2025

SUSTAINABLE DEVELOPMENT GOALS

SDG IN THE REPUBLIC OF KOREA: PROGRESS REPORT 2025

SDG in the Republic of Korea: Progress Report

2025

Foreword

Over the past decade, Korea has made significant efforts to implement policies that advance the country's Sustainable Development Goals (SDGs), underscoring the increasing importance of evidence-based policymaking and evaluation. Achieving the core SDG principle of "Leaving No One Behind" requires reliable, comprehensive statistics that encompass social, economic, and environmental dimensions.

The newly published Korea's SDG Progress Report 2025 indicates that while Korea has made steady progress across all 17 SDG areas, further efforts are needed in gender equality (Goal 5) and climate action (Goal 13), compared to OECD average. Moreover, strengthening responses to emerging challenges, such as online sexual exploitation and abuse (OSEA) and climate-induced natural disasters, has become an urgent priority.

A review of global SDG progress highlights the significant challenges that remain on the path to achieving these goals. The COVID-19 pandemic has exacerbated global inequalities, leading to an increase of 23 million people living in extreme poverty since 2019 and pushing over 100 million more into hunger. The number of refugees worldwide has reached an all-time high due to ongoing conflicts, and the impacts of climate change are worsening, placing a severe strain on developing countries.

Furthermore, the international community has initiated comprehensive discussions on the post-2030 development framework to prepare for the transition beyond the SDGs. To navigate the post-2030 era, the United Nations has identified several key priorities, including strengthening national leadership in data production and utilization, developing simple yet effective indicators, enhancing collaboration between policymakers and statistical experts, and expanding the use of non-traditional data sources such as satellite data and big data.

To address these evolving challenges, the Statistics Research Institute is committed to strengthening advancement toward Korea's Sustainable Development Goals through a diverse range of research initiatives. These efforts encompass the development and analysis of SDG indicators, innovative statistical production methodologies leveraging AI and big data, research on climate change-related indicators, and economic and social statistics aimed at enhancing economic vitality and overall quality of life.

In February 2025, the Statistical Development Institute redefined its role as the center for national statistical research. Moving forward, the newly established institute will spearhead innovations in national statistics, strengthening its role in data-driven SDG research and analysis.

It is my hope that this report will serve as a valuable resource for gaining an objective understanding of Korea's SDG progress and in shaping the country's future sustainable development policies. Lastly, I sincerely appreciate all those who contributed to the publication of this report.

Kim Jin

Director General

Statistics esearch Institute

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SDG Progress Assessment on a Global Scale

At the UN SDG Summit held to assess the progress of the sustainable development goals (SDGs), member states shared the recognition that the "achievement of SDGs is at risk" and agreed on the need for urgent, ambitious and transformative efforts to fully achieve the SDGs by 2030 (UN 2024).

A qualitative trend analysis was conducted on SDG indicators to assess the likelihood of achieving the global goals by 2030. As of 2024, only 17% of the 135 targets in the UN SDGs were expected to be achieved. About 48% were slightly or seriously off the track while the remaining 35% experienced stagnation or regression (UN 2024).

The achievement of the SDGs is now facing even more enormous and complex challenges, such as the lingering effects of COVID-19, economic turmoil caused by war and the climate crisis that is becoming an increasingly dire reality. In 2022, the global population living in abject poverty increased by 23 million compared to 2019, while the number of people suffering from hunger rose by more than 100 million. Due to the COVID-19 pandemic, progress in life expectancy went back to the levels seen a decade ago, and academic achievements, which drive future prosperity, were also at serious risk. The number of refugees across the world due to war reached an all-time high of 374 million while the civilian casualties also rose by 72% between 2022 and 2023. As the impacts of multiple environmental crises accumulated, 2023 was recorded as the hottest year, with global temperatures approaching very close to the 1.5℃ threshold set by the Paris Agreement. In addition, the global greenhouse gas emissions and the concentration of carbon dioxide in the air hit yet another record high in 2022.

Developing countries and fragile states have been faced with even more serious development challenges. The per-capita GDP growth rate in the most fragile states fell even below that of advanced nations, making it even more difficult to improve income inequality between countries. The investment gap to achieve the SDGs in developing countries amounts to 4 trillion dollars per year.

Key Findings of Korea's SDG Progress Report 2025

In January 2022, South Korea strengthened its institutional mechanisms for SDG implementation, including the enactment of the Framework Act on Sustainable Development, the establishment of national and local sustainable development plans, and the reform of the SDG assessment framework. In addition, Korea has contributed to building foundations for achieving the SDGs by periodically monitoring the SDG progress based on global SDG indicators. The SDG in the Republic of Korea: Progress Report 2025, published this year, analyzed on Korea's progress across the 67 SDG indicators. The key findings are summarized according to the five pillars: people, planet, prosperity, peace and partnership.

People: The degree of poverty reflected in the relative poverty rate based on disposable income and the average poverty gap has recently stalled in its improvement. In particular, the poverty rate among elderly (aged 66 or older) remains the highest among OECD countries. The Indicator of Food Price Anomalies (IFPA), which spiked in 2020 and 2021, returned to the 'normal' range in 2022 and 2023. However, food price inflation has remained relatively high at around 5% for several years. While Korea's capacity to respond public health issues is highly regarded, the suicide rate, which had been decreasing, saw a distinct increase in 2023 compared to the previous year, raising concerns. Participation in early children education and adult lifelong learning has recovered from the impact of COVID-19. Despite steady improvements, however, women's representation in public office and managerial positions is still considered low. Moreover, crimes of sexual violence targeting women have become increasingly diverse.

Planet: In 2022, the total greenhouse gas emissions eclined after rebounding in the aftermath of the COVID-19 pandemic. Meanwhile, considering the energy sector that accounts for a large proportion of greenhouse emissions, there have been long-term improvements in the production of new and renewable energy, its supply ratio and national energy

efficiency. However, the nation's share of renewable energy consumption still remains low by global standards. Fossil fuel subsidies surged due to the global energy crisis caused by conflicts. Climate change and extreme weather events, such as heatwaves and heavy rain, have led to increased human casualties from natural disasters. Ecosystem degradation has continued in various areas, including forest cover, the Red List Index, marine acidification, and fishery production. More efforts are needed to enhance water-use efficiency and reduce food waste across the entire supply chain, from production to consumption.

Prosperity: The real GDP per capita grew by only 1.3% in 2023, which is favorable compared to major economies, such as the United Kingdom, Germany and France. The nation's unemployment rate has remained low, showing signs of improvement. The share of manufacturing in value added and employment has recently declined, requiring attention to Korea's industrial competitiveness. There has also been steady improvement in income inequality, as observed in the Gini coefficient, but the asset inequality has recently worsened. The quality of living environments has improved, with a decline in the share of households below the minimum residential standards. However, Korea still needs to alleviate housing cost burdens for vulnerable groups and expand urban green spaces.

Peace and Partnership: In terms of diversity among public servants and officials, the number of public servants with disabilities has increased due to policy efforts; however, there has been little improvement in the ratio of young lawmakers, which is regarded low by global standards. Meanwhile, there was a noticeable increase in satisfaction with public services, such as license services, public hearings and resident participatory budgets. People felt less fear about crimes, indicating that the level of safety and security has enhanced. The size of Korea's ODA further rose by a large margin in 2023 and 2024, and the Internet access rate, which is essential infrastructure in this modern society, has maintained a high

level, but it is also necessary to address the gap with the vulnerable groups, such as the elderly and low income class and low-educated individuals.

The key findings from Korea's Progress Report 2025 show that global crises such as COVID-19 and war have directly and indirectly affected the Korean society in the medium and long term. Various stakeholders, including the government, businesses, civil society, and international organizations, are making efforts to address these challenges. However, persistent gender, age, and regional disparities remain, and more efforts are needed to overcome this climate crisis and preserve biodiversity.

1 NO POVERTY

The relative poverty rate based on disposable income and the average poverty gap have recently stalled in their improvement while the beneficiary rate of public pensions has increased. Social protection expenditure as a percentage of GDP surged until 2020, but it remains low compared to OECD countries.

2 ZERO HUNGER

The Indicator of Food Price Anomalies (IFPA) has recently returned to the 'normal' range, but food price inflation has remained relatively high for several years. The prevalence of undernourishment has recently increased again, and the agricultural income has stagnated, failing to rise for a long period.

3 GOOD HEALTH AND WELL-BEING

The suicide mortality rate, which had been decreasing, rose again in 2023. Korea's capacity to respond public health emergencies and the child immunization rate have been highly regarded. The number of health workers per capita has also increased, but it remains low compared to OECD countries.

4 QUALITY EDUCATION

According to international data (PISA), student performance in reading, mathematics among middle and high students has returned to the pre-COVID levels. Participation rates in early childhood education and lifelong learning have recovered from the impacts of COVID-19, and the adult literacy rate has continued to rise, despite some deviations by age and gender.

5 GENDER EQUALITY

Although women's representation in decision-making positions has gradually improved among lawmakers, public servants and managers in public and private sectors, it is still considered low. Gender-based violence, including dating violence, stalking and digital sex crimes, has diversified.

6 CLEAN WATER AND SANITATION

With the ongoing increase in public water supply, regional disparity has improved. The degree of integrated water resources management (IWRM) implementation has further advanced, but more efforts for vulnerable sectors are still needed to lower water stress and improve water-use efficiency.

7 AFFORDABLE AND CLEAN ENERGY

There has been long-term improvement in national energy efficiency, as reflected in the production and supply of new and renewable energy, its supply ratio and energy intensity. However, the share of renewable energy in total final energy consumption and energy intensity have remained low by global standards.

8 DECENT WORK AND ECONOMIC GROWTH
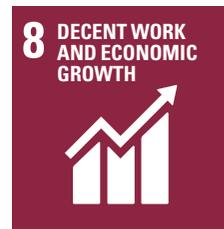
The real GDP growth rate per capita was recorded as low, but it remains favorable compared to major economies. With the unemployment rate remaining low, there have been signs of improvement in labor market conditions. The occupational injury rate has increased while fatal work-related accidents, such as work-related mortality rate, have decreased.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

The share of manufacturing in total value added and employment has recently decreased, necessitating monitoring of industrial competitiveness. The budget and human resources for research and development (R&D) remain at a high level due to past investments, but close monitoring of future budget changes is required.

