8 persons	United Nations Office for Disaster Risk Reduction
	11.5.2 Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters•	2018	0.000015%	2019	0.000026%	United Nations Office for Disaster Risk Reduction
11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	**11.6.1** Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities• • Domestic waste • (Industrial) Domestic waste • Industrial waste • Construction waste	2018	 46,749.3 9,286.1 167,726.9 206,950.9	2019	 45,912.1 12,049.3 202,619.0 221,101.9	Ministry of Environment, National waste Generation and Treatment Status
	11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)•	2015	$PM_{2.5}$: 26.3μg/m³	2016	$PM_{2.5}$: 26.4μg/m³	WHO
11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	**11.7.1** Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities•	2019	1.4%	2020	1.2%	Spatial Information Division, Korea Land and Housing Corporation, Statistics of Urban Planning
	11.7.2 Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months•	2016	Violent crimes: 387.8 cases /100,000 population	2018	Violent crimes: 566.0 cases /100,000 population	Korean Institute of Criminology, Korean Crime Victim Survey
11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	**11.a.1** Number of countries that have national urban policies or regional development plans that (a) respond to population dynamics, (b) ensure balanced territorial development, (c) increase local fiscal space•			2020	1	NUP 2020 Status
11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels	**11.b.1** Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030•	2018	0.95	2019	1	Sendai Framework Monitoring System
	11.b.2 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies•	2018	100%	2019	100%	Sendai Framework Monitoring System

Goal 12 Ensure sustainable consumption and production patterns

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	12.1.1 Number of countries developing, adopting or inplementing policy instruments aimed at supporting the shift to sustainable consumption and production•			2020		UNEP
	• Sustainable consumption and production implementation plan and policy priorities:				1	
	• Availability of sustainable consumption and production systems:				1	
	• Number of institutions related to sustainable consumption and production:				5	
12.2 By 2030, achieve the sustainable management and efficient use of natural resources	12.2.1 Material footprint, material footprint per capita, and material footprint per GDP					
	12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP•	2016		2017		Environment Live / Global Material Flows Database
	• Total consumption		804 million tons		809 million tons	
	• Consumption per person		15.83 tons		15.86 tons	
	• Consumption per GDP		0.616kg/USD		0.601kg/USD	
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses	12.3.1 a) Food loss index and b) Food waste index•	2011	311.3g/day/person	2016	367.95g/day/person	Ministry of Environment, National Waste Statistics
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement•	2015		2020		UNEP
	• Rotterdam Convention		72.55		67.24	
	• Basel Convention		16.67		20.00	
	• Stockholm Convention		33.33		50.00	
	12.4.2 (a) Hazardous waste generated per capita and (b) proportion of hazardous waste treated, by type of treatment•	2018	Designated waste generation 15,389 tons/day	2019	Designated waste generation 15,556 tons/day	Ministry of Environment, National waste Generation and Treatment Status
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	12.5.1 National recycling rate, tons of material recycled•	2018		2019		Ministry of Environment, National waste Generation and Treatment Status
	• Recycling rate		98.3%		98.9%	
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	12.6.1 Number of companies publishing sustainability reports•	2019	135	2019	138	Korean Standards Association
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities	12.7.1 Degree of sustainable public procurement policies and action plans implementation•			2020	1	UNCTAD, UNEP
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies, (b) curricula, (c) teacher education, and (d) student assessment•			2020	(a)1.0 (b)0.883 (c)1.0 (d)0.833	UNESCO
12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	12.a.1 Installed renewable energy generating capacity in developing countries (in Watts per capita)•	2018	235.5 watt per person	2019	305.6 watt per person	IRENA
12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products	12.b.1 Implementation of standard accounting tools to monitor the economic and environmental aspects of tourism sustainability					
12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities	12.c.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption)•	2018	0.0046%	2019	0.0034%	IEA

