2021

SUSTAINABLE DEVELOPMENT GOALS

SDGs IN THE REPUBLIC OF KOREA: PROGRESS REPORT 2021

Statistics Korea
Statistics Research Institute

SDGs in the Republic of Korea: Progress Report

2021

Foreword

The year 2021 has been expected to be the first year of the post-COVID era; however, the pandemic remains under development. The total cumulated number of confirmed cases of COVID-19 has exceeded 100 million worldwide by the end of January 2021. The pandemic has penetrated into all areas of human life, including the economy, society, and the environment. Unfortunately, it has disproportionately affected people in the less developed countries and more vulnerable groups, putting obstacles on the way of achieving Sustainable Development Goals(SDGs) that have been designed to 'Leave No One Behind'. Furthermore, the COVID-19 pandemic has exacerbated inequalities across countries just as it has within countries.

We have global goals of SDG across all fields that world leaders agreed to accomplish by the year 2030 for the sustainable development of all human beings. Global leaders gathered in 2015 to set such an ambitious goal, and have since been working hard to accomplish them in partnership with national leadership. The Report entitled 『SDGs in the Republic of Korea: Progress Report 2021』 indicates that the level of progress in implementing SDGs in Korea is the highest in the world in several areas. In the capacity index that measures public health preparedness to prevent, detect, evaluate and respond to health emergencies, Korea scored 97 out of 100. The probability of death from the four major NCDs(non-communicable diseases) in Korea is the lowest among OECD countries. In addition, Korea's level of digitization is the top in the world as 100% of primary, lower secondary and upper secondary schools have already gained access to computers and the Internet. The proportion of GDP invested in R&D has remained in the second place since 2012. However, there is a large gap in accessibility to public hospital beds by region. The levels of digital competency and use among the vulnerable socioeconomic groups, including the elderly and people with disabilities, are relatively low. More conscious efforts are essential to providing universal quality services in health and education to all.

The unprecedented pandemic has impeded progress in several areas. In Korea, the number of deaths due to COVID-19 over the last single year 2020 was equivalent to the number of deaths and missing persons attributed to disasters for the last ten years. The Korean economy has also been significantly impacted. There has been a sharp drop in the number of persons employed in face-to-face businesses such as accommodation and food service businesses, as well as wholesale and retail trade, pushing households into poverty. This is why we need to make concerted efforts in 2021 to recover from such a crisis. Data and statistics are, therefore, crucial for designing policies to bring about such a resilience because it is impossible to accurately assess the situation without such a metric.

This newly published report presents Korea's progress towards accomplishing SDGs based on data and statistics. We are certain that the data in this report will help policy makers identify areas where the country lags behind and provide the evidence required for creating 'Innovative policies for inclusive growth'. Statistics Korea remains committed to preparing for an era of sustainable development through the K-statistics. We will produce representative and accurate statistics that do not exclude particular groups, and protect utmost privacy through scientific methods before data is released to the public. 'Open statistics without bias' is a key ingredient of the national infrastructure for achieving each of 17 SDGs. We hope that team efforts from each country will eventually lead to sustainable development for global society as a whole.

Keunkwan RYU
Commissioner of Statistics Korea

Preface

The Statistics Research Institute, the state-run think tank of official statistics and data innovation in Korea, plays a pivotal role in developing indicators of global SDGs and monitoring their progress as authorized by the Korean government. I am pleased to publish the report entitled 『Sustainable Development Goals in the Repubilc of Korea: Progress Report 2021』(or the 2021 SDG Report), an assessment of where Korea currently stands with respect to the global SDGs and of how much progress Korea has made toward accomplishing the goals. We have released the SDG progress reports every year since the publication of the 2019 SDG Report. The 2021 SDG Report is notable in that the current situation in Korea has been assessed with highly reliable data, such as official statistics, showing where Korea stands in comparison to other OECD countries. The 2021 SDG Report makes it handy to take a look into a broad range of SDGs thanks to rigorous data visualization.

The 2021 SDG report has taken advantage of the COVID-19 perspectives to place SDGs analysis in context, as the pandemic has affected all 17 Goals, such as poverty, health, education, inequality and climate change. Below is a summary of progress towards these 17 goals as classified by the 5Ps(People, Planet, Prosperity, Peace and Partnership).

First, **people** should be free from poverty and hunger, and be able to fulfil their potential in dignity and equality both in a healthy environment. The 2021 SDG report notes that Korea's relative poverty rate among the elderly is high, and level of food security differs according to income level. In 2020, COVID-19 and climate change sharply increased prices of agricultural, livestock, and fishery products. Despite the increase in the number of online classes due to COVID-19, the level of digital competency and use was low among vulnerable socio-economic groups, requiring more efforts to ensure fair and high-quality education for all. Women's decision-making power remained lower than that of men. Public health resources were unevenly distributed across regions. Korea, as a whole, carried out an exemplary pandemic response and recorded a high level of capacity in the International Health Regulations index.

Second, the **planet** should be managed sustainably for the sake of current and future generations. Greenhouse gas emissions of Korea has been on the rise over the past 30 years. Waste is also mounting and the quantity of harmful waste is growing at an even faster rate. Accordingly, there is a growing need to create a sound economic ecosystem that enables sustainable consumption and production by increasing the percentage of waste that is recycled. In addition, sustainable management measures must be put in place for the entire ecosystem. The role of companies is important in such a management process, and fortunately, the number of Korean companies that publish a report tailored to sustainability development is on the rise.

Third, **prosperity** in harmony is a prerequisite for enjoying a rich and fulfilling life. The COVID-19 pandemic has affected all parts of the economy. Korea posted a negative growth rate of GDP throughout the first half of 2020, although such a rate has been found to be the highest one among OECD countries. Air transport was one of the hardest-hit industries; manufacturing, accommodation and food services were also affected. The good news is that Korea has continued to invest in R&D despite the pandemic, engineering the prospect of future growth.

Fourth, **peace** is a prerequisite for sustainable development. In this respect, we need to ensure that children, one of the most vulnerable groups, are free from fear of violence. Unfortunately, Korea expe-

rienced a number of incidents of violence and abuse against children in 2020.

Fifth, **global partnership** is essential to achieving sustainable development that benefits all, including countries in poverty. Korea has committed to further strengthening its ODA outreach over several decades, becoming one of the largest donors among OECD countries. Korea needs to carry out more effective ODA programs for beneficiaries based on the wholistic growth.

The year 2020 will be remembered as a year of mixed feelings of fear and hope due to COVID-19. From the perspectives of an institute pursuing evidence-based policymaking, the pandemic has made it more challenging to collect data in many countries; on the other hand, it was paradox to realize that data was desperately sought for responding to global disasters. Crisis is an opportunity for data innovation. This is why the 2021 SDG Report, which is published based on data and statistics, is invaluable. It is my hope that the 2021 SDG Report be served as a stepping stone for policy makers to create 'evidence-based policymaking'. I am also hopeful that the 2021 SDG Report help citizens better understand the SDGs and improve data literacy.

Finally, I would like to express my sincere gratitude to the following organizations for their devotion to the 2021 report and ongoing support in monitoring SDG implementation and data verification: National Park Research Institute, National Institute of Forest Science, National Institute of Biological Resources, Korea Energy Economics Institute, Science and Technology Policy Institute, Korea Institute for Curriculum and Evaluation, Korea Labor Institute, Korea Center for City and Environment Research, Korea Institute for Health and Social Affairs, Korean Women's Development Institute, Korea Environment Institute, National Youth Policy Institute, Korea Maritime Institute, Korean Institute of Criminology. I am also grateful to all the related government agencies and their staff that have helped produce SDG data and provide the required SDG data to international organizations. I also extend my gratitude from the bottom of my heart to Youngshil Park and her staff of the SDG Data Research Center for their hard work and dedication.

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

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Global SDG Indicators and Korean Data

『SDGs in the Republic of Korea: Progress Report 2021』 published by the Statistics Research Institute(SRI) of Statistics Korea(KOSTAT) aims to assess the progress towards achieving the 2030 Agenda of the country. The Agenda is an ambitious commitment agreed upon by world leaders in September 2015 at the United Nations General Assembly to overcome the complex crisis faced by human beings. The Resolution titled 'Transforming Our World: The 2030 Agenda for Sustainable Development' lays out the 17 goals that the world agreed to achieve by 2030. These goals, known as the SDGs, encompass all areas including politics, the economy, society, and the environment from an integrated perspective and ultimately aim to increase inclusiveness, ensuring that 'no one is left behind'. With the awareness that there is nowhere to hide from the threats to our sustainability such as poverty, inequality and the climate crisis, the UN is putting its best efforts into achieving the SDGs by the 2030 deadline.

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 UNSD are clearly defined to minimize the reporting burden on countries and avoid confusion in data exchange.

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 24 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
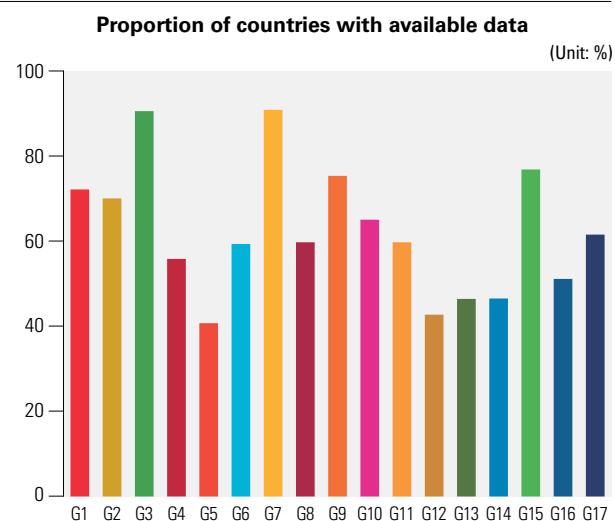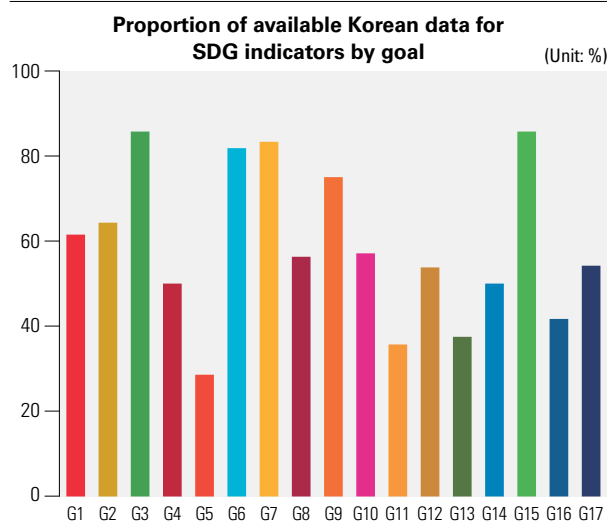
SDGs Data Flow
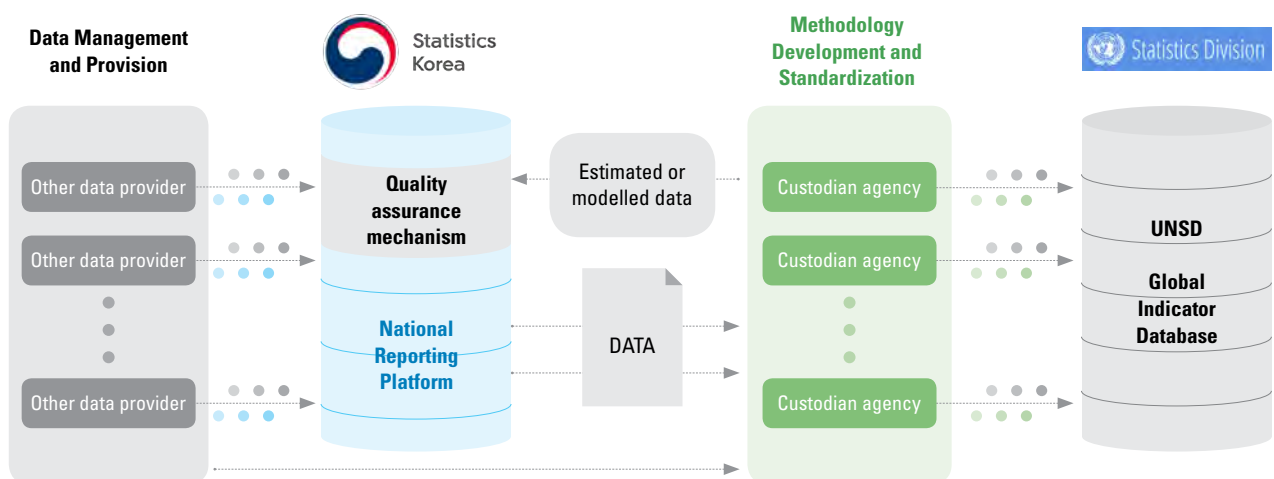
Source : modified based on IAEG-SDGs(2019)

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.

As of September 2020, Korea had 136 indicators of the total 231 indicators available, an increase in data availability from two years ago, which was 109. However, the data availability is still low for certain targets(left graph below). This trend is similar at the global level. The graph on the right below shows that as of July 2020, data from less than half of the countries was available for four of the 17 goals(Goal 5, 12, 13, and 14). This indicates that there is a large data gap between goals and countries(UN, 2020b). The SRI plans to improve the data availability of the country through continuous cooperation with the line-ministries and international organizations.

Proportion of available Korean data for SDG indicators by goal
(Unit: %)

Proportion of countries with available data
(Unit: %)

Features of the 2021 Report

The 2021 Report presents the current situation with national statistics corresponding to the global SDG indicators and compares the results with other OECD countries, pinpointing where Korea currently stands with respect to progress towards the SGDs. It is obvious that the figures of the year 2020 will be recorded as dramatic changes in SDG trajectory because of the COVID-19 pandemic that swept the world in an unexpected way. In this regard, this report attempts to analyze the SDG indicators directly related to the pandemic. As shown in the following figure, COVID-19 is having a profound impact on most areas of the SDGs, including health(Goal 3). Various measured to prevent the spread of the virus such as international travel restrictions and social distancing measures have affected economic activities(Goal 8) and disrupted systems of food production and distribution(Goal 2). Many students were unable to receive an proper education due to school closures(Goal 4), and women and children were more exposed to violence as they had to stay in confined spaces at home for longer periods of time(Goal 16). As the number of vulnerable groups falling below the poverty line increased(Goal 1), the issue of overall inequality intensified (Goal 10). Accordingly, international cooperation(Goal 17) is becoming more important to recover from the pandemic and achieve the SDGs.

The report draws on the latest available data for presenting the impact of COVID-19 and progress, as of December 2020. However, at that point, there were limitations in analyzing the impact of the pandemic on certain targets because many official statistics for the entire year have not yet been released on the date of publication. In order for making up for this, the report also presents monthly and quarterly data from various sources.

The major findings are as follow; firstly, as of midnight on January 1, 2021, the number of deaths from COVID-19
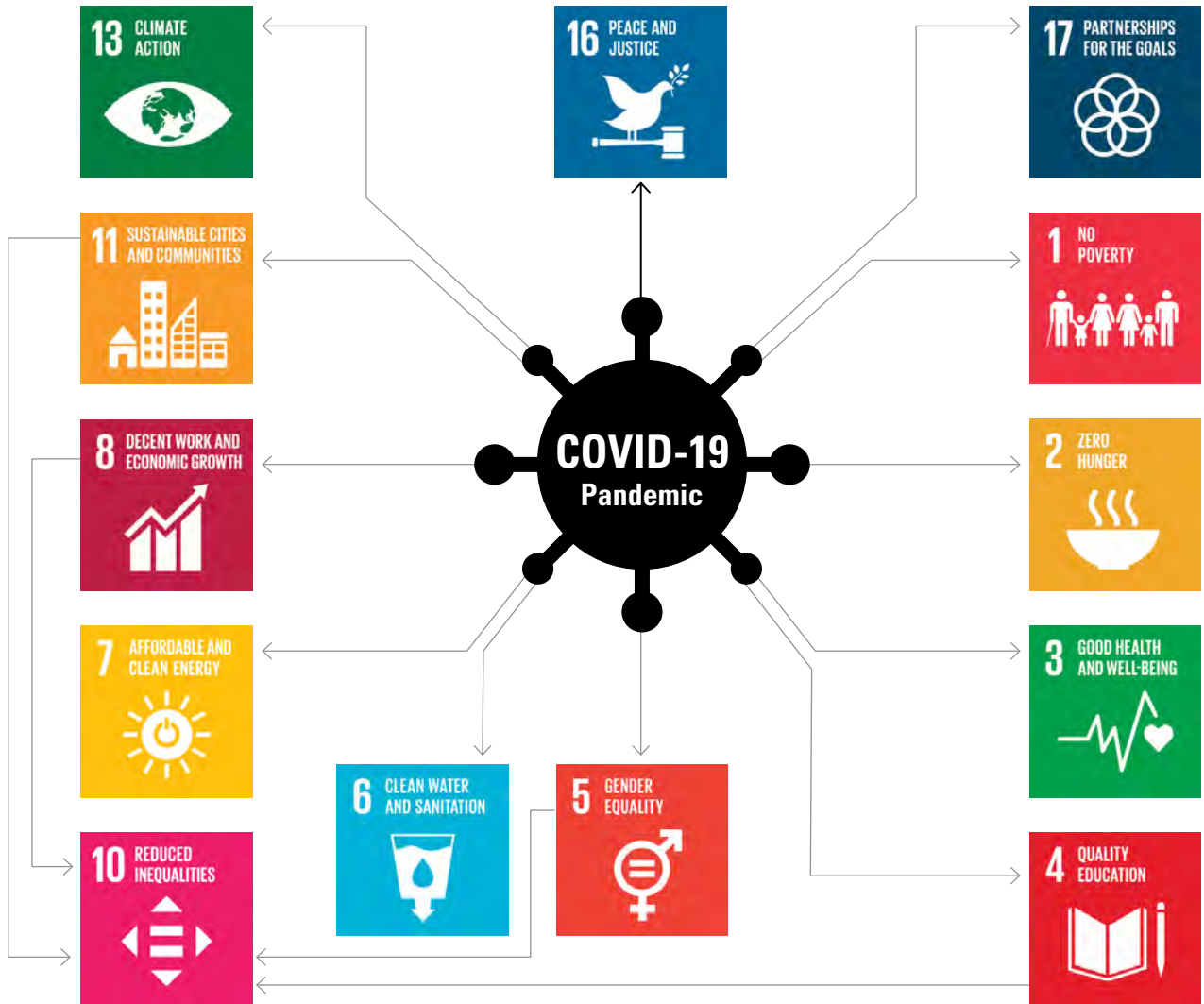
Source : UN(2020a)

in Korea stood at 917, which is on par with the 1047 people who died or disappeared due to social disasters over the past 10 years(2009~2019) combined. Secondly, economic damage was inevitable during the pandemic. Korea's real GDP growth per capita, fell to -1.4% in the first quarter of 2020 and -3.2% in the second quarter, showing negative growth throughout the first half of the year. One of the hardest-hit industries was air transport, with passenger traffic in April 2020 -80.3% and cargo traffic -35.1% compared to the same month last year. Thirdly, this directly hit the labor market. The employment rate, which has been around 3% since 2001, has reached 4% in 2020. The unemployment benefits paid to those made redundant until they find a new job have steadily increased since January 2020, exceeding 1 trillion won in May. Lastly, there were more fluctuations

in the prices of agricultural, livestock and fishery products due to not only the pandemic, but also the effects of climate change, such as the long summer rainy season last year. Compared to the same month of the previous year, the rate of change in the price indices of the products was 6.7% in 2020, the highest ever in the last five years. Especially, it exceeded 13% in September and October 2020.

The report presents the results of the findings with visual tools including charts, graphs and data tables to assist the readers to easily understand them. Key findings are summarized as an infographic format in the following section. We hope that this enables to understand the SDG areas where Korea is lagging behind and identify vulnerable groups so that the data can be used for making policies for the future.

Global SDG Indicator Framework

The global SDG indicators were developed by the Inter-Agency of Expert Group on SDGs(IAEG-SDGs) with members of 27 national statistical offices representing each region. This group established in March 2015 plays a role in developing and improving the global indicator framework, supporting the implementation of SDGs and strengthening national statistical capacity. The global SDG indicators were selected after a series of consultations of the members considering methodological clarity, measurability, ease of interpretation, international comparability, and outcome-focused measurement. The selection process was transparent and open where a variety of stakeholders participated.

The initial framework was proposed in March 2016, the first year of SDGs implementation, but consensus among the member states was not reached on some indicators at the time. In response, the IAEG-SDGs carried out revisions to the framework over the course of a year, and amendments(232 indicators) were finally agreed upon at the 48th UN Statistics Committee in March 2017. Over time, methodology has evolved and data availability has increased. Taking this into account, comprehensive reviews of the framework was made in 2020 and will be again in 2025.

The first comprehensive revision was adopted in March 2020 at the 51st UN Statistical Committee. 36 indicators were revised and they includes the cases where the methodology development was delayed, data is still not available or current indicators do not reflect all aspects of the targets. Reflecting this revision, a new framework with 231 indicators was approved. Over the next five years, the implementation progress of the SDGs will be monitored based on this indicator framework. Meanwhile, KOSTAT has been participating in the IAEG-SDGs as a member representing the East Asia region since June 2020.

Korean SDGs data platform

The SRI is running an open source-based platform for Korean data of the SDGs(https://kostat-sdg-kor.github.io/sdg-indicators/). This website contains the Korean data corresponding to the global indicators. By clicking on each goal on the main screen, you can see the list of indicators under each goal and the availability of data. Data provision of the platform is based on the availability of the Korean data for each indicator of the SDGs. In case that data is available, the platform displays data in the form of graphs and tables. The pages also provides metadata on definitions, formulas, sources, and comparisons with SDG global indicator data as an explanatory note. The data was selected through a series of reviews on the concepts, definitions and formulas of the global metadata of the SDG indicators.

The data is classified into four categories. Type 1: Korean data available corresponding to the global indicators; Type 2: Korean data is not available, but estimated data from international organizations is available; Type 3: alternative national data is available, and Type 4: data is not available or indicators are not related to the Korean context. According to this classification, the number of data wets falling under types 1, 2, and 3 are 58, 68, 28 respectively.

Korean SDGs data platform

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Infographics

12
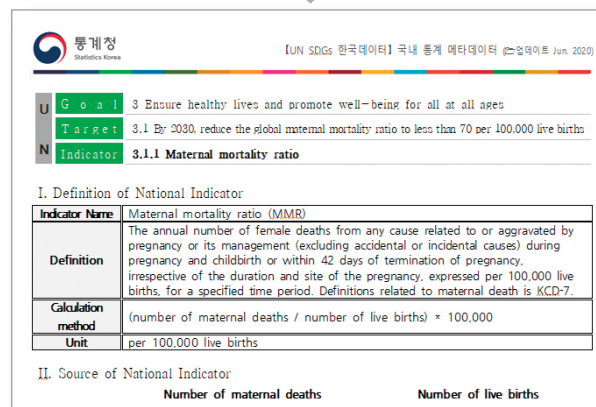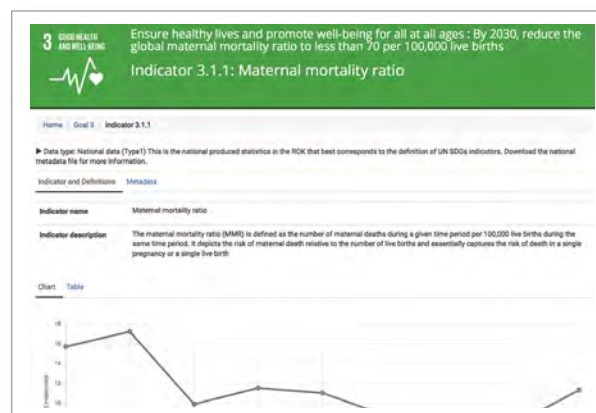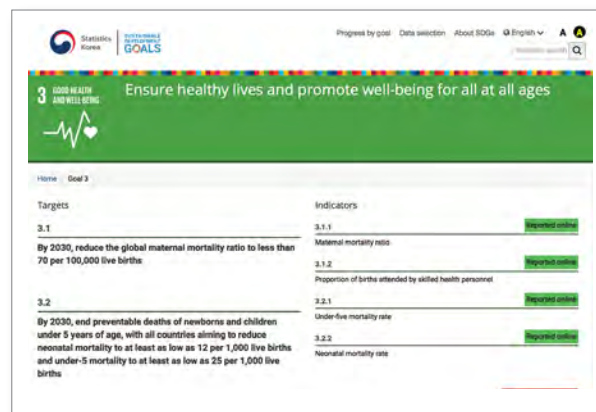
Number of deaths and missing attributed to disasters; 2009~2019

Natural disaster
218
persons

Social disaster
1,047
persons

Number of physicians and nurses per 1,000 population by region; 2019

Seoul 3.7 / 5.5

Gangwon 2.1 / 4.0

Incheon 2.1 / 4.0

Gyeonggi 1.9 / 3.0

Chungbuk 1.9 / 2.9

Chungnam 1.8 / 2.7

Sejong 1.2 / 0.7

Daejeon 3.0 / 4.7

Gyeongbuk 1.8 / 3.6

Jeonbuk 2.6 / 4.2

Gwangju 2.9 / 6.0

Jeonnam 2.2 / 4.8

Gyeongnam 2.0 / 4.2

Daegu 2.9 / 5.2

Busan 2.9 / 5.5

Ulsan 1.9 / 4.0

Jeju 2.1 / 4.2

Physicians

Nurses
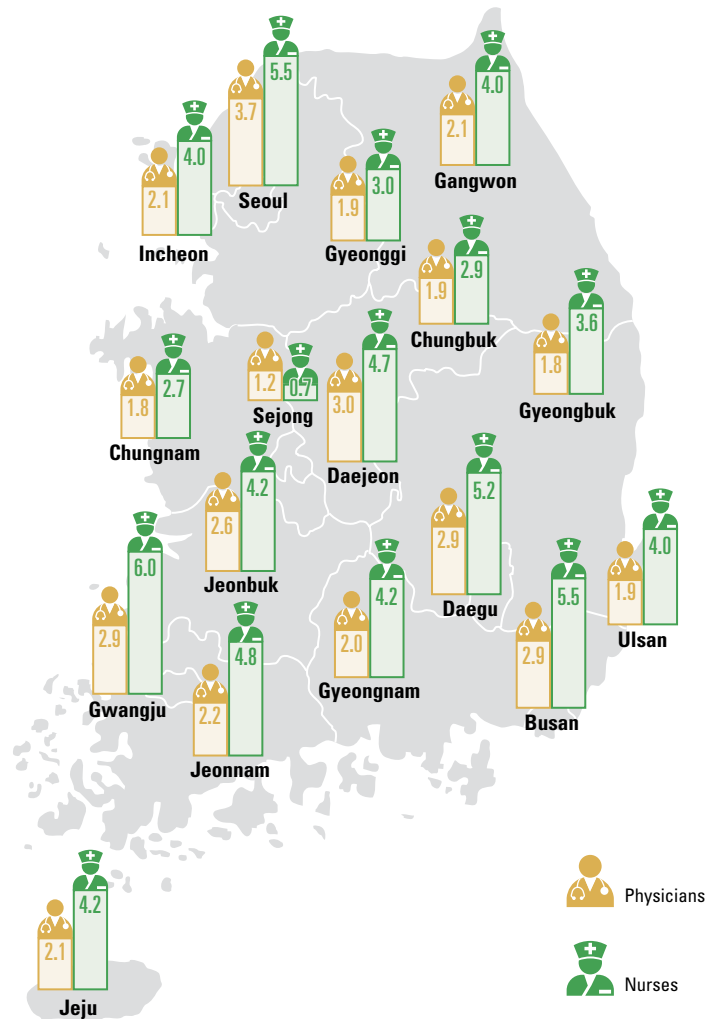
Agricultural, livestock, and fishery products price(year-on-year % change)

2.5%

13.5% 13.3%

9.7%

Jan. 2019 Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov. Dec. Jan. 2020 Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov. Dec.

Greenhouse gas emission

6.8
1990

14.1
2018

Emission per capita (tonne CO$_2$eq./person)

643.4
1990

401.6
2018
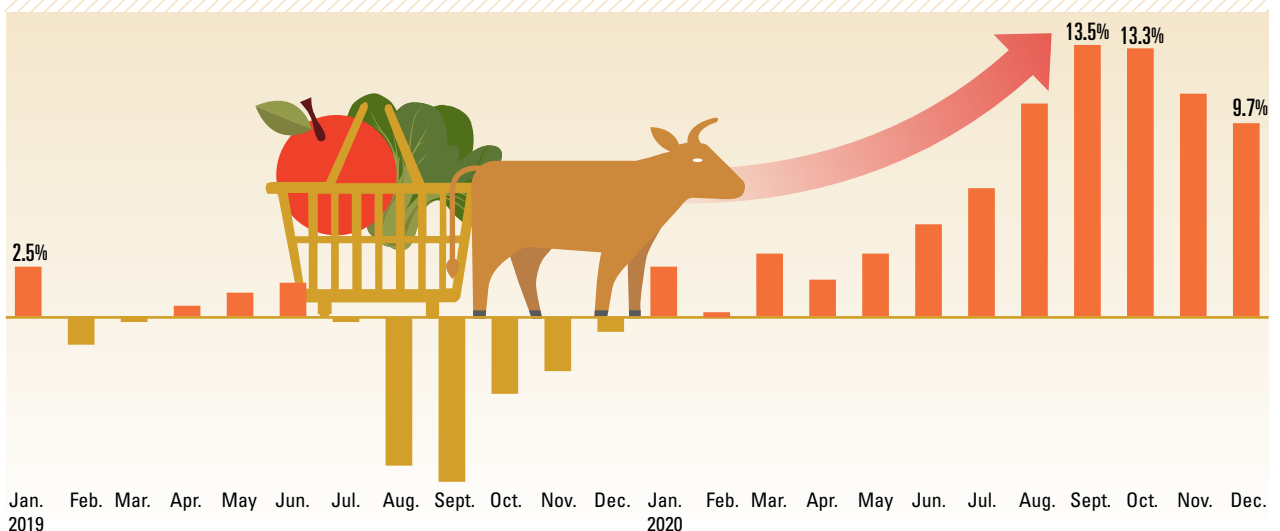
Emission per GDP (tonne CO$_2$eq./KRW 1 billion)
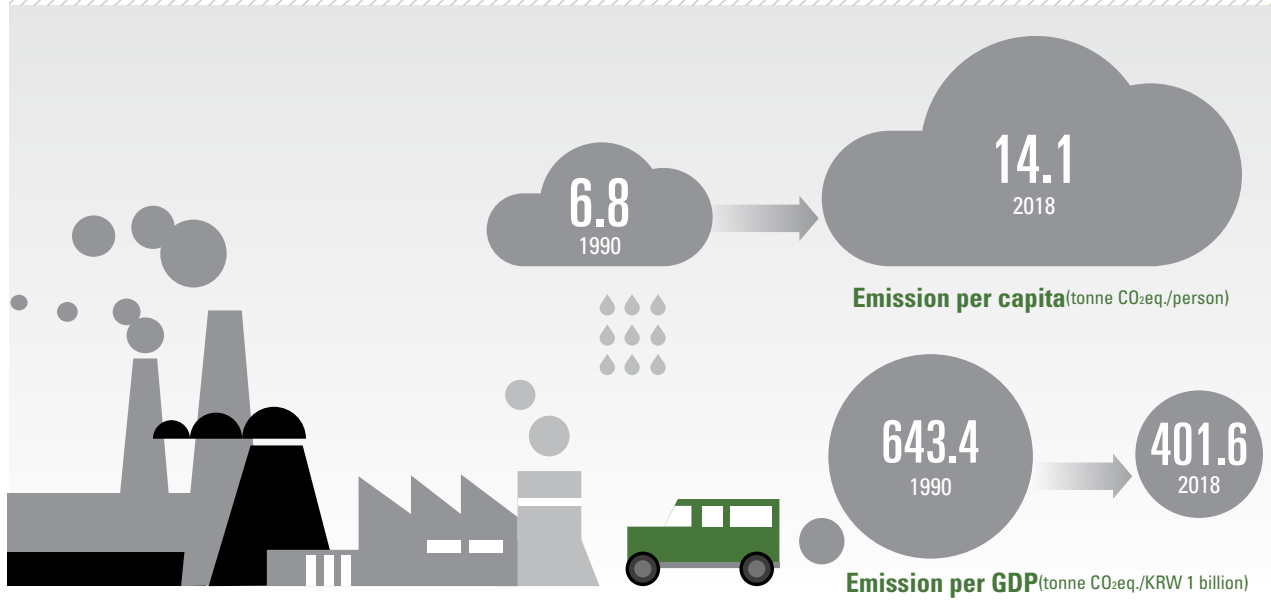
Female share of seats in national parliaments, local councils, and managerial positions

Female   **Male**

National parliaments 2020

19.0%   **81.0%**

Local councils 2018

28.3%   **71.7%**

Managers 2020

15.7%   **84.3%**

Real GDP growth per capita

-0.3%
1.0%
0.3%
1.2%
-1.4%
-3.2%
2.1%

Q1
2019
Q2
Q3
Q4
Q1
2020
Q2
Q3
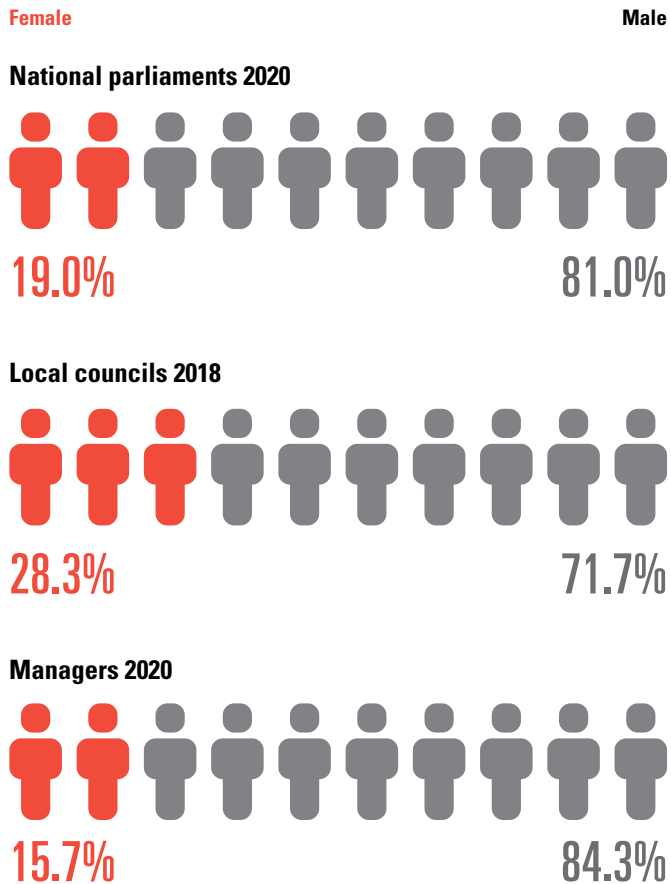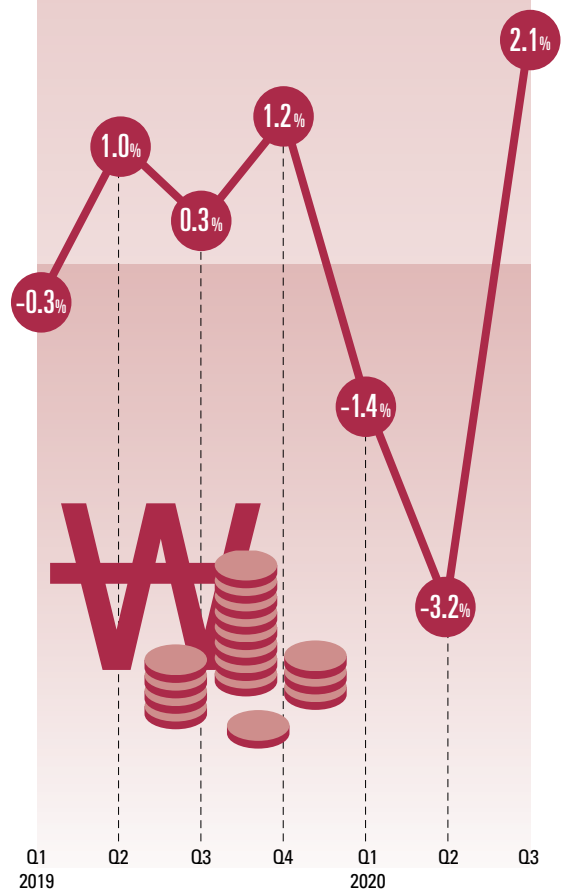
Proportion of public open space by region; 2019

Region	Value
Seoul	25.1%
Busan	
Daegu	
Incheon	
Gwangju	
Daejeon	
Ulsan	
Sejong	
Gyeonggi	
Gangwon	0.4%
Chungbuk	
Chungnam	
Jeonbuk	
Jeonnam	
Gyeongbuk	
Gyeongnam	
Jeju	

1.4%

Proportion of public open space in total land area
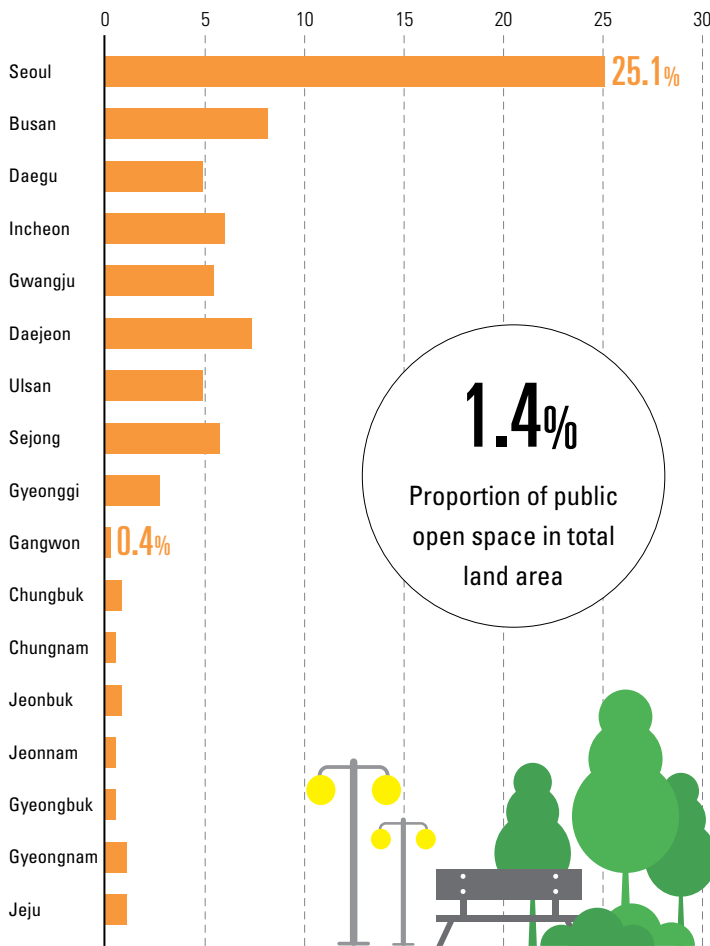
National protection areas; 2020

16.9%

16,905 km²

Territorial

2.1%

7,948 km²
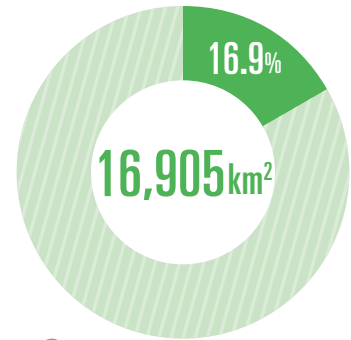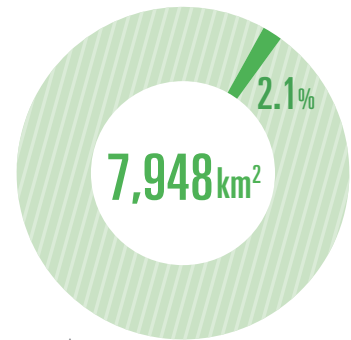
Marine

Unemployment rate by sex

4.5%

4.4%

4.6%
Female

3.7%
Male

Jan. 2019 Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov. Dec. Jan. 2020 Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov. Dec.
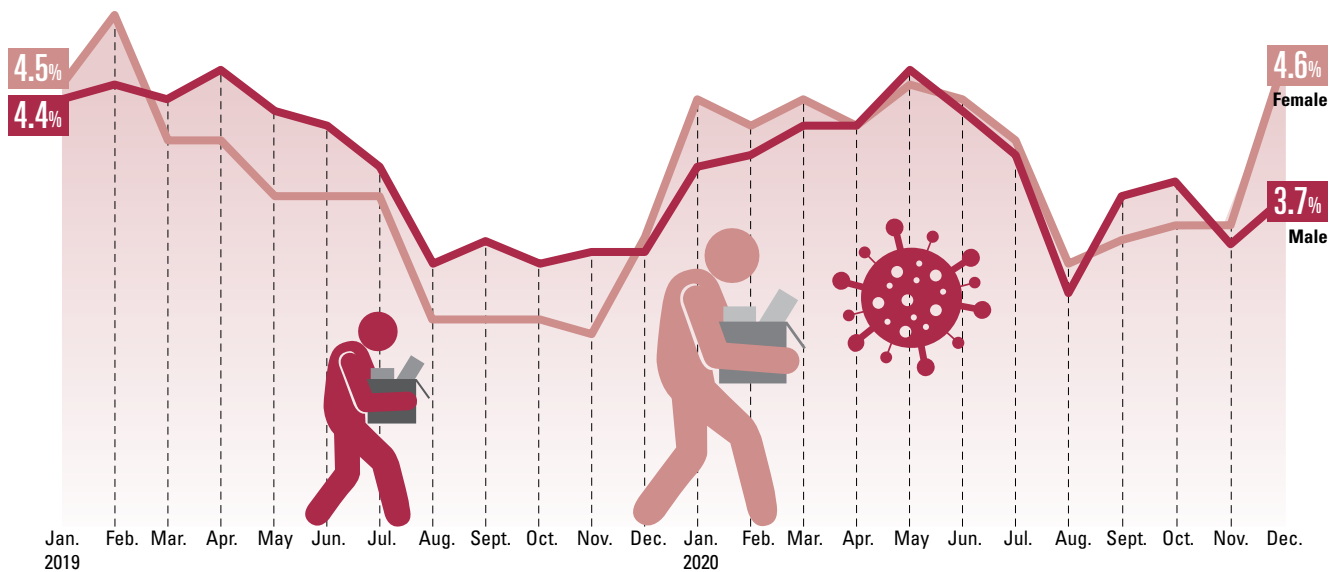
Report cases of suspected child abuse and neglect

2015 16,615 cases

2019 38,380 cases

Plastic in domestic waste

4,365 tonnes
2013

6,375 tonnes
2018
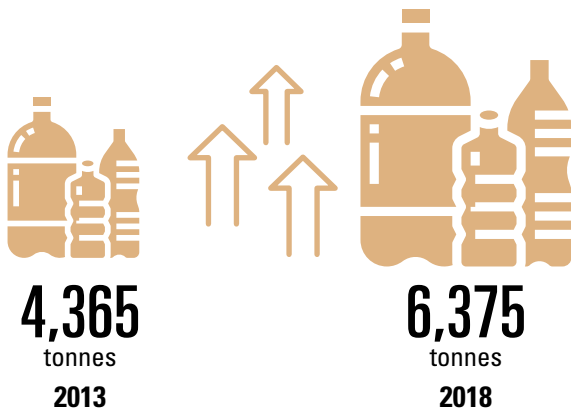
Proportion of bilateral aid for LCDs; 2018

35.8%
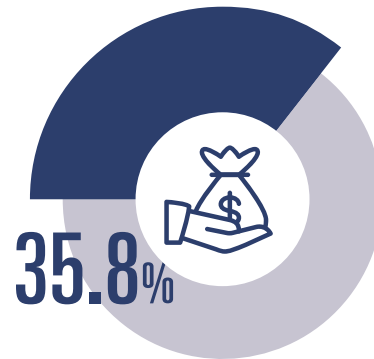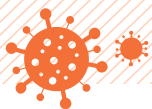
Air passengers and freight volume

👤 =millions

Air passengers

Apr. 2019 13,018,518 persons

Apr. 2020 2,571,085 persons

▣ =10 thousands tonnes

Freight volume

Apr. 2019 371,192 tonnes

Apr. 2020 241,004 tonnes

Getty Images Bank
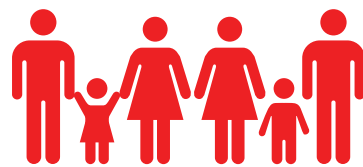
End poverty in all its forms everywhere

No poverty is one of the never-ending challenges of the international society. SDG 1 targets efforts 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.