10 REDUCED INEQUALITIES

Income inequality (Gini index) has steadily improved whereas wealth inequality has recently worsened. A noticeable increase in real income and real consumption expenditures was observed among households in the lowest income quintile. In the Social Mobility Indicator, further improvements are needed in areas such as fair wages, social protection and working conditions.

11 SUSTAINABLE CITIES AND COMMUNITIES

Declining proportion of households living below minimum housing standards and improvements in urban living conditions, the area of green spaces and public facilities has expanded. However, further efforts are needed to reduce the housing cost burden on vulnerable groups and further expand green spaces in urban areas. Fine particulate matter ($PM_{2.5}$) pollution has recently stagnated.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

With an overall increase in the recycling rate, improvements are needed in the municipal solid waste recycling rate and in the sustainable management of the food supply chain, including production, processing, and disposal. Amid the global energy crisis, fossil fuel subsidies have risen sharply.

13 CLIMATE ACTION

The total greenhouse gas (GHG) emissions decreased again in 2022, but stronger action is required as the frequency and intensity of extreme weather events, such as heatwaves and heavy rainfall, have increased, leading to more human casualties.

14 LIFE BELOW WATER

According to long-term monitoring, ocean acidification has occurred at a similar rate globally or in nearly waters. Plastic accounts for the majority of marine debris. Offshore fishery production has been decreasing for a long period, highlighting the need for efforts to enhance fisheries resource management, such as the Total Allowable Catch (TAC).

15 LIFE ON LAND

There has been an ongoing decline in the forest area and Red List Index. The proportion of terrestrial, freshwater, and mountain areas designated as protected areas remains low compared to major countries. However, Korea is preparing to implement efforts aligned with international recommendations.

16 PEACE AND JUSTICE

Diversity in public institutions, including the inclusion of persons with disabilities and young people, has improved, but the proportion of young parliamentarians has remained low by global standards. While fear of crimes has declined, the downward trend in homicides rates has recently stalled.

17 PARTNERSHIPS FOR THE GOALS

Korea's ODA has increased in absolute terms, but its ODA-to-GNI ratio remains low. The share of bilateral ODA to least developed countries (LDCs) is relatively high, but foreign direct investment (FDI) and trade with these countries remain sluggish. Korea's internet penetration rate remains high, but efforts are needed to address the digital divide affecting vulnerable groups.

SUSTAINABLE DEVELOPMENT GOALS

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A slight rise in the poverty rate for the retirement-age population following a period of decline

47.9%
2011

39.3%
2021

39.8%
2023

Fewer health workers in Korea compared to OECD countries, despite some expansion (2022)

● Korea ● OECD

Physicians
2.6
3.8

Nurses
4.9
8.4

Dentists
0.5
0.7

Pharmacists
0.8
0.9

Total
8.9
13.8

A rise in the rate of undernourishment

10.6%
2011

16.4%
2022

17.9%
2023
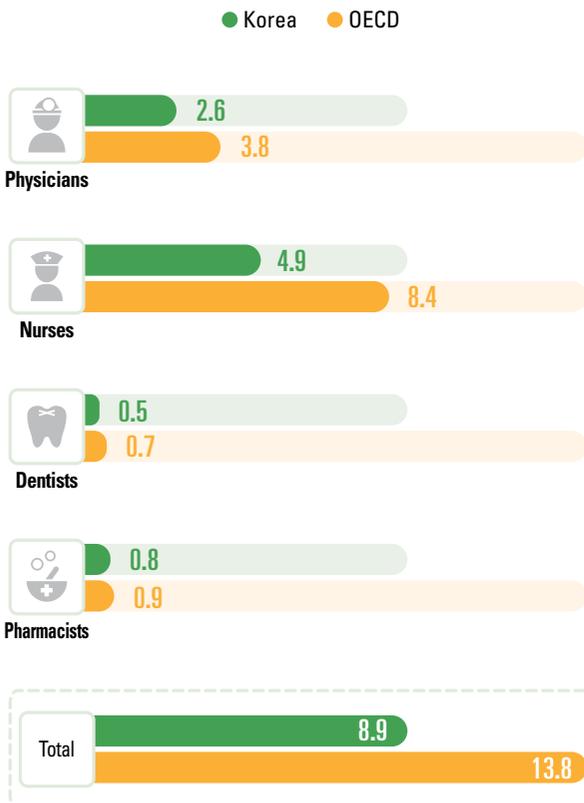
The ratio of 15-year-old students reaching the minimum proficiency level is comparable to the pre-COVID data

● **Reading**

92.4%
2012

86.3%
2015

84.9%
2018

85.3%
2022

● **Mathematics**

90.9%
2012

84.5%
2015

85.0%
2018

83.8%
2022
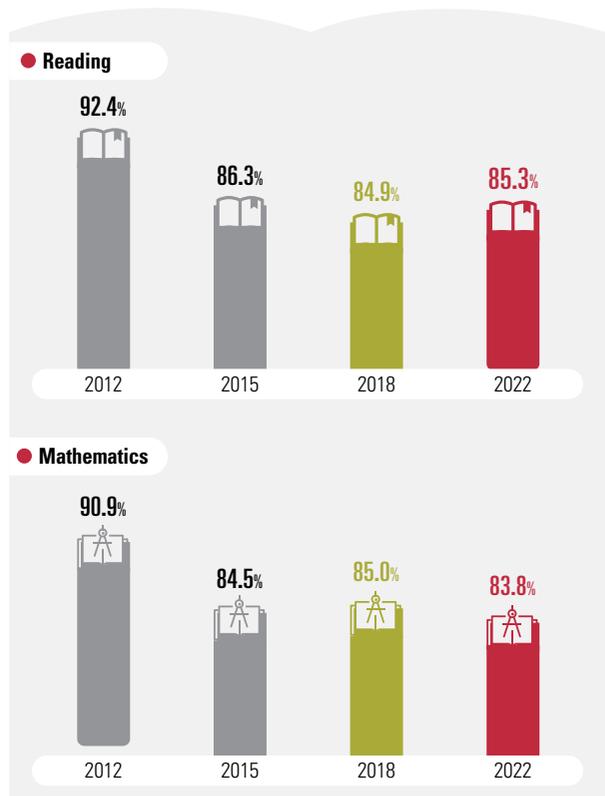
A decline in the arrest rate for offenders of digital sexual crimes

● 2020 ● 2023

94.6% Illegal filming (2020)
91.1% Illegal filming (2023)

88.9% Obscenities via communication media (2023)
83.1% Obscenities via communication media (2020)

86.7% Coercion/threats using recorded materials (2020)
61.4% Coercion/threats using recorded materials (2023)

92.0% Child sexual abuse materials (2020)
91.4% Child sexual abuse materials (2023)

74.2% Fake videos (2020)
48.2% Fake videos (2023)

Illegal filming

Obscenities via communication media

Fake videos

Coercion/threats using recorded materials

Child sexual abuse materials

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High level of Integrated Water Resources Management (IWRM) Implementation, 2023

○ 2017   ○ 2020   ○ 2023

Degree of Implementation (Overall)

100
80
60
40
20
0

D Financing

A Enabling Environment

C Financing

B Institutions & Participation
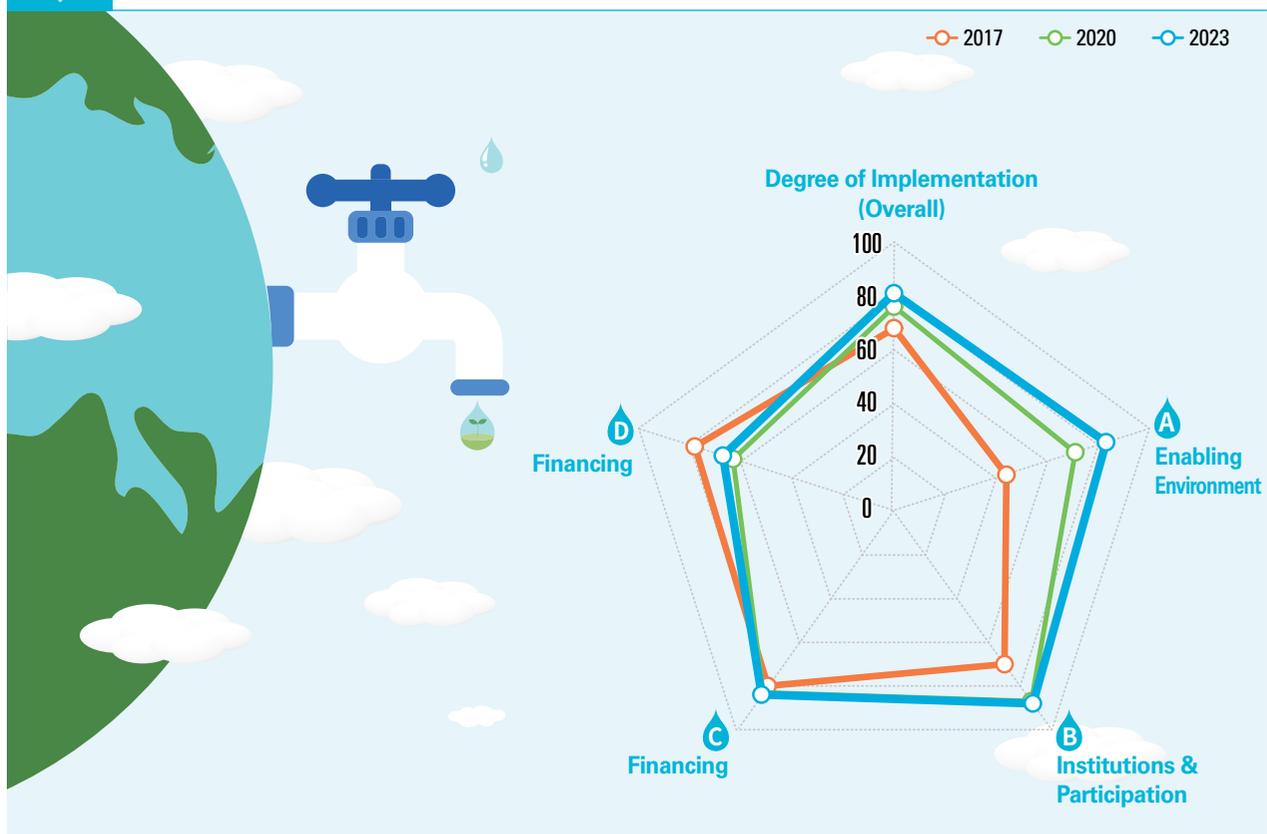
A steady increase in the production and ratio of new and reneable energy