Goal 13 Take urgent action to combat climate change and its impacts

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	13.1.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population•	2018		2019		United Nations Office for Disaster Risk Reduction
	• Deaths and missing persons: • Directly affected persons:		0.28 person 25.6 persons		0.21 person 17.8 persons	
	13.1.2 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030•	2018	0.95	2019	1	Sendai Framework Monitoring System as provided by designated national focal points
	13.1.3 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies•	2018	100%	2019	100%	Sendai Framework Monitoring System as provided by designated national focal points
13.2 Integrate climate change measures into national policies, strategies and planning	13.2.1 Number of countries with nationally determined contributions, long-term strategies, national adaptation plans, strategies as reported in adaptation communications and national communications					
	13.2.2 Total greenhouse gas emissions per year•	2017	727.045 Mt CO_2eq.	2018	701.37 Mt CO_2eq.	Ministry of Environment Greenhouse Gas Information Center, Greenhouse gas statistics
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	13.3.1 Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies, (b) curricula, (c) teacher education, and (d) student assessment•			2020	(a)1.0 (b)0.883 (c)1.0 (d)0.833	UNESCO
13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	13.a.1 Amount provided and mobilized in United States dollars per year in relation to the continued existing collective mobilization goal of the $100 billion commitment through to 2025					
13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	13.b.1 Number of least developed countries and small island developing States with nationally determined contributions, long-term strategies, national adaptation plans, strategies as reported in adaptation communications and national communications					

Goal 14 Conserve and sustainable use the oceans, seas, and marine resources for sustainable development

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	14.1.1 (a) Index of coastal eutrophication; and (b) floating plastic debris density • Annual marine litter collection•	2019	108 million tons	2020	138 million tons	Korea Marine Environment Management Corporation, Marine debris monitoring
14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	14.2.1 Number of countries using ecosystem-based approaches to managing marine areas					
14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	14.3.1 Average marine acidity (pH) measured at agreed suite of representative sampling stations					
14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics	14.4.1 Proportion of fish stocks within biologically sustainable levels					
14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information	14.5.1 Coverage of protected areas in relation to marine areas			2020	2.46%	UNEP-WCMC, BLI, IUCN
14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation	14.6.1 Degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing•			2018	5	FAO

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
14.7 By 2030, increase the economic benefits to Small Island Developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	14.7.1 Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries					
14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries	14.a.1 Proportion of total research budget allocated to research in the field of marine technology	2016	0.32%	2017	0.25%	Intergovernmental Oceanographic Commission of UNESCO
14.b Provide access for small-scale artisanal fishers to marine resources and markets	14.b.1 Degree of application of a legal/regulatory/policy/institutional frame work which recognizes and protects access rights for small-scale fisheries					
14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"	14.c.1 Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nations Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources					

Goal 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	15.1.1 Forest area as a proportion of total land area•	2019	64.6%	2020	64.5%	FAO
	15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type•	2019		2020		UNEP-WCMC, BLI, IUCN
	• Land		37.6%		37.6%	
	• FreshWater		36.8%		36.8%	
15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	15.2.1 Progress towards sustainable forest management•	2019		2020		FAO
	• Above-ground biomass stock in forest:		128.63 tons/ha		131.69 tons/ha	
	• Proportion of forest area located within legally establish protect area:		6.9%		6.9%	
	• Annual forest area change rate(2010):		-0.14		-0.16	
	• Forest area under an independently verified forest management certification scheme:		214.57 thousand ha		673.2 thousand ha	
	• Proportion of forest area under a long-term forest management plan:		41.14%		39.34%	
15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	15.3.1 Proportion of land that is degraded over total land area					
15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development	15.4.1 Coverage by protected areas of important sites for mountain biodiversity•	2019	20.21%	2020	20.21%	UNEP-WCMC, BLI, IUCN
	15.4.2 Mountain Green Cover Index•	2015	99.86	2018	99.86	FAO
15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	15.5.1 Red list Index•	2020	0.699	2021	0.697	IUCN, BLI
15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed	15.6.1 Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits•	2020		2021		ITPGRFA Secretariat
	• Number of reports of reference material transfer agreement:		277		277	
15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products	15.7.1 Proportion of traded wildlife that was poached or illicitly trafficked					
15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	15.8.1 Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species•	2016	1	2020	1	NBSAP