In 2020, the world entered an unpredictable era due to COVID-19. As most nations sealed their borders and enforced social distancing, numerous workers lost their jobs and small business owners as well as enterprises were hit hard. The Sustainable Development Goals Report 2020, published by the UN in July 2020, predicted that the most severe economic crisis would occur since the 1930s Great Depression. According to this Report, the population living below the international poverty line, which was steadily decreasing, may increase again after 2020. The population living below $1.9 per day was dropping from 15.7% in 2010 to 10% in 2015. The international society predicted that the numbers would further decrease to 8.2% in 2019 and continue to fall to 7.7% in 2020 in the absence of the COVID-19 pandemic. However, the Report stated that the population living below the international poverty line may rise again to 8.8% in 2020. It means that 71 million people around the globe may fall back into poverty.

Such disaster situations may affect vulnerable countries and vulnerable groups more severely. In 80 least developed countries(LDCs), which reported disaster damage resulting from rapid environmental changes such as the climate crisis in 2018, 14% of the total population were directly affected by disasters. Of those who died or disappeared, 29% were attributable to disasters. In 2020, Korea also suffered significant damage from COVID-19, large fires and typhoons. As a result, socioeconomic damage on the vulnerable groups are predicted to have become more severe. Responses to unpredictable disaster situations, various social support for the fast recovery of vulnerable groups, and effective disaster management systems are of growing importance globally.

More casualties occurring from social disasters than from natural disasters

In Korea, disasters are divided into natural disasters resulting from natural phenomena and social disasters caused by human activities. Natural disasters include typhoons, floods, heavy snowfall, droughts, heat waves, earthquakes and yellow dust. Social disasters encompass fires, major traffic accidents, facility collapses, maritime disasters, chemical spills, pollution and power and infrastructure accidents such as nuclear power plant accidents. Recently, social disasters also include infectious diseases such as MERS and COVID-19, livestock diseases and medical accidents resulting from disruptions in medical services.

As a result of analyzing damage from natural disasters and social disasters between 2009 and 2019, 218 people died or disappeared due to natural disasters, and social disasters caused 1,047 casualties. It was found that more people died or disappeared due to social disasters than due to natural disasters. On the other hand, the amount of damage from natural disasters totaled KRW 3,844.2 billion, which is slightly higher than the damage from social disasters at KRW 3,380 billion.

The most frequently occurred social disaster during the same period was fires at publicly used facilities(35 cases), followed by forest fires(20 cases), maritime accidents(16 cases) and livestock diseases(14 cases). Speaking of casualties(including persons dead, missing and injured), fires at publicly used facilities caused the greatest number of casualties(785 persons), followed by maritime accidents(680) and major subway accidents(477). In addition, 308 persons died, disappeared or were affected by infectious diseases. Livestock diseases caused the largest amount of property damage at approximately KRW 2,348.4 billion, followed by forest fire damage at KRW 316.7 billion and fire damage at publicly used facilities at KRW 307.2 billion. It was found that economic damage resulting from fires accounted for a majority of social disasters.

In 2019, 10 cases of publicly used facility fires occurred, which was the most frequently occurred social disaster. Fires at publicly used facilities caused the greatest number of casualties(128 persons) compared to other social disasters. Forest fires occurred eight times and caused property damage of KRW 258.4 billion, which accounted for half of the total damage. Livestock diseases caused the second largest property damage at KRW 145.7 billion.

Casualties and property damage by social disaster; 2019 (Unit: No. of persons, KRW 100 million)

- ■ Large fires at publicly used facilities
- ■ Maritime accidents
- ■ Forest fires
- ■ Other
- ■ Livestock diseases
- ■ Harmful chemical spills

Casualties: 3, 40, 41, 128

Property damange: 0.6, 4, 340, 917.5, 1457, 2584
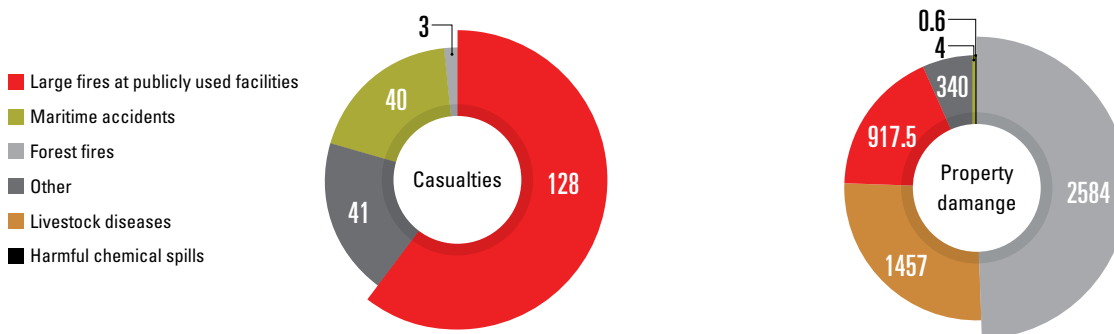
Source : Ministry of the Interior and Safety, 2020 Annual Report on Administration Safety Statistics
Note 1 : Other-Types of accidents not subject to management in compliance with the standard manual although the Central Disaster and Safety Countermeasures Headquarters or Local Disaster and Safety Countermeasure Headquarters was operated.
Note 2 : Casualties include the people dead, missing and injured.

COVID-19 is most deadly to the elderly

In 2020, damage caused by social disasters is forecast to greatly increase in Korea due to COVID-19. As of December 31, 2020, a total of 61,769 confirmed cases were reported. Among the confirmed cases, 917 patients died, which resulted in a mortality rate of 1.48%. 31,600 female COVID-19 confirmed cases were reported and accounted for 51.16% of the total, which was relatively higher than the 30,169 male confirmed cases at 48.84%. 459 male patients died, which accounted for 50.05% of the total dead while 458 female patients(49.95%) died. The mortality rate stood at 1.52% for males and 1.45% for females. By age group, the incidence of COVID-19 was highest in persons aged between 50 and 59 years. A total of 11,602 confirmed cases were reported and accounted for 18.78%, followed by persons in their 20s(9,836, 15.92%) and 60s(9,791, 15.85%). It was found that the elderly are more vulnerable

to COVID-19. As of December 31, 2020, 55.29%(507 patients) of the dead was persons in their 80s, which showed a high mortality rate of 16.55%. Next, persons in their 70s accounted for 28.24%(259 patients). The younger the age, the lower the mortality rates. There was no one died in age groups below 30 at that time.

Gap in employment insurance by types of employment

The economic crisis caused by COVID-19 led to the employment instability of wage workers and difficulty in securing jobs. Employment Insurance, one of the social insurances, helps workers with living stability and supports their job seeking activities by providing a fixed amount of benefits when workers are seeking employment while out of work. In 2020, job-seeking benefits of Employment Insurance increased month after month and eventually exceeded KRW 1 trillion. According to Job-Seeking Benefits Application Trends provided by the Ministry of Employment and Labor, job-seeking benefits amounting to KRW 733.6 billion were paid in January 2020 and continuously grew from there. It exceeded KRW 1,016.2 billion in May and increased to KRW 1,166.3 billion in September.

However, employment insurance attainment rates vary according to the employment types of wage workers. In Korea, the employment insurance attainment rate of wage workers increased from 52.2% in August 2004 to 72.6% in August 2020. However, the rate of vulnerable groups with unstable employment status such as non-regular workers and immigrants is relatively low. Their social safety net for an employment crisis was found to be weaker than regular workers. In 2020, the employment insurance attainment rate of non-reg-

COVID-19 cases(as of January 1, 2021) (Unit: No. of persons, %)

Category		Confirmed cases	Deaths	Mortality rate
Gender	Male	31,600(51.16)	458(49.95)	1.45
	Female	30,169(48.84)	459(50.05)	1.52
Age	80 or older	3,064(4.96)	507(55.29)	16.55
	70~79	4,849(7.85)	259(28.24)	5.34
	60~69	9,791(15.85)	110(12.00)	1.12
	50~59	11,602(18.78)	30(3.27)	0.26
	40~49	8,778(14.21)	7(0.76)	0.08
	30~39	7,873(12.75)	4(0.44)	0.05
	20~29	9,836(15.92)	0	0
	10~19	3,844(6.22)	0	0
	0~9	2,132(3.45)	0	0

Source : Ministry of Health & Welfare, COVID-19 Incidence Trends(ncov.mohw.go.kr, retrieved on January 1, 2021)
Note   : Mortality rate = Number of deaths / Number of confirmed cases x100

Wage workers' employment insurance attainment rate by employment type; 2004~2020

(Unit: %)

- —— wage workers
- —— regular workers
- —— non-regular workers

ular workers was only 46.1%, whereas that of regular workers was 89.2%.

22 million households benefitted from emergency disaster relief funds

The Korean government implemented a variety of social safety net policies to minimize the social and economic effects of COVID-19. In May 2020, KRW 14,235.7 billion in emergency disaster relief funds were provided in order to revitalize the local economy by preserving household income and inducing consumption. Emergency disaster relief funds were provided for 22,160,000 households regardless of their income levels. The Ministry of the Interior and Safety said that KRW 12,065.6 billion(99.5%) was used before the expiration date(end of August 2020) among KRW 12,127.3 billion except for cash and paper-type certificates. Funds provided as credit/debit card deposits(KRW 9,559.1 billion) were used at supermarkets and grocery stores(KRW 2,514.3 billion, 26.3%) the most, followed by restaurants(KRW 2,325.1 billion, 24.3%), hospitals/drug stores(KRW 1,017.2 billion, 10.6%), gas stations(KRW 578.8 billion, 6.1%) and clothes/sundries(KRW 451.8 billion, 4.7%). By sales volume, a majority of the funds(KRW 6,072.5 billion, 63.5%) were used at small- and medium-sized stores with annual sales of not exceeding KRW 3 billion, followed by large-sized stores(KRW 3,486.6 billion, 36.5%) with annual sales of at least KRW 3 billion.

Korea's social expenditure continuously grows

In 2020, Korea could gain in stature and trust for its health and welfare systems, comparing with other countries' responses to COVID-19. Such achievements can be considered a result of the government's efforts for better health and welfare systems with continuously growing expenditure. Korea's social expenditure(SOCX) increased from 2.6% in 1990 to 12.2% in 2019. However, the numbers are still low, given that the average SOCX of OECD member states stood at 20.0%(2019). In 2019, Korea's SOCX was lower than that of the OECD member states. France spent the largest amount for SOCX at 31.0%, followed by Finland at 29.1%, Belgium at 28.9% and the United States at 18.7%.

SOCX by OECD member state; 2019 (Unit: %, SOCX to nominal GDP)
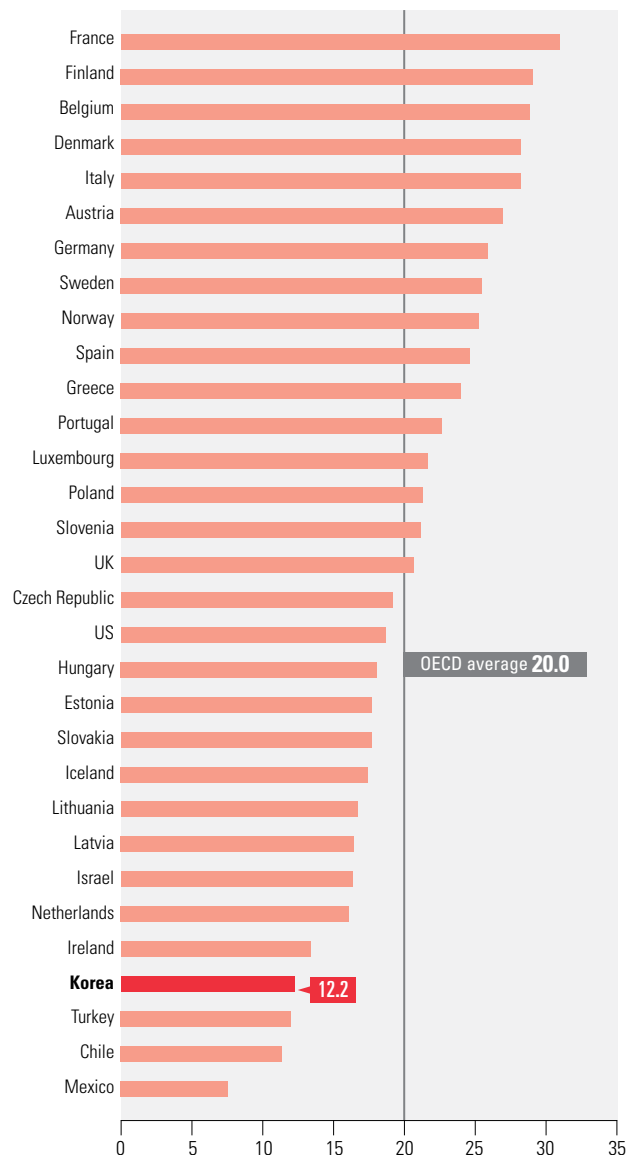
2 ZERO HUNGER

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

Food is essential for human survival. Food is still scarce on one side of the earth even in the 21st century, whereas food waste is a problem on the other side. According to the State of Food Security and Nutrition in the World(2020) jointly published by the Food and Agriculture Organization of the United Nations(FAO) and the World Food Programme(WFP), close to 750 million - or nearly one in ten people in the world - were exposed to severe levels of food insecurity in 2019. These numbers have been continuously increasing since 2015. It does not seem easy to achieve zero hunger, one of the SDGs. In particular, sub-Saharan Africa suffers the most severe food insecurity including hunger.

SDG 2 targets a comprehensive range of zero hunger goals including ending hunger, supplying and consuming a sufficient amount of food, supplying quality nutrition and ensuring sustainable food production systems. However, COVID-19 affected the food distribution systems, which resulted in increasing food prices in numerous countries. In addition, recent unusual weather phenomena are causing setbacks in food production. Based on a combination of such factors, the FAO predicts that the population exposed to hunger will increase by 83 million to 133 million in 2020 and will grow to 778.30 million or to 827.9 million in total.

The lower the income, the more vulnerable to food security

The percentage of Korean households not ensuring food security stood at 3.1% in 2018, which declined by 8.7%p from 11.8% in 2008. This implies improvement in food security in general. However, the data varies according to the income level and residential area. In terms of residential areas, 'eup/myeon(rural)', in 2018, showed a comparatively higher percentage of it at 4.0% than 'dong(urban)' at 2.9%. If we look at this by income level, the percentage of households not ensuring food security of the low income group stood at 11.5%, which was almost four times the average at 3.1% although the number decreased by 17.8%p compared to 10 years ago(29.3% in 2008). Given that only 0.1% of the high income group and 2.3% of the low-medium income group fail to ensure food security, it seems urgent for the low income group to improve their food security level.

Poor nourishment is relatively more common in women and teenagers(aged 10 to 18)

As a result of calculating the percentage of the poorly nourished population based on the Dietary Reference Intakes for Koreans, the numbers decreased by approximately 1.3%p from 13.8% in 2008 to 12.9% in 2018. The percentage of the

Percentage of households not ensuring food security; 2008~2018　(Unit: %)
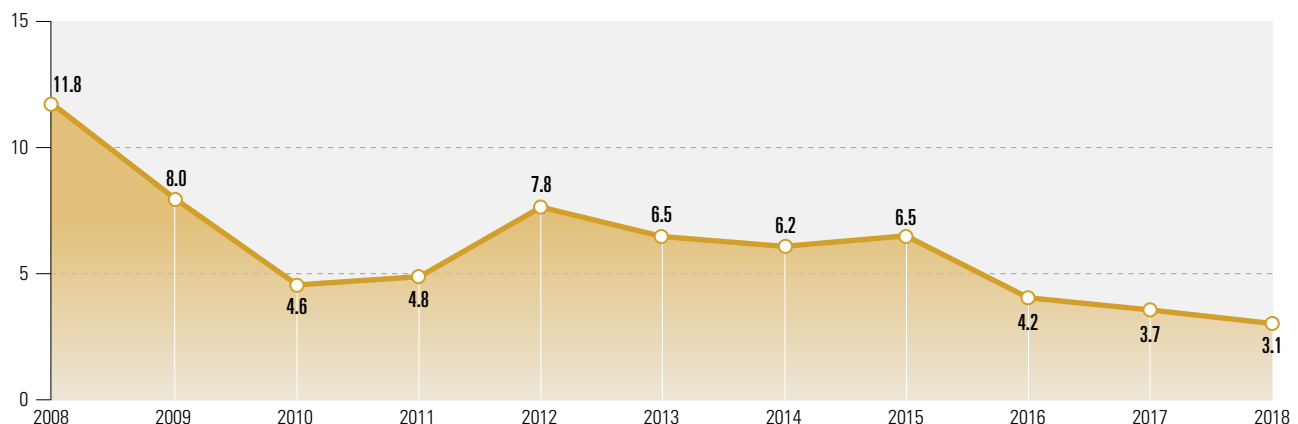
Source : Korea Disease Control and Prevention Agency, National Health & Nutrition Examination Survey, 2018

Note : The percentage of households not ensuring food security is calculated by subtracting the percentage of households ensuring food security(households that 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'.) from 100%.

Percentage of households not ensuring food security by characteristics; 2008~2018

(Unit: %)

Source : Korea Disease Control and Prevention Agency, National Health & Nutrition Examination Survey, 2018
Note : The percentage of households not ensuring food security is calculated by subtracting the percentage of households ensuring food security from 100.

Poorly nourished population; 2008~2018

(Unit: %)

Source : Korea Disease Control and Prevention Agency, National Health & Nutrition Examination Survey, 2018
Note : Poorly nourished population refers to persons who consume less than 75% of the estimated requirement of energy intake and take less than the average intake requirements of calcium, iron, vitamin A and riboflavin based on 2015 Dietary Reference Intakes for Koreans.

Poorly nourished population by sex and age group; 2018

(Unit: %)
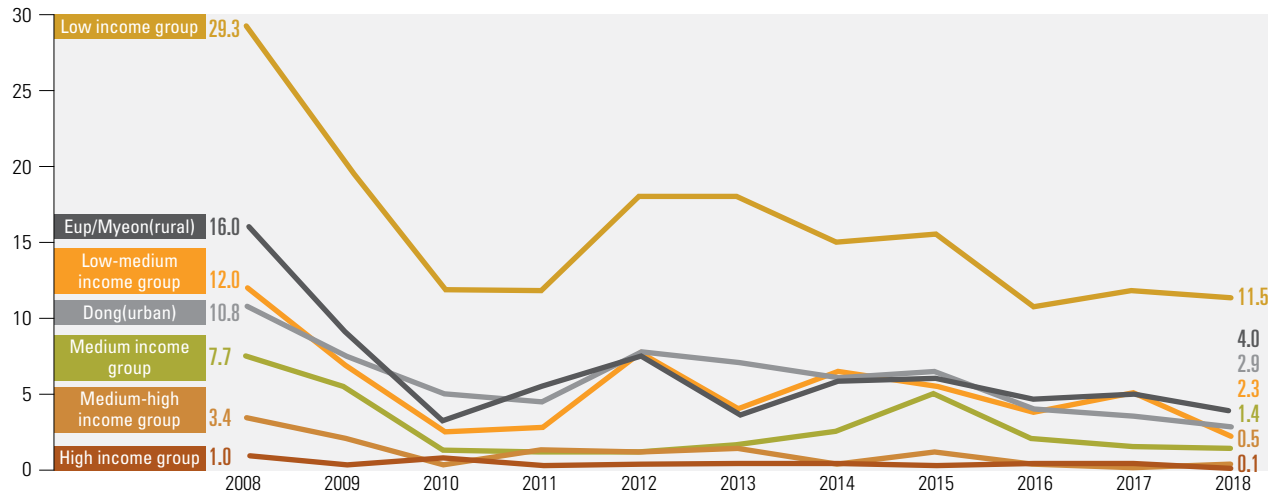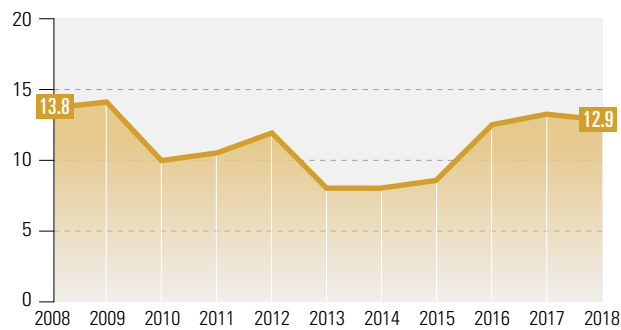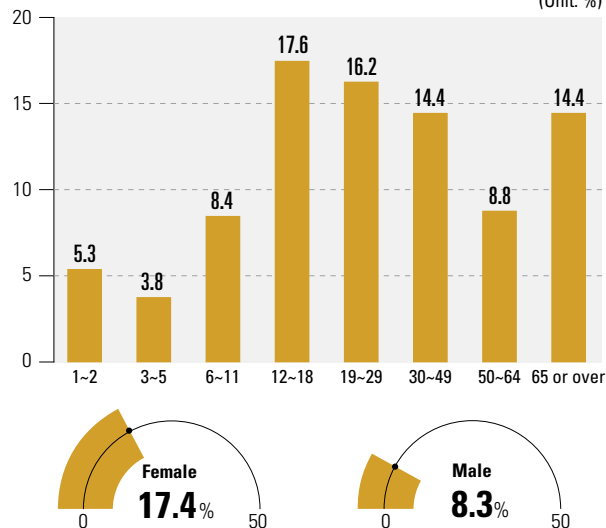

Source : Korea Disease Control and Prevention Agency, National Health & Nutrition Examination Survey, 2018

women stood at 17.4%, over twice the percentage in men at 8.3%. By age group, the percentage is the lowest with 3 to 5 years old at 3.8% while it is the highest with 12 to 18 years old at 17.6%. 14.4% of population over 65 years old were poorly nourished and this is more than those with 50 to 64 years old at 8.8%.

Labor productivity of farms continuously decreases for two consecutive years

Labor productivity can be measured as a ratio of the added value to the number of man-hours. It is an indicator to compare economic productivity between different industries or farms. According to the Farm Household Economy Survey of Statistics Korea, labor productivity amounted to KRW 21,444 per hour in 2017, which was the highest since the survey began. After that, it continuously decreased to KRW 18,003 in 2018 and KRW 16,912 in 2019. The larger the farmland size, the higher the labor productivity. The labor productivity of farms with an area of not less than 10ha came to KRW 44,067, which was 3.8 times that of farms with an area of 0.5~1.0ha at KRW 11,702. When comparing the annual farmhouse income between different farmland sizes, the annual income of farms with an area of not less than 10ha came to KRW 112.6 million, which was 2.7 times the average at KRW 41.18 million, and 3.2 times the income of farms with an area of less than 0.5ha at KRW 35.05 million. In terms of the average, the labor productivity and income of small farms were significantly lower than that of large farms.

Agricultural labor productivity; 2007~2019 (Unit: KRW/hour)
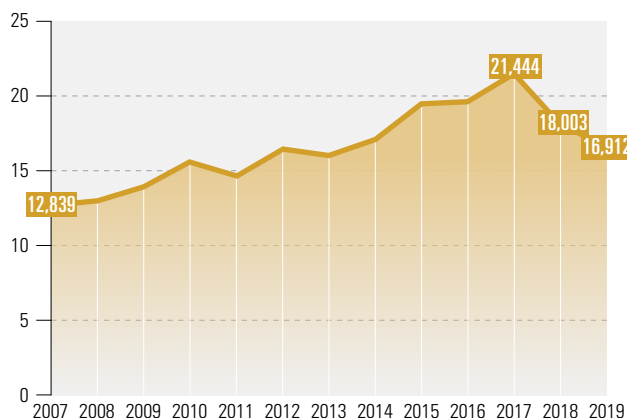
Source : Statistics Korea, Farm Household Economy Survey, 2019
Note : Labor productivity = Agricultural added value / Agricultural working hours
- Agricultural added value = Total agricultural income - (Intermediate material costs - Depreciation costs)
- Intermediate material costs = Farm management expenses – (Wages paid + Rent paid + Interest paid)
- Agricultural working hours = Family labor + Labor exchange + Employed labor + Volunteers' labor
- Farm management expenses referring to the sum of money used for agricultural management can be measured as the sum of cash used for agricultural activities, the appraised value of in-kind expenditures, the depreciation costs of agricultural fixed assets such as agricultural equipment and a change in the value of inventory production materials(Intermediate products which are self-produced and used again are excluded from farm management expenses).

High fluctuation in agri, livestock and fishery products price in 2020

In 2020, Korea experienced continuous uncertainty due to natural disasters such as the rainy season, typhoons and the COVID-19 pandemic. As a result, agricultural, livestock and fishery product inflation rates are high, compared to the total consumer prices. Livestock product prices continuously grew from 2016 to 2017 and stayed steady since 2018. In 2020, prices rose once again with

Labor productivity by farmland size; 2019 (Unit: KRW/hour)
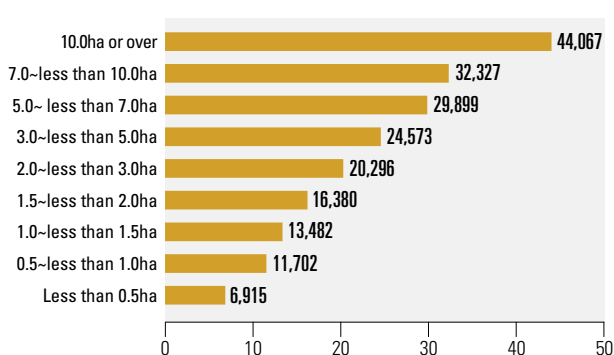
Source : Statistics Korea, Farm Household Economy Survey, 2019

Farm household income by farmland size; 2019 (Unit: KRW 1,000)
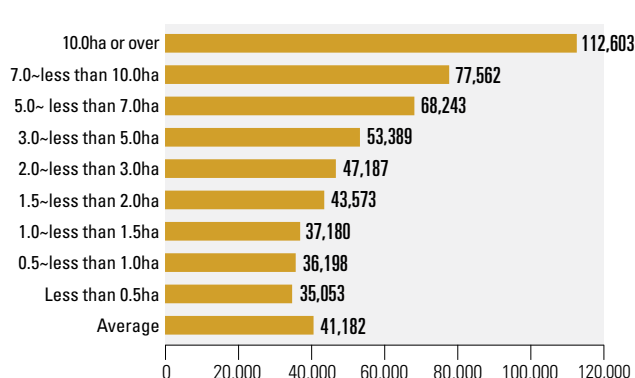
Source : Statistics Korea, Farm Household Economy Survey, 2019
Note   : Farm household income = Current income + Non-current income, Current income = Agricultural income + Non-farm income + Transfer income

rising household demand for meat after the spread of COVID-19. In 2018, vegetable prices skyrocketed due to the worst heatwave ever since records began. In 2020, an increase in prices expanded with the continuous summer rainy season and the spread of COVID-19.

Price index of agricultural, livestock and fishery products in Korea; 2016~2020 (Unit: %, year-on-year)
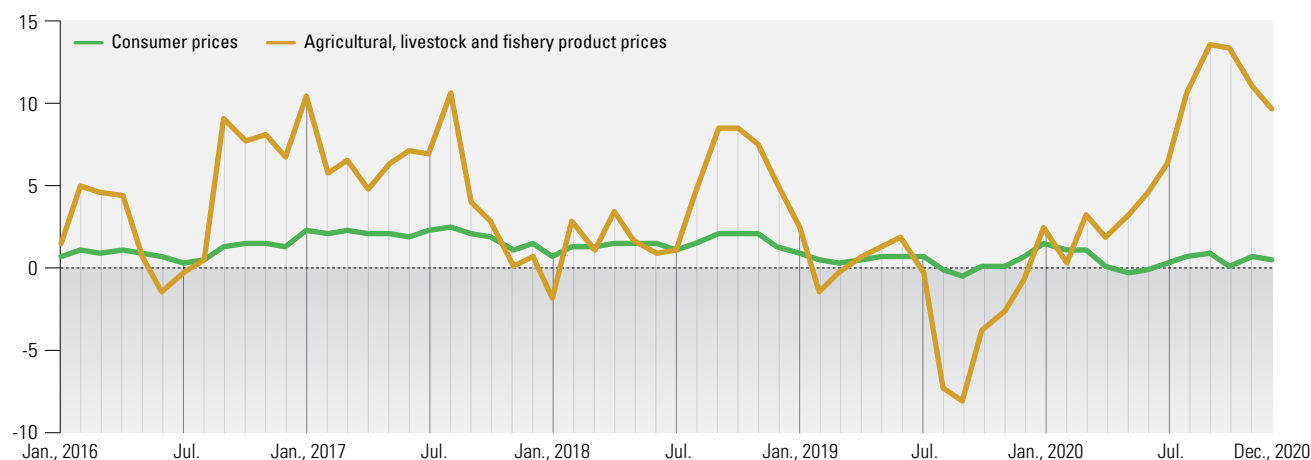
Source : Statistics Korea, Consumer Price Indices, each year

23

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

Health and welfare are basic human rights for people all over the world. With the motto of ensuring healthy lives for all, SDG 3 emphasizes that all humans have a right to receive quality healthcare. Its targets include enhancing the health of mothers and children, fighting communicable diseases, reducing non-communicable diseases, achieving universal health coverage, reducing deaths from hazardous chemicals and pollution, etc. However, it is becoming more difficult to achieve the targets since unprecedented health, economic and social crises resulting from COVID-19 are threatening our lives and livelihood.

The sudden outbreak of the COVID-19 pandemic brought about a public health emergency. As the entire world focuses on responding to COVID-19, the mortality rates of chronic disease and other infectious diseases such as AIDS, malaria and tuberculosis along with maternal mortality rates are expected to rise. In 2020, 1 billion people in lower middle income countries(LMICs) are predicted to spend at least 10% of their household income on medical expenses. Poverty is expected to worsen due to the burden on household budgets(UN, 2020b). Above all, vulnerable groups such as the elderly, persons with disabilities, women and children may be more severely affected due to their individual health and socioeconomic conditions. This phenomenon may worsen inequality and social conflicts.

Since the MERS outbreak in 2015, Korea has been putting forth the efforts to expand public healthcare resources and develop its capability to respond to public health crises such as the outbreak and spread of new infectious diseases. Core capacities have been continuously yielding results in the COVID-19 pandemic which is a public health crisis. Nevertheless, the need to expand public health and medical resources is still increasing.

Regional disparities in healthcare workers

In 2019, Korea had 127,258 physicians and oriental medical physicians and 215,293 nurses. The numbers of physicians and nurses increased by 34.4% and 94.1%, respectively, from 2009.

However, the numbers of physicians and nurses per 1,000 population greatly vary according to the region. The average number of physicians stood at 2.5 per 1,000 population. Sejong had the least number of physicians with 1.2, whereas Seoul had the greatest number of physicians with 3.7. Among 17 metropolitan cities and provinces, 11 cities

Numbers of physicians and nurses; 2009~2019
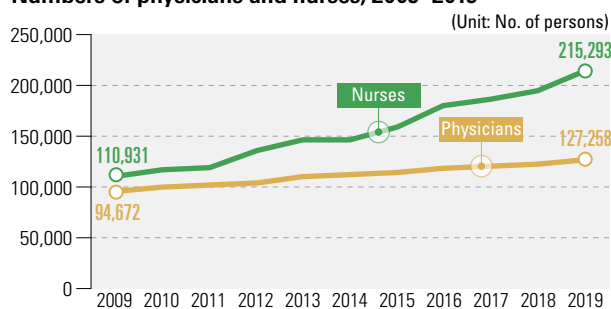
(Unit: No. of persons)

Source : Health Insurance Review and Assessment Service, National Health Insurance Service, National Health Insurance Statistical Yearbook, each year
Note : The number of physicians include physicians and oriental medical physicians. The number of nurses does not include assistant nurses.

Numbers of physicians and nurses per 1,000 population by region; 2019

(Unit: No. of persons)
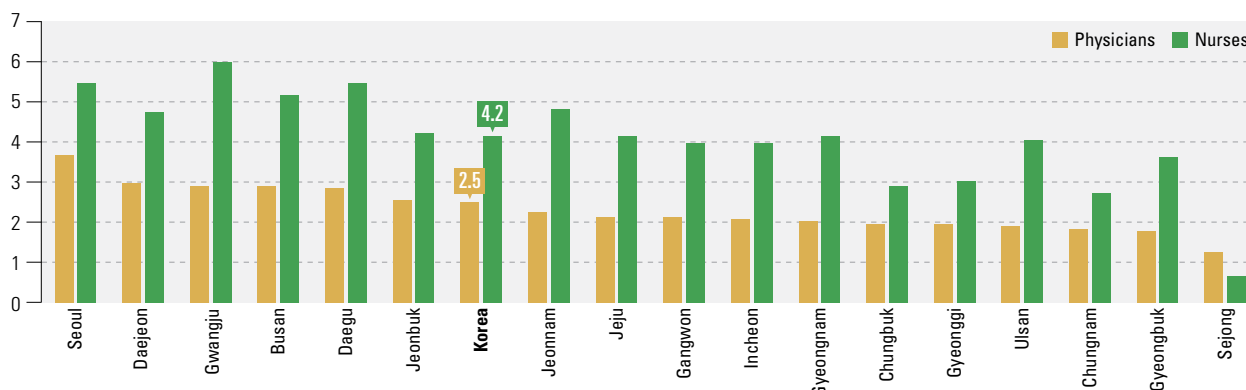
Source : Health Insurance Review and Assessment Service, National Health Insurance Service, National Health Insurance Statistics 2019
Note 1 : The number of physicians include physicians and oriental medical physicians. The number of nurses does not include assistant nurses.
Note 2 : The numbers of physicians and nurses per 1,000 population were calculated on the basis of Population Projections(2017).

Numbers of physicians and nurses per 1,000 population by OECD member state; 2018   (Unit: No. of persons)
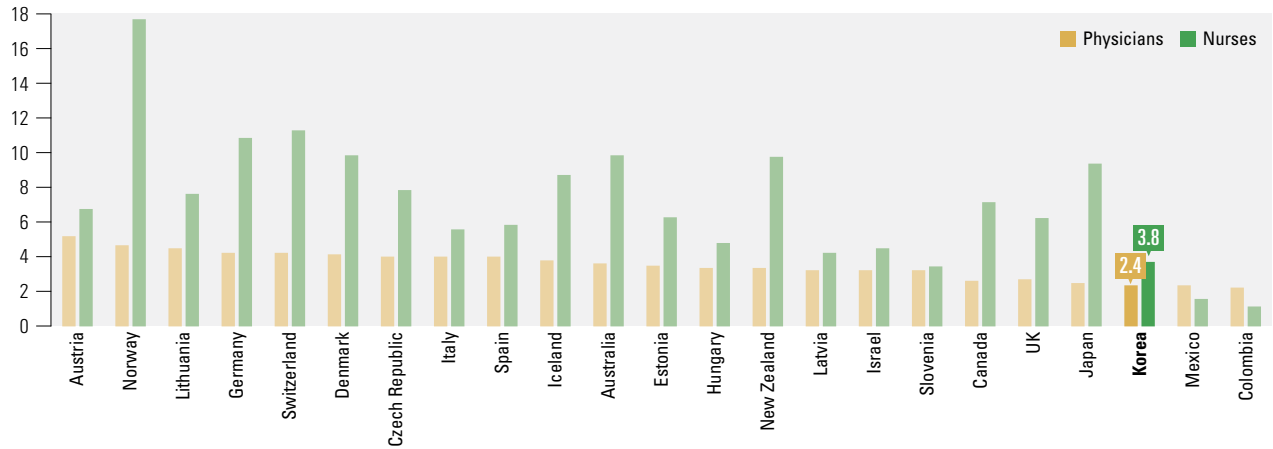
Source : OECD Statistics, Health Care Resources(retrieved on December 18, 2020)
Note : Countries with no data were excluded.

and provinces had lesser the average. And 9 of them were provinces. The number of nurses generally totaled 3.5 to 5.5 per 1,000 population. The number of nurses did not exceed 3 in Chungbuk, Gyeonggi, Chungnam and Sejong.

When comparing this with OECD countries, the numbers of physicians and nurses per 1,000 populations in Korea are lower than in other countries. In 2018, the number of physicians per 1,000 population totaled 5.2 in Austria, 4.8 in Norway, 4.6 in Lithuania and 4.3 in Germany, whereas Korea had 2.4 physicians. Korea had 3.8 nurses per 1,000 population, one third of the number of nurses in Germany, which had 11.1, and Switzerland with 11.5.