Production (1,000 TOE)

- 2011: 3,570
- 2021: 14,000
- 2023: 17,058

Ratio (%)

- 2011: 1.3
- 2021: 4.7
- 2023: 5.7
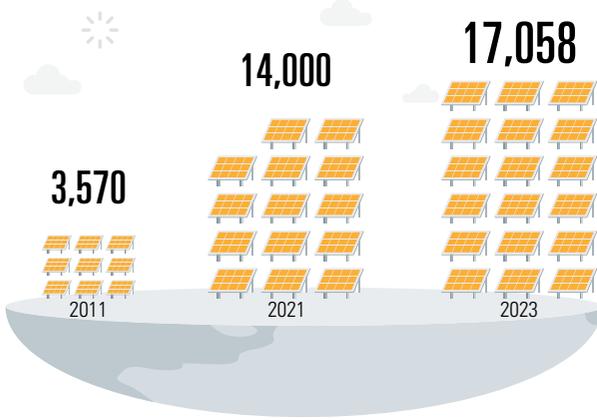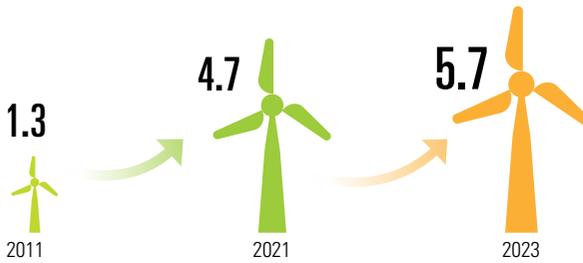
A favorable real GDP growth rate per capita compared to advanced nations, despite weakened growth (2023)

US	Japan	Korea	OECD	France	UK	Germany
2.4%	2.2%	1.3%	1.2%	0.6%	-0.6%	-1.1%
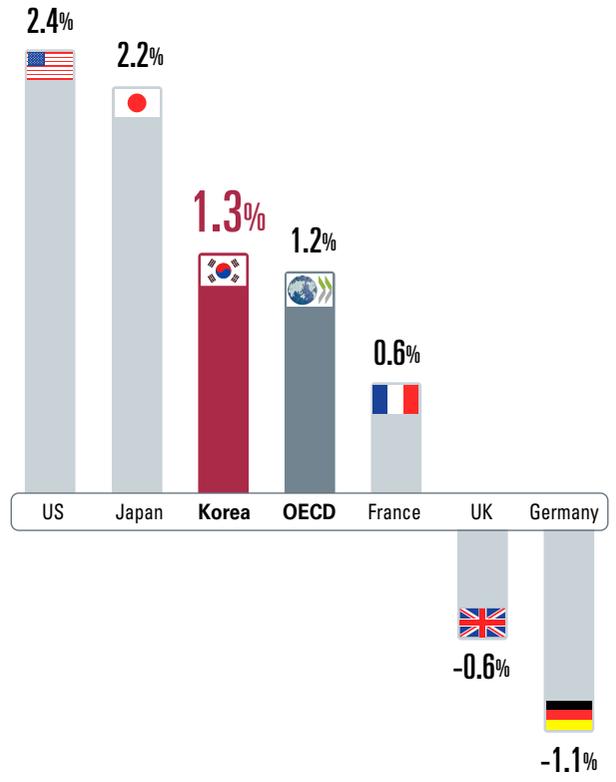
2nd largest R&D expenditures relative to GDP among OECD countries

Country	%
Israel	6.0
Korea	5.2
US	3.6
Sweden	3.4
Belgium	3.4
Japan	3.4
Switzerland (2021)	3.3
Austria	3.2
Germany	3.1
Finland	3.0
UK (2021)	2.9
Denmark	2.9
Iceland	2.6
Netherlands	2.3
France	2.2
Slovenia	2.1
Czech Republic	2.0
Australia (2021)	1.9
Estonia	1.8
Canada	1.7
Portugal	1.7
Norway	1.6
Greece	1.5
New Zealand (2021)	1.5
Poland	1.5
Spain	1.4
Hungary	1.4
Italy	1.4
Turkiye	1.3
Lithuania	1.1
Slovakia	1.0
Luxembourg	1.0
Ireland	1.0
Latvia	0.8
Chile (2021)	0.4
Colombia (2020)	0.3
Costa Rica (2021)	0.3
Mexico	0.3
OECD	2.1

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Worsening net wealth inequality despite a decline in the Gini coefficient for disposable income

● Gini coefficient for disposable income

2011	2018	2023
0.387	0.342	0.323

● Gini coefficient for net wealth

2011	2018	2023
0.619	0.588	0.605
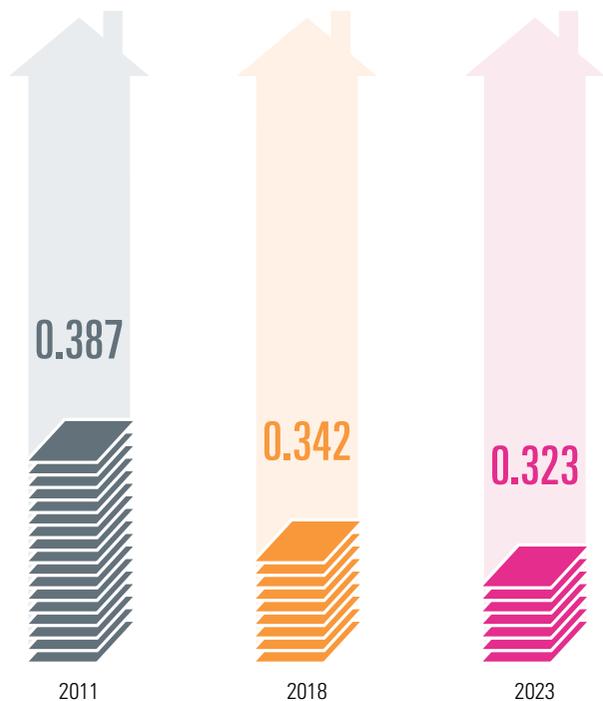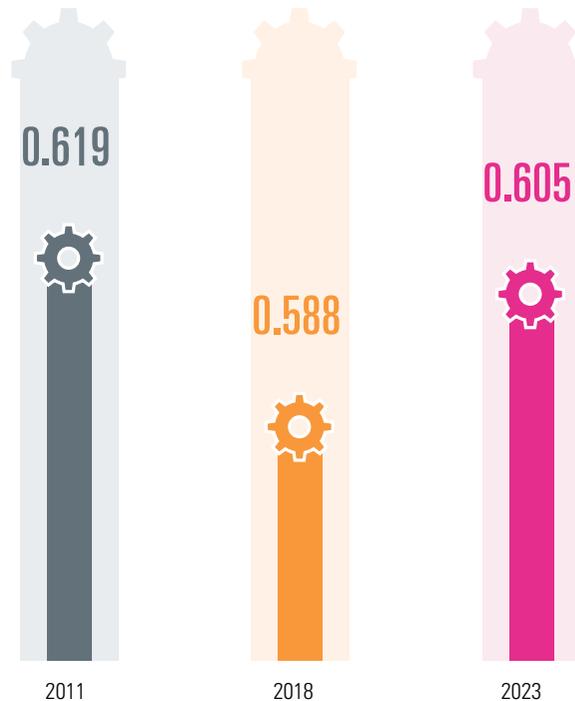
Stagnant improvement in fine particulate matter (PM$_{2.5}$)

Fine Particulate Matter ($\mu g/m^3$)

26	19	19

National Air Quality Standard(($\mu g/m^3$)

25	15	15
2015	2020	2023
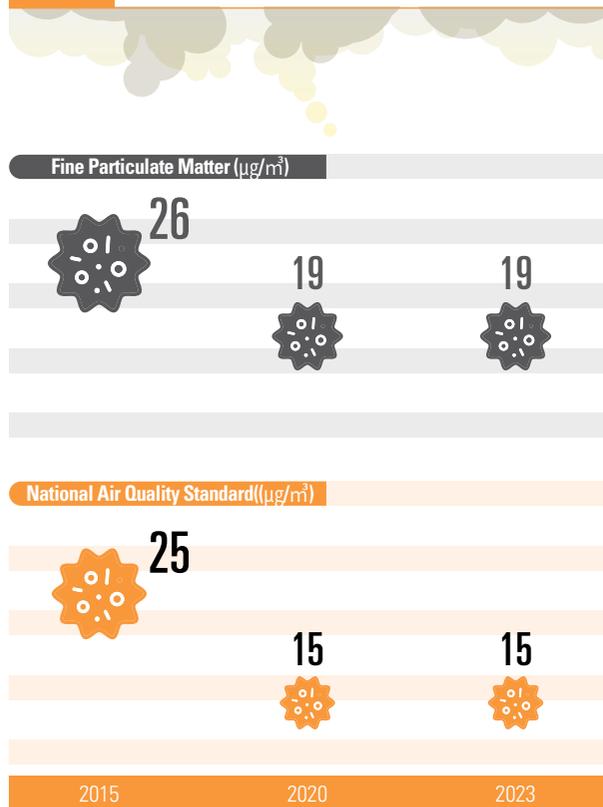
Rising per-capita hazardous waste, with recycling rate at a standstill