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	15.9.1 (a) Number of countries that have established national targets in accordance with or similar to Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011–2020 in their national biodiversity strategy and action plans and the progress reported towards these targets; and (b) integration of biodiversity into national accounting and reporting systems, defined as implementation of the System of Environmental-Economic Accounting•			2020	1	CHM / WESR
15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems	15.a.1 (a) Official development assistance on conservation and sustainable use of biodiversity (b) revenue generated and finance mobilised from biodiversity-relevant economic instruments•	2017	USD 26.9 million	2018	USD 14.5 million	OECD
15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation	15.b.1 (a) Official development assistance on conservation and sustainable use of biodiversity (b) revenue generated and finance mobilised from biodiversity-relevant economic instruments•	2017	USD 26.9 million	2018	USD 14.5 million	OECD
15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities	15.c.1 Proportion of traded wildlife that was poached or illicitly trafficked					

Goal 16 Peace, justice, inclusive institutions

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
16.1 Significantly reduce all forms of violence and related death rates everywhere	16.1.1 Number of victims of intentional homicide per 100,000 population, by sex and age•	2019		2020		Korean National Policy Agency, Crime Statistics
	• Number of victims of homicide:		297 persons		308 persons	
	16.1.2 Conflict-related deaths per 100,000 population, by sex, age and cause					
	16.1.3 Proportion of population subjected to (a) physical violence, (b) psychological violence and (c) sexual violence in the previous 12 months•	2016		2018		Korean Institute of Criminology, Korean Crime Victim Survey
	• Assault: • Harassment: • Sexual violence:		0.16% 0.09% 0.08%		0.16% 0.12% 0.16%	
	16.1.4 Proportion of population that feel safe walking alone around the area they live•	2017		2019		Korean Institute of Criminology, Korean Crime Victim Survey
	• Proportion of population who feels fear of crime		20.7%		19.8%	
16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children	16.2.1 Proportion of children aged 1-17 years who experienced any physical punishment and/or psychological aggression by caregivers in the past month•	2019	25.0%	2020	22.9%	National Youth Policy Institute, Survey on National Human Right Conditions
	16.2.2 Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation					
	16.2.3 Proportion of young women and men aged 18-29 years who experienced sexual violence by age 18					
16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all	16.3.1 Proportion of victims of violence in the previous 12 months who reported their victimization to competent authorities or other officially recognized conflict resolution mechanisms•	2016	27.4%	2018	32.6%	Korean Institute of Criminology, Korean Crime Victim Survey
	16.3.2 Unsentenced detainees as a proportion of overall prison population•	2019	35.4%	2020	35.4%	Ministry of Justice, Korea Correctional Service Statistics
	16.3.3 Proportion of the population who have experienced a dispute in the past two years and who accessed a formal or informal dispute resolution mechanism, by type of mechanism					
16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime	16.4.1 Total value of inward and outward illicit financial flows (in current United States dollars)					
	16.4.2 Proportion of seized, found or surrendered arms, whose illicit origin or context has been traced or established by a competent authority in line with international instruments					
16.5 Substantially reduce corruption and bribery in all their forms	16.5.1 Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months•	2020	0.43%	2021	0.41%	Anti-Corruption and Civil Rights Commission, Integrity Assessment
	16.5.2 Proportion of businesses that had at least one contact with a public official and that paid a bribe to a public official, or were asked for a bribe by those public officials during the previous 12 months•	2020	0%	2021	0%	Korea Institute of Public Administration, Government Corruption Survey

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
16.6 Develop effective, accountable and transparent institutions at all levels	16.6.1 Primary government expenditures as a proportion of original approved budget, by sector (or by budget codes or similar)					
	16.6.2 Proportion of population satisfied with their last experience of public services•	2018	93.9%	2019	93.5%	Korea Institute of Public Administration, Social Integration Survey
16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels	16.7.1 Proportions of positions in national and local institutions, including (a) the legislatures; (b) the public service; and (c) the judiciary, compared to national distributions,by sex, age, persons with disabilities and population groups•	2019	Male : 52.7% Female : 47.3%	2020	Male : 52.1% Female : 47.9%	Ministry of Personnel Management, Ministry of Personnel Management Statistical Yearbook
	16.7.2 Proportion of population who believe decision-making is inclusive and responsive, by sex, age, disability and population group•	2018	43.1	2019	40.6	Korea Institute of Public Administration, Center for Social Survey
16.8 Broaden and strengthen the participation of developing countries in the institutions of global governance	16.8.1 Proportion of members and voting rights of developing countries in international organizations•	2019		2020		Individual international organizations
	• UN Economic and Social Council: • IMF: • FSB:		1.85%(1.85%) 1.73%(0.53%) 3.51%(4.17%)		1.85%(1.85%) 1.73%(0.53%) 3.51%(4.17%)	
16.9 By 2030, provide legal identity for all, including birth registration	16.9.1 Proportion of children under 5 years of age whose births have been registered with a civil authority, by age					
16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements	16.10.1 Number of verified cases of killing, kidnapping, enforced disappearance, arbitrary detention and torture of journalists, associated media personnel, trade unionists and humanrights advocates in the previous 12 months					
	16.10.2 Number of countries that adopt and implement constitutional, statutory and/or policy guarantees for public access to information•			2021	1	UNESCO
16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime	16.a.1 Existence of independent national human rights institutions in compliance with the Paris Principles•			2019	1	OHCHR
16.b Promote and enforce non-discriminatory laws and policies for sustainable development	16.b.1 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law•			2019		National Human Rights Commission of Korea, Survey of Human Rights Conditions
	• Experienced discrimination on the basis of gender				13.9%	