Not only does Korea lack medical personnel compared to other countries, but also such personnel is concentrated in some metropolitan cities. It implies that residents of provinces have lower accessibility to medical services. In particular, vulnerable groups such as children, mothers and persons with disabilities, cannot easily have access to quality universal medical services for emergency or serious conditions. If they cannot use sufficient local medical resources, health inequalities may continue.

Lower number of beds in public hospitals

Public health and medical institutions refer to institutions established and operated by the State, local governments and public institutions. Public health and medical care refer to all activities in which the State, local governments and health and medical care institutions protect and promote

Total number of beds in hospitals and public hospitals per 1,000 population by OECD member state; 2018   (Unit: No. of hospital beds)
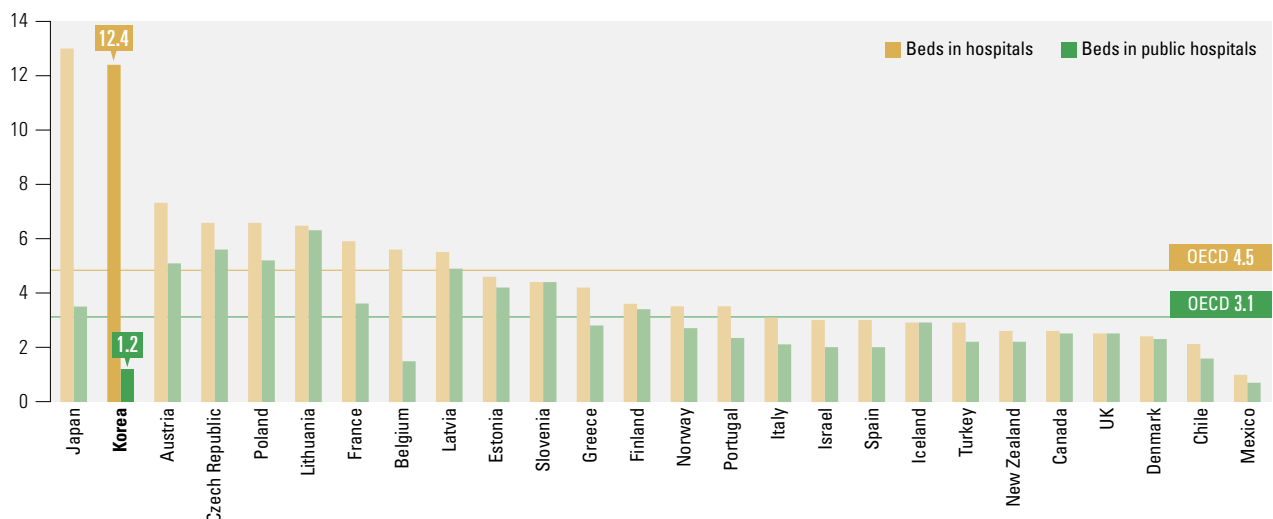
Source : OECD Statistics, Health Care Resources(retrieved on November 3, 2020)
Note : Countries with no data were excluded.

Number of beds in public hospitals per 1,000 population by region in Korea; 2018 (Unit: No. of beds)

Region	Beds
Korea	1.2
Jeonnam	2.9
Gangwon	2.6
Jeju	2.2
Daejeon	2.1
Gyeongnam	1.9
Jeonbuk	1.9
Gwangju	1.8
Chungbuk	1.8
Gyeongbuk	1.7
Chungnam	1.7
Daegu	1.5
Busan	1.2
Seoul	0.9
Gyeonggi	0.7
Incheon	0.5
Ulsan	0.1
Sejong	0.0
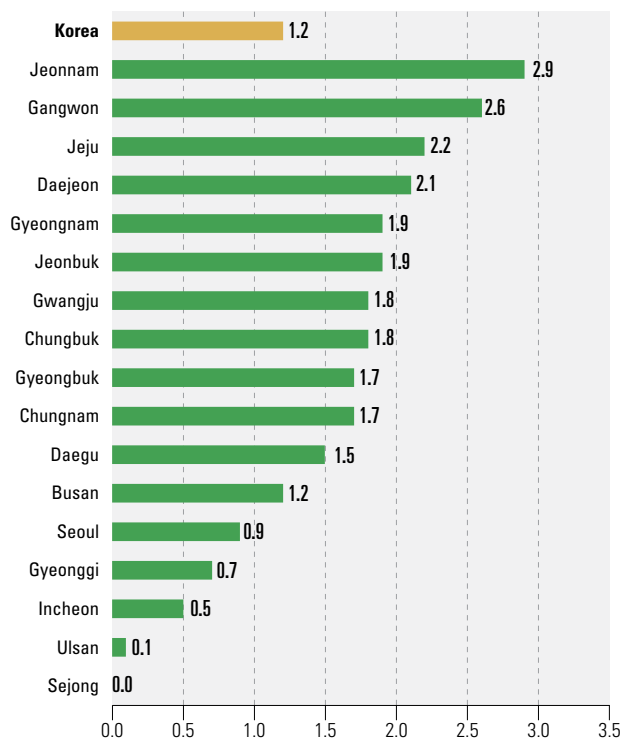
Source : Ministry of Health & Welfare, Data of Public Medical Institutions(December 31, 2018)
Note : The numbers of hospital beds in public medical institutions per 1,000 population were calculated on the basis of Population Projections(2017).

national health and ensure universal health coverage for the people regardless of regions, classes or fields.

In 2018, Korea had 12.4 hospital beds per 1,000 populations, which was the second highest following Japan(13.0). It is significantly high compared to the OECD average(4.5), mainly because the medical care facilities which provide long-term care service(*Yoyang-byungwon*) are classified as medical institutions, showing big difference in the number of beds compared to other OECD countries(OECD, 2019). However, the number of beds in public medical institutions is relatively low. In 2018, the number of beds in public hospitals stood at 1.2 per 1,000 population. It means that the number of beds in public hospitals in Korea is at the bottom among OECD member states even though the country has made significant efforts to increase public medical resources such as medical facilities and beds in order to respond to new infectious diseases since the MERS outbreak in 2015(OECD average: 3.1). As a result of comparing beds in public hospitals between regions. Seoul, Gyeonggi, Incheon, Ulsan and Sejong had fewer than 1 bed in public hospitals.

The numbers show that Korean public medical institutions, which have to primarily respond to uncertain situations of infectious diseases with unpredictable period, size and influence, have insufficient resources although Korea has enough hospital beds compared to other countries.

Increase in deaths of the elderly from NCDs

Non-communicable diseases(NCDs) such as Cancer or Diabetes are not just a health and medical care issue, but also a hindrance to socioeconomic development. The UN puts the NCDs on the agenda as one of the 21st century management issues. Accordingly, the World Health Organization(WHO) set a goal of reducing premature NCD deaths by 25% until 2025. The UN encourages each country to establish a national policy and manage performance indexes.

Regarding a fluctuation of deaths from cancer, diabetes,

Number of deaths from NCDs(all population); 2000 and 2019 (Unit: No. of persons)

	Total	Female	Male

Cancer
- Total: 58,197 (2000) → 81,203 (2019)
- Male: 37,224 (2000) → 50,281 (2019)
- Female: 20,973 (2000) → 30,922 (2019)

Diabetes
- Total: 10,808 (2000) → 8,102 (2019)
- Female: 5,407 (2000) → 4,121 (2019)
- Male: 5,401 (2000) → 3,981 (2019)

Cardiovascular diseases
- Total: 58,827 (2000) → 60,252 (2019)
- Female: 30,342 (2000) → 31,580 (2019)
- Male: 28,485 (2000) → 28,672 (2019)

Chronic respiratory diseases
- Total: 11,393 (2000) → 13,163 (2019)
- Male: 6,656 (2000) → 8,203 (2019)
- Female: 4,737 (2000) → 4,960 (2019)

Source : Statistics Korea, Cause of Death Statistics, each year

Source : Statistics Korea, Cause of Death Statistics, each year

Mortality rates of NCDs in OECD member states; 2016

(Unit: %)
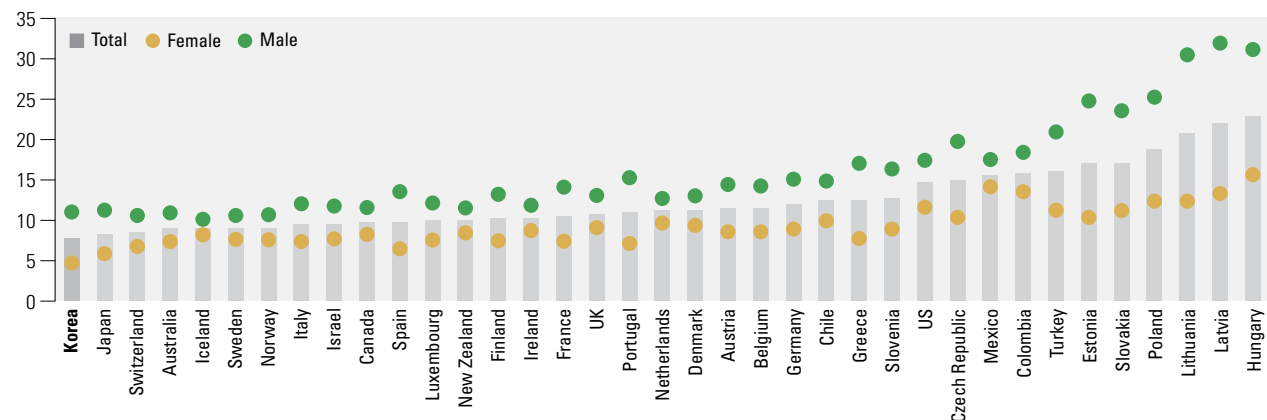
Source : WHO, Global Health Estimates 2016: Death by Cause, Age, Sex, by Country and by Region, 2000~2016
Note   : The mortality rate is calculated using the Life Table Methods with the probability of dying from cancer, diabetes, cardiovascular diseases and chronic respiratory diseases between the ages of 30 and 70.

cardiovascular diseases and chronic respiratory diseases in Korea, the number of deaths from the diseases other than cancer was similar to 2000 or decreased thanks to chronic disease prevention and management policies and projects such as creating a social atmosphere for health promotion and establishing a national surveillance systems. On the other hand, deaths from the diseases other than diabetes were found to continuously increase in the population aged 65 and over. Analyzing the data of the population aged 65 and over based on gender, more men died from cancer and chronic respiratory diseases than women, whereas more women died from cardiovascular diseases than men.

Percentage of 30-year-old people who would die before their 70th from the four NCDs defined by the WHO stood at 7.8% in 2016 in Korea, which implies that Korea's premature death rate was the lowest among OECD member states

including Switzerland(8.6%) and Japan(8.4%). Comparing the premature death rate from the four NCDs by gender, men consistently outnumbered women in all countries.

The WHO defined old age, underlying diseases(diabetes, high blood pressure, cardio-cerebrovascular diseases, chronic respiratory diseases, chronic kidney diseases, cancer, etc.) and smoking as high risk factors of COVID-19(WHO, 2020). As a result of analyzing patients hospitalized for COVID-19, the Centers for Disease Control and Prevention of the United States and the European Centre for Disease Prevention and Control found that many of the patients had underlying diseases. The Korea Disease Control and Prevention Agency reported that 98.5%* of deaths from COVID-19 in Korea had underlying diseases as of midnight, May 21, 2020. It means that COVID-19 infection may be more dangerous in persons with an underlying disease.

Korea ranked high in the IHR with 97%

The International Health Regulations(IHR) are WHO member states' legal regulations for ensuring and enhancing their capacities to prevent, detect, evaluate, report and respond to a public health crisis. In accordance with the IHR, the member states are obligated to develop and maintain their capacities to monitor and respond to international public health risks. These indicators reflect the core capacities agreed upon by the member states. They are used to evaluate each country's ability to respond to an international public health crisis.

The 13 core capacities are as shown below: ①Legislation and Financing; ②IHR Coordination and National IHR Focal Point Functions; ③Zoonotic Events and the Human–animal Interface; ④Food Safety; ⑤Laboratory; ⑥Surveillance; ⑦Human Resources; ⑧National Health Emergency Framework; ⑨Health Service Provision; ⑩Risk Communication; ⑪Point of Entry; ⑫Chemical Events; and ⑬Radiation Emergencies.

In the 2018 IHR core capacities evaluation, Korea achieved 100% only in eight items out of the 13 items. In 2019, Korea achieved 100% in 11 items except Items 2 and 10(Total average: 97%). In the same period(2019), Korea's results are at the top with Canada(12 achieved, Total average: 99%), Japan(11 achieved, Total average: 95%) and the United Kingdom(10 achieved, Total average: 93%). Korea's results are much higher than the global average and the countries in the Western Pacific region.

Comparison of IHR core capacities between OECD member states; 2019 (Unit: %)
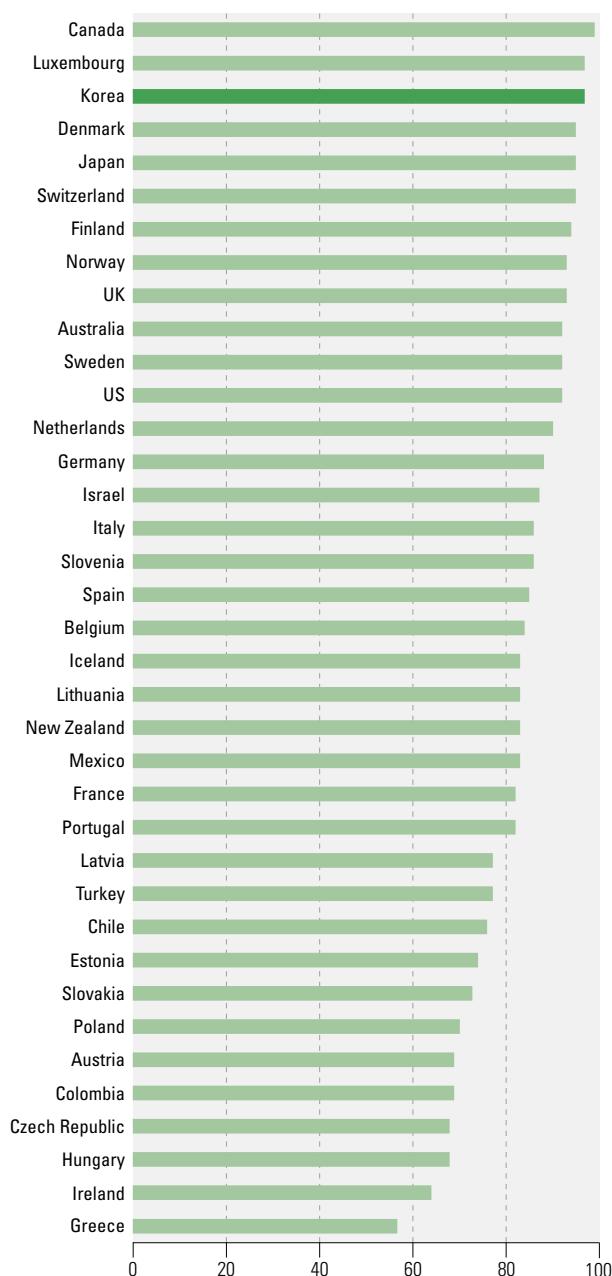
Source : e-SPAR(WHO), www.extranet.who.int/e-spar(retrieved on October 29, 2020)
Note : Consisting of 24 indicators of the 13 IHR core capacities. Capacity levels are measured as the average of the indicators. Indicators are calculated as the evaluation score out of 5 points in percentage terms.

Global position of Korea's IHR core capacities; 2019 (Unit: %)
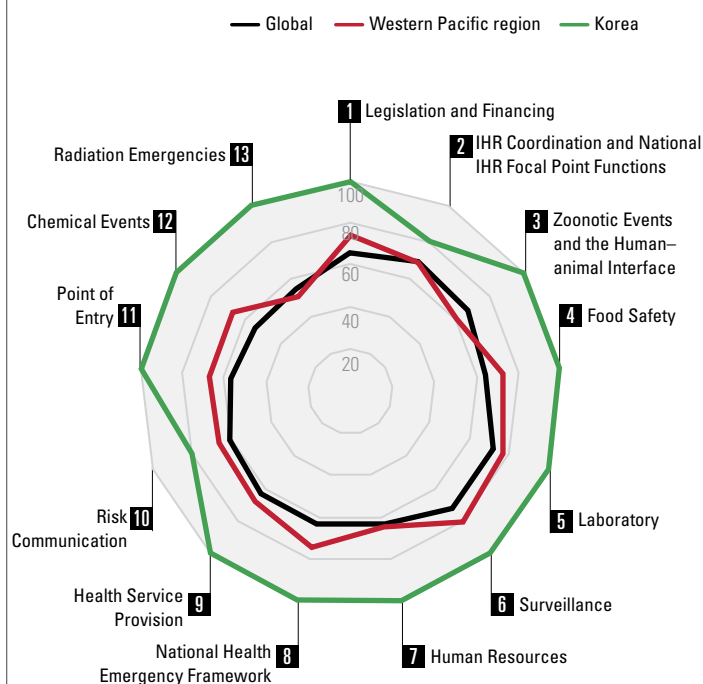
Source : e-SPAR(WHO), www.extranet.who.int/e-spar(retrieved on October 29, 2020)

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* Circulatory system diseases such as cardio-cerebrovascular diseases, etc.(76.5%), diseases of the endocrine system such as diabetes, etc.(47.7%), mental disorders such as dementia, etc.(43.9%), respiratory diseases such as chronic obstructive pulmonary disease, etc.(23.5%), etc.(duplications included).

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

As a result of the MDG's efforts to realize universal primary education, elementary aged children who do not go to school fell by half, from 100 million in 2000 to 57 million in 2015(UN, 2015); nonetheless, there is a constant report of the poor learning level of children and students. To overcome this, the SDGs were adopted to ensure more inclusive and quality lifelong education. However, the unexpected COVID-19 pandemic led to school closures and education systems have been severely affected.

According to the UNESCO, 165 countries decided on school closures as of April 23, 2020. Approximately 1,478.7 million students, 84.5% of the total number of registered students worldwide from pre-primary to tertiary education levels, are suffering a setback in their education. In Korea, the start of the first semester in 2020 was postponed, which was originally supposed to be in March of the year. Instead, online classes started for middle school and high school seniors on April 9 and students were able to continue studying even amid a crisis.

As online classes extend, however, it is expected that the learning gap will broaden due to students' less concentration and feedback in class. As a result of the Survey on Online Class Experience and Awareness in the First Semester of 2020, 79% of teachers thought that a gap in academic achievement grew wider. There are also growing concerns that the educational inequality will worsen as vulnerable groups such as low-income class and persons with disabilities are not used to attending online classes because of lack of facilities etc(Ministry of Education, National Council of Governors of Education, 2020). The Korean government is carrying out the state-level academic achievement test every year, and in order to monitor the quality of education amid the difficulty caused by COVID-19, it is analyzing the trend of students' academic achievements based on its result.

Decrease in the minimum proficiency levels

It is found that the minimum proficiency levels in reading and math of Korean students aged 15 are recently going down. As a result of analyzing the data of the Program for International Student Assessment(PISA), the percentage of students who have reached the minimum proficiency level in reading decreased from 94.2% in 2000 to 84.9% in 2018. In the same period, students who reached the minimum proficiency level in math fell from 92.8%(2000) to 85.0%(2018). To divide the decreasing level into gender, male students have decreased more compared to female students. The minimum proficiency levels in reading from 2000 to 2018 showed a decrease of 7.4%p by female students whereas male students decreased by 11.4%p. Female students have decreased by 5.4%p and male students by 9.8%p in math.

Widening gap between socioeconomic classes

We have looked into the matter of equity between the relatively less vulnerable group and vulnerable group through its ratio. First, the gender parity index of minimum proficiency level in reading has been 1 or over since the survey began. It means that the minimum proficiency level of female students is higher than that of male students. The gender parity index

Percentage of the students aged 15 who achieved the minimum proficiency level in reading and math; 2000~2018

(Unit: %)
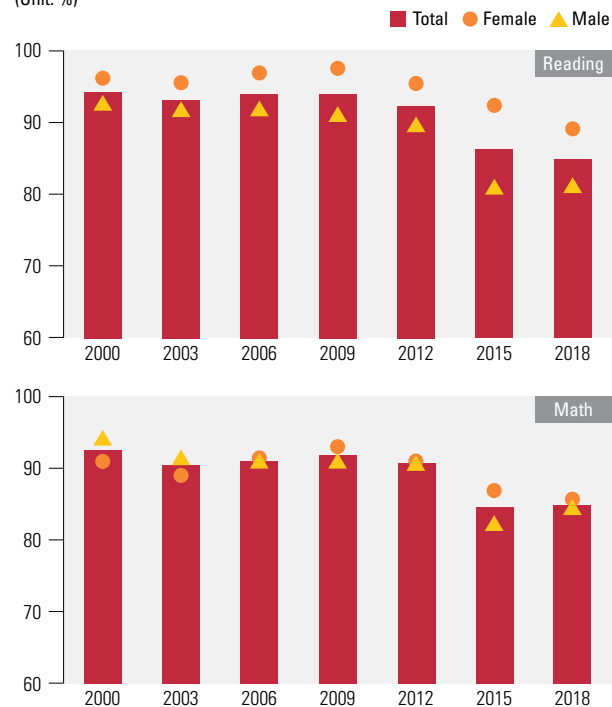
Source : OECD, PISA, each year
Note : Achievement levels in reading and math divided into 6 levels; Level 2 is considered the minimum standard. Level 2 signifies that the student is equipped with basic competency to utilize knowledge in different situation and purpose(Korea Institute for Curriculum and Evaluation, 2020).

Gender and socioeconomic parity index; 2000~2018

Gender parity index

| 1.039 → 1.093 (Reading) |
| 0.966 → 1.014 (Math) |

— Reading — Math

Socioeconomic parity index

| 0.899 → 0.816 (Reading) |
| 0.870 → 0.799 (Math) |

Source : OECD, PISA, each year
Note : Normally, the vulnerable group is located in the numerator in parity index, which is cal-
culated by the ratio of two different groups in the given index. Here, the achievement
rate of minimum achievement level of reading and math was calculated between male
students(denominator) and female students(numerator), and the comparison between
the upper 25% socioeconomic class and the lower 25% class. Therefore, if the value
is larger than 1, it is more favorable to the vulnerable group; if it's less than 1, it is less
favorable to the vulnerable group.

increased from 1.039 in 2000 to 1.093 in 2018, moving far away from the equilibrium point of 1. The gender parity index on math was less than 1 in the early 2000s, which showed that the level of male students was higher than female students. The level of female students has been increasing since 2006. Now the gender parity index has been maintained at greater than 1. Academic achievements varied according to the students' socioeconomic background. As a result of comparing the minimum proficiency level in reading and math

between the upper 25% socioeconomic and the lower 25%, the levels were all lower in the lower 25% socioeconomic status with the index value less than 1. In addition, the gap between the groups have been recently widening. Not only are there growing concerns about the poor academic achievement of students after the COVID-19 outbreak, but also a gap between the socioeconomic status may widen.

In OECD member states, the percentage of female students who have reached the minimum proficiency level in reading was consistently higher than male stu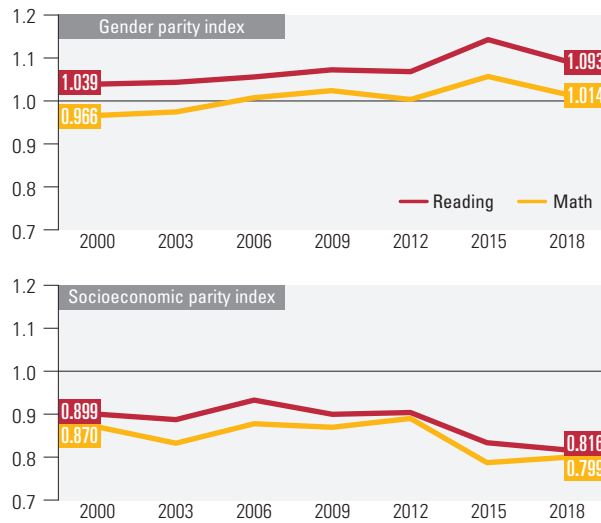dents. A difference between the genders was relatively significant in Greece(1.288), Israel(1.288) and Iceland(1.235). Gender differences in math vary among countries. Based on the parity index of Ireland which is equaled to 1, the level of female students was higher in Israel(1.093) and Iceland(1.071), whereas the level of male students was higher in Colombia(0.749) and the Mexico(0.877). The socioeconomic parity index was less than 1 in all categories and all countries. Students in a high socioeconomic class showed better minimum proficiency level in reading and math than other students. The maximum and minimum values of the reading and math were shown in Estonia(0.895, 0.882, respectively) and Colombia(0.440, 0.337, respectively). A gap in academic achievement between the socioeconomic classes was relatively small in Korea(0.816, 0.799, respectively).

Informatization varies according to the school levels

After the COVID-19 outbreak, online classes have been spreading as an alternative education tool in response to

Gender and socioeconomic parity index of OECD member states; 2018

Gender parity index

● Reading
● Math

Korea: 1.093 (Reading), 1.014 (Math)

Ireland, Estonia, UK, Colombia, Belgium, Korea, US, Japan, Canada, Germany, Portugal, New Zealand, Mexico, France, Denmark, Sweden, Italy, Poland, Australia, Hungary, Switzerland, Austria, Netherlands, Chile, Luxembourg, Finland, Czech Republic, Turkey, Slovenia, Norway, Latvia, Lithuania, Slovakia, Iceland, Israel, Greece

Socioeconomic parity index

Korea: 0.816 (Reading), 0.799 (Math)

Colombia, Mexico, Slovakia, Israel, Hungary, Luxembourg, Chile, Greece, Lithuania, Czech Republic, Switzerland, Belgium, France, Austria, Germany, Turkey, Portugal, Italy, Iceland, Netherlands, New Zealand, US, Australia, Sweden, Latvia, Denmark, Slovenia, Japan, Norway, Poland, UK, Korea, Ireland, Finland, Canada, Estonia

Source : OECD, PISA,
each year
Note : Countries with
no data were
excluded.

Schools with access to the computers and internet for pedagogical purposes (Unit: %)

Elementary school, Computer access 44.9
Middle school, Computer access 59.7
High school, Computer access 61.1
Global

Elementary school, Computer and Internet access 100
Middle school, Computer and Internet access 100
High school, Computer and Internet access 100
Korea
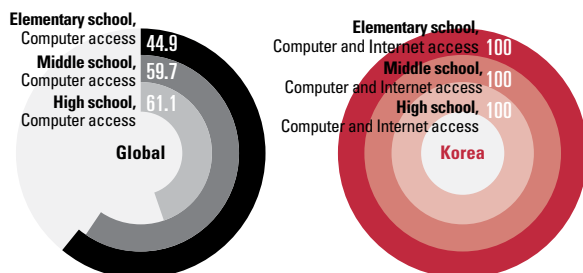
Source : UIS, 2015, 2016, 2017
Note 1 : Primary education, lower secondary education and upper secondary education in accordance with the International Standard Classification of Education are suggested as elementary school, middle school and high school correspondingly.
Note 2 : 2016, 2015 and 2017 data are used for elementary school, middle school and high school, respectively, for global data. 2016 data are used for Korea.

school closures. For the stable operation of such classes, building an informatization infrastructure is crucial.

Although informatization levels of Korean schools are very high, they vary according to the school levels and informatization details. Regarding digital device as of 2020, students had average of 0.2 digital devices, with 0.25 in high school, followed by elementary and middle schools. The average number of teachers teaching information and computer subjects and those possessing relevant certificate per school stood at 0.48 and 0.3 respectively. In high school, the teachers were the highest, and in special education school, the fewest. According to the 2019 White Paper on ICT in Education Korea, teachers' ICT training hours were found to affect students' digital literacy, which implies that securing qualified teachers should be dealt with importantly in all schools.

Status of school informatization; 2020
(Unit: No. of devices, No. of persons)

Total | Elementary school | Middle school | High school
Special education school
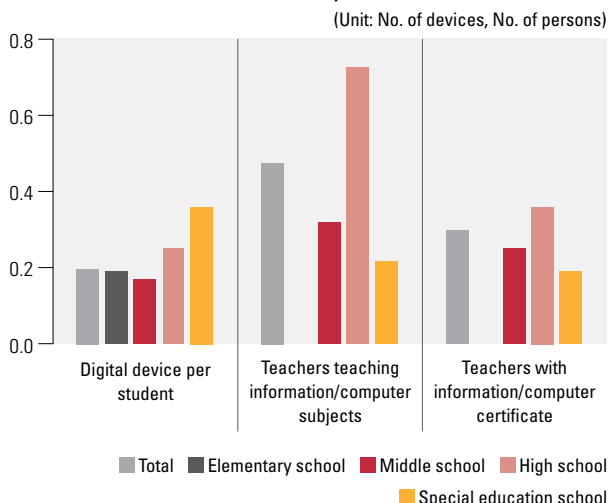
Source : Korea Education and Research Information Service, 2020 Survey on Education Informatization of Elementary and Middle Schools
Note : Data on the teachers in elementary school is not available.

Vulnerable groups have poor informatization capacities and utilization competences

Since Korea's ICT levels are globally renowned, it is expected that Korean people's informatization levels are accordingly high. However, ICT levels are found to be relatively low in persons with disabilities, lower-income class, farmers/fishermen and the elderly. Assuming that the informatization level of general population is 100, the informatization levels of vulnerable groups were comparatively low, with 75.2% in persons with disabilities, 87.8% in the lower-income class, 70.6% in farmers and fishermen and 64.3% in the elderly.

As a result of analyzing their informatization levels in three categories such as informatization access, capacities and utilization, all four vulnerable groups showed over 90% of the level of general population in informatization access. However, device utilization capacities and internet utilization were beneath. In particular, the elderly showed the lowest levels in capacities and utilization at 51.6% and 63.9%, respectively. It shows the need of systematic support of resources to these groups in order for the online classes which is becoming more common due to the COVID-19 to be operated smoothly regardless of students' family background.

Ministry of Education is supporting the online classes to be operated without barrier by providing smart devices and mobile data for the students in low-income bracket; further consideration is needed to prevent the occurrence of gap in informatization capacity and its utilizing level.

33

Digital informatization levels by vulnerable group; 2019 (Unit: %)

Total
Persons with disabilities 75.2
General 100 — Lower-income class 87.8
Elderly 64.3 — Farmers and fishermen 70.6

Access
Persons with disabilities 92.6
General 100 — Lower-income class 95.2
Elderly 90.6 — Farmers and fishermen 91.3

Capacities
Persons with disabilities 67.8
General 100 — Lower-income class 86.5
Elderly 51.6 — Farmers and fishermen 63.6

Utilization
Persons with disabilities 74.0
General 100 — Lower-income class 85.4
Elderly 63.9 — Farmers and fishermen 67.2

Source : Ministry of Science and ICT, 2019 Report on Digital Divide
Note : Informatization access is measured with the possession of wired/wireless information appliances and possibility of full-time internet access. Informatization capacities are measured with computer utilization competence and mobile device utilization competence. Lastly, informatization utilization is measured with wired/mobile internet utilization, diversity of internet service utilization and a degree of advanced internet utilization.

5 GENDER EQUALITY

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Achieve gender equality and empower all women and girls

The Beijing Platform for Action adopted at the Fourth World Conference on Women in 1995 became a turning point in gender equality history. The terms, gender equality and women's empowerment, were established at this conference. This event is considered to have produced tangible results in improving women's rights for the past quarter century. However, COVID-19 revealed that there still is gender inequality in the social structure. For instance, women still account for a majority of essential labor such as childcare. This is the reason why achieving gender equality in politics, society, economy and daily life by empowering women and girls was set as an independent goal in the 2030 Agenda.

Women are more likely to be in a more vulnerable position in crisis situations such as the COVID-19 pandemic. Social distancing, working from home and store and restaurant closures require deeper roles of the family. Under this situation, more duties are imposed on women than on men. The unpaid domestic work hours increased by 63% for women and by 59% for men in the Asia-Pacific region(UNWOMEN, 2020a) after the COVID-19 outbreak. In addition, concerns about health, financial situation and safety in a household, which is limited living space, cause tension. This may lead to domestic violence against women and children. The shadow pandemic is occurring now(UNWOMEN, 2020b). There is a discussion that similar situations are arising in Korea as well.

Since the Beijing Platform for Action, Korea has been establishing systems to empower women and improve their rights. It includes the Framework Act on Gender Equality, the Framework Act on Prevention of Violence Against Women and the Act on the Prevention of Domestic Violence and Protection, the gender impact assessment program and the 50% recommendation quota system of female proportional representation candidates. Especially the gender impact assessment program contributes to the realization of gender equality by analyzing and making assessment of the cause of socioeconomic gap between women and men during the implementation of government's major policies such as law, plan and project. The regular monitoring process is required based on the concrete data whether the actual gender equality is achieved or not.

Expected to increase in women's unpaid work hours due to COVID-19

Unpaid domestic and care work hours have been decreasing for women and increasing for men over the past 20 years. However, women still spend more time on domestic work than men. The proportion of unpaid domestic and care work hours in a 24-hour day reduced by 1.8%p(26 minutes) from 14.2%(204 minutes) in 1999 to 12.4%(178 minutes) in 2019 for women and increased by 1.6%p(23 minutes) from 2.0%(29 minutes) to 3.6%(52 minutes) during the same period. Accordingly, differences in unpaid domestic and care work hours between women and men reduced from 175 minutes in 1999 to 126 minutes in 2019. However, women still spend two more hours per day on unpaid domestic and care work than men. As people stay home longer after the COVID-19 outbreak, unpaid domestic and

Gender gap in unpaid domestic and care work hours in Korea; 1999, 2004, 2009, 2014, and 2019 (Unit: %)
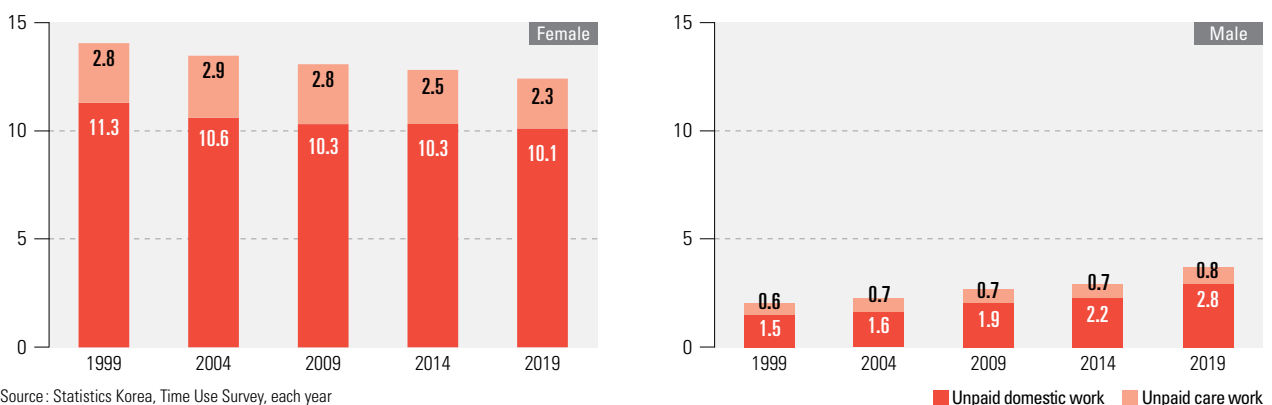
Source : Statistics Korea, Time Use Survey, each year
Note 1 : Unpaid household works consist of domestic work and care work.
Note 2 : Due to rounding, the ratio presented in this graph may not add up precisely to the total.

Country	Gender gap
Mexico	19.8
Turkey	15.4
Colombia	12.9
Japan	12.0
Italy	12.0
Greece	11.1
Korea	11.0
Hungary	9.3
Poland	8.3
Portugal	7.6
France	6.3
Switzerland	6.0
Germany	6.0
US	5.8
UK	5.7
Canada	5.0
Finland	4.7
Sweden	3.2
Norway	3.0

Legend: Gender gap(female-male) ▮ Female ▬ Male

Source : UNSD, Time Use Survey by Nation
Note 1 : Countries with no data were excluded. Survey year by country[Finland/France/Hungary(2010), Norway/Sweden(2011), Germany/Poland(2013), Greece/Italy/Mexico/Korea(2014), Portugal/Turkey/UK(2015), Canada/Japan/Switzerland(2016), Colombia(2017), US(2018)].
Note 2 : As for the Korean data, travel time related to unpaid domestic and care work is calibrated. 2019 data are not collected by UNSD yet.

care work hours are expected to increase. In particular, caregivers need to take care of children at home much longer now owing to preschool closures and online classes. Numerous unofficial data show that childcare is mainly taken care of by women. It seems clear that a decreasing tendency for women's unpaid care work hours for the past 20 years[40 minutes(2.8% of total unpaid domestic work hours) in 1999, 33 minutes(2.3%) in 2019] has entered a new phase after the COVID-19 outbreak. Meanwhile, Statistics Korea have estimated the economic value of unpaid domestic and care work. According to its report, unpaid domestic and care work worth approximately KRW 320 trillion has been carried out in 2014, among which economic value of the women's unpaid domestic and care work totaled KRW 245 trillion, three times bigger than that of men which is KRW 76 trillion.

Such a tendency is shown in other countries as well. As a result of comparing the results of the recent Time Use Surveys conducted by OECD member states, it was consistently found that women spend more time on unpaid domestic and care work than men. Countries with bigger gender gap than Korea(11.0%p) include Mexico(19.8%p), Turkey(15.4%p), Colombia(12.9%p), Japan and Italy(12.0%p), and Greece(11.1%p). Norway(3.0%p) and Sweden(3.2%p) showed the smallest differences between males and females.

Female share of seats in national parliaments(2020) and local councils(2018) of the OECD countries (Unit: %)

National Parliaments	Local Councils
Mexico	Iceland
Sweden	Mexico
Fnland	Sweden
Spain	France
Switzerland	Norway
Norway	Finland
New Zealand	Belgium
Belgium	New Zealand
Portugal	UK
Denmark	Latvia
France	Australia
Austria	Spain
Iceland	Slovenia
Italy	Denmark
UK	Switzerland
Netherlands	Italy
Germany	Estonia
Australia	Netherlands
Luxembourg	Hungary
Latvia	**Korea**
Canada	Czech Republic
Estonia	Germany
Poland	Poland
Slovenia	Canada
Lithuania	Slovakia
US	Luxembourg
Israel	Chile
Chile	Lithuania
Czech Republic	Austria
Ireland	Ireland
Slovakia	Colombia
Greece	Israel
Colombia	Japan
Turkey	Turkey
Korea	
Hungary	
Japan	

Source : The data of the members of national parliaments are collected by IPU, and local councils by the United Nations Regional Commission and UNWOMEN.
Note : Data for the members of national parliaments are dated January 2020 while that of local councils are 2018. For the local councils, data for Austria and Britain is based on 2019 and it is 2017 for Czech Republic, Estonia, Japan and Poland. There are no data for Greece, Portugal and the United States.

Female decision-makers, 20~30% of the total in political and economic area

Women accounted for 17.3% of the national parliament seats as of January 2020 in Korea. Among the OECD countries, Japan ranked the lowest(9.9%), followed by Hungary(12.1%) and Korea. In the 21st General Election held in April 2020, fifty seven female candidates won, which accounted for 19% of the total 300 members. However, this is still the one of the lowest members among the OECD countries. The proportion of women among the members of local councils is slightly higher than national parliaments with 28.3%(as of 2018), but still less than half of all seats. Mexico(48.2% and 45.0% respectively) and Sweden(47.0%,

43.8% respectively) have a high proportion of women in both the national parliament and local council.

Female managers account for less than 20% as well. Although the number of female managers is gradually growing, Korea still has the lowest female manager rate in OECD member states. In 2018, Turkey(14.8%) and Japan(14.9%) showed similar proportion to Korea. While other countries' percentage all reached 20%, Latvia(44.9%), Poland(42.5%), Iceland(41.5%) and the United States(40.7%) exceeded 40%. However, no country was closed to or exceeded 50%.