Per-capita hazardous wase

72.1 (kg/year)	120.0 (kg/year)
2011	2022

Recycling Rate

57.1%	65.0%
2011	2022

A shift toward a decrease in greenhouse gas emissions

2011
721.64 milion tons

2021
740.98 milion tons

2022
724.29 milion tons

A still high proportion of plastic in coastal waste

● Ratio of plastic weight out of coastal waste

58.8%   **51.3**%   **50.0**%

2018   2021   2023
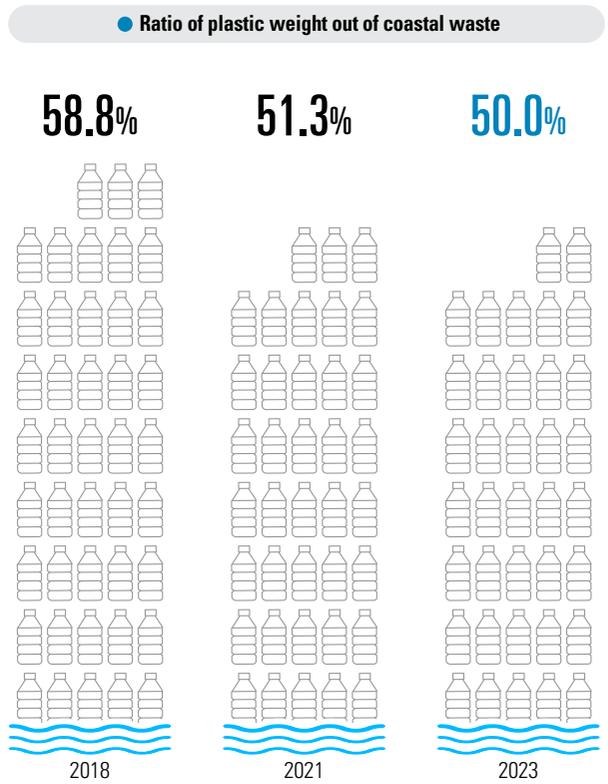
Need to expand the ratio of protected areas in land, freshwater and mountains (2023)

● Korea   ● OECD

64.34
37.58
Land

36.83
65.45
Freshwater

20.21
60.28
Mountains
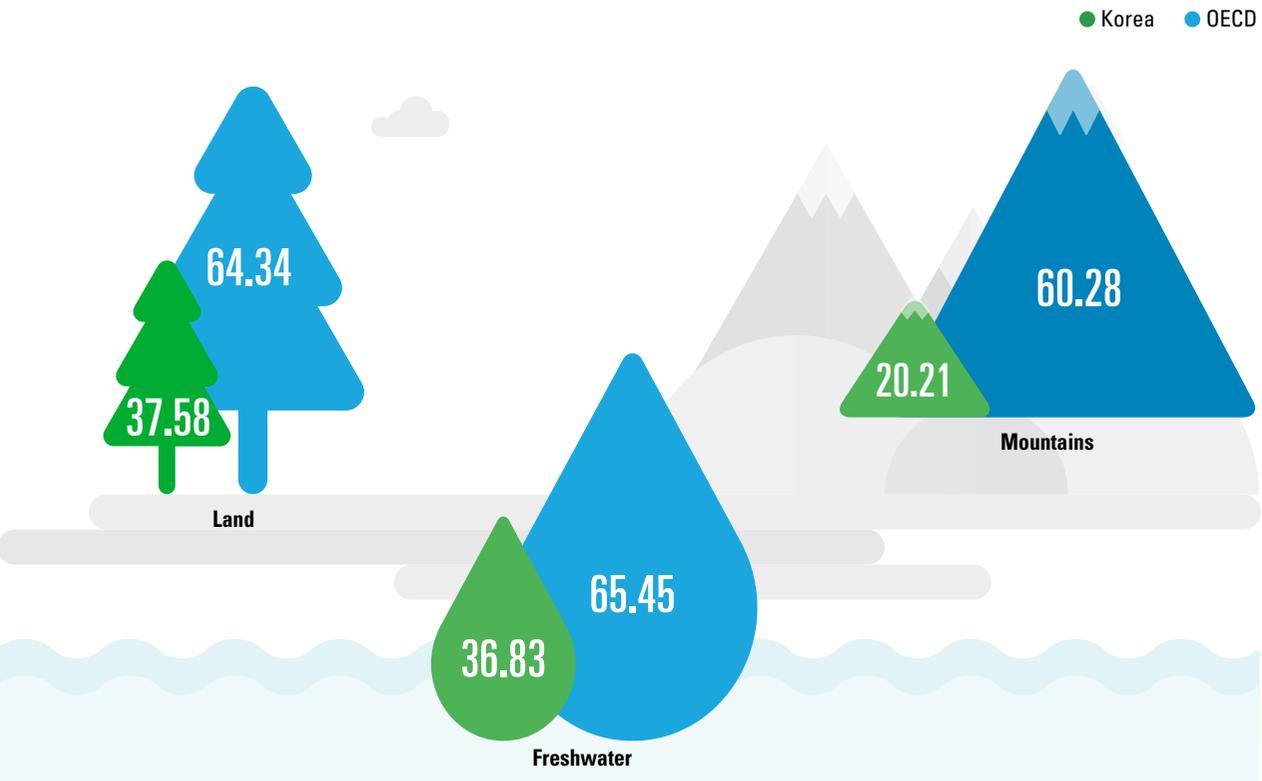
The proportion of young parliamentarians aged 45 or younger (7.4%), rated at the bottom of OCED countries (2022)

7.4% — South Korea

38.3% — AVG. of 18 OECD countries with unicameral legislatures

39.4% — Lower Chamber in bicameral legislature

18.9% — Upper Chamber in bicameral legislature
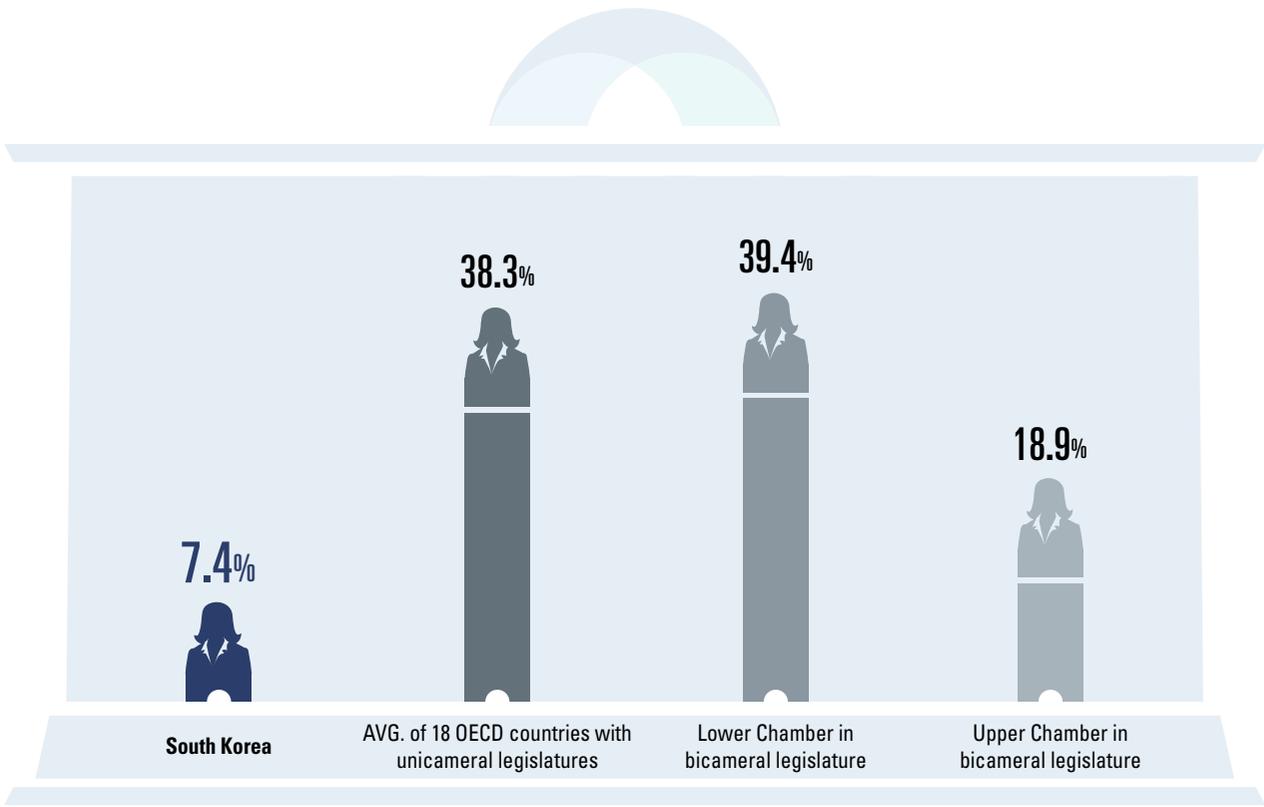
Sustained increase in Korea's ODA budget to assist developing countries

(Unit: million dollars)