Goal 17 Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection	17.1.1 Total government revenue as a proportion of GDP, by source•	2018	33.4%	2019	34.2%	IMF
	17.1.2 Proportion of domestic budget funded by domestic taxes•	2018	66.3%	2019	60.2%	IMF
17.2 Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries	17.2.1 Net official development assistance, 1) total and 2) to least developed countries, as a proportion of the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee donors' gross national income (GNI)•	2019	1) 0.15%	2020	1) 0.14%	OECD, DAC database
17.3 Mobilize additional financial resources for developing countries from multiple sources	17.3.1 Foreign direct investments (FDI), official development assistance and South-South Cooperation as a proportion of gross national income (GNI)•	2018	USD 12.18 billion	2019	USD 10.57 billion	UNCTAD
	17.3.2 Volume of remittances (in United States dollars) as a proportion of total GDP•	2019	0.44%	2020	0.45%	World Bank
17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress	17.4.1 Debt service as a proportion of exports of goods and services					
17.5 Adopt and implement investment promotion regimes for least developed countries	17.5.1 Number of countries that adopt and implement investment promotion regimes for developing countries, including LDCs					

Target	Indicator	Recent year1	Value1	Recent year2	Value2	Source
17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	17.6.1 Fixed Internet broadband subscriptions per 100 inhabitants, by speed•	2018	41.6 persons	2019	42.8 persons	ITU
17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	17.7.1 Total amount of funding for developing countries to promote the development, transfer, dissemination and diffusion of environmentally sound technologies					
17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology	17.8.1 Proportion of individuals using the Internet•	2019	91.8%	2020	91.9%	Statistics produced in charge of Digital Industry Policy Division, Proportion of individuals using the Internet
17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation	17.9.1 Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries					
17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda	17.10.1 Worldwide weighted tariff-average• *Based on industrial products	2018	4.92%	2019	4.79%	ITC/UNCTAD/WTO database
17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020	17.11.1 Developing countries' and least developed countries' share of global exports					
17.12 Average tariffs faced by developing countries, least developed countries and small island developing States	17.12.1 Weighted average tariffs faced by developing countries, least developed countries and small island developing States • *Based on industrial products	2018	1.72%	2019	1.69%	ITC/UNCTAD/WTO database
17.13 Enhance global macroeconomic stability, including through policy coordination and policy coherence	17.13.1 Macroeconomic Dashboard					
17.14 Enhance policy coherence for sustainable development	17.14.1 Number of countries with mechanisms in place to enhance policy coherence of sustainable development					
17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development	17.15.1 Extent of use of country-owned results frameworks and planning tools by providers of development cooperation			2018	52.3%	OECD, UNDP
17.16 Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries	17.16.1 Number of countries reporting progress in multi-stakeholder development effectiveness monitoring frameworks that support the achievement of the sustainable development goals					
17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	17.17.1 Amount of United States dollars committed to public-private partnerships for infrastructure					
17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts	17.18.1 Statistical capacity indicator for SDG monitoring					
	17.18.2 Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics•			2020	1	PARIS21
	17.18.3 Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding•			2020	1	PARIS21
17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries	17.19.1 Dollar value of all resources made available to strengthen statistical capacity in developing countries					
	17.19.2 Proportion of countries that (a) have conducted at least one population and housing census in the last 10 years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration•			2019	1	UNSD

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