It was found to be even more difficult for women to become a middle or senior manager. In Italy, women accounted for 27.0% of the total number of managers, whereas the
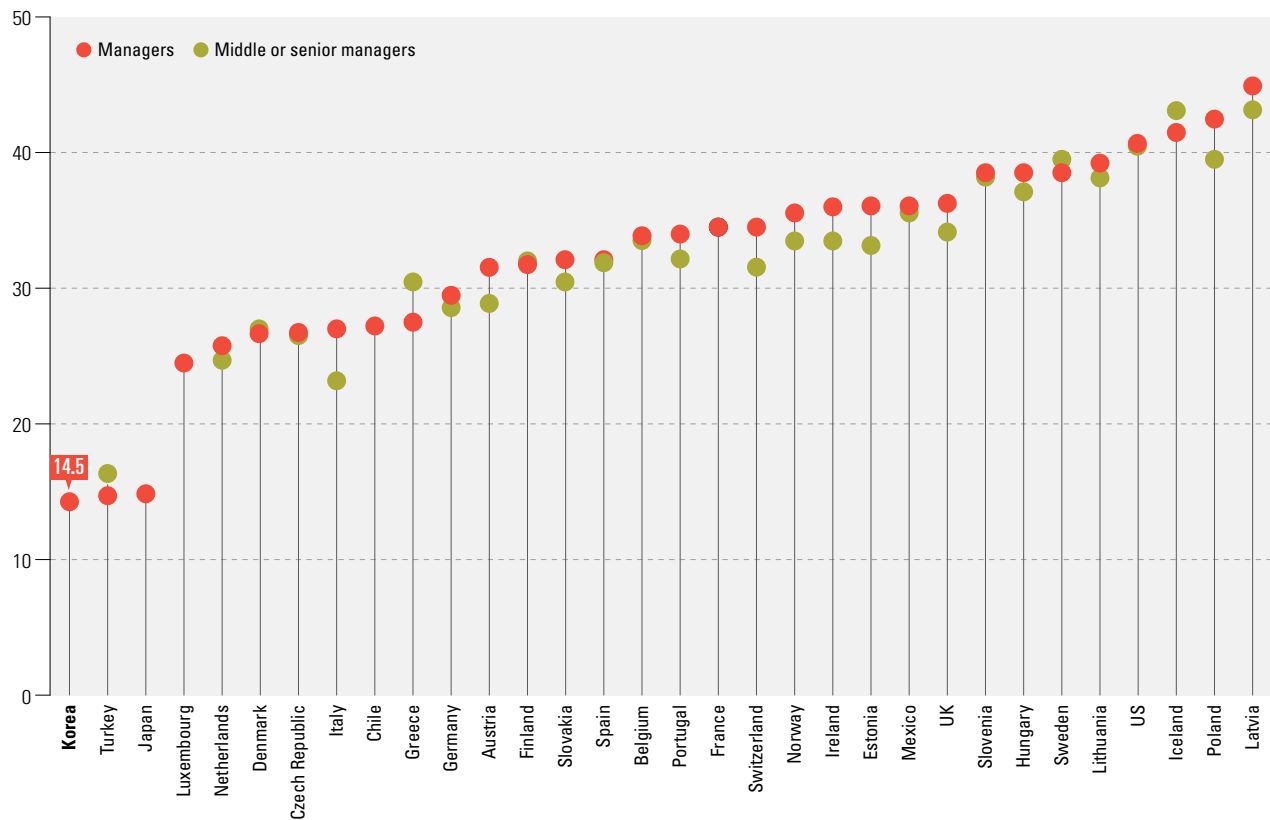
Source : UNSD, Labor Force Survey by nation, 2018
Note : Countries without data were excluded. Korea has only female ratio data among all manager.

proportion of women as middle or senior managers stood at 23.2%, 3.8%p less than the percentage of women to managers in total. Such trend is shown in numerous countries. The percentage of female middle or senior managers was higher than that of total female managers only in Greece, Denmark, Finland, Greece, Iceland, Sweden and Turkey.

Increase in crimes between intimates

Crimes may occur by relatives, friends, lovers, co-workers or superiors. The number of criminals who commit crimes against the persons whom they know have been maintained about 210 to 250 thousands between 2010 and 2018, which accounts for 20.6% to 25.8% of the total criminals. Cases in which the offender and victim are in an intimate relationship such as relatives residing together or lovers almost doubled from 23,261(2.5%) in 2010 to 44,693(4.6%) in 2018. Which was a noticeable increase differentiated from other relations.

Focusing on crimes that occur in intimate relationships, we disaggreagetd them into types of crimes. The sexual vio-

lence were occurred more within the intimate relationships while the violent crime were more by the relatives residing together. In particular, the number of violent criminals who committed crimes against their relatives increased almost two times from 12,857 in 2014 to 25,253 in 2015. This is partially because the Act on Special Cases Concerning the Punishment etc. of Child Abuse Crimes was enacted in 2014.

However, official crime statistics data only includes cases investigated by the police, prosecution or special judicial police. It is very likely that violence by spouses in household may be hidden. According to the 2019 Domestic Violence Survey, 10.3% of women and 6.2% of men experienced domestic violence from their spouses for the past one year. Domestic violence decreased from 2016 for both genders. However, the gender gap(women-men) increased from 3.5%p in 2016 to 4.1%p in 2019. In terms of types of domestic violence against women, sexual violence increased, whereas physical, psychological and economic violence decreased.

Status of criminals who commit crime against acquaintances; 2010~2018

(Unit: No. of persons, %)

Legend: Acquaintance total — Intimate relationship — Lover — Relative residing together

Lover ● Relative residing together ● Relative ● Friend ● Neighbor ● Work relationship ● Acquaintance ● Other

Criminal offender

11,779
11,482
31,041
13,652

Sex offender

365
278
1,092
593

Violent offender

7,299
9,244
26,646
7,816
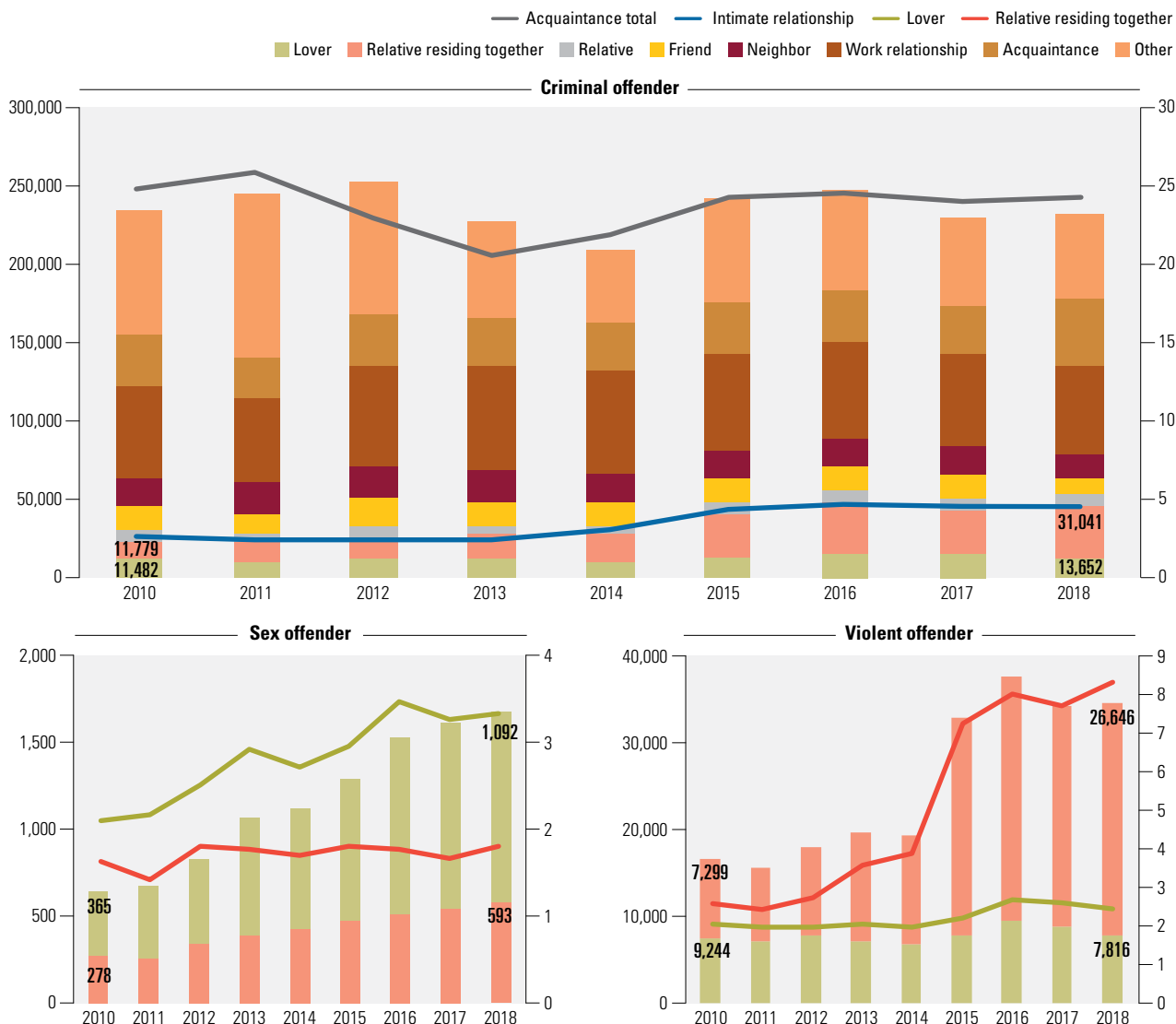
Source : Supreme Prosecutors' Office, Crime Analysis, each year

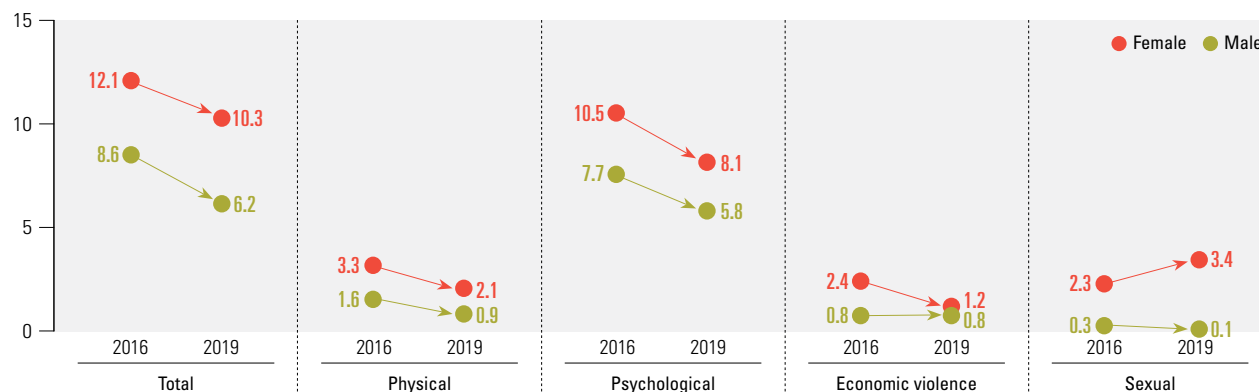Note 1 : Data on the relationship between criminals and victims were collected through the Korean Crime Statistics System(Won-pyo) for Criminals. The relationships are divided into the State, government officials, employer, employee, co-worker, friend, lover, relative residing together, other relative, trade opponent, neighbor, acquaintance, stranger, other and unknown. Except the State, government employee, stranger and unknown, other relationships(employer, employee, co-worker, trade opponent) are grouped as a business relationship.

Note 2 : The Supreme Prosecutor's Office collects the crime related raw data based on the Criminal Law and other relevant Special Acts, and classifies the crimes according to their own internal classifications. The Criminal Offenders include the criminals from property-related crimes, felony, and violent crimes. Murder, robbery and sex crimes are classified as felony while physical assaults or injury are violent crimes. Sex offenders were categorized as rapists until 2013. Please refer Special Prosecutor's Office's User Guide(2019) for more detailed information.

Experience rate of domestic violence from spouse for the past one year; 2016 and 2019

(Unit: %)

● Female ● Male

	Total	Physical	Psychological	Economic violence	Sexual
Female 2016	12.1	3.3	10.5	2.4	2.3
Female 2019	10.3	2.1	8.1	1.2	3.4
Male 2016	8.6	1.6	7.7	0.8	0.3
Male 2019	6.2	0.9	5.8	0.8	0.1

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

Note : Since there are some differences in the definition of violence types at different investigation points, the violence experience rates of the same item in 2016 and 2019 were calculated and compared.

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Ensure availability and sustainable management of water and sanitation for all

A variety of recently emerging epidemic issues remind us of the importance of water and sanitation. In particular, the risk of infection with the new coronavirus(COVID-19) greatly decreases if you comply with basic sanitation rules such as hand washing with clean water. However, many countries, especially in developing countries, lack a sufficient and clean water supply and basic sanitation facilities such as excreta treatment facilities, which cause health difficulties. According to the Sustainable Development Goals Report 2020 of the United Nations, the population using safely managed water services increased from 61% in 2000 to 71% in 2017. The population using safely managed sanitation services grew from 28% to 45% during the same period. However, a population of almost 4.2 billion are still using poor sanitation facilities. In addition, approximately half of them, 2 billion, are living in places without basic sanitation facilities. In 2017, the population living in a house with a hand washing facility for soap only amounted to 25% in sub-Saharan African countries and 28% in the least developed countries.

Korea's basic sanitation facility distribution rate is close to 100% and the water supply and sewerage system distribution rate exceeds 90%, which implies that Korea have less severe basic sanitation issue. However, there are growing concerns about water shortage resulting from climate change. Now, it is recognized that the country needs to take a long-term approach to the efficient distribution and utilization of water as a resource. Integrated water resources management is becoming important since it is directly connected to agriculture(SDG 2), industry(SDG 8, 12), energy(SDG 7), city(SDG 11) and environment(SDG 13 to 15) issues as well as sanitation. This is the reason why this concept first adopted at the 1992 Earth Summit is reflected in SDG 6.

Importance of IWRM as a resource

SDG 6 Target 6.5 is to: 'By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate'. Indicator 6.5.1's Integrated Water Resources Management(IWRM) is defined as 'a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems'. IWRM rests upon three principles in terms of the integrated management of economic, social and environmental aspects of water resources. The three principles are economic efficiency, social equity and ecological sustainability. It is recommended that stakeholders have participatory monitoring and reporting systems for IWRM implementation.

The UN Environment Program(UNEP) has developed and has been utilizing the IWRM indicator to evaluate the level of IWRM of each country. The IWRM indicator largely consists of four segments: enabling environment, institutions and participation, management instrument and financing. Enabling environment means whether a country has national policies, laws, plans, etc. for IWRM. Institutions and participation, an efficient system for IWRM implementation, refer to the participation of stakeholders such as public and private sectors and communities, and gender-sensitive direction. Management instruments refer to decision-making tools, management methods and activities based on rational information for efficient water resources management. Financing is related to budgets and fund raising for water resources development and management.

The UNEP uses a questionnaire survey consisting of 32 questions to prepare the IWRM indicator of each country. Questions include national level and sub-national level answers. In addition, they include basin level, aquifer level and transboundary level. Answers collected from countries are verified through a transparent review by relevant departments, civil society, etc. Answers are converted into points ranging from 0(implementation not yet started) to 100(fully implemented). This indicator of each country is surveyed every two years.

IWRM implementation by nation; 2017

Very low　Low　Medium-low　Medium-high　High　Very-high　No data
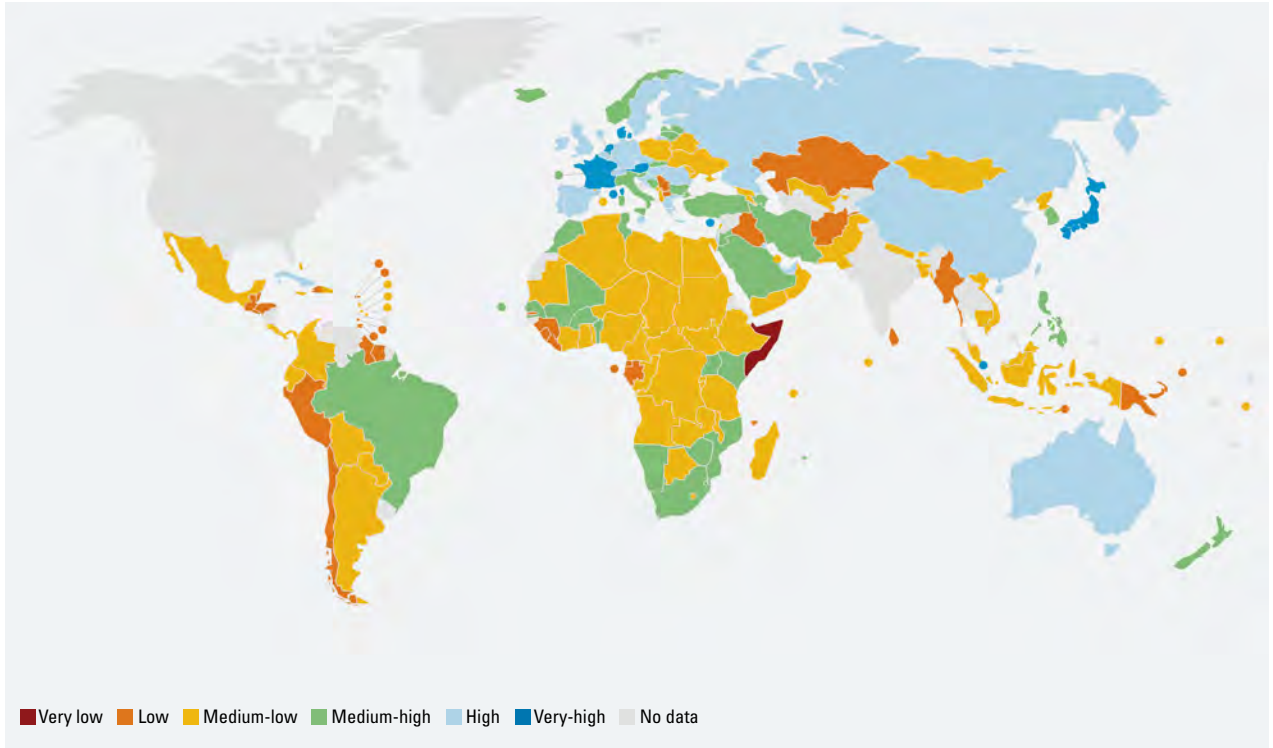
Korea's IWRM implementation rate by segment and comparison with other countries; 2017

(Unit: %)

Global
Korea
Japan
China
Russia

IWRM implementation rate

Enabling environment

Institutions and participation

Management instrument

Financing
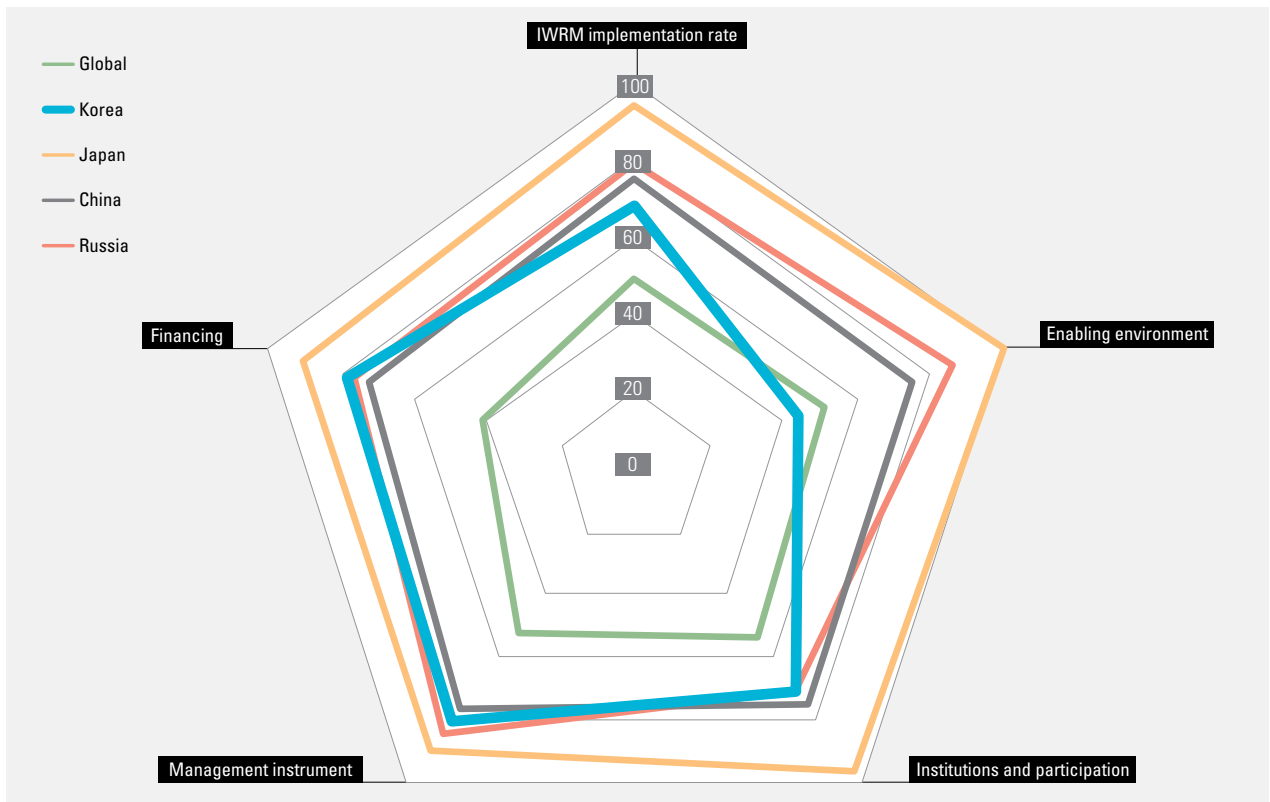
BOD of four major rivers in Korea; 2008~2019

(Unit: mg/ℓ)

— Hangang River(Paldang Dam)   — Nakdonggang River(Mulgeum)   — Geumgang River(Daecheong Dam)   — Yeongsangang River(Juam Dam)
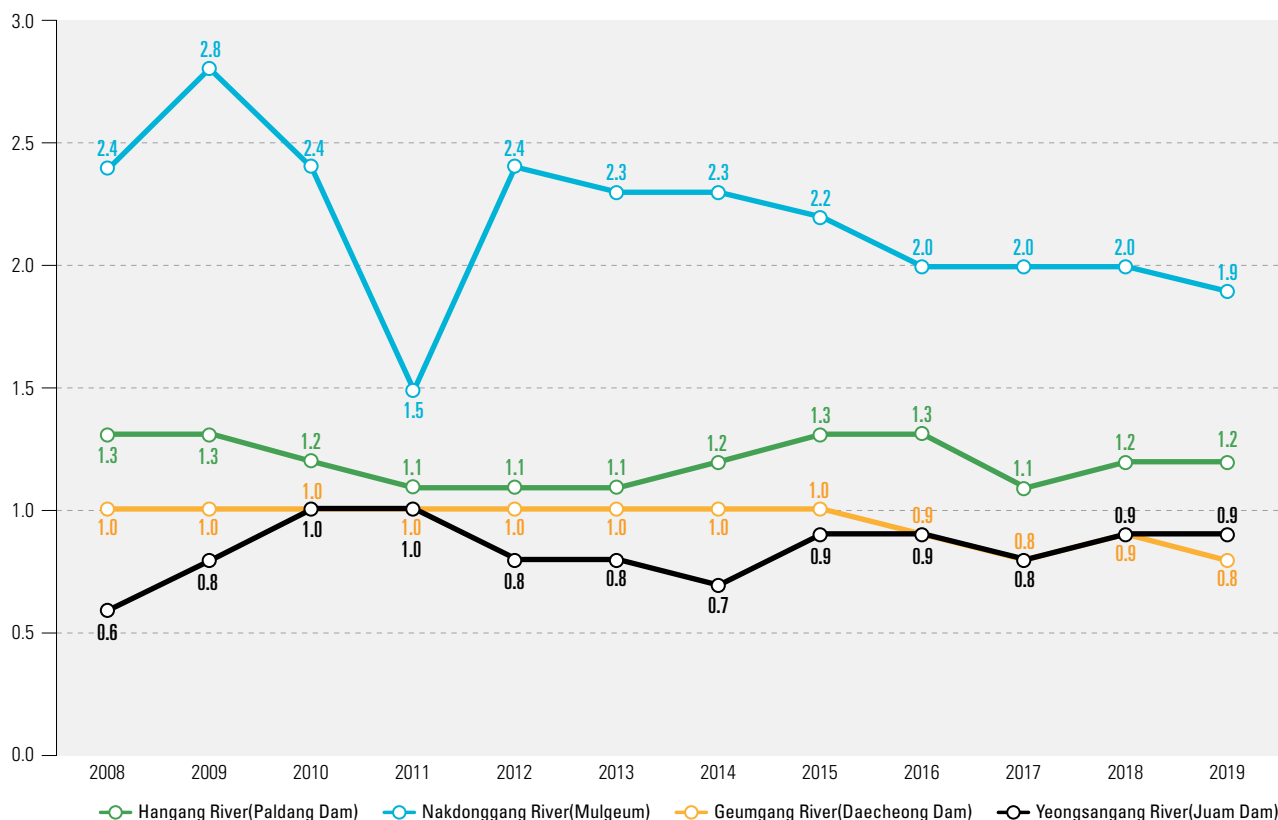
Source : Ministry of Environment, National Water Quality Data(K-Indicators, index.go.kr, retrieved on November 25, 2020)
Note 1 : Biochemical Oxygen Demand(BOD) is the amount of oxygen needed by aerobic biological organisms to break down organic material present in a given water amount. The higher the BOD, the more severe the water pollution.
Note 2 : Water samples of the four major rivers were collected at tap water intake areas.

Korea shows a medium-high level of IWRM

A total of 172 countries participated in the baseline report conducted in 2017. The global average implementation rate of IWRM stood at 49%(49 points out of 100). France, Singapore showed 100% implementation. Austria, the Netherlands, Denmark, Japan recorded over 90% implementation rates. Korea showed a rate of 68%, a medium-high level. Korea ranked 22nd among OECD member states and 36th in the world. Korea received the highest score, 80%, in management instrument, followed by 78% in financing and 70% in institutions and participation. On the other hand, it received 44% in enabling environment. Since then, Korea has been putting forth efforts to keep pace with the international IWRM trend. The Korean government is pushing for IWRM policies by enacting the Framework Act on Water Management in 2018 and setting up the Water Management Committee.

Water quality of the four major rivers is maintained at 'good' level

Identifying quality water bodies among the entirety of bodies of water of a nation is a good indicator to evaluate water resources sustainability. In 2017, the United Nations Environment Programme(UNEP) surveyed the percentage of quality water bodies in 48 countries. The result shows that 65% of the bodies of water has good water quality. Korea ranked 14th in the world, at 87.3%. Regarding biochemical oxygen demand(BOD) which is a representative standard used to evaluate the degree of water pollution, the BOD of the four major rivers of Korea is 2mg/ℓ or below, maintained at a 'good' level. The BOD of the Hangang River for the past 10 years is between 1.1 and 1.3mg/ℓ and the Geumgang River has a BOD between 0.8 and 1.0mg/ℓ, which indicate comparatively good water quality. However, the BOD of the Yeongsangang River increased from 0.6mg/ℓ in 2008 to 0.9mg/ℓ in 2019. The Nakdonggang River improved in BOD levels from 2.4mg/ℓ to 1.9mg/ℓ during the same period, but still shows higher levels of pollution than other rivers.

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, reliable sustainable and modern energy for all". Energy has been emerging as an important issue of the international society for the past 20 years. Consequently, it has now become an independent SDG. Its targets include universal access to modern energy, increasing the global utilization of renewable energy and doubling the improvement in energy efficiency.

With the COVID-19 outbreak, energy security has been reemerging as an important issue. As numerous countries sealed borders, trade decreased and the global oil demand greatly fell. The phenomena resulted from reducing modes of transportation and industrial facility closures caused by prolonged border closures and quarantine. Before the COVID-19 pandemic, 100 million barrels of crude oil was consumed globally every day. Now, the daily consumption of crude oil decreased by 29% to 71 million barrels. As fossil fuels are slowly stiffening, renewable energy is emerging as a stable energy source. Renewable energy is produced from the natural environment of regions or countries where energy consumers live. In addition, it does not need to rely on fuel resources, which should travel a long distance, on the contrary to fossil fuels. The International Energy Agency(IEA) reported that only the demand for renewable energy among numerous energy sources is showing a growth trend, a 1%p increase between 2019 and 2020, after the COVID-19 outbreak(Maeng, 2020).

## Energy efficiency has been gradually improving since 2011

Energy intensity is a measure to identify how much energy is used for production. It is used to evaluate the efficiency of energy used for economic activities. Energy intensity shows units of energy per unit of GDP*. It is defined according to a nation's industrial structure, added value, energy savings, energy utilization efficiency, etc. In other words, energy intensity decreases as energy efficiency increases, the propor-

tion of energy-intensive industries in the national economy diminishes, and higher value-added products are produced. In 2018, Korea's energy intensity stood at 0.185toe per unit of GDP. Numbers have been continuously decreasing, since 2011 which indicates increasing energy efficiency. However, data provided by the International Energy Agency(IEA) show that Korea's energy efficiency is still lower than other major countries.

Energy intensity; 2007~2019   (Unit: toe/GDP, thousands USD)
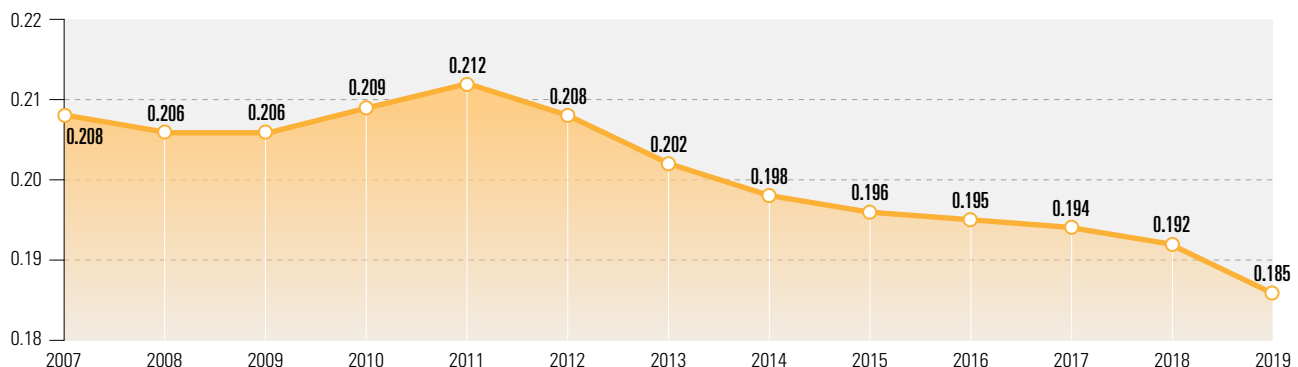
Source : Korea Energy Economics Institute, 2020 Yearbook of Energy Statistics

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* It refers to energy domestically supplied by production, import, export and a change in inventory. It is calculated as the sum of energy used to be converted into other energy and final energy used for industrial, transport, household and commercial uses. In the current National Energy Balance, petroleum refining corresponding to the use of crude oil and the production of petroleum products is not deemed conversion statistics, but petroleum products are considered as primary energy import.

Energy intensity of OECD member states; 2017 (Unit: MJ/USD)
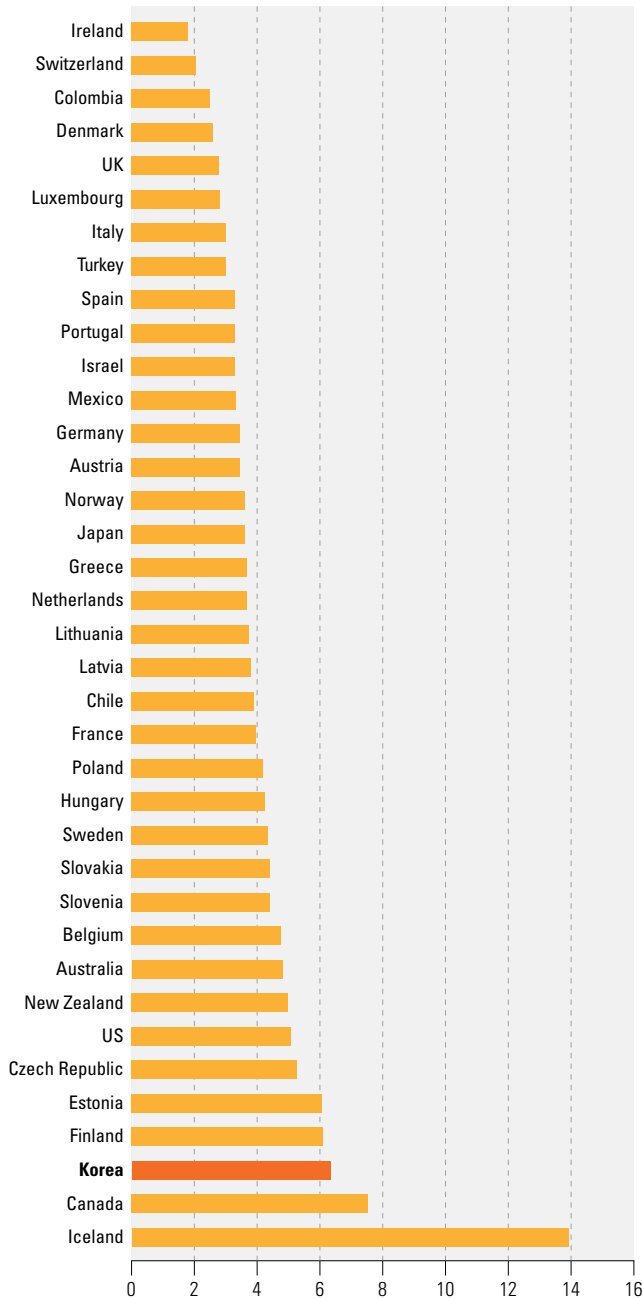
Source : IEA(unstats.un.org/unsd/energystats/data, retrieved on December 18, 2020)

Renewable energy in primary energy of OECD member states; 2018 (Unit: %)

Source: OECD iLibrary World energy balances(retrieved on December 18, 2020)

Increase in use of renewable energy

As a result of calculating the proportion of renewable energy in the primary energy as an indicator to monitor the expansion of renewable energy, renewable energy accounted for 2.4% of the primary energy in Korea in 2019. The proportion of renewable energy is gradually increasing in Korea, but is still the lowest among OECD member states, with 1.9% in 2018 Iceland has the highest rate, at 88.7%, among OECD member states. Renewable energy accounted for over 30% in seven countries.

Proportion of renewable energy in primary energy in Korea; 2000~2019 (Unit: %)
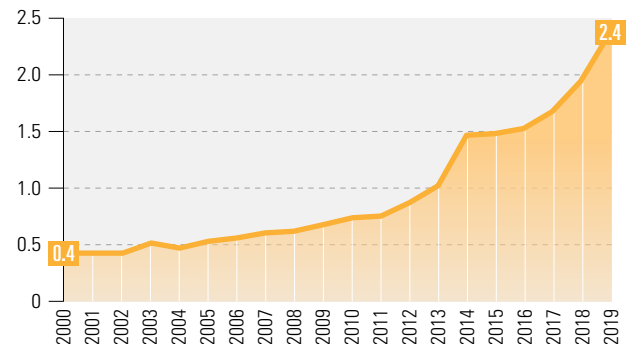
Source : OECD iLibrary World energy balances(retrieved on December 18, 2020)

Korea is promoting the use of new energy such as hydrogen energy and fuel cells as well as renewable energy. New and renewable energy supply is sharply increasing. New and renewable energy supply increased 1.2 times, from 5,608,776toe in 2007 to 6,856,284toe in 2010. It grew by 3.2 times, from 2007 to 2018(17,837,507toe). Accordingly, the proportion of new and renewable energy in primary energy rose from 2.4% in 2007 to 2.6% in 2010, and to 5.8% in 2018. In 2018, waste accounted for a majority of new and renewable energy at 50.9%, followed by bio at 24.9%, Solar Photovoltaic at 11.1%, hydropower at 4.0%, wind power at 2.9% and fuel cells at 2.1%. Waste, bio and Solar Photovoltaic energy supply is increasing much faster than other energy sources.

Production and supply of new and renewable energy; 2007~2018　　　　　　　　　　　　　　(Unit: toe, %)
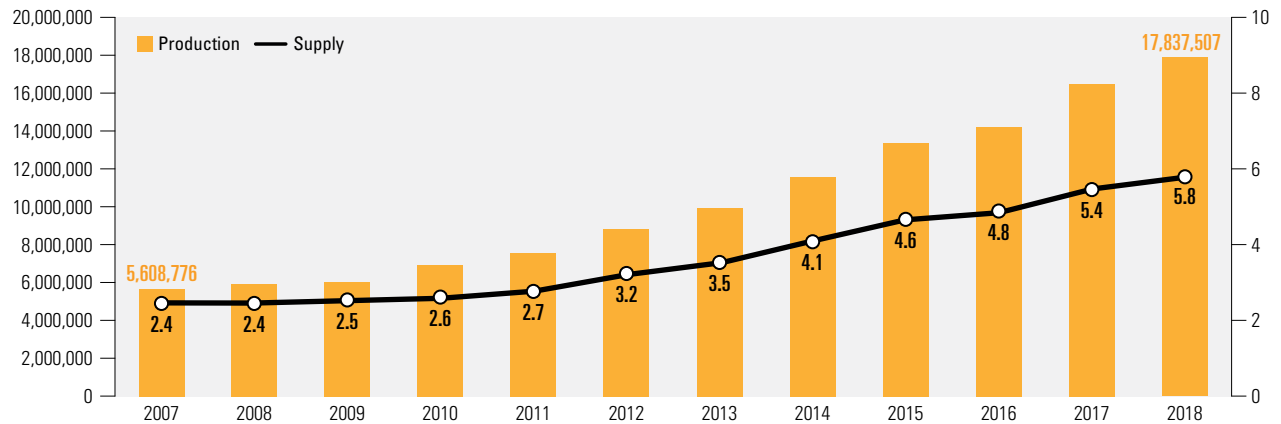
Source : Ministry of Trade, Industry and Energy/Korea Energy Agency, New & Renewable Energy Supply Statistics, each year
Note　: Renewable energy is collected from renewable resources such as sunlight, water, geothermal heat, rainwater and organisms. New energy is obtained by converting preexisting fossil fuels or collected from electricity or heat through chemical reactions of hydrogen, oxygen, etc.

New and renewable energy production by energy source; 2007~2018　　　　　　　　　　(Unit: toe)

Source : Ministry of Trade, Industry and Energy/Korea Energy Agency, New & Renewable Energy Supply Statistics, each year
Note　: IGCC(Integrated Gasification Combined Cycle)

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

SDG 8 has three pillars including economic growth, full and productive employment and decent work. Sustainable economic growth should be led by technological innovation and innovation. In addition, th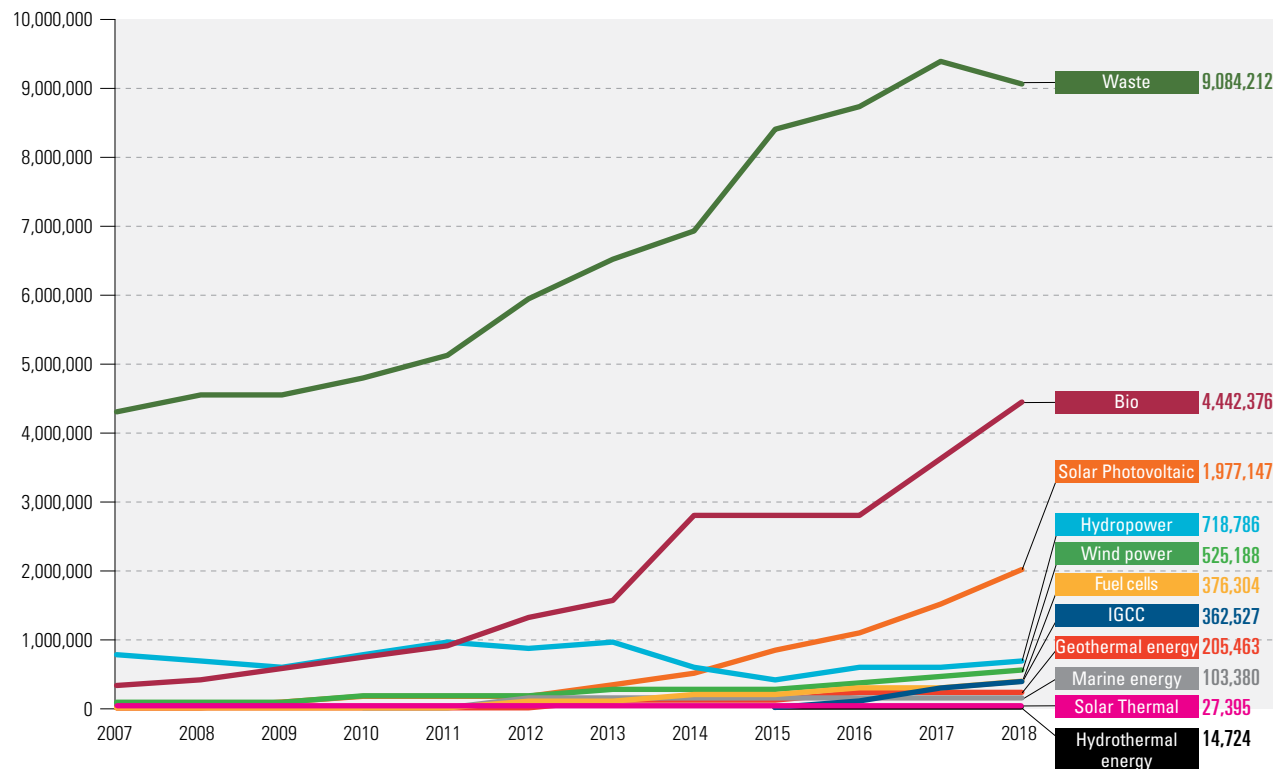is process should embrace vulnerable groups such as children, women and migrant workers. Ultimately, quality jobs will be provided for all people and decent work will enhance the quality of life. To achieve SDG 8, it is recommended to achieve the following: industrial diversification through innovative policies and economic growth with improved resource efficiency; achieving equal pay for work of equal value; ending child labor; ensuring productive employment by protecting labor rights for migrant workers; reducing youth unemployment rates; and creating quality jobs by promoting sustainable tourism.