Year	Value
2010	1,174
2011	1,325
2012	1,597
2013	1,755
2014	1,857
2015	1,915
2016	2,246
2017	2,200
2018	2,357
2019	2,462
2020	2,250
2021	2,873
2022	2,810
2023	3,131
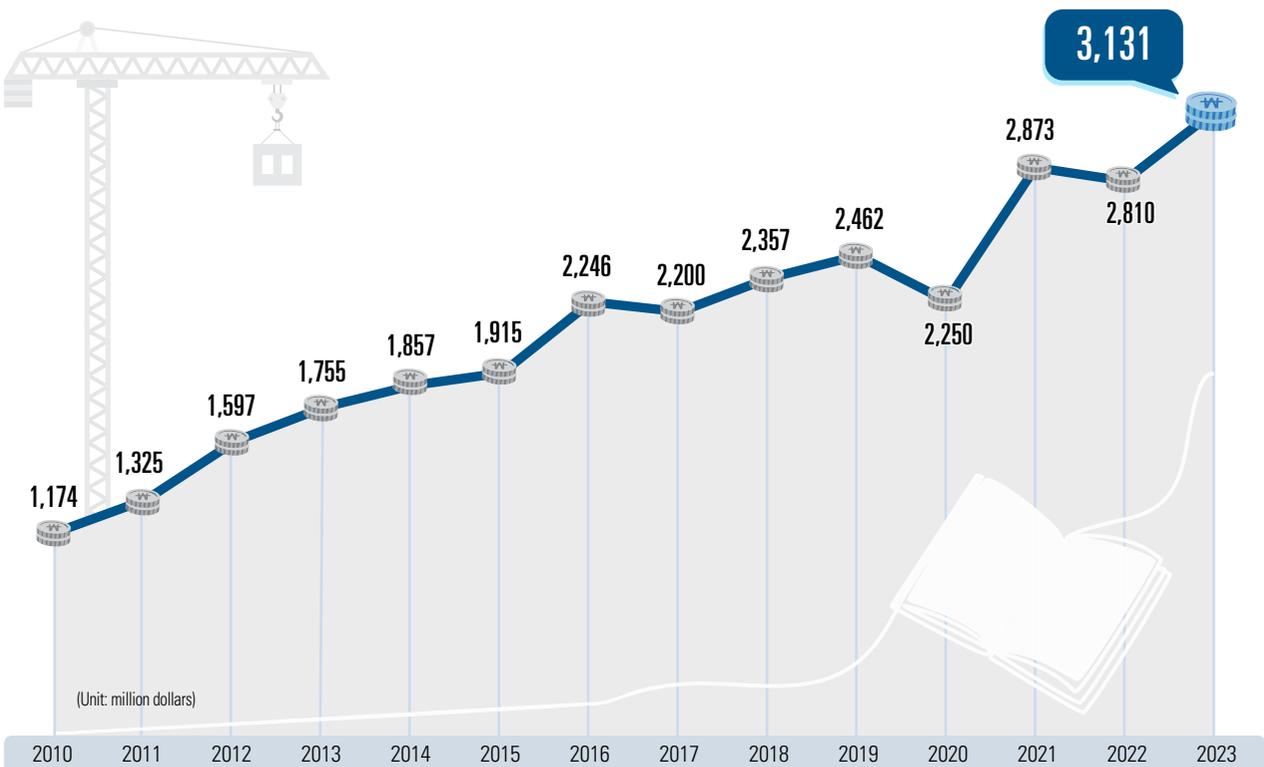
1 NO POVERTY
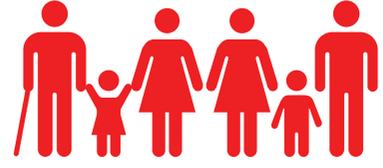
End poverty in all its forms everywhere

SDG 1 aims to monitor poverty in a multidimensional manner and minimize the impacts of various disastrous situations on the poor. Therefore, it focuses not only on poverty itself, but also on inequality of the market economy, which is the main culprit of poverty, as well as on difficulties in accessing socio-economic resources and policy efforts to alleviate these challenges. On the global scale, the shocks from COVID-19 and climate change-induced disasters have further compromised efforts to eradicate poverty. In South Korea, long-term improvements have faltered in some indicators related to poverty and social security, such as the relative poverty rate and the coverage of the national pension scheme. In addition, it is necessary to make a significant progress in reducing the poverty rate among retirees and increasing social expenditures for public pensions.

>> **The relative poverty rate based on disposable income declined from 18.5% in 2011 to 14.8% in 2021; however, this downward trend faltered to some extent, with the rate increasing by 0.1%p to 14.9% in 2022 and 2023.**
- The average poverty gap also narrowed from 37.0% in 2011 to 30.1% in 2020, showing some improvement. But it again increased to 32.6% in 2023.
- The relative poverty rate among the retirement-age population aged 66 or older went down to 39.3% in 2021, but went up again to 39.7% in 2022 and 39.8% in 2023, placing South Korea highest among OECD members in 2022.

>> **Among the population aged 65 or older, the take-up rate of the National Pension and occupational retirement pensions increased (reaching 54% in 2022). The proportion of wage earners covered by the National Pension continued to increase until 2023, but it slightly declined to 88.3% in 2024.**
- Meanwhile, among the elderly aged 80 or older, the take-up rate of public pensions as a proportion of their income was only equal to 34.9%, indicating a significant gap with 62.4% among those aged 65 to 69.
- The proportion of wage workers covered by the National Pension (including those individually covered) rose from 74.3% in 2011 to 88.3% in 2024. However, when looking at the figures by employment type, there is a huge gap between regular workers (97.3%) and non-regular workers (70.6%), with the rate dropping to 73.4% for non-wage workers.

>> **The cash benefits of social expenditure relative to GDP increased 2.3 times from 2.98% in 2011 to 6.74% in 2020.**
- In particular, expenditures associated with old age (1.74%→3.25%) and unemployment (0.26%→0.78%) saw an increase, and other social expenditures rose sharply from 0.59% in 2019 to 1.48% in 2020 in response to COVID-19 within such a short time frame.
- That said, expenditures for the elderly and bereaved families accounted for 3.28% in 2019, less than half of the OECD average (7.74%).

The poverty rate among the retirement-age population declined, but but slightly increased again (⟳ SDG 1.2.1)

Low-income households face challenges in securing stable market income and tend to rely more on public transfer income. The economic conditions of this vulnerable group can be assessed using the relative poverty rate, which refers to the population whose household income is 50% or less than the median equivalized disposable income. According to the 「Survey of Household Finances and Living Conditions」 by Statistics Korea, Korea's relative poverty rate based on disposable income gradually decreased from 18.5% in 2011 to 14.8% in 2021, However, it slightly rose to 14.9% in 2022 (a 0.1%p year-on-year increase) and remained the same in 2023.

By age group, a steady decline was observed among working population aged 18 to 65 (13.9% in 2011 to 9.8% in 2023) and children aged 17 or younger (16.3% in 2011 to 8.5% in 2023); however, the poverty rate among retirees aged 66 or older declined from 47.9% in 2011 to 39.3% in 2021, but it rose again by 0.4%p in 2022 and further grew by 0.1%p to 39.8% in 2023. Over the past three years, the poverty rate of retirees based on market income was recorded at 59.9%, 59.1% and 57.0%, showing a significant gap compared to the poverty rate based on disposable income, which was 20.6%p, 19.4%p and 17.2%p.

The fact that the decline in the poverty rate based on market income did not lead to a decrease in the poverty rate based on disposable income reveals that the growth of public transfer income was insufficient for the retirement-age population.

Meanwhile, the average poverty gap is used as an indicator to show the difference between the poverty line and the income of the population below the poverty line. A narrower poverty gap indicates that economic distress of the poor has been alleviated even though they remain in poverty. Out of the total population, the average poverty gap declined from 37.0% in 2011 to 30.1% in 2020, but it rose to 31.9% in 2021 and 33.2% in 2022,

followed by a slight reduction to 32.6% in 2023. In particular, the average poverty gap among the retirement-age population went down to 32.5% in 2020 from 43.2% in 2011; however, it rose to 34.2% in 2021 and 35.4% in 2022. Although it shrank a little bit to 35.1% in 2023, this highlights that the economic situation of poor households has shown little improvement since 2021. While the average equalized disposable income grew at an annual rate of 6.2% and 8.6% to reach 37.06 million KRW in 2021, 39.36 million KRW in 2022 and 42.76 million KRW in 2023, the public transfer income decreased at a rate of 3.2% and 0.3% to 4.04 million KRW, 3.91 million KRW and 3.90 million

Relative Poverty Rates based on Disposable Income by Age Group, 2011~2023 (Unit: %)
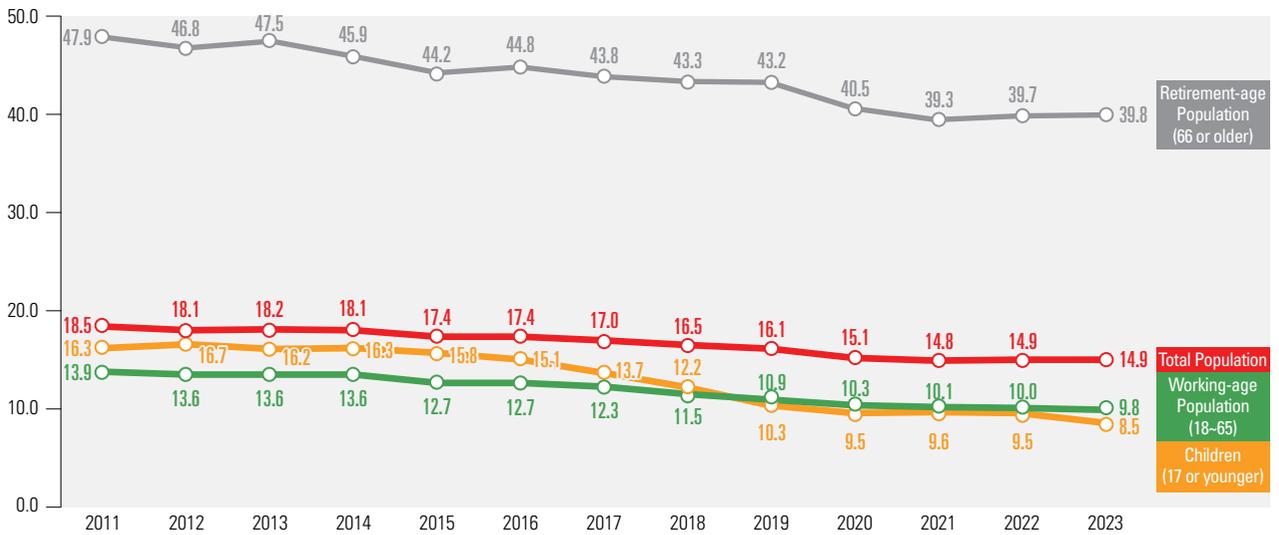
Source: Statistics Korea·Bank of Korea·Financial Supervisory Service, Survey of Household Finances and Living Conditions(https://kosis.kr, retrieved on Dec 10, 2024)
Note 1 : The relative poverty rate refers to a proportion of the population whose income level falls below the poverty line (50% or less than the median equivalized disposable income) out of the total population.
Note 2 : Disposable income is calculated by adding public transfer income to market income minus public transfer expenditures.
Note 3 : This graph has been updated based on administrative data (announced in Dec 2024) regarding employment insurance and occupational health and safety insurance benefits, thereby differing from figures previously published.