However, the COVID-19 pandemic had a huge impact on economic growth and employment. Individual proprietors, fixed-term employees, women, etc. are suffering from more economic difficulties, whereas telecommutable jobs and non-contact industries not requiring human contact are revitalized fast or rather have a chance to grow. As a result, the economic gap is even widening than in the past. According to the Economically Active Population Survey of Statistics Korea, the number of the self-employed stood at approximately 5,560,000 in August 2020. About 100,000 lost their jobs(5,660,000 in August 2019).

Korea recorded negative growth in the first half of 2020 and showed a small rally in the third quarter

Uncertainty continued with the China-United States trade deal in 2019 and the COVID-19 pandemic in 2020, which slowed down global economic growth. Korea's real GDP per capita used to be maintained at around 2.0%. However, it showed negative growth throughout the first half of 2020, -1.4% in the first quarter and -3.2% in the second quarter. In the first quarter of 2020, consumption of services such as entertainment, culture, food and accommodations greatly declined with social distancing. In the second half, border closures considerably reduced exports. However, Korea showed a small rally, with a growth rate of 2.1%, in the third quarter. It appears that this phenomenon resulted from the base effect of negative growth of the first half year and slightly increasing exports particularly in semiconductors. Negative growth of the first and second quarters of 2020 were consistently shown in all OECD member states.

Quarterly growth of real GDP per capita of OECD member states; 2019~2020
(Unit: %)
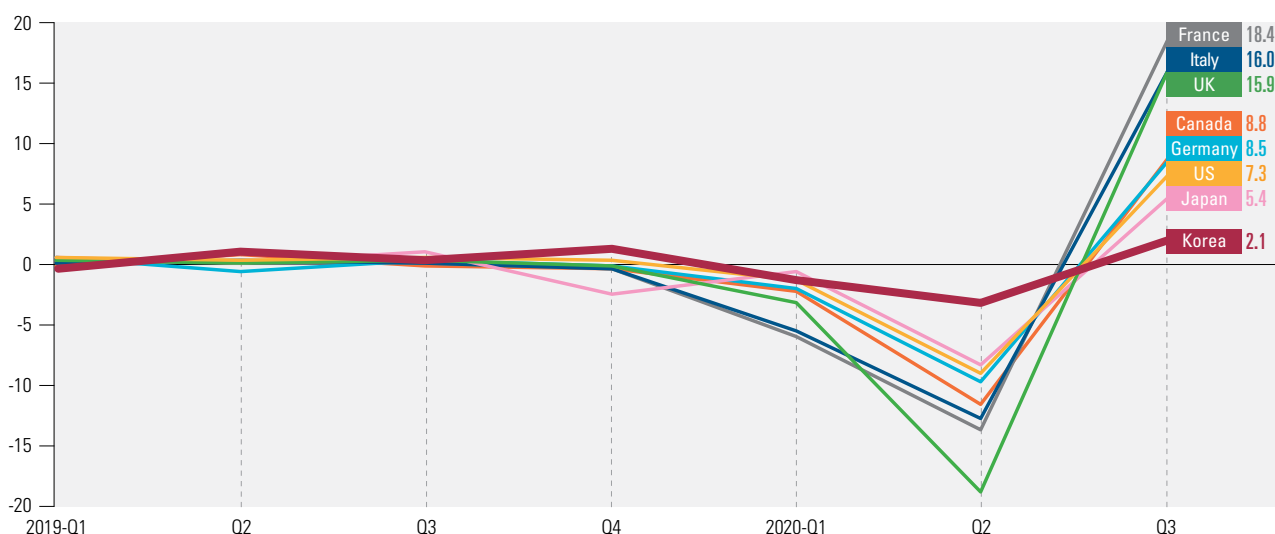
Source : OECD(http://stats.oecd.org, retrieved on February, 2, 2021)

Women's unemployment rates prominently increased after the COVID-19 outbreak

Korea's unemployment rates was 4.4% in 2000 and 4.0% in 2001, and have been in the range of 3.0% until 2019. However, after the COVID-19 outbreak in 2020, the rate increased again with 4.0%. The pandemic has a different in fluence in men and women. Men's unemployment rate had been constantly higher than women's one between 2000 and 2019. However, in 2020, women's unemployment rate was higher than men with 4.0% and 3.9% respectively.

According to the monthly data on unemployment, there were three months when women's unemployment rates were higher than men in 2019, which was January, February, and December. In 2020, however, in only three months, men's unemployment rates were higher than women, which was May, September and October. In other months, women

Unemployment rates of Korea; 2000~2020 (Unit: %)
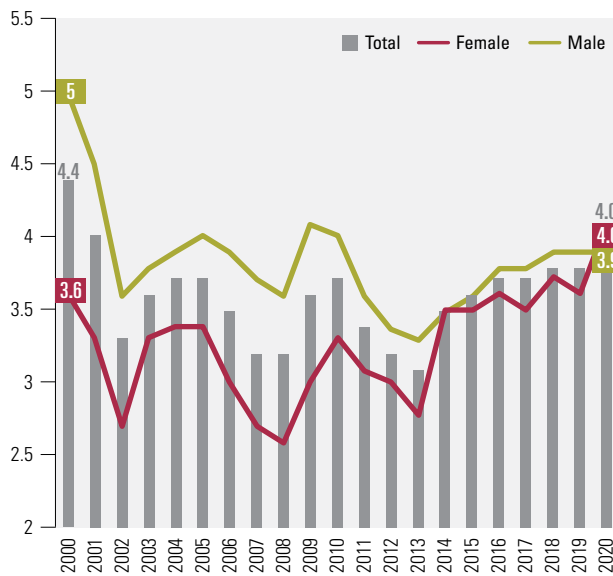
Source : Statistics Korea, Economically Active Population Survey, each year

Monthly unemployment rates of Korea; 2019~2020 (Unit: %)
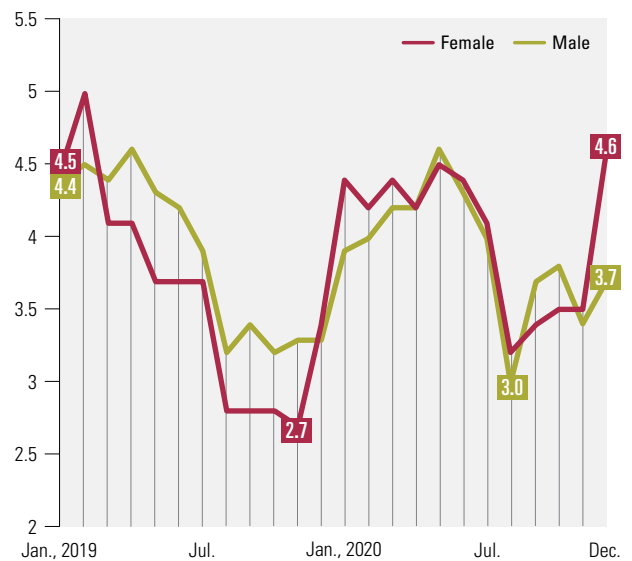
Source : Statistics Korea, Economically Active Population Survey, December 2020

Real average hourly wage in Korea; 2006~2019 (Unit: KRW)
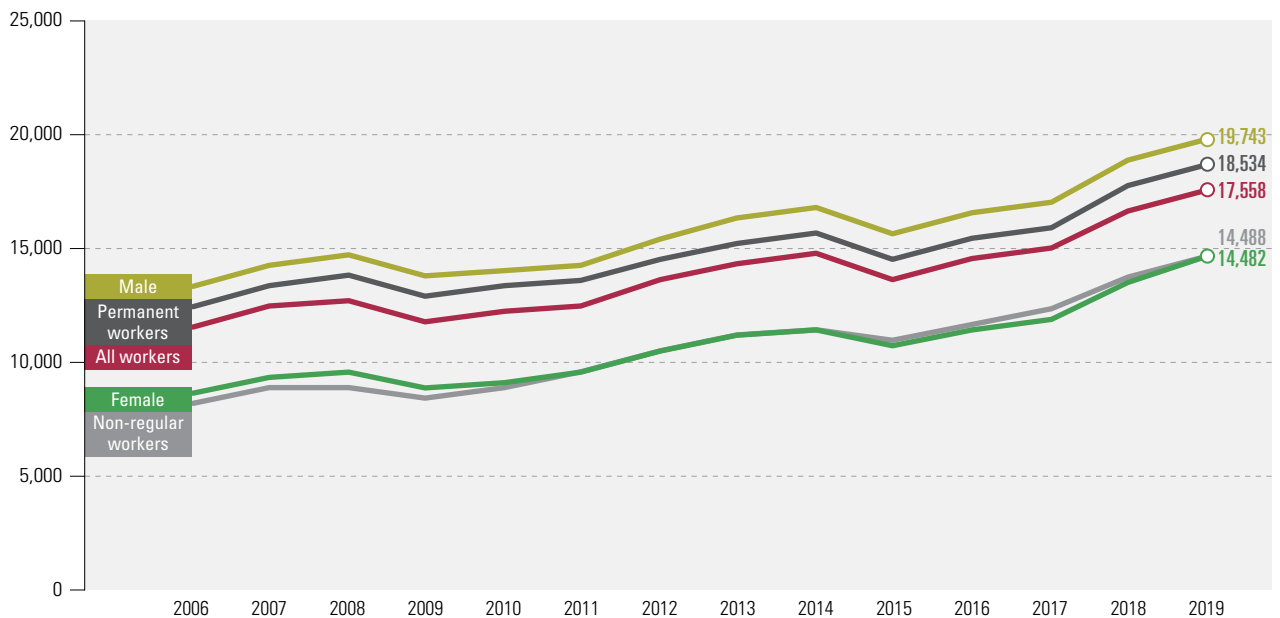
Source : Ministry of Employment and Labor, 2019 Survey on Working Conditions Employment Type
Note : These figures are realized through dividing the average hourly wage by the Consumer Price Index(Statistics Korea, 2015=100).

were more unemployed than men. This phenomenon occurred since the entire job market was depressed particularly for women(Korea Women's Development Institute, 2020).

The average hourly real wage of workers increased by KRW 5,584 for the past 10 years, from KRW 11,974 in 2009 to KRW 17,558 in 2019. In 2019, the average hourly real wage of men stood at KRW 19,743, which was KRW 5,261 higher than that of women, which stood at KRW 14,482. Non-regular workers received KRW 14,488 per hour, which was KRW 4,046 lower than regular workers(KRW 18,534).

Safe working condition

The total number of industrial accident victims including diseases and accidents occurred at workplace, in 2019, increased by 6,937(6.8%) and reached 109,242(102,305 in 2018). The number of deaths from industrial accidents decreased by 122(-5.7%) and was recorded at 2,020(2,142 in 2018). Among them, the number of deaths from accidents stood at 855, the lowest level since the statistical surveys began. Deaths from disease also decreased by 0.5% year-on-year, to 1,165 persons in 2019(1,171 persons in 2018).

Compared to OECD member states, Korea has a high number of fatal injuries among 100,000 workers. Based on the latest data, Korea had 5.09 deaths per 100,000 workers (2018), the fourth after Turkey(7.52 in 2016), Mexico(7.46 in 2017) and the United States(5.24 in 2016).

Fatalities per 100,000 population of the OECD countries
(unit: No. of persons)
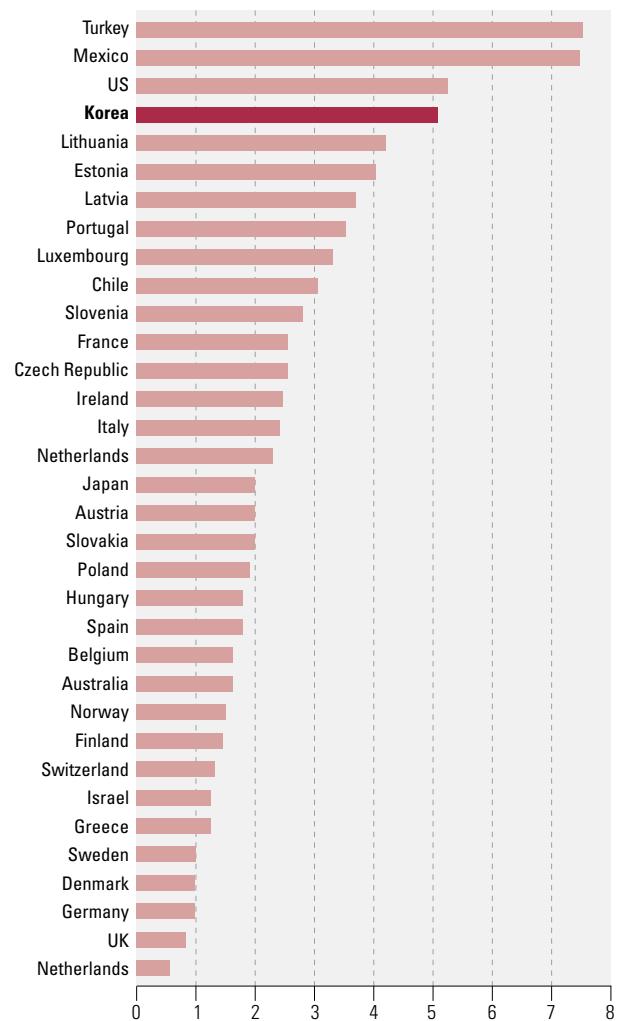
Source : ILO, http://ilostat.ilo.org
Note : The reference year varies from country to country. It is 2016 for Austria, Estonia, Greece, Hungary, Lithuania, the United States, Sweden, Spain, Slovakia, and Turkey, 2017 for Mexico, and Australia, and 2018 for Israel, Japan, Chile and Korea. For the rest of countries, it is 2015.

Fatal and non-fatal industrial accidents in Korea; 2001~2019
(Unit: No. of persons)
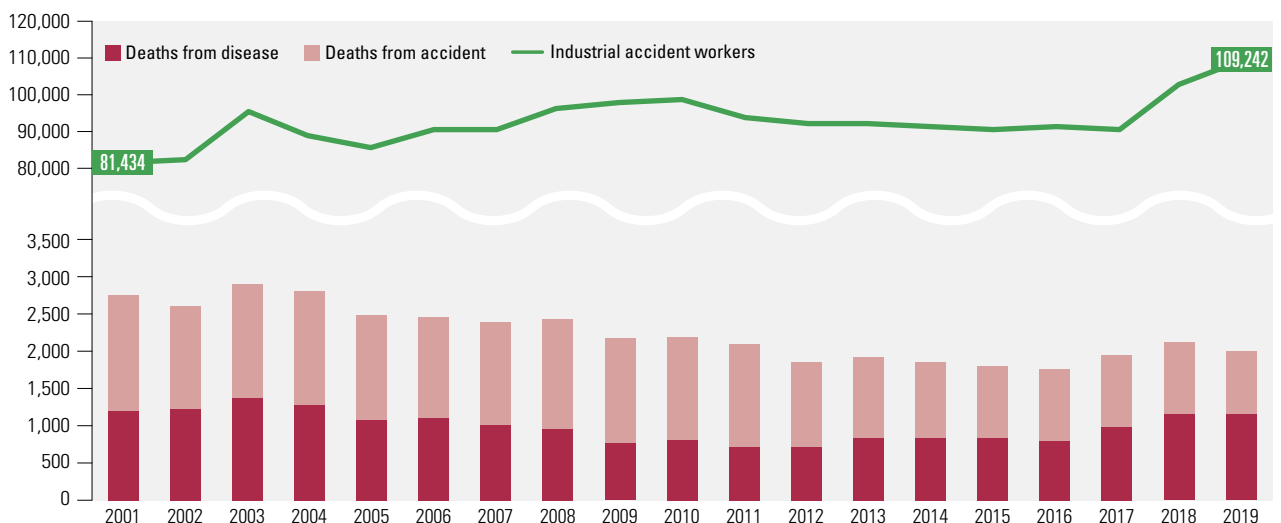
Source : Ministry of Employment and Labor, Industrial Accident Incidence, each year

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

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

SDG 9 includes the following targets enhancing added value through industrial development; investment in technology and education for the application of science, technology and innovation; and ensuring resources to achieve inclusive and sustainable development goals based on the targets previously mentioned. SDG 9 is founded on 'Inclusive and Sustainable Industrial Development(ISID)' of the Lima Declaration adopted by the UN Industrial Development Organization(UNIDO) in 2013. Manufacturing plays an important role in economic development and job creation. However, the growth of the manufacturing industry has been slowing down in recent years. In addition, the trade deals among the leading countries and the global supply chains damaged by the COVID-19 pandemic had a huge impact on the global manufacturing industry. It is not just a matter of manufacturing. Other industries including air transport, accommodation, food service, wholesale, and retail are faced with a serious crisis due to the COVID-19 pandemic.

With rapidly rising demand for non-contact businesses, the transition to a digital economy is accelerating in a variety of fields encompassing telecommuting, video conferencing, online education, online shopping and telemedicine. Digital services are also newly growing. In addition, biohealth including pharmaceuticals and medical instruments are newly emerging as a growing industry. It is important to develop COVID-19 vaccines and treatments and find sustainable competitiveness through technological innovation in preexisting industries, so as to revitalize the economy. Now our daily lives are changing with this national crisis. It is more important than ever to narrow the digital divide in service accessibility through a variety of policies for persons isolated from digital benefits.

Rapid decrease in air passenger and freight volume resulting from the COVID-19 outbreak

Air transport is one of the industries most affected by the COVID-19 pandemic. Domestic and international travel restriction measures reduced the global air transport demand. Accordingly, airlines canceled their services and air traffic sharply decreased. The year-over-year decrease in rates of passenger traffic of Korea have been maintained at over 50% since March 2020. In particular, passenger traffic in April declined by 80.3% compared to the same month of the previous year. Freight traffic also shows a similar picture with somewhat difference in rates. Since freight traffic decreased by 35.1% in April, its year-on-year decrease rates have been maintained the trend. The decline in passenger and freight traffic, however, has slightly rebounded in the fourth quarter in 2020.

Change in job market by industry

Manufacturing industry has played a key role in economic growth in Korea over the last several decades. However,

Change rate of air passenger and freight volume; 2019~2020 (Unit: %, year-over-year)
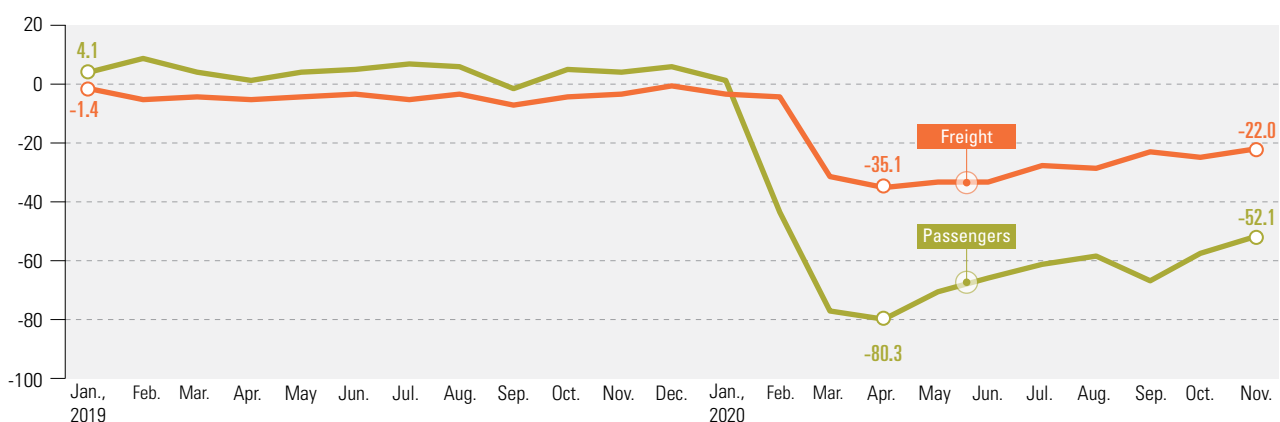
Source : Korea Airports Corporation, Incheon International Airport Corporation, Air Traffic Statistics(Korean Statistical Information Service, https://kosis.kr, retrieved on December 20, 2020)
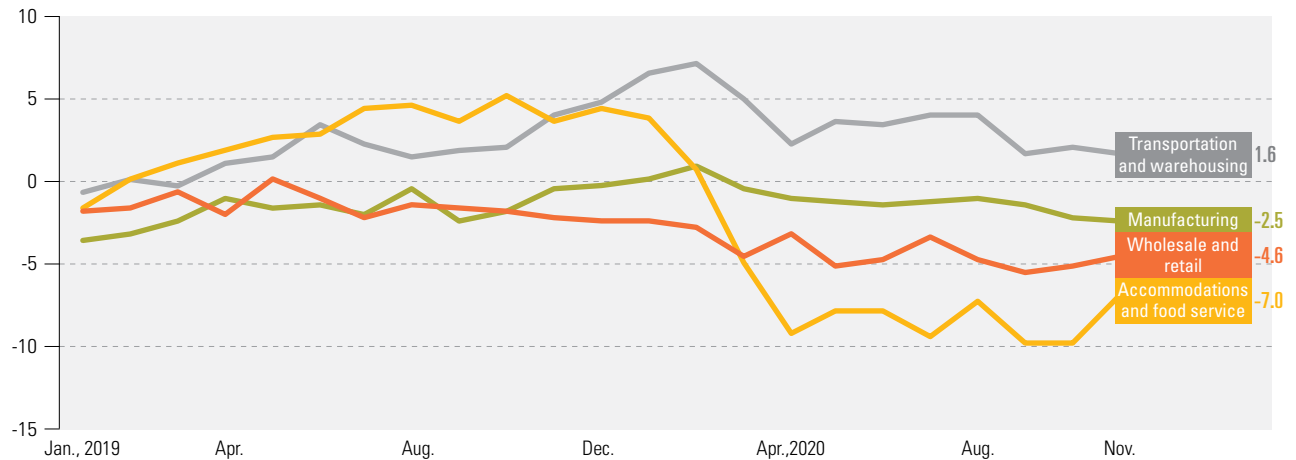
in recent days, the industry has stagnated in its domestic product and employment due to increasing uncertainties in global economy. In particular, the industry is currently experiencing a slump in employment according to the Labor Force Survey(Kim, 2019). In particular, the number of people employed in manufacturing greatly decreased with the slow growth of manufacturing in 2019. The job market is still on the decline in 2020. The COVID-19 pandemic had a negative impact on this phenomenon too. In particular, accommodation and food service activities have been in decline since March 2020. In April, the change rate of employed people fell to 9.2% compared to the same month of the previous year. Since then, the numbers are not recovering. Wholesale and retail businesses are also showing a bigger decline in 2020. From September to November,

the number of people employed in wholesale and retail businesses decreased by more than 4%. On the other hand, the number of people employed in transportation and warehousing, in February 2020, greatly increased by 7.0% year-on-year since the number of couriers skyrocketed with social distancing. The growing trend has been maintained thus far.

Korea ranks 2nd in R&D expenditure

Korea's investment in R&D has been dramatically increased. It amounted to KRW 85.7287 trillion in 2018, seeing eight-fold increase from KRW 13.8485 trillion in 2000. The number of full-time equivalent(FTE) researchers has also increased significantly from 108,370 in 2000 to 408,370 in 2018. This growth has made Korea ranked at 2nd highest among the OECD countries concerning the R&D expendi-

Total R&D expenditures and number of full-time equivalent researchers; 2000~2018
(Unit: KRW 100 million, thousand persons)

ture as a proportion of GDP with 4.5% in 2018. By sources, the proportion of private and foreign funds increased steadily from 73% in 2000, and the ratio of private and foreign funds to government and public sources remained high at 79:21 in 2018. The government and public funds amounted to KRW 17.9 trillion(20.8%) and 0.5 Trillion(0.6%) respectively while the private and foreign funds were KRW 65.7 trillion(76.6%) and KRW 1.7 trillion(1.9%) respectively.

More than 60% of total R&D expenditure has spent on the six future promising technology(6T), which will lead the future of humanity as next-generation industries. The term refers to Information Technology(IT), Bio Technology(BT), Nano Technology(NT), Environment Technology(ET), Culture Technology(CT) and Space Technology(ST). Investment in 6T greatly increased from KRW 13,781.9 billion in 2004 to KRW 56,360.7 billion in 2018. In particular, IT(35.8%), NT(10.2%) and ET(9.3%) made up over half(55.3%) of the total.

R&D expenditure as a proportion of GDP of the OECD countries; 2000~2018   (Unit: %)
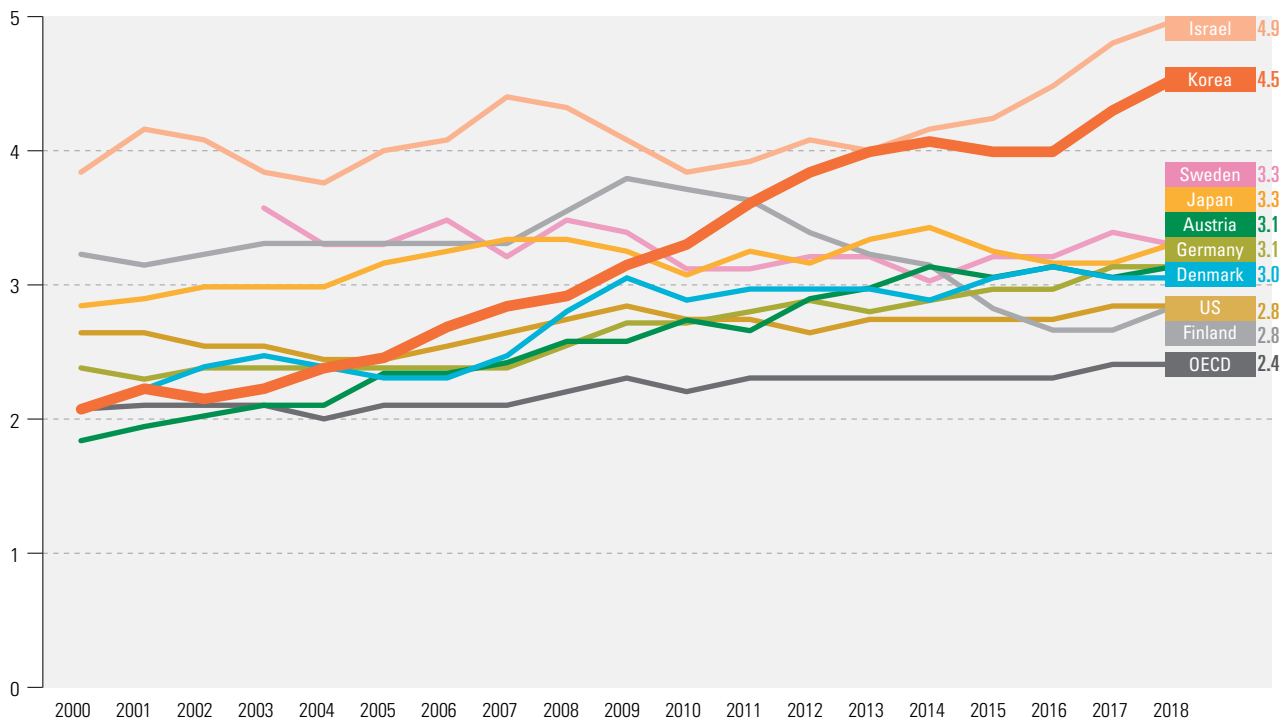
Source : OECD, Main Science and Technology Indicators 2020

Investment in future promising technologies(6T); 2004~2018   (Unit: KRW 100 million, %)
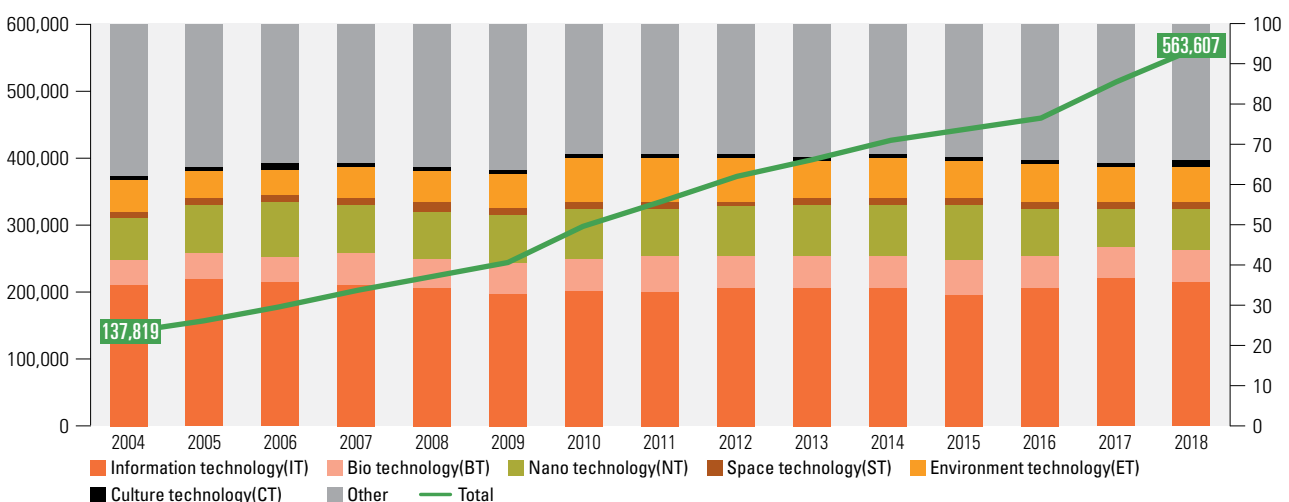
Source : Ministry of Science and ICT, 2018 R&D Activities Survey Report

10 REDUCED INEQUALITIES

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Reduce inequality within and among countries

SDG 10 aims to reduce all inequalities on the basis of gender, age, disability, race, class, religion and opportunity as well as domestic and international income inequalities. SDG 10 targets include the following: reducing income inequalities, which is the key of inequality reduction; ending discriminatory laws, policies and practices; strengthening social protection policies; improving monitoring and regulation of global financial markets and institutions; enhancing representation of developing countries; responsible and well-managed migration policies; implementation of the principle of preferential treatment for developing countries; and expansion of ODA for developing countries. Achieving this goal requires disaggregated data showing the inequality by population group.

According to David et al.(2020), the COVID-19 pandemic will cause more serious damage on the poor and the underprivileged. As a result of analyzing the influences of the epidemics in the 2000s[SARS(2003), H1N1(2009), MERS(2012), EVD(2014), ZIKA(2016)] on income distribution for five years after an outbreak, it was found that the Gini coefficient increased by almost 1.5% despite of the government's redistribution policies. The government policies have varied depending on the level of education. The employment of people with lower levels of education decreased by over 5% five years after an epidemic, whereas people with higher levels of education were barely affected.

In 2019, income inequality reduced

The Gini coefficient is a number aimed at measuring the degree of income inequality and disparity. It is a representative measure of inequality in an income distribution between different classes. The Gini coefficient ranges from 0 to 1. The closer to 0, the more equal. The closer to 1, the more unequal. The Gini coefficient on disposable income prepared on the basis of the Survey of Household Finances and Living Conditions of Statistics Korea on the recommendation of the OECD continuously decreased from 2011 to 2015. In 2016, it increased to 0.355. The Gini coefficient recorded 0.354 in 2017 and 0.345 in 2018 and 0.339 in 2019. The Gini coefficient on disposable income is calculated by adding public transfer income and subtracting public transfer expenditure from market income, reflecting the effects of the government's redistribution policies. According to the calculations, the government's policy effects increased from 0.030 in 2011 to 0.057 in 2018 and 0.065 in 2019. In 2017, the Gini coefficient on disposable income stood at 0.390 in the United States and 0.357 in the United Kingdom, which shows higher level than Korea while Germany and France stood lower at 0.289 and 0.292 respectively.

Relative poverty rates are high in the elderly

A relative poverty rate shows the proportion of the poor receiving 50% less than the average household income in the total population. High relative poverty rates mean that there are a lot of relatively poor people in a nation. As a result of calculating the relative poverty rate based on the results of the Survey of Household Finances and Living Conditions of

Gini coefficient in Korea; 2011~2019
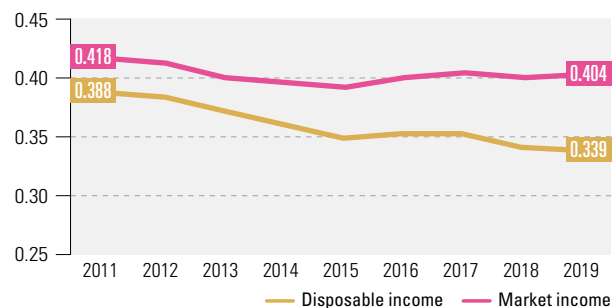
Source : Statistics Korea/The Bank of Korea/Financial Supervisory Service, 2019 Survey of Household Finances and Living Conditions

International comparison on Gini coefficient; 2017
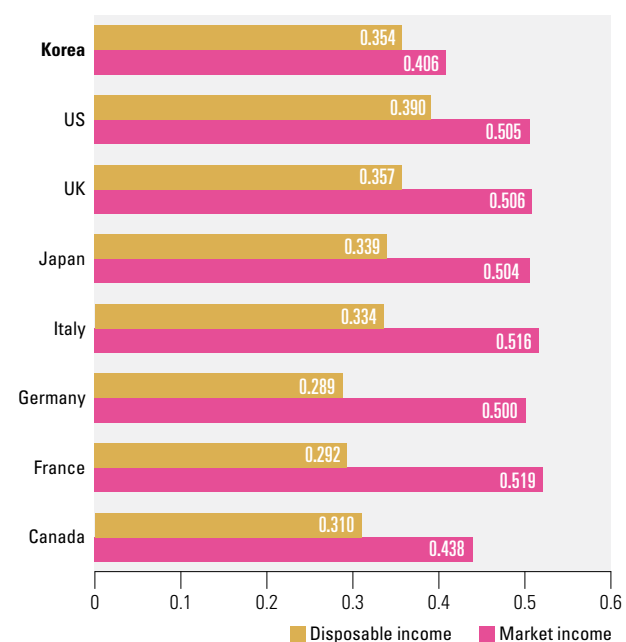
Source : OECD, http://stats.oecd.org, retrieved on November 30, 2020
Note : 2015 data are used for Japan.

Relative poverty rate by age group; 2011, 2019

(Unit: %)
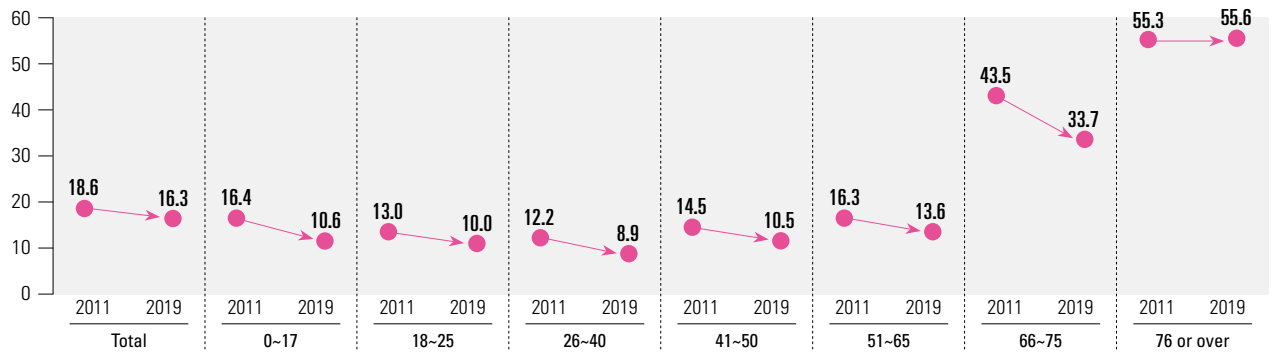
Source : Statistics Korea/The Bank of Korea/Financial Supervisory Service, Household Finances and Living Conditions Survey, each year

Statistics Korea, it was found to be 16.3% in 2019. It is the lowest result since the statistical surveys began in 2011. By age group, the number of the poor was the highest in those 76 years old or over at 55.6%, followed by 66 to 75 years old at 33.7% and 51 to 65 years old at 13.6%. The relative poverty rate of persons aged between 26 and 40 was relatively low, at 8.9%.

13% of Work and Visit status workers pay recruitment fees

SDG 10 includes reducing the excess burden of employment cost or remittance charges on migrant workers in order to ensure equal opportunities. In October 2020, a total of 480,630 foreigners with employment visas are staying in Korea. Among them, only 45,055 people are professional workers such as professors and language instructors. 465,575 people, accounting for 90.6%, has Employment Permit System(E-9) status or Work and Visit(H-2) status as compatriots in China or CIS(Commonwealth of Independent States) countries.

Foreign workers who come to Korea through the Employment Permit System already have a determined job in Korea due to the characteristics of the system. They may not have to pay recruitment fees although they may pay some expenses to prepare for a test or study Korean during the process of being selected for the Employment Permit System. However, as of 2018, foreigners with Work and Visit(H-2) status who find a job after entering Korea may pay job matching costs. According to the Survey on Immigrant's Living Conditions and Labour Force(2018) of Statistics Korea, 13.1% of the respondents with H-2 status answered that they have paid recruitment fees. The remaining 86.9% said they did not pay. The survey results show that a majority(59.2%) of the respondents who paid recruitment fees answered that they paid less than KRW 150,000 for

Size of recruitment fees paid by persons with Work and Visit(H-2) status; 2018

(Unit: %)
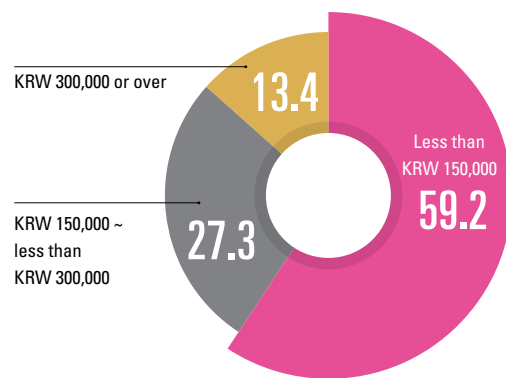
Source : Statistics Korea, 2018 Survey on Immigrant's Living Conditions and Labour Force

job placement, followed by KRW 150,000~less than KRW 300,000(27.3%) and KRW 300,000 or over(13.4%).