Average Poverty Gap based on Disposable Income by Age Group, 2011~2023 (Unit: %)

Source: Statistics Korea·Bank of Korea·Financial Supervisory Service, Survey of Household Finances and Living Conditions (https://kosis.kr, retrieved on Dec 10, 2024)
Note 1 : The poor population refers to population whose income level falls below the poverty line (50% or less than the median equivalized disposable income).
Note 2 : The average poverty gap refers to the difference between the average income of the poor population and the poverty line, divided by the poverty line.

Poverty Rate among Retirement-age Population(over 65 years) by OECD Member, 2022 (Unit: %)
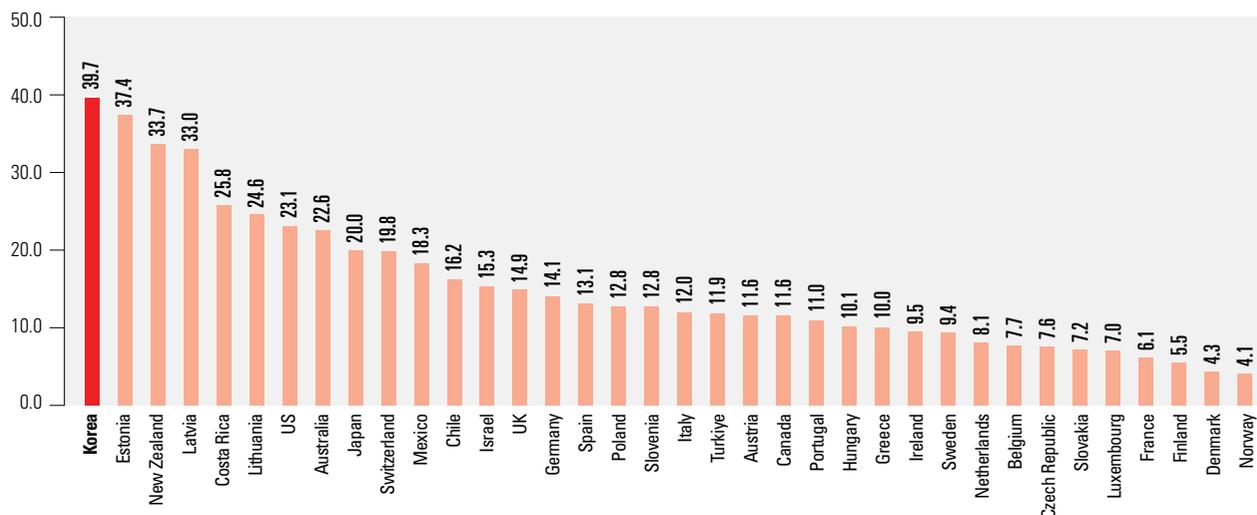
Source: OECD Data Explorer, Income Distribution Database(https://data-explorer.oecd.org, retrieved on Jan 6, 2025)
Note : The data was based on the year 2019 for Denmark, 2020 for Australia and Germany and 2021 for Japan, Switzerland and the Netherlands. There was no data for Iceland and Colombia.

KRW each year. Given that the public transfer income is typically distributed among low-income households, it is not far-fetched to say that worsening economic distress in poor households was driven by the reduction in public transfer income. In the post-COVID era, improvements in employment and economic situations, along with higher interest rates, contributed to an increase in market income of households; however, the financial support urgently put in place during the pandemic was scaled back once it ran its course, as was the public transfer income for these households.

Compared to OECD members, Korea's poverty rate of retirees topped the list at 39.7% in 2022 among 36 OECD countries with available data. South Korea is followed by Estonia (37.4%), New Zealand (33.7%), Latvia (33.0%), Costa Rica (25.8%) and Lithuania (24.6%). The rate was also relatively high in the United States (23.1%), Australia (22.6%) and Japan (20.0%). In contrast, countries with low poverty rates among the retirement-age population included Norway (4.1%), Denmark (4.3%), Finland (5.5%) and France (6.1%).

Growing take-up rate and coverage of public pension as a proportion of income (⟳ SDG 1.3.1)

According to 「Pension Statistics」 compiled by Statistics Korea, 4.883 million or 54.0% of the population aged 65 or older benefited from the National Pension and occupational retirement pensions in 2022. The number of these beneficiaries increased by

more than 2 million from 2.865 million in 2016, along with a steady growth of the take-up rate from 42.3% in 2016. However, there was a considerable gap in the take-up rates by age group. In 2022, the take-up rate stood at 62.4% for the population aged 65 to 69, but the rate fell to 58.5% for those aged 70 to 74 and 58.1% for those aged 75 to 79. It even drastically declined to 34.9% for the elderly aged 80 or older. This is likely due to a large number of senior citizens who didn't get to be eligible for the National Pension Scheme (NPS) as the scheme was phased in to increase eligibility after its inception in 1988. That said, the take-up rate of those who have recently joined the old-age group has seen a gradual improvement, raising the overall take-up rate. Senior citizens falling below certain thresholds of income, including the public pension benefits, are eligible for the basic pension, and they may also receive other personal or private retirement pensions. Combined all this, the pension take-up rate of those aged 65 or older amounted to 90.5% in 2022, up 3.5%p from 87.0% in 2016, with an average monthly amount of 650 thousand KRW received.

The proportion of the population covered by the NPS has been steadily rising to ensure income security for old age. The rate of workplace-based insured workers increased to 82.1% in 2023 from 67.9% in 2011, although it slightly declined to 81.8% in 2024. Similarly, the coverage of the NPS, including individually insured persons, rose from 74.3% in 2011 to 88.7% in 2023, followed by a slight decline to 88.3% in 2024.

Coverage of National Pension and Occupational Retirement Pension, 2016~2022

(Unit: 1,000 population, %)

No. of Beneficiaries (1,000 population)

Take-up Rate by Age Group (65~69): 55.5 → 62.4
Take-up Rate by Age Group (70~74): 52.7 → 58.5
Take-up Rate by Age Group (75~79): 36.2 → 58.1
Take-up Rate: 42.3 → 54.0
Take-up Rate by Age Group (80 or older): 15.6 → 17.9 → 20.0 → 23.1 → 26.8 → 30.6 → 34.9
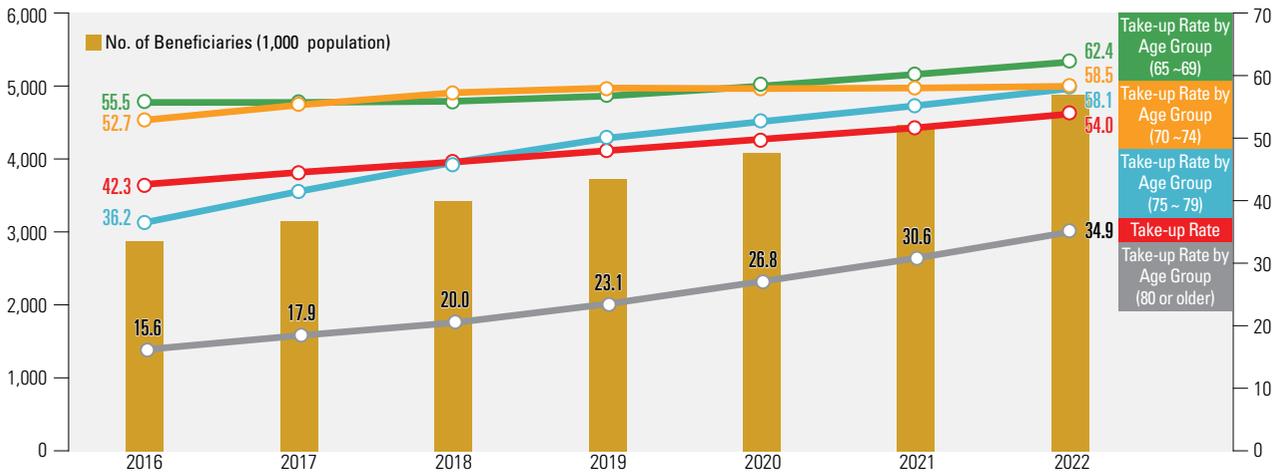
Source: Statistics Korea, Pension Statistics (https://kosis.kr, retrieved on Dec 22, 2024)
Note 1: The total number of beneficiaries includes those receiving double benefits.
Note 2: The National Pension and occupational retirement pensions include all types of pensions, such as old-age (retirement) pension, bereaved family pension and disability pension.

Coverage of National Pension by Employment Type, 2011~2024

(Unit: %)

Incl. individually covered regular workers: 83.4 → 97.3
Workplace-based covered regular workers: 79.6 → 95.4
Incl. individually covered wage workers: 74.3 → 88.3
Workplace-based covered wage-workers: 67.9 → 81.8
Incl. individually covered non-wage workers: 56.4 → 73.4
Incl. individually covered non-regular Workers: 56.2 → 70.6
Workplace-based covered non-regular workers: 44.5 → 55.0
Workplace-based covered non-wage workers: 17.1 → 18.1
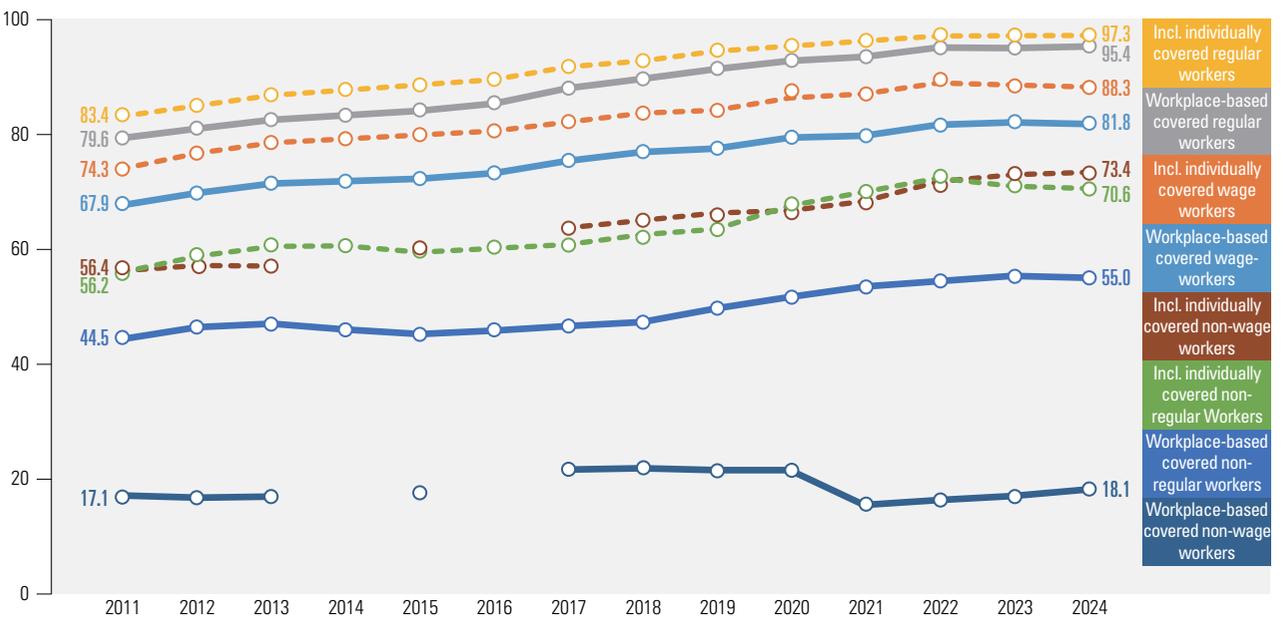
Source: Statistics Korea, Economically Active Population Survey/ Additional analysis was conducted on raw data for each employment type.
Note 1: The graph is based on August data in each year.
Note 2: Employees aged 59 or younger are eligible for the National Pension, and the analysis is based on those aged 18 to 59 from the raw data. Public servants and private school teachers/staff are excluded from the calculation since they are not subject to the coverage.
Note 3: It is necessary to distinguish data before 2018 and after 2019 when comparing non-regular and regular workers as they are affected by the number of part-time workers additionally captured in 2019.
Note 4: As the additional analysis was not conducted for non-wage workers in 2014 and 2016, the corresponding data is not available.

However, a significant difference was observed between regular and non-regular workers. In 2024, the rate of workplace-based insured regular workers was as high as 95.4% whereas that of non-regular workers was a mere 55.0%. The coverage for non-regular workers could rise up to 70.6% if individually insured persons were included, but it still fell short of the coverage rate for regular workers (97.3%). There has also been growing coverage among non-wage workers, including the self-employed. The rate rose from 63.8% in 2017 to 73.4% in 2024 when individually insured persons are included. However, when non-regular workers and non-wage workers are individually insured under the NPS, they often delay or fail to pay contributions, potentially leaving them vulnerable to old-age income insecurity.

The ratio of cash benefit expenditures to GDP increased to 6.74%, but it remains significantly below the OECD average

(⟳ SDG 1.b.1)

A high poverty rate among senior citizens is primarily attributed to the underdeveloped public pension system. SDG 1.b.1 can be used as an indicator to assess the scale of pro-poor public social expenditures. This indicator emphasizes changes in cash expenditures, particularly for the elderly and bereaved families, including public pension benefits, amid rising social expenditures in total. Over the decade from 2011 to 2020, the ratio of social expenditures to GDP showed a 1.8-fold increase from 7.81% to 14.39%. Among these, cash benefit expenditures grew even more significantly by 2.3 times from 2.98% to 6.74%. Within cash benefit expenditures, the spending on the old-age population increased from 1.74% to 3.25% while that on the unemployed significantly increased from 0.26% to 0.78%. However, there was no prominent growth in expenditures on bereaved families and individuals with disabilities. Meanwhile, cash benefit expenditures for other social policies surged considerably in response to COVID-19, growing from 0.59% in 2019 to 1.48% in 2020.

That said, Korea's social spending relative to GDP, particularly cash benefits, remains low among OECD countries. In 2019, the nation's cash benefits relative to GDP stood at 5.03%, slightly higher than those of Chile (4.57%) and Mexico (3.53%), but less than half of the OECD average (11.36%). Out of social expenditures in OECD members, the elderly and bereaved families represent the two main policy domains with the highest cash benefit expenditures. While the OECD countries' average expenditure in these domains accounted for 7.74%, Korea's expenditure was only 3.28%.

Ratio of Cash Benefit Expenditures to GDP by Policy Domain, 2011~2020 (Unit: %)
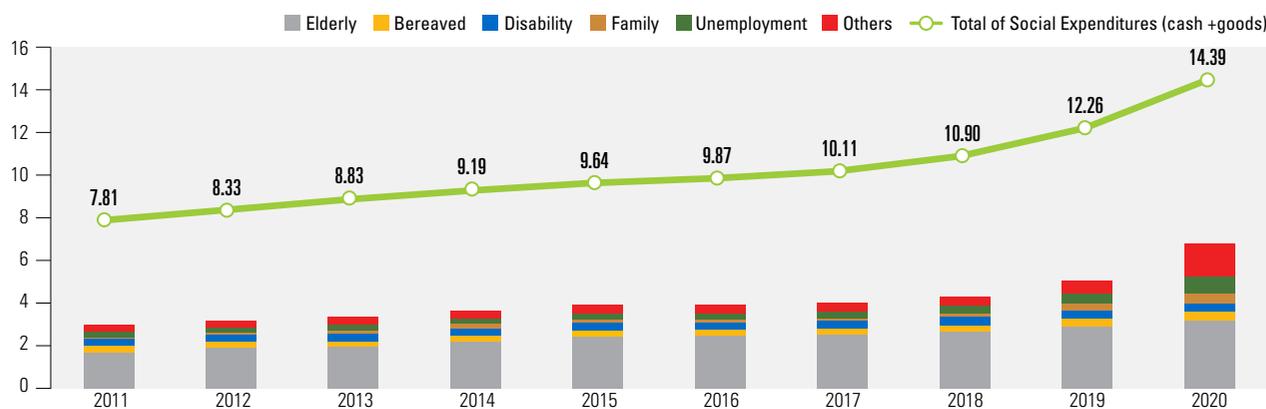
Source: OECD Data Explorer, Social expenditure aggregates(https://data-explorer.oecd.org, retrieved on Sep 23, 2024)

Ratio of Cash Benefit Expenditures to GDP by OECD Country, 2019 (Unit: %)
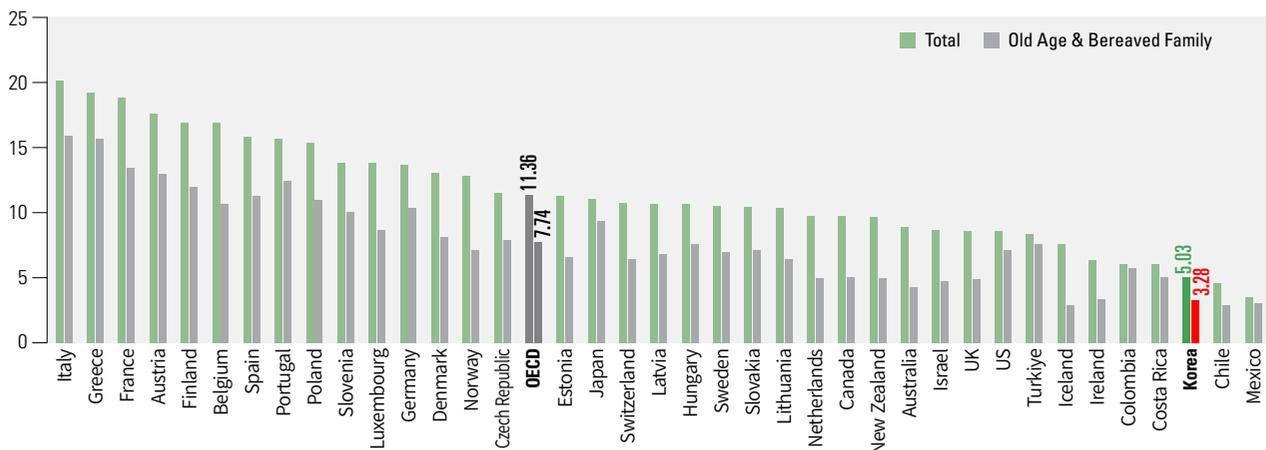
Source: OECD Data Explorer, Social expenditure aggregates(https://data-explorer.oecd.org, retrieved on Sep 24, 2024)

2 ZERO HUNGER

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

SDG 2 aims not only to end hunger but also to ensure food provision through sustainable agriculture and improve nutritional status. Globally, one in ten people still suffers from hunger. In nearly 60% of countries worldwide, in 2022, food prices rose slightly or abnormally high due to disruptions to the food supply chain, such as war. Recently, South Korea saw a slight decrease in its proportion of the undernourished population, and food prices, which were considered outrageously high during the COVID-19 pandemic, started to come back to normal in 2022. However, agricultural income, which measures agricultural profitability, has remained stagnant since 2003.