EPS workers wire transfer 63.9% of their income

Regarding the income levels of immigrants working in Korea, those with a monthly income of KRW 2 to 3 million accounted for a majority at 51.3% as of May 2019, followed by KRW 1 to 2 million(27.2%) and over KRW 3 million(16.3%). They were found to wire transfer 24.4% of their income to home and abroad. It was the second largest expenditure item, following living expenses(41.6%). As a result of analyzing migrant workers' spending by status of stay, those with non-professional employment(E-9) status who obtained a job through the Employment Permit System were found to remit 63.9% of their income on wire transfers. This result was much higher than their living expenses(19.5%) and than the spending on wire transfer of professional workers(25.5%), and that of foreign workers with Work and Visit(H-2) status(14.1%). Approximately

Income expenditure of immigrants by visa status; 2019   (Unit: %)

| | 2.6 |
| | 3.2 |

Legend: ■ Wire transfer to home and abroad ■ Living expenses ■ Housing expenses ■ Saving ■ Other

Chart categories: Non-professional employment(E-9), Work and Visit (H-2), Professional worker (E1~E7), International student (D2, D4, 1, 7), Overseas Korean (F4), Permanent residency (F5), Marriage immigrant (F6)
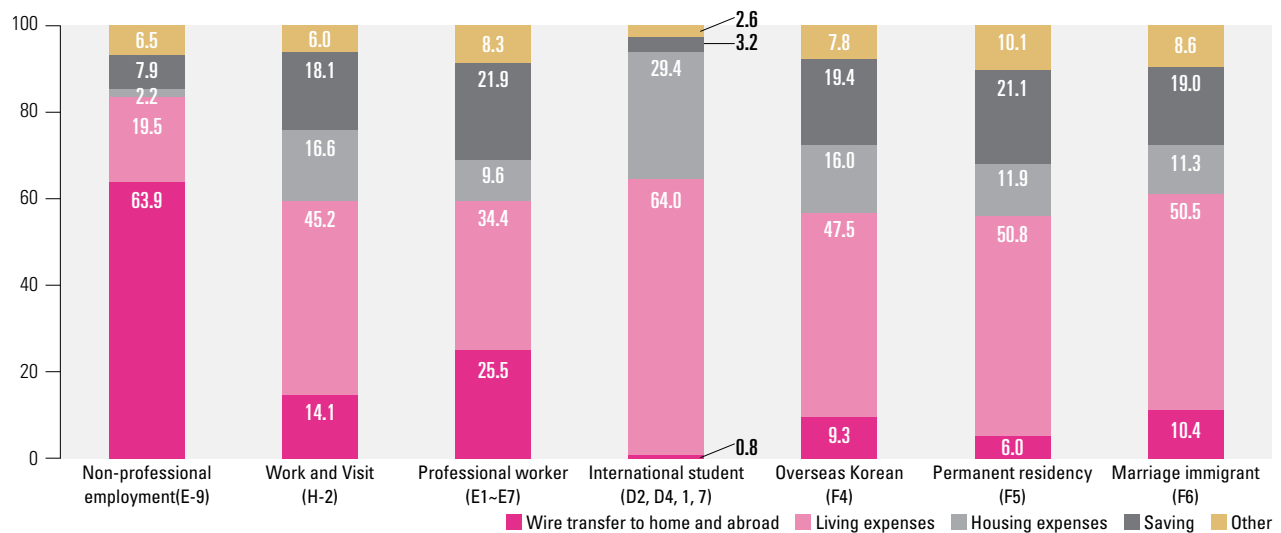
Source : Statistics Korea, 2019 Survey on Immigrants' Sojourn and Employment

38.7% of migrant workers(about 507,000) were found to wire transfer money to their families or relatives living in Korea or abroad. A majority(22.5%) of them send the money 12 times a year, followed by 7 to 11 times(3.9%) and 6 times(2.5%). 21.6% of them, which make up the largest part, sent KRW 10 to 15 million abroad per year, followed by KRW 20 million(19.3%) and KRW 15 to 20 million(17.9%).

Decrease in foreign workers due to COVID-19

Non-professional foreign workers(E-9, H-2) accounting for a significant portion of Korea's job market decreased by 6.7% in E-9 and 15.8% in H-2 compared to October 2019 due to the COVID-19 pandemic. This phenomenon is clearly shown in the monthly immigration data of 2020. Foreign workers who entered Korea through the Employment Permit System dramatically fell after February 2020.

Now the numbers do not even reach 10% of the number of the previous year. Although the number of foreign workers who entered Korea through the Employment Permit System increased to 14,639(12,454 previous year) in January 2020, the number decreased to 13,608(16,373 in February 2019) in February. Thereafter, the number dramatically fell to 1,376 in June, and 575 in October. 9,735 entered Korea in October 2019. A decrease in foreign workers caused difficulties to Korean small- and medium-sized enterprises and to agricultural and fishing industries that find manpower through the Employment Permit System. To overcome such difficulties, the government extended the work permit period of all foreign workers residing in Korea by 50 days and temporarily allowed seasonal work in agriculture and fishery. In addition, the government provides loans for foreign workers so that they can earn a living during prolonged stay in Korea.

Number of foreign workers with E-9 visa entering Korea; 2019~2020   (Unit: No. of persons)

Legend: ■ 2019 ■ 2020

Months: January, February, March, April, May, June, July, August, September, October
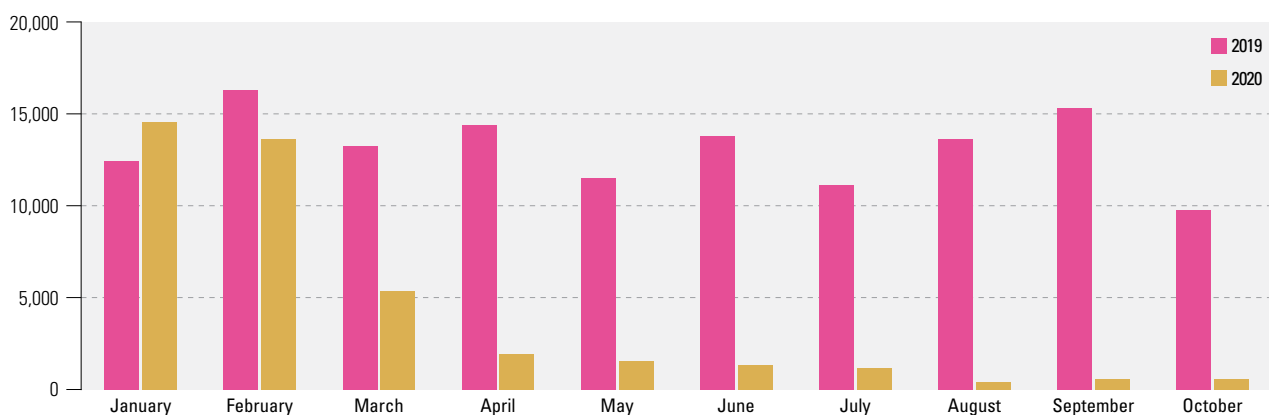
Source : Ministry of Justice, Monthly Report of Immigration/Foreigner Policy Statistics, January~October 2020

11 SUSTAINABLE CITIES AND COMMUNITIES

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

More than half of the world population are living in only 3% of the global area; cities. Cities are leading the economic growth, accounting for 60% of the world's GDP. Accordingly, cities spend 60~80% of the total energy and their carbon emissions make up over 70% of the total emissions. Cities have a huge impact on the environment.

The COVID-19 pandemic is threatening cities and citizens. Over 90% of global COVID-19 cases are confirmed in urban areas. In particular, the pandemic is seriously damaging densely populated slums where approximately 1 billion people live(UN, 2020b). Now problems raised during this process are leading the change in a perspective on cities. As COVID-19 keeps spreading, Korea faces a variety of issues such as the lack of public medical facilities and differences in the capacity to respond to a depressed local economy and disasters between local governments. Now the government is seeking out ways to resolve such issues. As people stay home longer due to social distancing and telecommuting, there has been a growing interest in the residential environment. This phenomenon has been leading to a rising demand for a healthy environment for living.

The roles of cities and civil society are important in this regard. Sustainable urban planning for vulnerable groups and pragmatic solutions for preparing various disaster situations are quired. SDGs can provide guidance for this. In particular, SDG 11 includes the following: ensuring access for all to 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. It emphasizes enhancing the capacity for participatory, integrated and sustainable human settlement planning. The international society tries to improve the residential environment through solutions led by local governments and communities. They are also working on reducing the influence of the pandemic on the economy and suggesting support plans to recover depressed cities by providing city data for evidence-based decision making(UNHABITAT, 2020).

1.06 million households living under the minimum residential standards

Households not meeting the minimum residential standards refer to those households living in places that fail to satisfy the residential area, bedroom and facility standards.

Households living under the minimum residential standards; 2006 and 2019 (Unit: %)
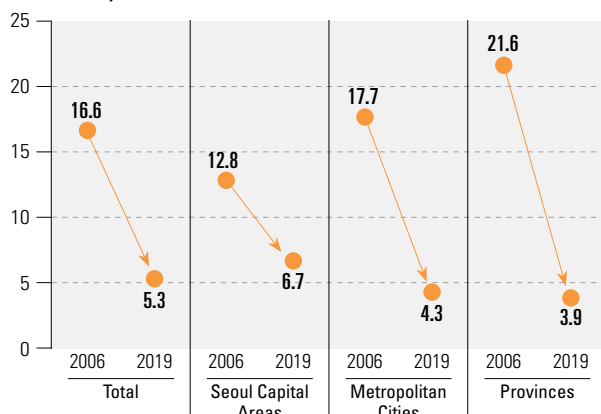
Source: Ministry of Land, Infrastructure and Transport, 2019 Korea Housing Survey Report
Note : As Seoul, Incheon and Gyeonggi-do were included in the Seoul Capital areas, Incheon was excluded from the Metropolitan cities and Gyeonggi-do from Provinces.

In Korea, households living under the minimum residential standards decreased from 16.6% in 2006 to 5.3% in 2019. However, 5.3%, approximately 1,060,000 households, are still living in a poor environment not meeting the minimum residential standards. Households living under the minimum residential standards in the Seoul Capital Area reached 6.7%, which was higher than metropolitan cities(4.3%) and provinces(3.9%).

In particular, among the households living under the minimum residential standards, there are those who live in living quarters other than housing unit. In Korea, this includes *gosiwons*, accommodations(inns), shacks, or green house. It was estimated that approximately 370,000 households were living in such living quarters other than housing units in 2017. *Gosiwon/goshitels* accounted for a majority, 41.0%(150,000 households). 39.0%(140,000 households) were found to live in publicly used facilities or space in workplaces, which was difficult to define a living quarter type. Lastly, 8.2%(30,000 households) lived in accommodations. Households living in living quarters other than

Living quarters other than housing units; 2017 (Unit: %)

- **Gosiwon/Goshitel 41.0**
- Space at workplaces, publicly used facilities, etc. **39.0**
- Other **10.0**
- Accommodation **8.2**
- Shack/Plastic greenhouse **1.8**

	Gosiwon/Goshitel	Other	Accommodation	Shack/Plastic greenhouse
Seoul Capital Area 190,186 households	68.7	26.2	3.5	1.6
Non-Seoul Capital Area 179,315 households	11.6	73.1	13.3	2.0

- ■ Gosiwon/Goshitel
- ■ Other(Including space at workplaces, publicly used facilities, etc.)
- ■ Accommodation   ■ Shack/Plastic greenhouse

Source : Ministry of Land, Infrastructure and Transport, 2017 Housing Survey of Living Quarters other than Housing Unit

Note : Living quarters refer to all facilities people live in. Living quarters are divided into housing units and living quarters other than housing units. A housing unit must be in a permanent or semi-permanent building and have at least one room, kitchen and independent entrance. Lastly, a housing unit, by custom, must be able to be owned or sold. Residential facilities not meeting such standards are categorized as living quarters other than housing units.

housing units made up some 51.5% in the Seoul Capital Area. In the Seoul Capital Area, *gosiwons/goshitels* were more common while workplaces or publicly used facilities were used more in non-Seoul Capital Area.

Continuous efforts are needed to reduce fine particular matter

Particulate matter with a diameter of 10μm or less(PM_{10}) and fine particulate matter with a diameter of 2.5μm or less($PM_{2.5}$) are extremely small invisible harmful substances. Such substances are generated when fossil fuels such as coal and oil is burnt and from exhaust gas from plants and automobiles. In 2013, the International Agency for Research on Cancer(IARC) forming part of the World Health Organization(WHO) classified particulate matter as a class 1 carcinogen. In particular, prolonged exposure to particulate matter may aggravate respiratory diseases and cardiovascular diseases.

As the days of high levels of particulate matter are recently increasing in Korea, it is considered a serious issue. Levels of PM_{10} and $PM_{2.5}$ are generally high between January and May each year. As a result of analyzing levels of particulate matter during this period, particulate matter recorded the highest level at 75μg/m³ in February 2015. Its levels were maintained at between 40~60μg/m³ until 2019 and decreased to 30~40μg/m³ in 2020. $PM_{2.5}$ levels were maintained at 20~30μg/m³ after 2015 without a significant

Fluctuations in particulate matter levels; Jan. 2015 ~ May 2020 (Unit: μg/m³)
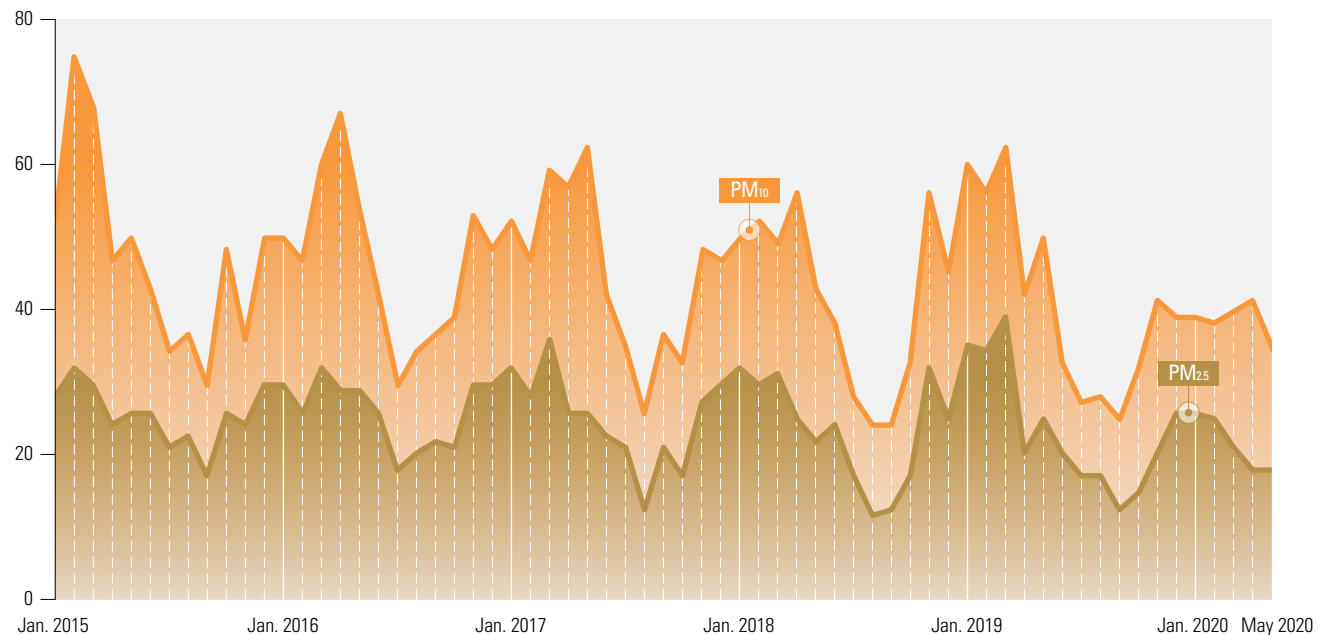
Source : Ministry of Environment, Air Pollution Information(Korean Statistical Information Service, https://kosis.kr, retrieved on December 20, 2020)

Annual average particulate matter levels by city/province; 2019   (Unit: μg/m³)

PM₁₀ ● PM₂.₅

Gyeonggi, Sejong, Chungbuk, Chungnam, Incheon, Jeonbuk, Seoul, Gwangju, Daejeon, **Korea**, Daegu, Gyeongbuk, Gyeongnam, Ulsan, Gangwon, Busan, Jeju, Jeonnam
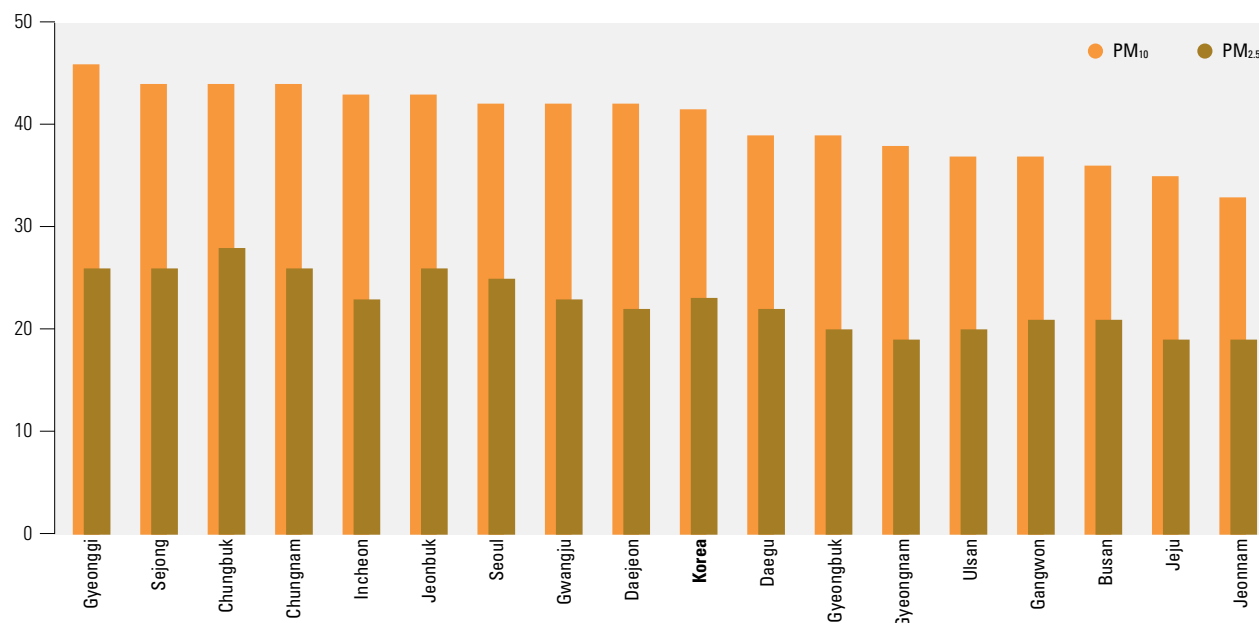
Source : National Institute of Environmental Research, Annual Report of Air Quality in Korea 2020
Note   : National data is calculated on the basis of population-weighted average of the regions.

Proportion of public space by region; 2012 and 2019 (Unit: %)

2012
2019
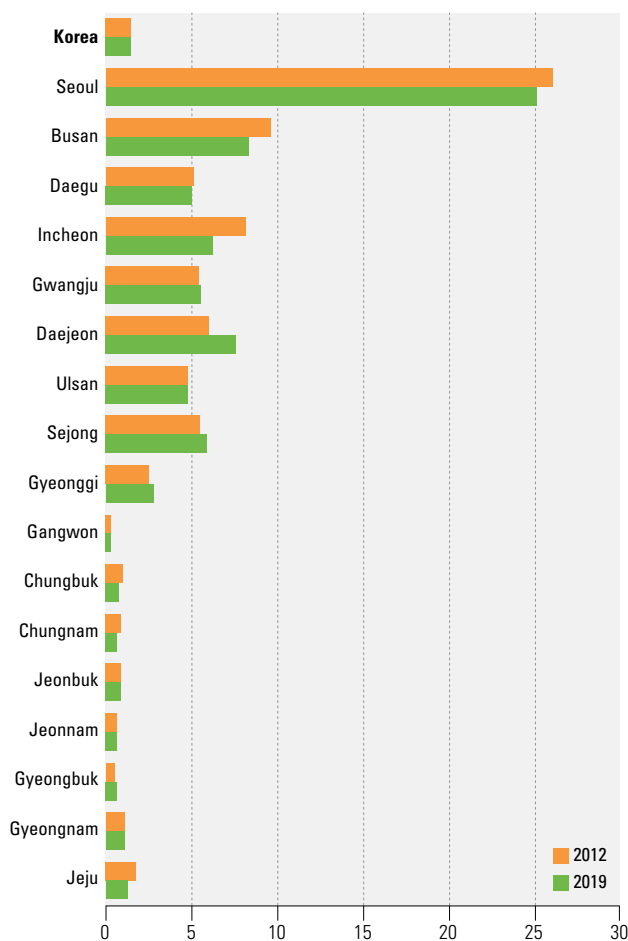
Source : Ministry of Land, Infrastructure and Transport, Korea Land & Housing Corporation,
          Statistics of Urban Planning(Korean Statistical Information Service, https://kosis.kr,
          retrieved on December 20, 2020)
Note   : Proportion of public space is calculated by dividing Space facilities by Area of corre-
          sponding administrative district. Space facilities includes Square, Park, Green area,
          Recreation area, and Public land.

change. In 2020, its levels slightly fell to 10~20μg/m³. It is assumed that it is a temporary decline resulting from restricted travel and closures of some plants due to the COVID-19 pandemic. Levels of PM₁₀ and PM₂.₅ are expected to increase anytime without continuing measures. In 2019, Gyeonggi and Chungbuk showed the highest level in PM₁₀ and PM₂.₅ respectively. In general, the particulate matter levels of Gyeonggi, Sejong, Chungbuk, Chungnam and Jeonbuk were much higher than the national average. Jeonnam ranked the lowest in both PM₁₀ and PM₂.₅.

Regional disparities in accessing open public space

Urban public space is a space where citizens can freely access and enjoy their public lives and activities. With a growing social interest in the quality of urban life and a pleasant living environment, there has been an increasing demand for public space as a key factor that determines the quality and identity of an urban environment(Lee et al., 2015). In 2019, public space was found to account for 1.4% of the total area of Korea. It is found that there is regional disparities in accessing open public space. Seoul was the most accessible city with 25.1% followed by Busan(8.2%), Daejeon(7.5%), and Incheon(6.2%). Provincial areas such as Kangwon(0.4%), Chungnam(0.7%), Jeonnam(0.7%), Gyeongbuk(0.7%), Chungbook(0.8%) showed the lower accessibility with less than 1%. Public space greatly increased by over 1.5%p in Daejeon, whereas it decreased the most, by 1.9%p, in Incheon.

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Ensure sustainable consumption and production patterns

The world tried to reduce the use of plastic until the beginning of 2020. Korea also restricted the use of disposable cups in August 2018, and plastic bags at supermarkets in April 2019. In September 2018, the Seoul Metropolitan Government announced to become a zero disposable plastic city for the first time in Korea by establishing a disposable-free distribution structure. It was the first step to build a sustainable consumption and production system in the country. A linear economic structure consisting of production and consumption can be shifted into a circular economic structure by reducing pollutants and using resources efficiently in the entire processes of production, distribution and consumption of products and services. However, online consumption, food delivery and disposable face masks became the new norm after the COVID-19 outbreak. Such lifestyle is generating a huge amount of waste, going counter to sustainable consumption and production.

Fastest hazardous waste generation in recent years

In 2018, Korea's daily average waste generation totaled 446,102 tonnes, which increased by 21.6% from 366,921 tonnes in 2009. Waste generation is growing almost every year in all types of waste. In particular, designated waste grew much more than other types of waste. Designated waste increased by 69.9% from 9,060 tonnes in 2009 to 15,389 tonnes in 2018. Designated waste refers to harmful wastes that can contaminate the surrounding environment, such as waste acid and waste alkari, or that can harm the human body, such as infectious waste. It is expected to continuously grow, taking medical waste generated from confirmed COVID-19 cases and quarantined persons into consideration.

Regional waste generation varied according to the waste types. Construction waste, which accounts for a majority of the total waste generation, was generated the most in Gyeonggi, followed by Seoul and Gyeongnam. Industrial waste was generated the most in Chungnam, Jeonnam and Gyeongbuk in the order named. Domestic waste was generated the most in Gyeonggi, Seoul and Gyeongnam in the order

Waste generation by waste type; 2009~2018　　(Unit: tonne/day)
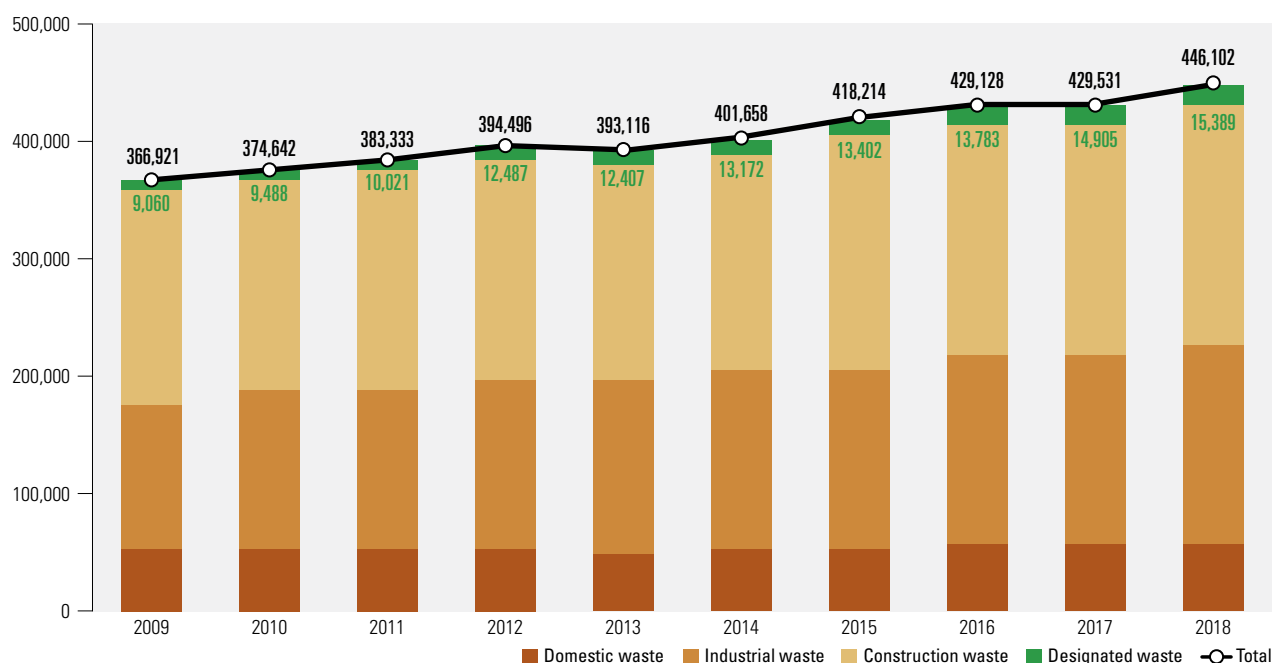
Source : Ministry of Environment, National Waste Generation and Disposal, each year
Note 1 : Domestic waste refers to the sum of household waste and domestic waste from business premises and construction sites.
Note 2 : Designated waste is excluded from industrial waste.
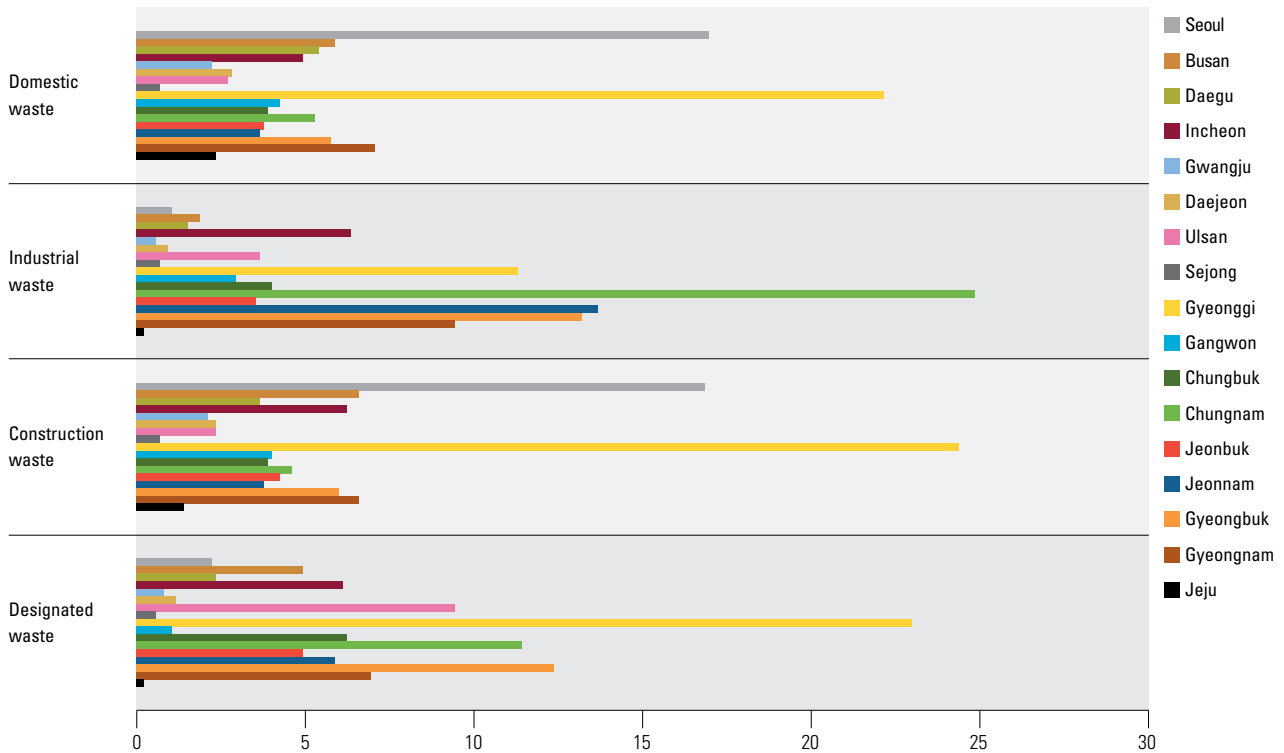
Legend: Seoul, Busan, Daegu, Incheon, Gwangju, Daejeon, Ulsan, Sejong, Gyeonggi, Gangwon, Chungbuk, Chungnam, Jeonbuk, Jeonnam, Gyeongbuk, Gyeongnam, Jeju

Categories: Domestic waste, Industrial waste, Construction waste, Designated waste

Source: Ministry of Environment, National Waste Generation and Disposal 2019

named. Lastly, designated waste was generated the most in Gyeonggi, Gyeongbuk and Chungnam in the order named.

In 2018, the daily average of domestic waste generation was 1.06kg per person. It was the highest in Jeju(1.90kg), which was over twice that of Gwangju, the smallest generation(0.86kg). Gyeonggi generated the largest amount of domestic waste per day. As a result of dividing the domestic waste generation by the number of population, it generated 0.92kg of domestic waste per person per day, which was lower than the national average.

Plastic waste is growing every year

Plastic in domestic waste has continuously increased for the past five years. The daily average of plastic waste generation increased by 46.0%, from 4,365 tonnes in 2013 to 6,375 tonnes in 2018. Accordingly, the proportion of plastic waste in domestic waste grew from 9.0% to 11.4%. In addition, more plastic waste was dumped in standard plastic garbage bags than for recycling. Amount of plastic waste for recycling remained steady while those in the standard plastic bags has been increasing since 2013.

Domestic waste generation per capita; 2018 (Unit: kg/day/person)

Seoul 0.94, Busan 0.95, Daegu 1.21, Incheon 0.92, Gwangju 0.86, Korea 1.06, Daejeon 1.07, Ulsan 1.32, Sejong 1.27, Gyeonggi 0.92, Gangwon 1.53, Chungbuk 1.32, Chungnam 1.35, Jeonbuk 1.13, Jeonnam 1.08, Gyeongbuk 1.19, Gyeongnam 1.14, Jeju 1.90
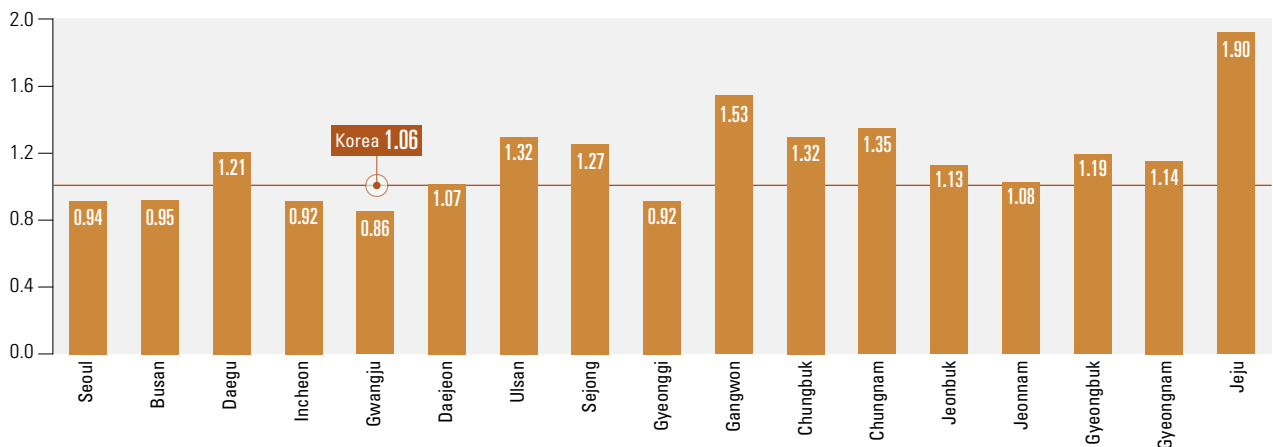
Source: Ministry of Environment, National Waste Generation and Disposal 2019

Proportion of plastic waste in domestic waste; 2013~2018

(Unit: tonne/day, %)
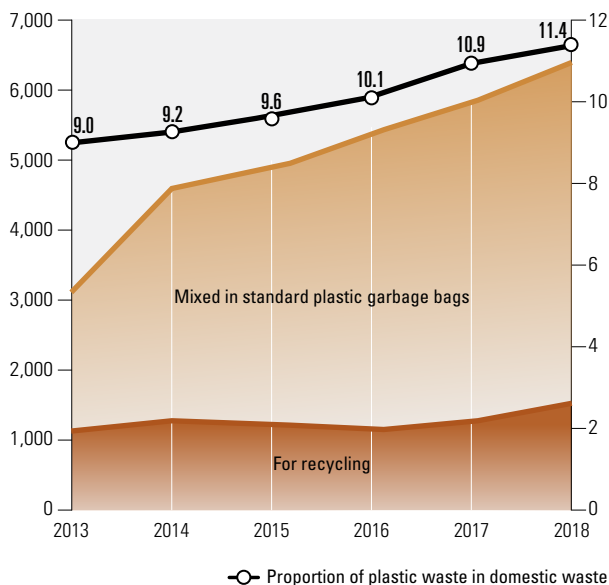
Source: Ministry of Environment, National Waste Generation and Disposal 2019

Need to increase utilization of recycled waste

As of 2018, recycling accounted for the largest portion in waste disposal methods(86.1%). By waste type, 62.0% of domestic waste, 81.6% of industrial waste and 98.3% of construction waste were recycled. This figures are based on the recycling rate of discharger; thus the data has limitations in monitoring whether the recycled waste is actually being recycled. The recycling rate of waste designated as harmful waste was 60.0%, which was much lower than other types of waste. More specifically, medical waste was barely recycled and most of it(92.9%) was incinerated, whereas 62.6% of designated waste from business premises was recycled.

More companies publish sustainability report

Enterprises play an important role in establishing a circular economic structure for sustainable production and consumption. In recent years, there has been growing interest in corporate social responsibility and their eco-friendly management in society. More and more enterprises are publishing a sustainability report in Korea. According to the Korean Standards Association, the number of enterprises publishing a sustainability report increased from 63 in 2008 to 136 in 2019. As with financial statements, the enterprises' sustainability report is expected to be an important criterion for assessing their value in the future.

Waste disposal by type; 2018

(Unit: %)
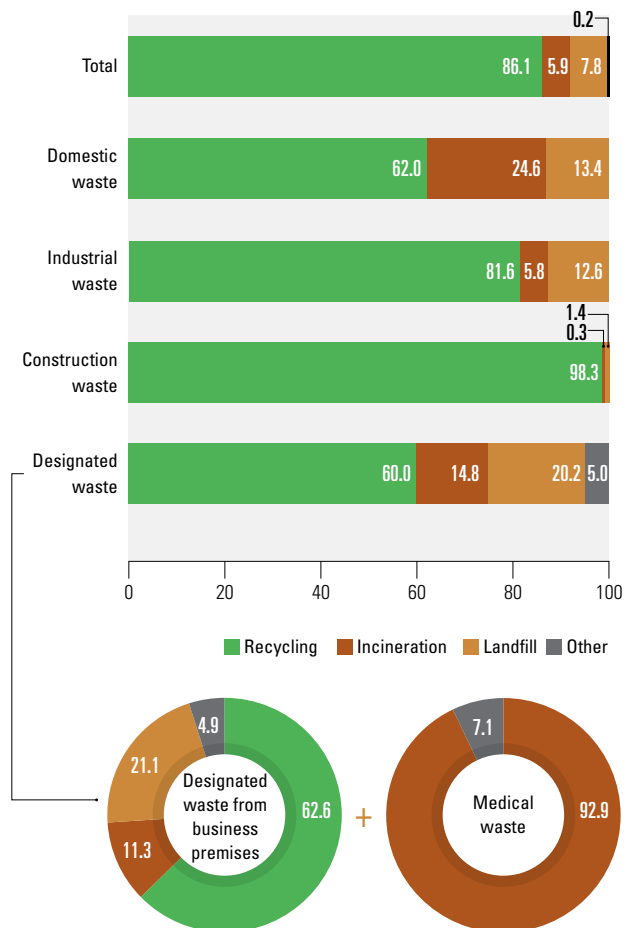
Source: Ministry of Environment, National Waste Generation and Disposal 2019

Number of enterprises publishing sustainability report; 2008~2019

(Unit: No. of enterprises)
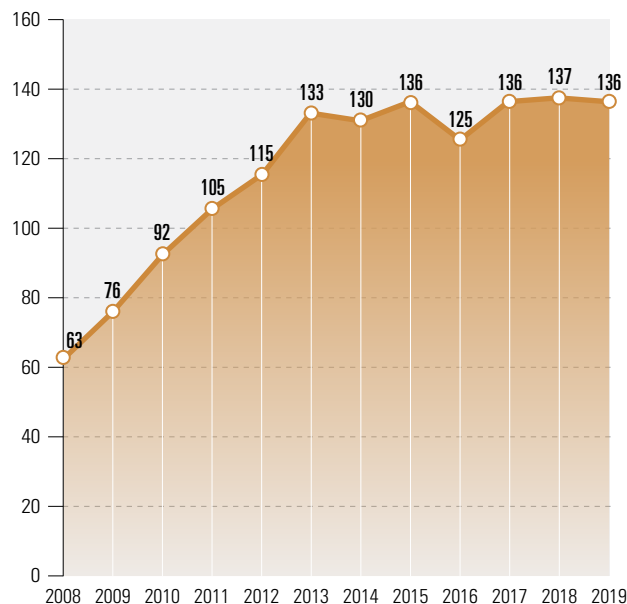
Source: Korean Standards Association(www.ksa.or.kr/ksi/5011/subview.do, retrieved on November 25, 2020)

13 CLIMATE ACTION

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Take urgent action to combat climate change and its impacts

Climate change is a fundamental threat against human survival and sustainable development. The Intergovernmental Panel on Climate Change(IPCC) stated that the global average temperature increased by 0.75°C from 1906. It also stated an additional 2°C increase in global temperature will have devastating consequences for ecosystems. The international society has agreed on actions for reducing climate change and its effects by adopting the Paris Agreement(December 2015) as the successor of the Kyoto Protocol which ended in 2020. SDG 13 focuses on an increase in greenhouse gas(GHG) emissions and climate change resulting from human activities and consider their effects urgent issues. Its targets include the following: strengthening resilience and adaptive capacity to climate change and natural disasters; integrating climate change measures into national planning and strategies; and strengthening education and competences.

Recently, Korea announced '2050 Long-term low greenhouse gas Emission Development Strategies' that it will realize a carbon-neutral society swiftly and put forth the efforts to strengthen its international leadership for coping with climate change. The government also committed to reduce the national GHG emissions up to 24.4% compared to the year 2017 by 2030.

Energy accounts for a majority of GHG emissions, around 87%

Korea's total GHG emissions in 2018 were 727.6 million tonnes CO₂eq., about 2.5 times the amount of CO₂eq. in 1990(292.2 million tonnes CO₂eq.). GHG emissions had continued to rise for nearly three decades while it was slightly reduced in 2019 with 702.8 million tonnes CO₂eq. compared to the previous year (Ministry of Enviornment, 2021). GHG are also emitted in the fields of Land Use, Land-use Changes, and Forestry(LULUCF), but the amount of GHG

Total GHG emissions and proportion of emission by gas type; 1990~2018 (Unit: million tonnes CO₂eq., %)
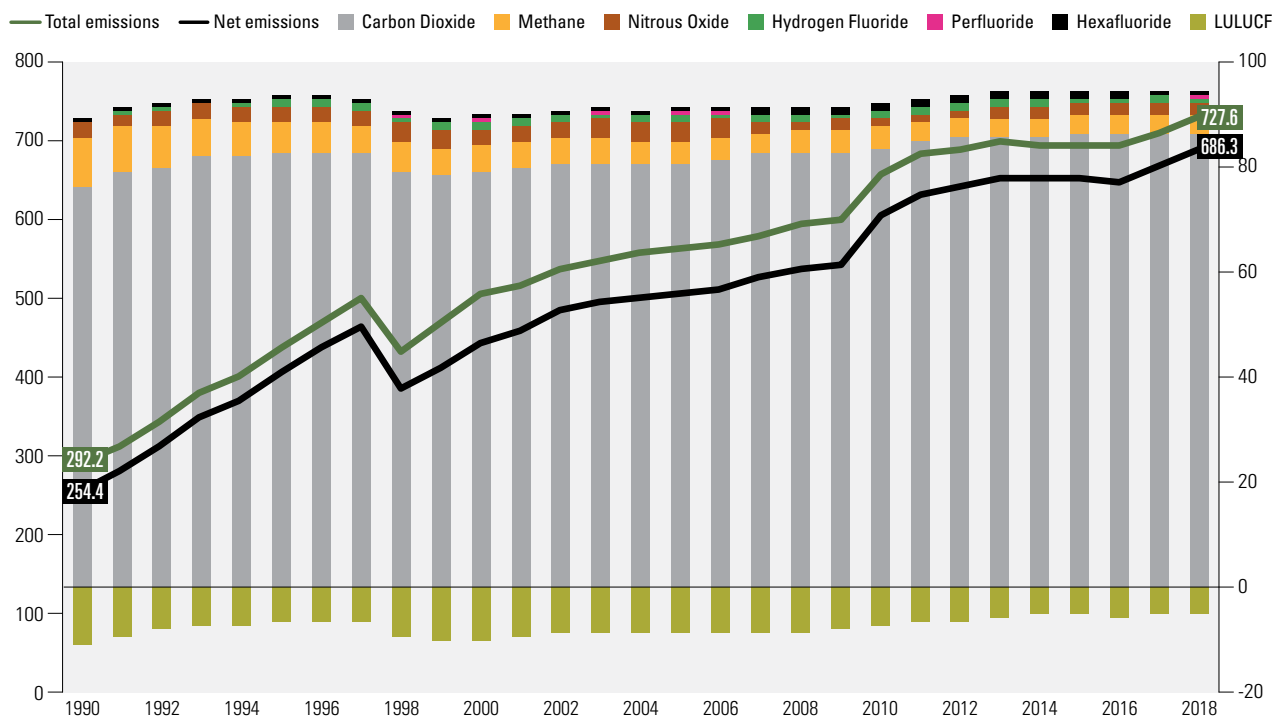
Source : Ministry of Environment/Greenhouse Gas Inventory and Research Center, 2019 National Greenhouse Gas Inventory Report
Note : LULUCF is deducted from the total emission ratio since it is generated from green areas such as forests and functions to absorb GHG.

GHG emissions by sector; 2018
(Unit: %, million tonnes CO₂eq.)
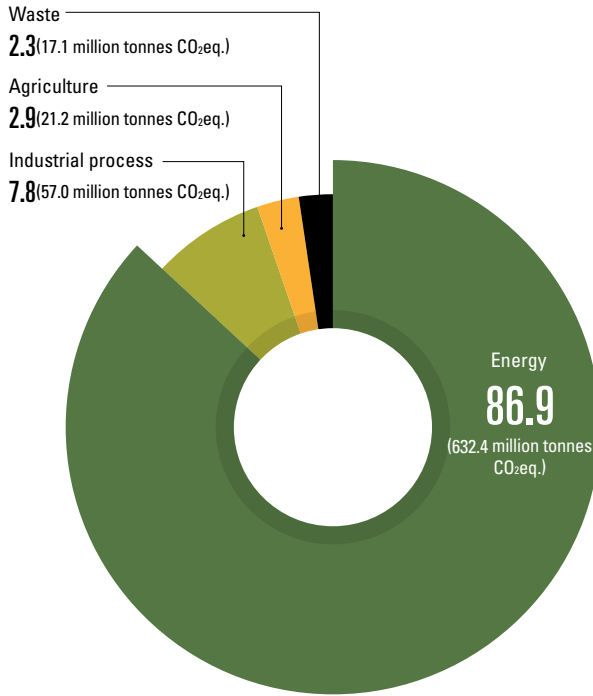
Waste
2.3(17.1 million tonnes CO₂eq.)

Agriculture
2.9(21.2 million tonnes CO₂eq.)

Industrial process
7.8(57.0 million tonnes CO₂eq.)

Energy
86.9
(632.4 million tonnes CO₂eq.)

Source : Ministry of Environment/Greenhouse Gas Inventory and Research Center, 2019 National Greenhouse Gas Inventory Report

absorbed is higher, with a net absorption of 41.3 million tonnes CO₂eq. in 2018. The net GHG emissions in 2018 were 686.3 million tonnes CO₂eq.

Among the gases, Carbon Dioxide(CO₂) accounts for the largest portion. CO₂ emissions in 2018 were 664.7 million tonnes CO₂eq., accounting for 91.4% of total emissions. In addition, Methane(CH₄) was 3.8%(27.7 million tonnes CO₂eq.), Nitrous Oxide(N₂O) was 2.0%(14.4 million tonnnes CO₂eq.), Hydrogen Fluoride(HFCs) was 1.3%(9.3 million tonnes CO₂eq.), Hexafluoride(SF₆) was 1.2%(8.4 million tonnes CO₂eq.), and Perfluoride(PFCs) was 0.4%(3.2 million tonnes CO₂eq.). For CO₂, its share of total emissions decreased by 0.3%p compared to 2017, but the absolute amount increased by 15 million tonnes CO₂eq. Energy accounts for 86.9% of the total contribution to GHG emissions, followed by industrial processes 7.8%, agriculture 2.9% and waste 2.3%.

In 2018, the total GHG emissions to real GDP amounted to 401.6 tonnes CO₂eq. per KRW 1 billion. This indicator has been generally showing a decline since 1998 when the country hit by the economic crisis, but the total GHG

GHG emissions to real GDP and GHG emissions per capita; 1990~2018
(Unit: tonne CO₂eq./KRW 1 billion, tonne CO₂eq./person)
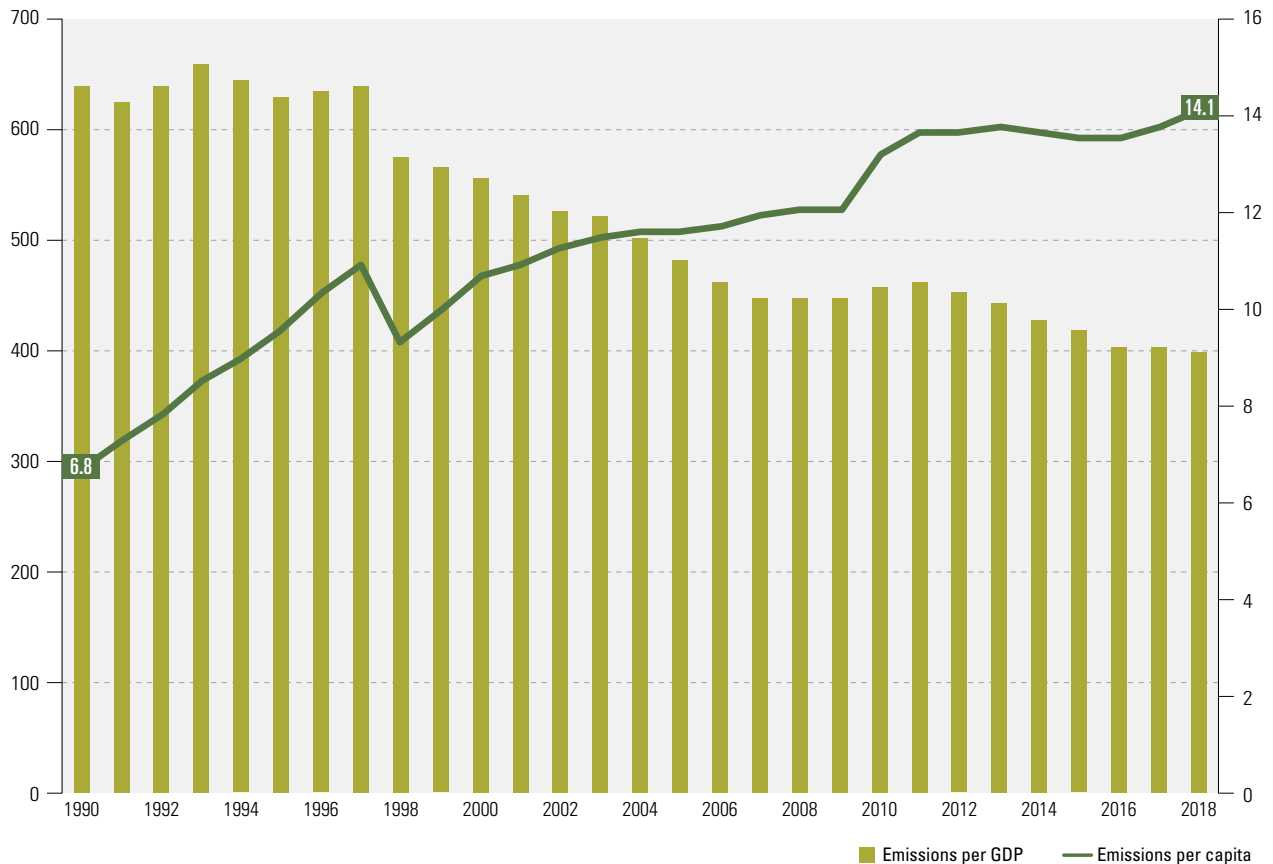
■ Emissions per GDP　── Emissions per capita

Source : Ministry of Environment/Greenhouse Gas Inventory and Research Center, 2019 National Greenhouse Gas Inventory Report

emissions per capita are increasing. As a result of comparing GHG emissions to GDP(USD) with OECD member states, it was found that Korea's GHG emissions to GDP ranked 6th in 34 countries in order of high emissions. Estonia, Austrailian, Newzealand, Canada and Poland has more emissions than Korea. Lastly, Switzerland showed the smallest GHG emissions to GDP among OECD members.

GHG emissions per GDP of OECD countries; 2018

(Unit: kgCO$_2$eq./USD)

Country	Value
Switzerland	
Sweden	
Norway	
France	
UK	
Ireland	
Denmark	
Luxembourg	
Austria	
Italy	
Spain	
Netherlands	
Portugal	
Germany	
Hungary	
Latvia	
Lithuania	
Belgium	
Finland	
Japan	
Turkey	
Slovakia	
Slovenia	
Israel	
Greece	
Czech Republic	
US	
Korea	
Poland	
Canada	
New Zealand	
Australia	
Estonia	

0   0.1   0.2   0.3   0.4   0.5   0.6
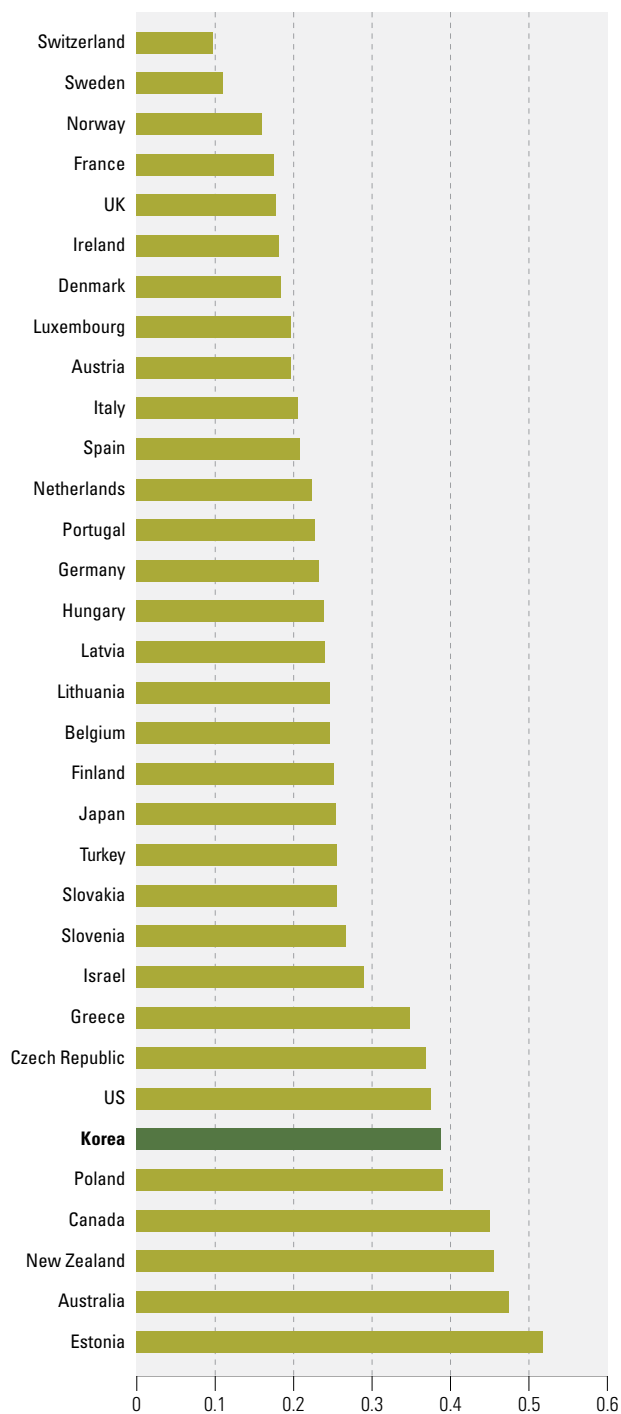
Source : OECD(http://stats.oecd.org, retrieved on November 25, 2020)
Note   : Korean data is based on 2016.
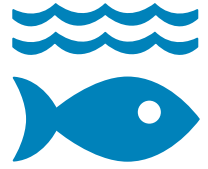
Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Plastics found stuck in the body or the stomach of dead marine animals show that marine debris is a serious problem to the world as well as Korea. SDG 14 aims to conserve marine ecosystems and protect marine resources in a more sustainable way, showing various efforts to prevent marine pollution. In particular, SDG 14 emphasizes the following: resolving marine plastic issues; designating marine restricted area to conserve marine ecosystems; managing sustainable fishery resources; and supporting the utilization of sustainable marine resources by small island developing countries.

Accordingly, Korea has been implementing the 2030 Fisheries Innovation Plan to respond to a decrease in fishery resources in coastal waters. In addition, the Ministry of Oceans and Fisheries, Ministry of Environment and Korea Coast Guard have established the Third Master Plan on Marine Debris Management(2019~2023), so as to cope with increasing domestic and international interest in marine debris. The Korean government has implemented a number of policies in order to strengthen the national management system for marine debris reduction and to shift from collection to prevention-centric response. Restrictions on the use of plastic products were part of such efforts.

At first, a decrease in human activities due to COVID-19 seemed to have a positive impact on the marine environment. Contrary to expectations, however, medical waste such as face masks sharply grew all over the world. Delivery and courier services also increased for a non-contact lifestyle. Lastly, the use of disposable plastic products rose again to prevent human-to-human transmission of the virus. There are growing concerns that the international society's efforts to reduce marine debris may be back to square one.

Increase in marine debris collected since 2015

It is assumed that approximately 180,000 tonnes of marine debris are generated each year in Korea(Ministry of Oceans and Fisheries, 2018). Since marine debris spreads quickly after it flows into the oceans, it is difficult to estimate the total amount. Therefore, the amount of marine debris collected is estimated on the basis of a variety of marine debris collection projects of the central and local governments. The collection projects include marine debris collection, waste purification, fish farm management, marine/water resources management, coastal management and fishing site environment improvement. Through such projects, Korea has collected 885,814 tonnes of marine debris from 2008 to 2019. The amount of marine debris collected increased from 25,239 tonnes in 2008 to 108,644 tonnes in 2019. In 2012, it reached 122,365 tonnes. The amount of marine debris collected has been continuously growing since 2015.

Marine debris collected; 2008~2019   (Unit: thousand tonnes)
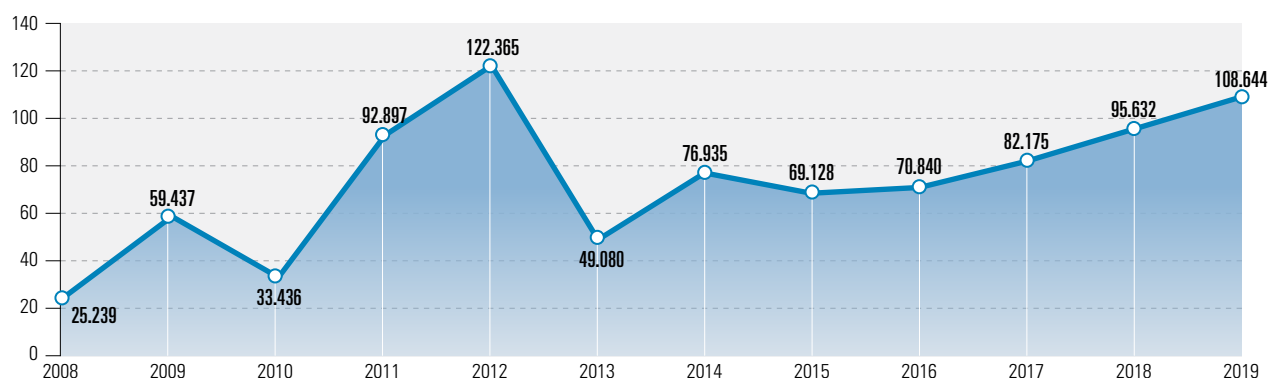
Source : Marine Environment Information Portal of Korea Marine Environment Management Corporation(www.meis.go.kr, retrieved on November 24, 2020)

Marine debris is sometimes generated when wood in forests or garbage on land flows into the oceans through streams and rivers due to natural disasters such as cloudbursts, heavy rains and floods. Most marine debris is generated by tourists in beaches during summer vacations or from garbage dumped by local residents. Recently, external factors such as pollutants from neighboring countries are causing marine debris as well. Therefore, it is difficult to apply regional factors uniformly. However, as a result of analyzing marine debris collected by metropolitan cities and provinces from 2008 to 2019, 244,281 tonnes, the largest amount, was collected in Jeonnam, followed by Gyeongnam(173,086 tonnes), Jeju(87,873 tonnes) and Chungnam(86,732 tonnes), which implies that the wider the marine area, the more marine debris collected.

Marine debris is largely divided into coastal debris, floating debris and deposited debris. As a result of analyzing the amount of marine debris collected after 2008 based on these three categories, coastal debris(463,400 tonnes, 52.3%) accounted for a majority of the total marine debris(885,814 tonnes), followed by deposited debris(271,741 tonnes,

30.7%) and floating debris(54,162 tonnes, 6.1%). Recently, coastal debris grew the most from 38,822 tonnes in 2018 to 75,131 tonnes in 2019. Deposited debris decreased from 41,502 tonnes to 25,800 tonnes, whereas floating debris increased from 5,666 tonnes to 7,713 tonnes during the same period.

Gradual growth of shallow-sea cultures

One of the most important aspects in maintaining marine ecosystems is sustainable management of fisheries resources. SDG Target 14.4 emphasizes an appropriate level of fish harvesting. In 2019, Korea's annual provisional fishery production reached 3,829,708 tonnes(Production value: KRW 8,338.7 billion). As a result of analyzing fishery production by type, shallow-sea cultures(2,371,999 tonnes) accounted for 61.9% of the total production, followed by adjacent waters fisheries(914,570 tonnes, 23.9%), distant water fisheries(507,883 tonnes, 13.3%) and inland water fisheries(35,255 tonnes, 0.9%). Total fishery production has increased from 2,510,000 tonnes to 3,830,000 tonnes since

Amount of collected marine debris by region; 2008~2019 (Unit: thousand tonnes)
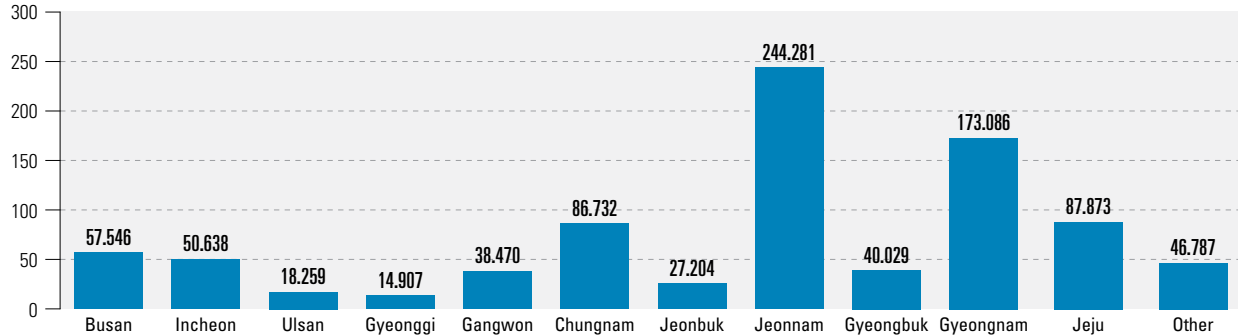
Source : Marine Environment Information Portal of Korea Marine Environment Management Corporation(www.meis.go.kr, retrieved on November 24, 2020)

Collected marine debris by type; 2008~2019 (Unit: thousand tonnes)
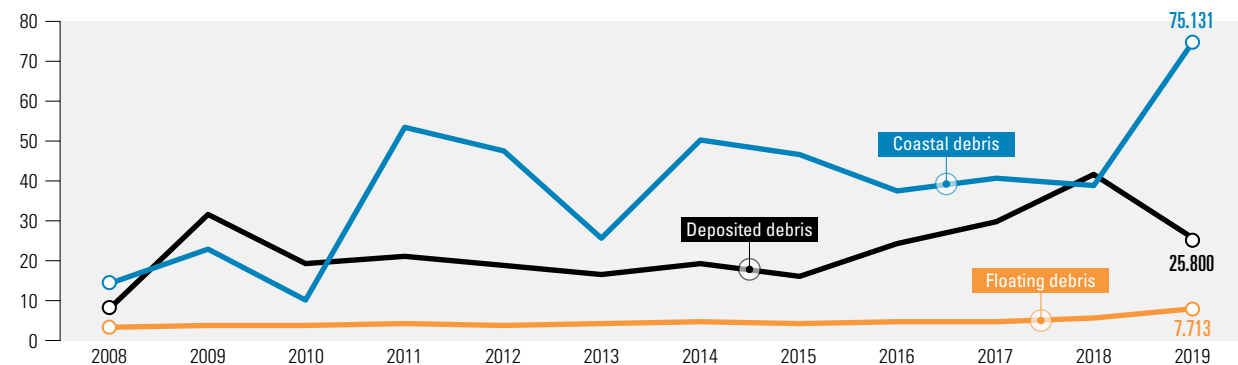
Source : Marine Environment Information Portal of Korea Marine Environment Management Corporation(www.meis.go.kr, retrieved on November 24, 2020)
Note   : Coastal debris is waste found at beaches or seashores. Floating debris refers to garbage floating on the sea surface. Lastly, deposited debris means garbage deposited on the bottom of the oceans.

Fishery production by production method; 2000~2019   (Unit: thousand tonne)
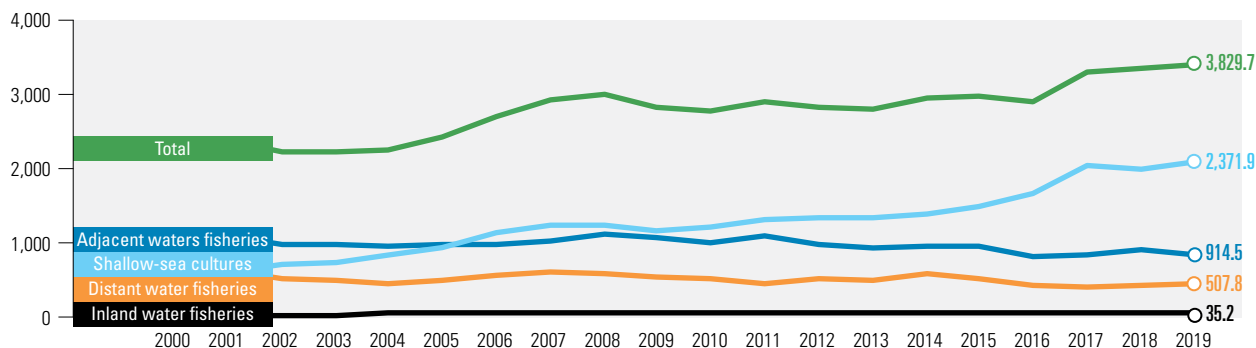
Source : Statistics Korea, Fishery Production Survey(kosis.kr, retrieved on November 25, 2020)
Note   : 2019 data are provisional.

Percentage of fishery production by production method; 2000~2019   (Unit: %)
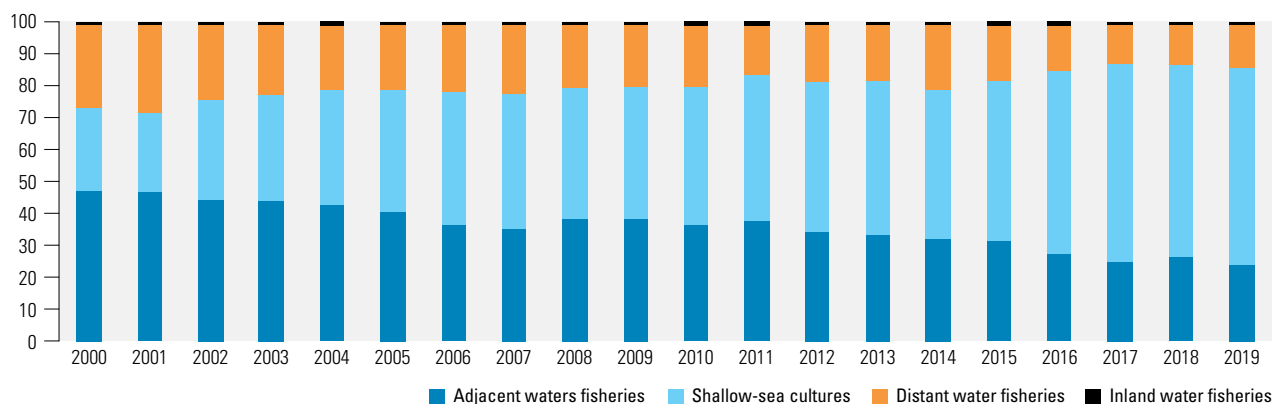
Source : Statistics Korea, Fishery Production Survey(kosis.kr, retrieved on November 25, 2020)
Note   : 2019 data are provisional.

2000. Adjacent waters fisheries(1,190,000 tonnes) had made up approximately half of the total production in 2000, but decreased to 910,000 tonnes in 2019. On the other hand, shallow-sea cultures showed an annual average growth rate of 7%, from about 650,000 tonnes in 2000 to about 2,370,000 tonnes in 2019. Its proportion in total fishery production increased from 26% in 2000 to 62% in 2019.

As shown in the graph above, Korea's coastal fishery production is showing a decline. The Ministry of Oceans and Fisheries(2019) estimates that Korea's maximum securable fishery resources in coastal fisheries totals 5,030,000 tonnes. However, the current amount of retained resources(as of 2017) stands at 3,040,000 tonnes. If the current fishing intensity is maintained, a reduction in resources may become more severe. To respond to such a situation, the Korean government has set a goal to increase coastal resources to 5,030,000 tonnes by 2030. The government prohibited the overfishing of juvenile fish and illegal fishing by adopting the Total Allowable Catch(TAC) to restrict the catch of

major fish species. The TAC allows a catch up to the upper limit by fish species. The Ministry of Oceans and Fisheries sets and manages the TAC by fish species each year. According to the press release in June 2020, the TAC between July 2020 to June 2021(fishing season) is set at 286,045 tonnes. 12 species including mackerel, horse mackerel, squid, red crab and blue crab and 14 fishery types(refer to the table) are subject to the TAC.

TAC management standards from July 2020 to June 2021

Category	Details
Fish species subject to TAC (12 species)	Mackerel, horse mackerel, sailfin sandfish, squid, red crab, snow crab, blue crab, comb pen shell, butter clam, mottled skate, Jeju spiny turban shell and Manila clam
Fishery types subject to TAC (14 types)	Large purse seine, offshore fish trap, fishing by diving, offshore longline, offshore gill net, coastal gill net, coastal fish trap, offshore jigging, large trawl, two-boat large bottom trawl, trawl in the East Sea, Danish seine in the East sea, coastal complex fishery and community fishery

Source : Press release of Ministry of Oceans and Fisheries(June 29, 2020)

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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

Many countries took measures to restrict international and domestic travel due to the COVID-19 pandemic. During this process, the media focused on wild animals wandering around empty cities. Monkeys, deer, raccoons, etc. showed up in residential areas and roads where people disappeared. This phenomenon which seemed like a tradeoff between human and wild animals directly indicates that species are not harmonizing in ecosystems.

Forests, which are wildlife habitats, are becoming damaged by human activities such as housing construction, road installations, industrial complex construction, etc. The proportion of forests in the land area at the global level decreased from 31.9%(4,158,049,522ha) in 2000 to 31.2%(4,058,930,810ha) in 2020. The 2030 Agenda has set a goal to promote the sustainable use of terrestrial ecosystems through protection and halt biodiversity loss as SDG 15. Countries are establishing a variety of policies to ensure biodiversity by protecting ecosystems such as forests, wetlands and lakes. There is a saying that the sky has no boundary. As the saying goes, national policies are not sufficient enough for ecosystem conservation and global cooperation is required.

Sustainable forest management through long-term forest planning

Sustainable Forest Management(SFM) includes activities to maintain and strengthen the economic, social and environmental value of forests for current and future generations. In this sense, SFM is monitored on the basis of five indicators: forest area net change rate; total aboveground biomass of forests; protected forest rate; rate of forests with long-term forest management plan; and forest area certified for forest management.

Korea is also affecting a global decline in forests. Korea's forests have been decreasing by 0.16% on average year after year for the past five years(2015~2020). Among 37 OECD member states, forest areas decreased during the same period in nine countries: Korea, Israel(-3.23%), Colombia(-0.33%), Mexico(-0.19%), Slovenia(-0.16%), Hungary(-0.08%), the United States(-0.02%), Canada(-0.01%) and Japan(-0.01%). However, protected forest rates have been showing an increase for the past 20 years. The Netherlands has the highest protected forest rate at 59.5% in 2020 and shows the biggest increase by 36.7%p after 2000. Korea's protected forest rates have been increasing since 2000(5.3%). However, Korea's 2020 protected forest rate stood at 6.9%, a low level compared to other OECD member states. The amount of aboveground biomass, which has the biggest value as renewable natural resources, has been increasing since 2000 except in four countries(Canada, Chile, Australia and Portugal). Korea's aboveground biomass grew from 59 tonnes per hectare in 2000 to 132 tonnes per hectare in 2020.

Rates of forests managed through long-term forest management plans decreased only in Korea and Sweden, whereas the rates increased in most OECD countries. Korea's rates decreased from 59.0% in 2000 to 39.3% in 2020. This is partly because private forests' management planning has changed from an obligation to recommended action. Rates of forests managed on the basis of long-term forest management plans reach 100% in Japan, the Czech Republic, Finland, Latvia, Lithuania, Slovakia and Turkey. The percentage of forest areas certified for forest management by an independent agency is also used as an auxiliary indicator for SFM monitoring. In Korea, the forest area certified for forest management increased from 193,391ha in 2010 to 214,571ha in 2019. However, this indicator has a limitation in comparison since forest areas vary according to the certification systems and expiration of individual countries.

Annual net change rate of forests; 2015~2020   (Unit: %)
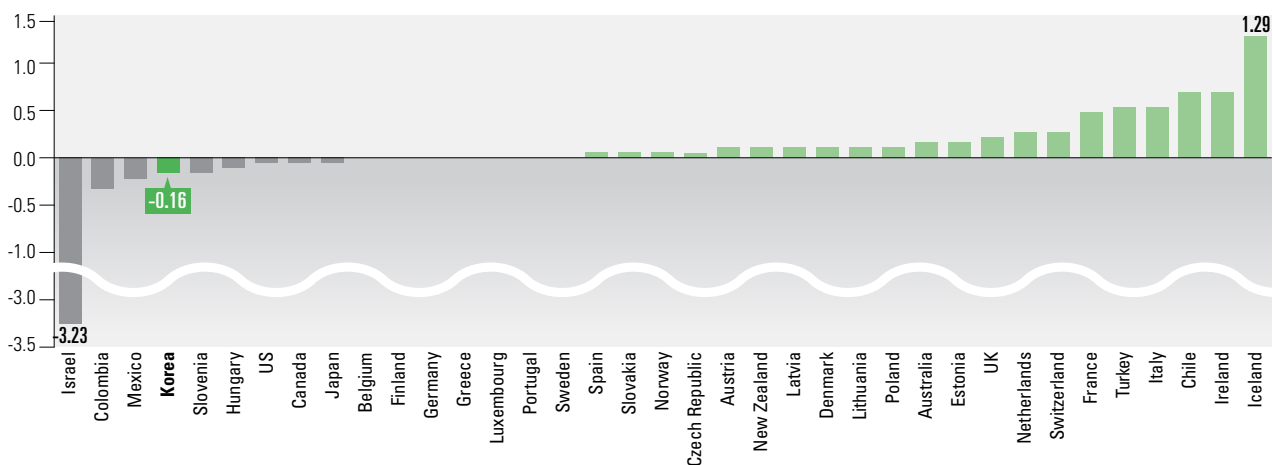
Percentage of protected forests; 2000, 2020   (Unit: %)
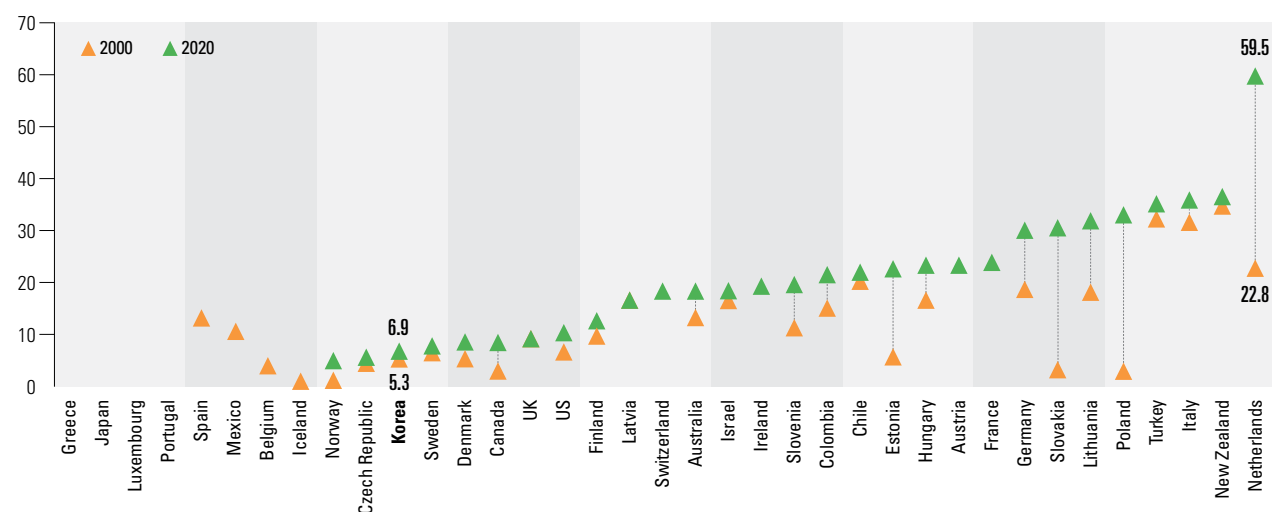
Total aboveground biomass; 2000, 2020   (Unit: 1t/ha)
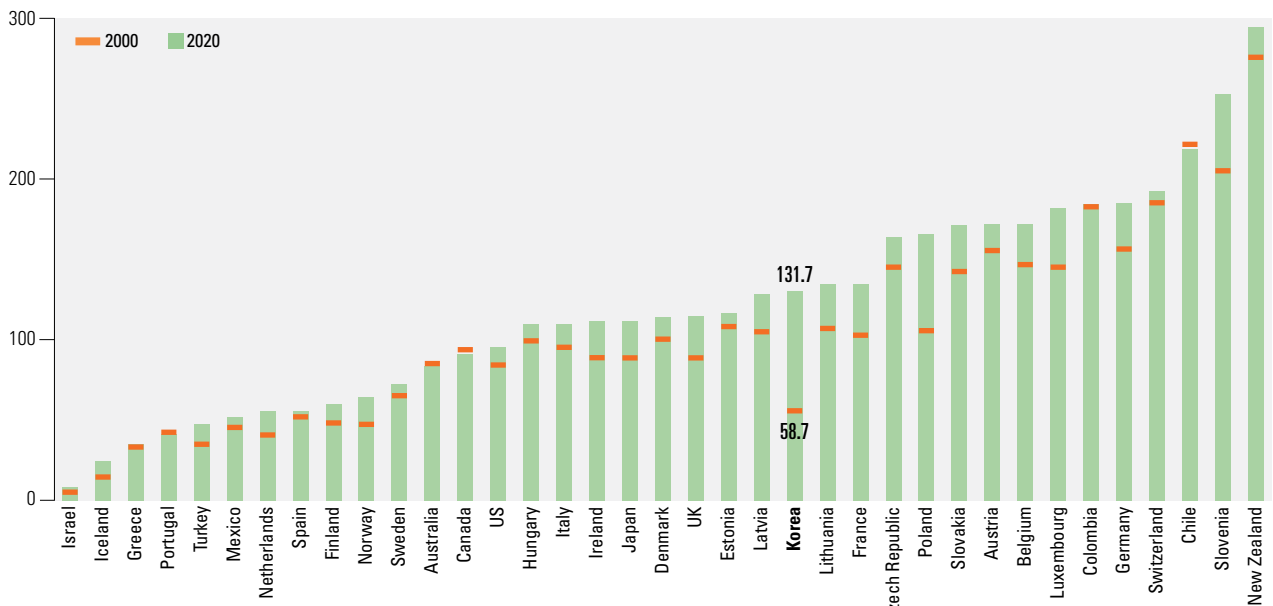
Source : FAO, Global Forest Resources Assessment(retrieved on November 25, 2020)
Note : No data is found regarding protected forest rates.

Increasing trend of terrestrial protected areas

Korea designates protected areas and manages terrestrial, marine and freshwater ecosystems on the basis of 14 acts including the Natural Environment Conservation Act. Korea's protected areas are categorized into natural environment conservation areas, national parks, fishery resource protection areas, forest genetic resource protection areas, wildlife protection areas and wetland protection areas. As the number of protected areas grew from 21 in 2007 to 3,439 in 2020, the total area also increased. Terrestrial protected areas and marine protected areas increased from 3,879km^2 and 4,012km^2 in 2007 to 16,905km^2 and 7,948km^2 in 2020, respectively. In the 4th National Biodiversity Strategy(2019~2023), Korea has set a goal to expand the percentage of terrestrial protected areas to 17.0% of the land area by 2021. In 2020, the percentage of terrestrial protected areas stood at 16.9%.

The International Union for Conservation of Nature(IUCN) has designated Key Biodiversity Areas(KBAs) to protect ecosystems on a global basis. In 2019, 37.5% of terrestrial KBAs, 36.8% of freshwater KBAs and 20.2% of mountain KBAs were managed in accordance with domestic laws.

Terrestrial and marine protected areas; 2007, 2020 (Unit: km^2)
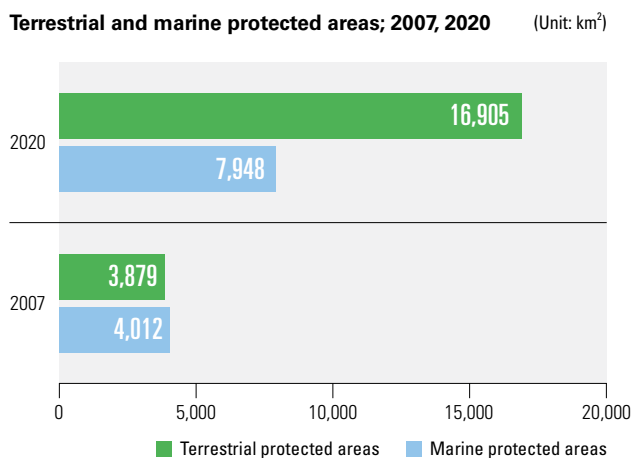
Source : KOREA Database on Protected Areas(www.kdpa.kr, retrieved on November 25, 2020)
Note   : The extent of duplicated protected areas is excluded.

Species at risk of extinction are growing all over the world and 12 species are regionally extinct

The IUCN has managed the Red List Index that comprehensively categorizes the status and threats of wildlife to prevent extinction and preserve biodiversity. This list includes nine categories of Extinct, Extinct in the Wild, Critically Endangered, Endangered, Vulnerable, Near Threatened, and Least Concerned, depending on the risk of extinction. Based on the number of spices in the categories, the Red List Index is calculated. As a result, it is expressed between 0(all species extinction) and 1(all species of interest). The global level of the Red List Index fell from 0.803 in 2000 to 0.732 in 2020, which can be interpreted as a decline in the average conservation status of the listed species. Among them, the Index of Korea's species is also lower than the global trend, from 0.763 in 2000 to 0.699 in 2020. Sweden, Finland, Lithuania, Latvia, Luxembourg, Belgium, Estonia and Germany have maintained over 0.980 over the past two decades.

In addition to the global RLI, the IUCN developed a regional RLI evaluation guideline so that each country can utilize the Index at the national and regional level. Korea has been publishing the Red Data Book since 2011 under the supervision of the Ministry of Environment. According to the Book, 12 species are not extinct in the word, but are extinct in Korea. 12 species include mammals(Panthera tigris altaica, Lynx lynx, Cervus nippon hortulorum, Canis lupus coreanus), birds(Pitta nympha Temminck & Schlegel, Dryocopus javensis, Tadorna cristata(N. Kuroda, Sr., 1917), Nipponia nippon), fish(Leiocassis longirostris Gunter, 1864), insects[Gymnopleurus mopsus(Pallas)] and invertebrates [Heteropoda venatoia(Linnaeus, 1767) and Selenops bursarius Karsch, 1879].

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

SDG 16 aims to create peaceful and inclusive societies for sustainable development. It includes realizing justice by enhancing judicial access for all regardless of their class and ethnicity and building effective and accountable institutions at all levels. Even in 2020 when the entire world is battling COVID-19, over 80 million people are suffering from disputes and conflicts in some locales. Approximately a quarter of children are not able to register their birth in the world. Consequently, they cannot have access to basic social services. The UN(2020b) is warning that such unstable systems and environments may deteriorate, particularly in developing countries, amid the COVID-19 pandemic.

In Korea, people are experiencing violence and discrimination in their daily lives. As child violence and abuse are occurring in succession in 2020, more and more people have an interest in such issues. Article 915 of the Civil Act of Korea stipulates 'parental authority holder's right to take disciplinary action'. This Article has been misused as a legal ground that allows punishment of children by parents. It is also a long cultural foundation that accepts violent disciplinary action against children. In 2020, the Korean government has paved the way to raise people's awareness of physical punishment and abuse against children by planning to repeal this Article. Nevertheless, reports of child abuse are growing each year. In 2020, child protection agencies who monitor the child could not easily visit households due to social distancing and online classes resulting from the prolonged COVID-19 pandemic, making child to stay longer hours at home and thus exposed to more abusive situation. As a result, there are likely to be unreported cases of child abuse.

Decrease in physical punishment at school

SDG Target 16.2 aims to end abuse, exploitation, trafficking and all forms of violence and torture against children. To achieve this target, it demands to report the proportion of children who experienced any form of psychological punishment(yelling at or insulting a child) or physical punishment(causing physical pain or light pain intentionally) by caregivers. This includes shaking a child by their shoulders, even though it does not cause any injury, and hitting a specific body part of a child with a hand or an object.

The National Youth Policy Institute looked into students experiencing physical punishment from elementary school fourth graders to high school seniors through the Survey on the Human Rights of Children and Adolescents. The survey shows that those experiencing physical punishment has been slightly reducing after 2013. Students who have experienced physical punishment from their parents at least once in the past one year reduced from 30.6% in 2013 to 25% in 2019. Students who have experienced physical punishment from school teachers greatly fell from 29.8% in 2013 to 9.2% in 2019, which shows that physical punishment significantly decreased in school.

Experience of physical punishment from parents or school teachers; 2013~2019 (Unit: %)
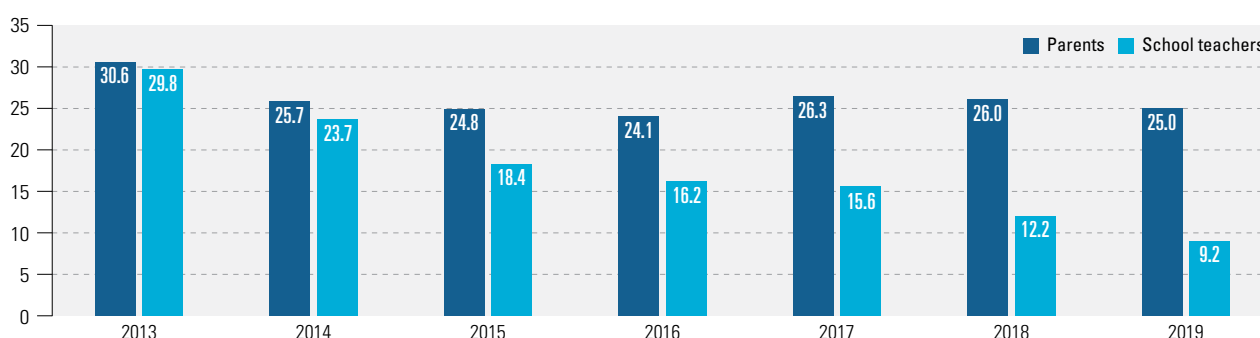
Year	Parents	School teachers
2013	30.6	29.8
2014	25.7	23.7
2015	24.8	18.4
2016	24.1	16.2
2017	26.3	15.6
2018	26.0	12.2
2019	25.0	9.2

Source : National Youth Policy Institute, Survey on Human Rights of Children and Adolescents, each year
Note 1 : Respondents who checked 'Never' were subtracted from 100% to calculate the proportion of students who experienced physical punishment.
Note 2 : From 2013 to 2016, the answer options to the physical punishment experience question were 'Never', 'Once or twice a year', 'Once or twice a month', 'Once or twice a week' and 'At least 3 times per week'. After 2017, the answer options were 'Never', 'Once or twice a year', 'Once or twice every 2 or 3 months', 'Once or twice a month' and 'Once or twice a week'.

Experience of hearing insulting words(swearing) from parents or school teachers; 2013~2019　　　　(Unit: %)
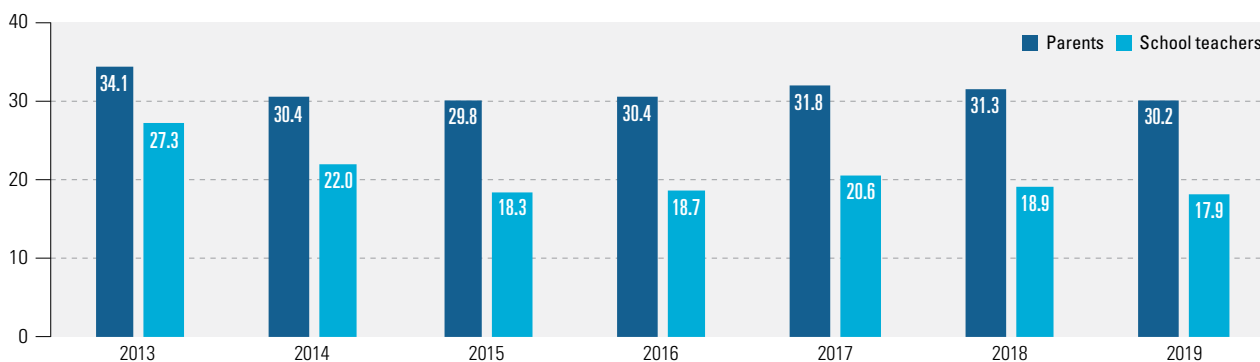
Source : National Youth Policy Institute, Survey on Human Rights of Children and Adolescents, each year
Note 1 : Respondents who checked 'Never' were subtracted from 100 to calculate the proportion of students who experienced physical punishment.
Note 2 : From 2013 to 2016, the answers to the physical punishment experience question were 'Never', 'Once or twice a year', 'Once or twice a month', 'Once or twice a week' and 'At least 3 times per week'. After 2017, the answers were 'Never', 'Once or twice a year', 'Once or twice every 2 or 3 months', 'Once or twice a month' and 'Once or twice a week'.

The proportion of children who experienced non-physical punishment, that is to say insulting remarks, from their parents slightly decreased from 34.1% in 2013 to 30.2% in 2019. The proportion of children who experienced non-physical punishment from teachers also declined from 27.3% to 17.9% during the same period. However, the proportions of the two cases were all higher than that of physical punishment.

Increasing child abuse reports, but lower discovery rates

With Korean society's growing awareness of child abuse, child abuse hidden in households is now coming to the surface. The number of child abuse reports greatly increased from 19,214 in 2015 to 41,389 in 2019. The num-

ber of child abuse reports of 2019 grew by 13.7% from 2018(36,417cases). 92.7%(38,380 cases) of the reports received were confirmed as suspected cases of child abuse. Among a total of 38,380 suspected cases of child abuse, 30,045 cases were confirmed as child abuse. The child abuse discovery rate is increasing from 1.32‰ in 2015 to 3.81‰ in 2019, but still lower than other countries like the United States(2016) and Australia(2016~2017) which show 9.0‰.

The survey shows that more child abuse was perpetrated by men(16,615 cases, 55.3%) than women(13,429 cases, 44.7%). Biological fathers and mothers accounted for 41.2%(12,371 cases) and 31.1%(9,342 cases) of child abuse, respectively. Child abuse by stepfathers and stepmothers accounted for 1.9% and 1.1%, respectively. This result indicates that 75.6% of child abuse was caused by parents(in-

Number of child abuse reports received and suspected cases, and discovery rates; 2015~2019　　　　(Unit: No. of cases, ‰)
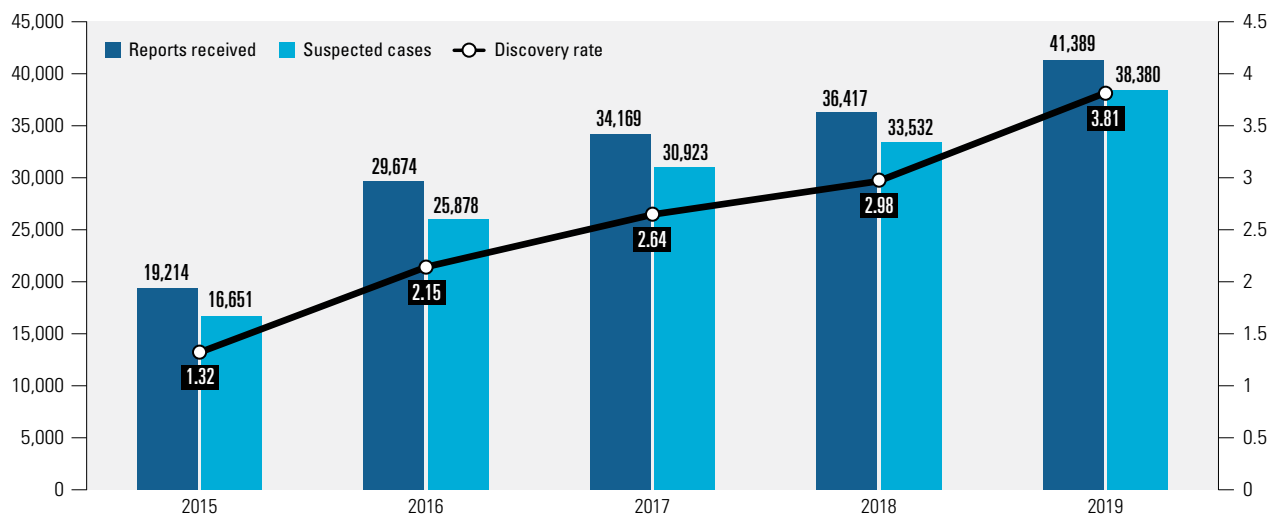
Source : Ministry of Health & Welfare, Statistics on Child Abuse and Neglect 2019
Note　: Discovery rate refers to the number of finally confirmed cases of child abuse per 1,000 child population.

Relationship between child abuse perpetrators and victims; 2019 (Unit: %)

Other 1.2
Other persons 2.2
Relatives 4.4
Substitute caregivers 16.6
Parents 75.6
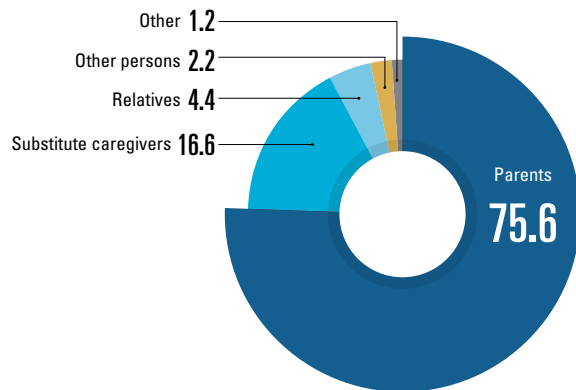
Source : Ministry of Health & Welfare, Child Abuse and Neglect 2019
Note : Substitute caregivers refer to persons who take care of other persons' children for a certain period of time of a day in any form. Substitute caregivers include parents' cohabitants, preschool staff, elementary/middle/high school staff, private educational institute staff, children welfare staff, nursery staff, etc.(Ministry of Health & Welfare, 2020).

Types of child abuse; 2019 (Unit: %)

Sexual abuse 2.9
Neglect 9.6
Physical abuse 13.9
Psychological abuse 25.4
Combined abuse 48.2

Physical Psychological Neglect 3.0
Other 3.2
Psychological Neglect 3.4
Physical Psychological 38.6
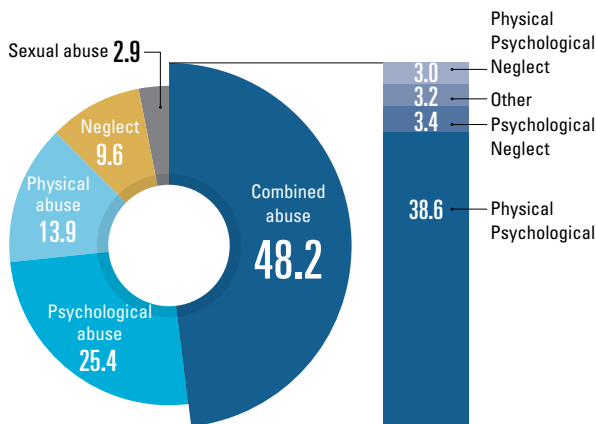
Source : Ministry of Health & Welfare, Statistics on Child Abuse and Neglect 2019

cluding adoptive parents). Substitute caregivers accounted for 16.6% of child abuse. Among them, elementary/middle/high school staff took up the largest part(2,154 cases, 7.2%), followed by childcare staff(1,384 cases, 4.6%). Since most perpetrators are parents, a majority of child abuse(23,883 cases, 79.5%) occurred at home. In many cases(14,476 cases, 48.2%), child abuse occurred in combination(physical abuse, psychological abuse, sexual abuse, neglect, etc.), instead of occurring as a single type of child abuse. Psychological abuse made up the largest part(7,622 cases, 25.4%) of a single type of child abuse, followed by physical abuse(4,179 cases, 13.9%) and neglect(2,885 cases, 9.6%). A combination of physical abuse and psychological abuse accounted for the largest part(38.6%) in combined abuse.

Experiences of gender discrimination makes up the largest part

The National Human Rights Commission of Korea publishes 'Discrimination Experience for the Past Year' each year based on the Discrimination Prohibition Standards of the UN International Human Rights Law. According to the 2019 Survey on National Human Rights Conditions published in June 2020, 13.9% of the respondents said that they have experienced gender discrimination, which accounted for the largest part of discrimination reasons. Then, it was followed by age(13.6%), economic status(10.3%), employment type such as fixed-term employment(7.8%), educational background(7.7%) and physical condition(6.6%).

Reasons of discrimination experience for the past one year; 2019 (Unit: %)

Category	%
Gender	13.9
Age	13.6
Economic status	10.3
Employment type	7.8
Educational background	7.7
Physical conditions	6.6
Political ideas	4.1
Marriage status	3.3
Region of birth	2.7
Pregnancy/Childbirth	2.6
Disease	2.3
Religion	2.2
Disabilities	1.7
Ethnic group/Race	1.4
Family background	1.2
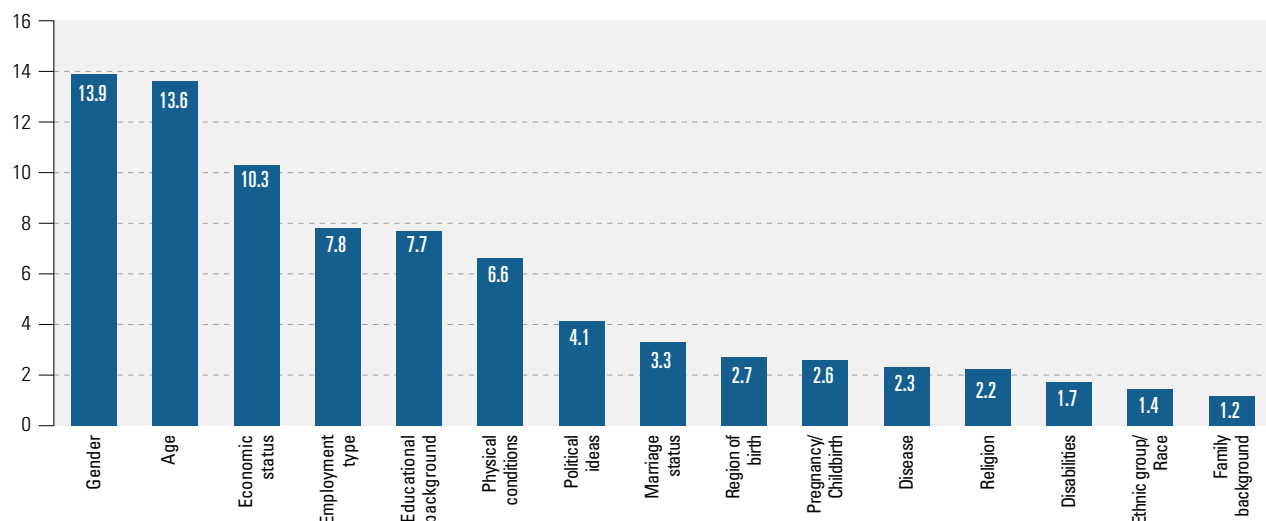
Source : National Human Rights Commission of Korea, 2019 Survey on National Human Rights Conditions
Note : Questionnaire answer options consists of 'Yes' and 'No or Not applicable'. Data shows the proportion of respondents who checked 'Yes'.

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

SDG 17 emphasizes inclusive participation of stakeholders such as the government, civil society, private sector and their proactive partnership to achieve the 2030 Agenda successfully. However, achieving the SDGs is expected to become difficult in the wake of the COVID-19 pandemic. The UN High-level Political Forum on Sustainable Development(HLPF) held in July 2020 urged nations to establish forward-looking policies and concentrate their leadership on implementing the SDGs. Developing countries requested support such as securing of financial resources for development, debt relief, infrastructure investment and ODA expansion from the international society, whereas advanced countries such as the European Union(EU) emphasized the transition to climate change, biodiversity and low-carbon digital-centric economy. COVID-19 is showing us how crisis responses could vary according to the politics, economy and sociocultural environments of nations. In addition, numerous issues of direction of multilateral cooperation organizations such as the UN are arising at the same time.

It has been 10 years since Korea joined the OECD Development Assistance Committee(DAC) and became an official donor country. With the government's continuous Official Development Assistance(ODA) expansion policy, Korea has become one of the countries expanding it the fastest among OECD member states. Recently, there has been an increasing demand for quality improvement as well as quantitative growth. COVID-19 has us think about how we will approach support for developing countries' SDG implementation by 2030 and how we will proceed with a variety of ODA projects in the future.

ODA/GNI ratio stood at 0.15%

According to the 2019 provisional statistical data of ODA of OECD member states released by the Office for Government Policy Coordination in April 2020, the ODA size of 30 donor countries affiliated to the OECD DAC amounted to USD 152,800 million, which corresponds to 0.3% of the gross national income(GNI) on average. Korea's ODA reached USD 2,520 million, increased by USD 160 million from 2018. The ODA/GNI ratio stood at 0.15%. Korea has been continuously expanding its ODA since it joined the OECD DAC in 2009. The annual average ODA increase rate was the highest between 2010 and 2019 at 11.9%. However, its ODA/GNI ratio has not yet reached 0.2%, the value promised with the international society.

Korea's ODA; 2002~2019 (Unit: USD million, %)
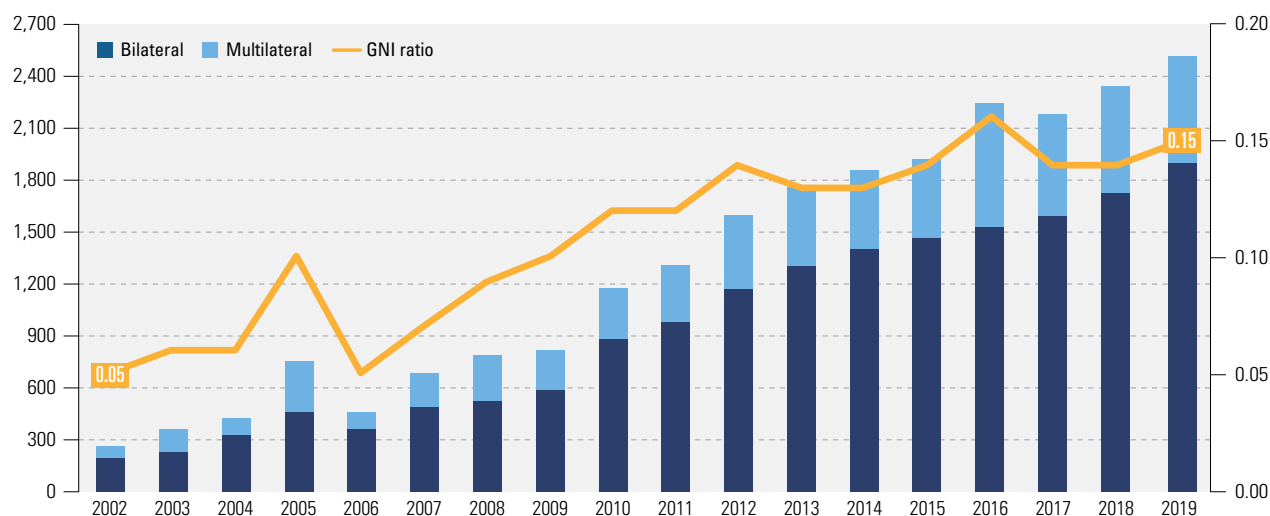
Source : Ministry of Economy and Finance, ODA Statistics(Korean Statistical Information Service kosis.kr, retrieved on November 18, 2020)
Note : 2019 data are provisional.

35.8% of bilateral aid is for LDCs

Korea's bilateral aid for individual partner countries amounted to USD 1,731.05 million in 2018, accounting for 73.5% of the total ODA. Its multilateral aid provided through multilateral institutions such as international organizations came to USD 623.8 million, making up 26.5%. 35.8% of the total bilateral aid was provided for Least Developed Countries(LDCs), USD 642.3 million, which was higher than the bilateral aid of 2009, USD 161 million(27.7%). On the other hand, bilateral aid for High-Middle Income Countries(HMICs) decreased from 16.1% in 2009 to 9.7% in 2018. As a result of analyzing bilateral aid accumulated from 2009 to 2018, it was found that over 74% of the total ODA was provided for lower income countries, 37% for least developed countries and 37% for Low-Middle Income Countries(LMICs). The ODA for HMICs accounted for 9% of bilateral aid. In 2018, Vietnam(USD 134.81 million) received the largest bilateral aid, followed by Ethiopia(USD 79.11 million), Bangladesh(USD 72.13 million), Egypt(USD 69.17 million), Laos(USD 68.28 million), Tanzania(USD 67.36 million), Cambodia(USD 61.44 million), Mongolia(USD 59.18 million), the Philippines(USD 57.69 million) and Indonesia(USD 43.3 million). In particular, Vietnam has been receiving the largest bilateral aid since 2008.

40% of bilateral aid is for economic infrastructure, and 30% for social infrastructure

In 2018, 40.2% of the total ODA amount committed was provided for economic infrastructure and services, and approximately 30.3% for social infrastructure and services and 14.3% for production(industry), etc. 84% was used for economic, social and industrial sectors. 42.3% of bilateral aid for social infrastructure and services was provided for education, 32.6% for health, 14% for public administration and civil society and 4.5% for water resources and sanitation. Humanitarian assistance accounted for 4.1% of the total bilateral ODA.

GPEDC indicators for monitoring on the effectiveness of development assistance

The international society has been putting forth the effects to enhance the effectiveness of international development cooperation projects such as ODA, which led to establishment of the Global Partnership for Effective Development Cooperation(GPEDC) at the Fourth High Level Forum on Aid Effectiveness held in Busan in 2009. Under this Partnership, the global community has been monitoring the results of development cooperation on a regular basis. The GPEDC monitoring framework consists of four principles(Focus on Development Results, Country Ownership of Development Co-operation, Inclusive Partnerships for Effective

Bilateral ODA by recipient countries' income; 2009~2018 (Unit: USD million)

Least developed countries · Low income countries · Low-middle income countries · High-middle income countries · Income not distributed
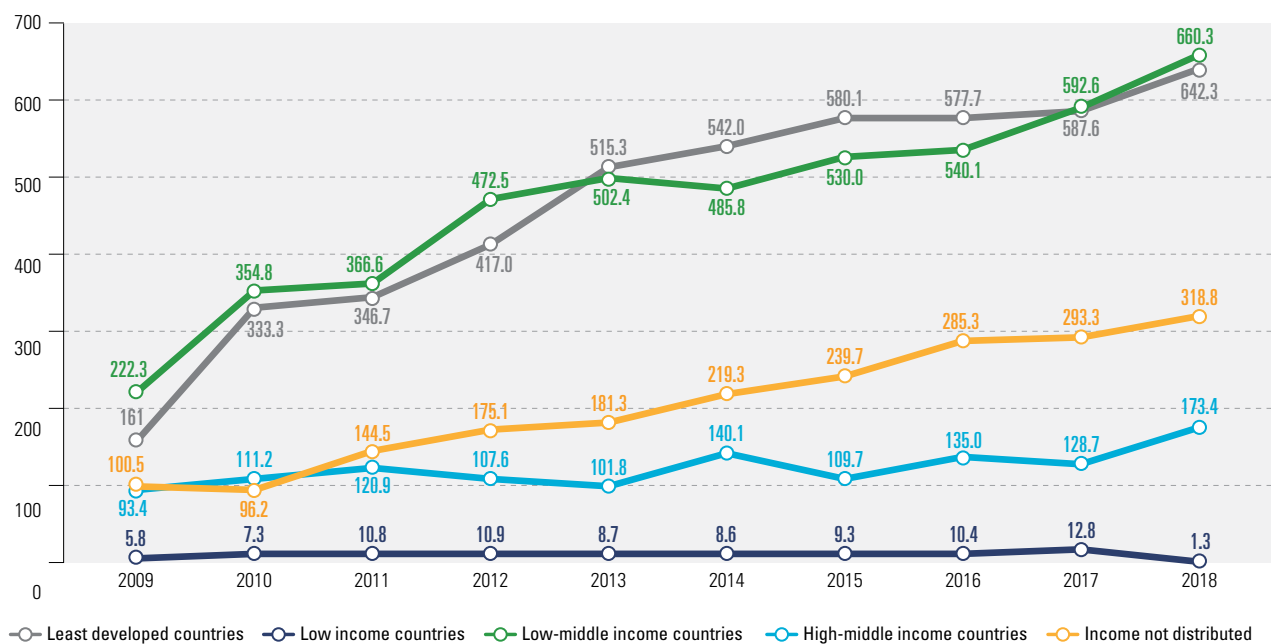
Source : The Export-Import Bank of Korea, 2019 Global ODA Statistics, ODA Data

Bilateral aid by sector; 2018(based on the amount committed) (Unit: %)

Others(including non-distribution) **3.4**
Administrative expenses of donor country **3.0**
Humanitarian assistance **4.1**
Multi-sector **4.7**

Population policy and reproductive health **1.4**
Water resources and sanitation **4.5**
Other social infrastructure **5.3**

| Production (Industry) **14.3** | Economic infrastructure and services **40.2** | Social infrastructure and services **30.3** |

Public administration and civil society **14.0**

Education **42.3**

Health **32.6**

Source : The Export-Import Bank of Korea, 2019 Global ODA Statistics, ODA Data
Note   : Due to rounding, the ratio presented in this graph may not add up precisely to the total.

Development, Transparency and Accountability for Effective Development) and 10 indicators. In particular, 'Use of Country-led Results Frameworks of Development Partners' indicator in accordance with 'Focus on Development Results' principle is being used as SDG Target 17.15.1(Extent of use of country-owned results frameworks and planning tools by providers of development cooperation).

According to the monitoring results of 2018, Korea uses 52.3% of results frameworks of recipient countries. The average of donor countries stood at 57.1% and Iceland recorded the highest result at 100%. After Iceland, China(83.3%), Finland(79.6%), Italy(68.5%) and Germany(65.7%) were found to utilize recipient countries' systems proactively. Korea was similar to Australia(53.1%) and the Czech Republic(52.8%).

This score is measured as the average of three indexes. The first index is the proportion of new development cooperation projects drawn from recipient country-led performance systems in donor countries' projects. The second index is the proportion of the result indicator drawn from recipient country-led performance systems. Lastly, the third index is the proportion of the result indicator to be monitored on the basis of recipient countries' resources and evaluation systems. As a result of monitoring in 2018, Korea received 89.7%, 39.2% and 27.9%, respectively. The results show that Korea needs to improve in making project result indicators and monitoring the effectiveness of projects based on such indicators even though it is already utilizing recipient countries' result systems proactively when finding new development cooperation projects.

Proportion of utilizing recipient countries' results frameworks and planning tools; 2018 (Unit: %)

Country	Value
Iceland	
China	
Finland	
Italy	
Germany	
Japan	
Spain	
Norway	
Austria	
France	
Switzerland	
Sweden	
Canada	
Netherlands	
Ireland	
Australia	
Czech Republic	
Korea	
Portugal	
Denmark	
US	
Luxembourg	
New Zealand	
UK	
Monaco	
Belgium	
Slovenia	

Global average **57.1**
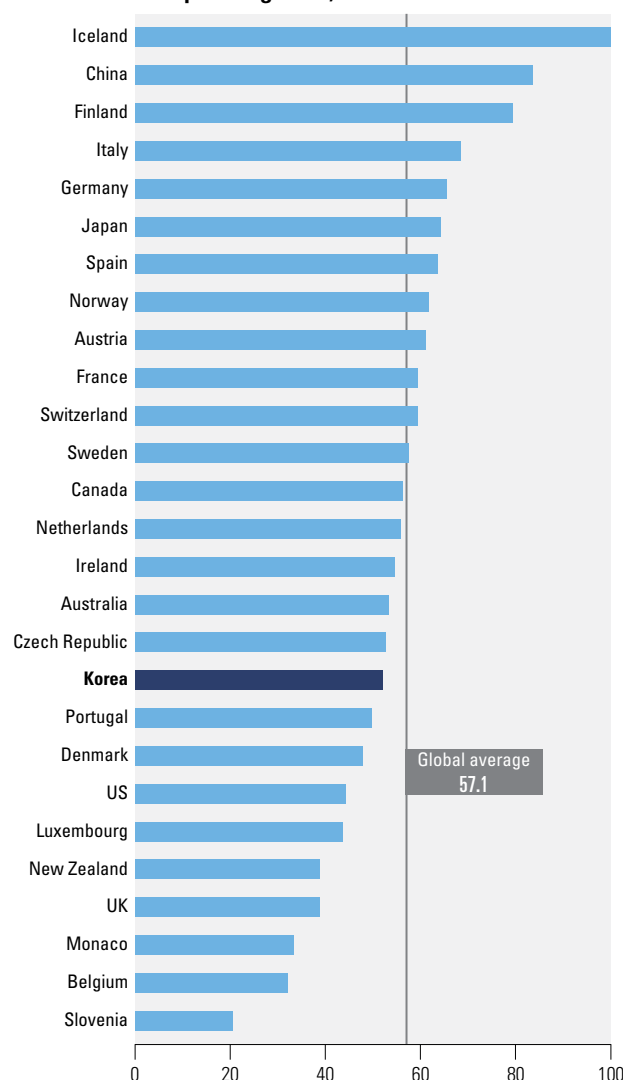
Source : Global Partnership for Effective Development Cooperation website(retrieved on September 2, 2020) UN SDGs Global Database(retrieved on September 2, 2020)

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https://en.unesco.org/covid19/educationresponse [Global tracking of COVID-19 caused school closures and re-opening]

Abbreviations

AI Avian Influenza

BOD Biochemical Oxygen Demand

BT Bio Technology

CIS Commonwealth of Independent States

CT Culture Technology

DAC Development Assistance Committee

ET Environment Technology

EU European Union

FAO Food and Agriculture Organization of the United Nations

FTE Full Time Equivalent

GDP Gross Domestic Product

GNI Gross National Income

GPEDC Global Partnership for Effective Development Cooperation

HLPF High-level Political Forum on Sustainable Development

HMIC High-Middle Income Countries

IARC International Agency for Research on Cancer

IEA International Energy Agency

IGCC Integrated Gasification Combined Cycle

IHR International Health Regulations

ILO International Labour Organization

IMF International Monetary Fund

IPCC Intergovernmental Panel on Climate Change

IPU Inter-Parliamentary Union

ISID Inclusive and Sustainable Industrial Development

IT Information Technology

IUCN International Union for Conservation of Nature

IWRM Integrated Water Resources Management

KBAs Key Biodiversity Areas

LDC Least Developed Countries

LMIC Low Middle Income Countries

LULUCF Land Use, Land-use Change, and Forestry

MDGs Millennium Development Goals

NCDs Non-communicable Diseases

NT Nano Technology

ODA Official Development Assistance

OECD Organization for Economic Cooperation and Development

PISA Program for International Student Assessment

PM Particulate Matter

PPP Purchasing Power Parity

SDGs Sustainable Development Goals

SOCX Social Expenditure

ST Space Technology

TAC Total Allowable Catch

UHC Universal Health Coverage

UN United Nations

UNEP United Nations Environment Programme

UNESCO United Nations Education, Scientific and Cultural Organization

UNIDO United Nations Industrial Development Organization

UNSD United Nations Statistics Division

WCMC World Conservation Monitoring Center

WFP World Food Programme

WHO World Health Organization

Global Indicator Framework for the SDGs

Goal 1 — End poverty in all its forms everywhere

Targets	Indicators
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 geographic location(urban/rural)
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, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable
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
	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 type of tenure
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
	1.5.2 Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)
	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
	1.5.4 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies
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
	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

Targets	Indicators
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
	2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale(FIES)
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** Prevalence of stunting(height for age <-2 standard deviation from the median of the World Health Organization(WHO) Child Growth Standards) among children under 5 years of age
	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)
	2.2.3 Prevalence of anaemia in women aged 15 to 49 years, by pregnancy status(percentage)
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
	2.3.2 Average income of small-scale food producers, by sex and indigenous status
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
	2.5.2 Proportion of local breeds classified as being at risk of extinction
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
	2.a.2 Total official flows(official development assistance plus other official flows) to the agriculture sector

Targets		Indicators	
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
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

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

Targets		Indicators	
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
		3.1.2	Proportion of births attended by skilled health personnel
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
		3.2.2	Neonatal mortality rate
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
		3.3.2	Tuberculosis incidence per 100,000 population
		3.3.3	Malaria incidence per 1,000 population
		3.3.4	Hepatitis B incidence per 100,000 population
		3.3.5	Number of people requiring interventions against neglected tropical diseases
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
		3.4.2	Suicide mortality rate
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
3.6	By 2020, halve the number of global deaths and injuries from road traffic accidents	**3.6.1**	Death rate due to road traffic injuries
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
		3.7.2	Adolescent birth rate(aged 10~14 years; aged 15~19 years) per 1,000 women in that age group
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**	Coverage of essential health services
		3.8.2	Proportion of population with large household expenditures on health as a share of total household expenditure or income
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
		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]
		3.9.3	Mortality rate attributed to unintentional poisoning
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
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
		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 and distribution
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
		3.d.2	Percentage of bloodstream infections due to selected antimicrobial-resistant organismsi

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

Targets		Indicators	
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
		4.1.2	Completion rate(primary education, lower secondary education, upper secondary education)

Targets	Indicators
4.2 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	**4.2.1** Proportion of children aged 24~59 months who are developmentally on track in health, learning and psychosocial well-being, by sexi
	4.2.2 Participation rate in organized learning(one year before the official primary entry age), by sex
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
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
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
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
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
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
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
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 leveli

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Goal 5 Achieve gender equality and empower all women and girls

Targets	Indicators
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
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
	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
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
	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
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
	5.5.2 Proportion of women in managerial positions
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
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 Proportion of countries where the legal framework(including customary law) guarantees women's equal rights to land ownership and/or control
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
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

Targets	Indicators
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
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 hand-washing facility with soap and water
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
	6.3.2 Proportion of bodies of water with good ambient water quality
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
	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
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
	6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation
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
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

Targets	Indicators
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	**7.1.1** Proportion of population with access to electricity
	7.1.2 Proportion of population with primary reliance on clean fuels and technology
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
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
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)

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

Targets	Indicators
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	**8.1.1** Annual growth rate of real GDP per capita
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
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
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
	8.5.2 Unemployment rate, by sex, age and persons with disabilities
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

Targets	Indicators
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
	8.8.2 Level of national compliance with labour rights(freedom of association and collective bargaining) based on International Labour Organization(ILO) textual sources and national legislation, 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
	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
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
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

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

Targets	Indicators
9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder 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
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
	9.2.2 Manufacturing employment as a proportion of total employment
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
	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 capacities	**9.4.1** CO_2 emission per unit of value added
9.5 Enhance scientific research, upgrade the technological capacities 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
	9.5.2 Researchers(in full-time equivalent) per million inhabitants
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
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

Goal 10   Reduce inequality within and among countries

Targets	Indicators
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
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
10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	**10.4.1** Labour share of GDP
	10.4.2 Redistributive impact of fiscal policy4
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

Targets	Indicators
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
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
	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 destinationi
	10.7.4 Proportion of the population who are refugees, by country of origin
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
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)
10.c By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent	**10.c.1** Remittance costs as a proportion of the amount remitted

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

Targets	Indicators
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
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 situations, women, children, persons with disabilities and older 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, private), type of heritage(cultural, natural) and 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
	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
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
	11.6.2 Annual mean levels of fine particulate matter(e.g. $PM_{2.5}$ and PM_{10}) in cities(population weighted)
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
	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
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; and (c) increase local fiscal space
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
	11.b.2 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies

Goal 12 — Ensure sustainable consumption and production patterns

Targets	Indicators
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 capacities of developing countries	**12.1.1** Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production
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
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
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
	12.4.2 (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	**12.5.1** National recycling rate, tons of material recycled
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
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 plan implementation
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
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)
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)i

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

Targets	Indicators
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
	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
	13.1.3 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies
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
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
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** Amounts 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 sustainably use the oceans, seas and marine resources for sustainable development

Targets	Indicators
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) plastic debris densityi
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
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 negotiation4	**14.6.1** Degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing
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
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 framework 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

Targets	Indicators
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
	15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type
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
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
	15.4.2 Mountain Green Cover Index
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
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
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

Targets	Indicators
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
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; and (b) revenue generated and finance mobilized from biodiversity-relevant economic instruments
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; and (b) revenue generated and finance mobilized from biodiversity-relevant economic instruments
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 **Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**

Targets	Indicators
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
	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
	16.1.4 Proportion of population that feel safe walking alone around the area they live
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
	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
	16.3.2 Unsentenced detainees as a proportion of overall prison population
	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
	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
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
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
	16.7.2 Proportion of population who believe decision-making is inclusive and responsive, by sex, age, disability and population group
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
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 human rights 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
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
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

Targets	Indicators
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
	17.1.2 Proportion of domestic budget funded by domestic taxes
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, total and to least developed countries, as a proportion of the Organization for Economic Cooperation and Development(OECD) Development Assistance Committee donors' gross national income(GNI)
17.3 Mobilize additional financial resources for developing countries from multiple sources	**17.3.1** Foreign direct investment, official development assistance and South-South cooperation as a proportion of gross national income
	17.3.2 Volume of remittances(in United States dollars) as a proportion of total GDP
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 the least developed countries
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 speed5
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
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
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 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access	**17.12.1** Weighted average tariffs faced by developing countries, least developed countries and small island developing States
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
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 in 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 Sustainable Development Goal monitoring
	17.18.2 Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics
	17.18.3 Number of countries with a national statistical plan that is fully funded and under implementation, by source of funding
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

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