> » **The proportion of the undernourished began rising in 2015, with a slight increase in recent years. It reached 17.9% in 2023.**
> - The percentages of the undernourished in both high-income and low-income groups increased, narrowing the gap between income levels to some degree.
> - The percentage of undernourished individuals is relatively high among adolescents (ages 12 to 18) and the elderly (aged 65 or older). In 2023, it increased year on year in these age groups while it slightly decreased among the middle-aged adults (ages 50 to 64).
> - The proportion of women suffering from undernourishment tends to be higher than that of men each year, with the gender gap recorded at 2.9%p in 2023.
>
> » **The agricultural income, which serves as a major indicator of agricultural profitability, has remained stagnant since 2003 with an annual growth rate of merely 0.3%.**
> - As a result, farms' dependence on agricultural income as a proportion of their total income declined from 39.3% in 2003 to 21.9% in 2023.
>
> » **It was reported in 2020 that Korea held in custody 26 local livestock species with sufficient genetic resources to ensure species restoration.**
>
> » **The Indicator of Food Price Anomalies (IFPA) stood at 1.08 in 2020 and 0.61 in 2021, indicating 'abnormally high' and 'slightly high' respectively, but it declined to −0.32 in 2022 and 0.16 in 2023, returning to the 'normal' state.**
> - Food price inflation has remained relatively high at 4.4%, 5.9%, 5.9% and 5.5% since 2020(2015=100).

The prevalence of malnutrition has recently increased (⟳ SDG 2.1.1)

Undernourishment has significantly decreased in South Korea due to rising incomes, expanded food trade, and food industry development. However, undernourishment still persists among the low-income class, and changes in dietary lifestyles have also contributed to the issue. Undernourishment refers to a condition in which energy intake is less than 75% of the required amount (recommended dietary intake), and the intake of calcium, iron, vitamin A and riboflavin is below the average required amount (75% of the recommended dietary intake). According to the National Health and Nutrition Survey conducted by the Korea Disease Control and Prevention Agency, the prevalence of undernourishment (standardized for age) was 17.9% in 2023. This figure decreased from 18.5% in 2001 to a low of 8.4% in 2014 but increased again, reaching 17.4% in 2020. It then declined slightly to 16.6% in 2021 and 16.4% in 2022 before

rising again to 17.9% in 2023, nearly double the lowest recorded level in 2014.

The prevalence of undernourishment varies depending on income level, age and gender. The undernourishment rate in the low-income class stood at 21.0% in 2023, whereas in the high-income class, it was only 14.6% for the same year. Although undernourishment increased in both income groups, the high-income group experienced a greater increase, sending the gap with the the low-income class to 6.4%p. Compared to other age groups, in 2020, adolescents aged 12 to 18 (26.9%) and the elderly aged 65 or older (24.5%) had notably high percentages of undernourishment. The rates declined in both age groups for two consecutive years (2021 and 2022), but increased again to 27.5% and 19.3% in 2023, respectively. Meanwhile, for the middle-aged adults aged 50 to 64, the percentage continued to rise to 14.2% in 2021 and 16.9% in 2022, before slightly decreasing to 15.8% in 2023. Each year, women had a higher

percentage of undernourishment than man due to different dietary lifestyle or habits between men and women. The largest gender gap in prevalence of undernourishment was reported at 11.3%p in 2007, averaging 6.7%p over the entire period. In 2023, the proportion of undernourished women stood at 19.4% while that of male counterparts was equal to 16.5%, increasing by 1.5%p respectively and sending the gender gap to 2.9%p.

The prevalence of undernourishment was on an increase after 2015, and then it slightly decreased after 2020, before rising again in 2023. This increase can be attributed to several factors, mainly including the growing elderly population due to ageing and the increase in single-person households. Recently, nutritional intake has slightly improved among the elderly, but they still face difficulties due to reduced physical activities and chewing trouble caused by tooth loss. Single-person households, on the other hand, often skip meals due to their

Proportion of Undernourished Population by Income Level, 2001~2023

(Unit: %)
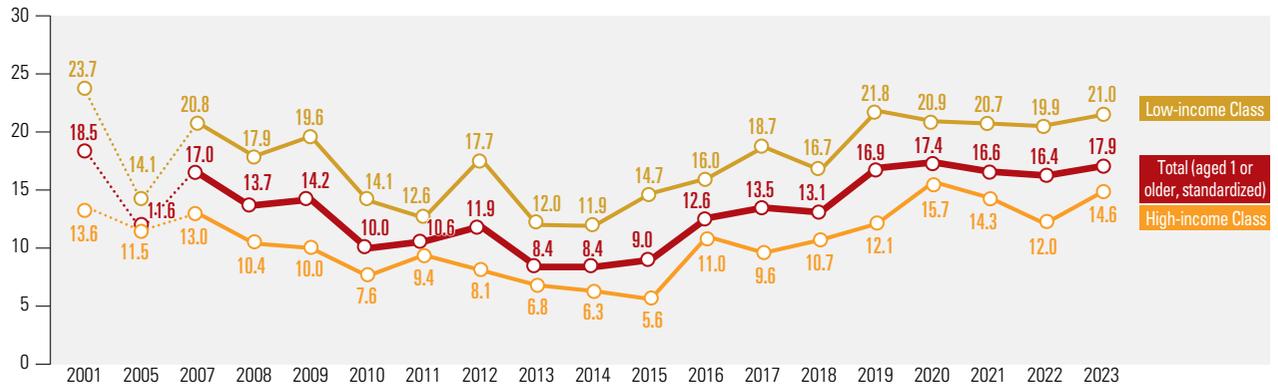
Source: Korea Disease Control and Prevention Agency, National Health and Nutrition Survey (https://kosis.kr, retrieved on Dec 30, 2024)
Note 1 : Age is standardized based on the projected population in 2005.
Note 2 : Income levels are classified in quintiles (high/medium-high/medium/medium-low/low) of equivalized monthly household income (monthly household income/No. of household members) by sex and age (in an internal of 5 years).

Proportion of Undernourished Population by Age Group, 2001~2023

(Unit: %)
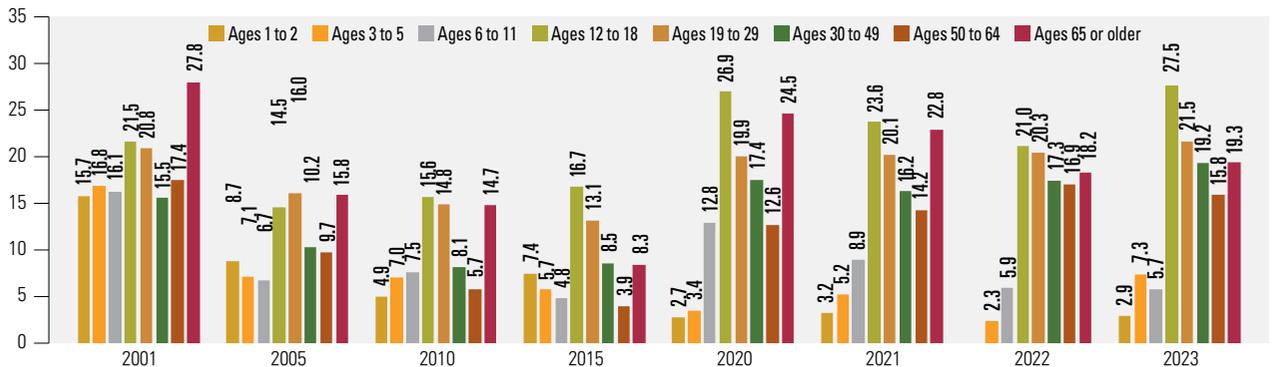
Source: Korea Disease Control and Prevention Agency, National Health and Nutrition Survey (https://kosis.kr, retrieved on Dec 30, 2024)
Note 1 : Age is standardized based on the projected population in 2005.

Proportion of Undernourished Population by Gender, 2001~2023

(Unit: %)

Source: Korea Disease Control and Prevention Agency, National Health and Nutrition Survey (https://kosis.kr, retrieved on Dec 30, 2024)
Note : Age is standardized based on the projected population in 2005.

living conditions. A detailed analysis is needed to identify the factors contributing to undernourishment for each population group. Based on the findings, it is essential to promote dietary lifestyles befitting the individuals' needs, come up with measures to enhance nutrition and encourage a balanced nutritional intake in daily life through the provision of education and information.

Need to come up with proactive measures to improve agricultural profitability (⊘ SDG 2.3.2)

The income of farms, as the producer of food, serves as an indicator for measuring various economic performances conducted in agricultural operations, and is a critical factor in determining the sustainability of economic activities for producers. The farm income is comprised of recurring income and non-recurring income. Recurring income includes agricultural income, non-agricultural and transfer income. Among them, agricultural income is calculated by deducting management costs from the total profits of agricultural production. Non-agricultural income refers to earnings obtained from economic activities other than agriculture, such as self-employment and the provision of labor. Last but not least, transfer income includes public and private subsidies. Meanwhile, non-recurring income refers to unexpected earnings, such as monetary gifts from weddings or funerals and compensation from accidents.

The average farm income in Korea stood at 50,828 thousand KRW in 2023, of which 11,143 thousand KRW was agricultural income. Overall farm income increased by 3.2% on an annual average from 26,878 thousand KRW in 2003 while agricultural income grew by 0.3% from 10,572 thousand KRW in 2003, still remaining stagnant. For the same period, non-agricultural income and transfer income rose by 3.8% and 11.3%, respectively on an annual average. As a result, the proportion of agricultural income out of the total farm income decreased from 39.3% in 2003 to 21.9% in 2023 while the ratio of transfer income, including public subsidiaries, increased from 7.6% to 33.8% for the same period. In 2023, income from economic activities other than agriculture accounted for the largest share (39.3%) out of the total, such as side businesses and provision of labor.

Such stagnation in agricultural income, which results from agricultural activities, can undermine production activities of farmers who play a key role in food production. Thus, it is necessary to identify the causes and implement measures to improve agricultural profitability. In fact, the decline in agricultural profitability is attributed to various factors, including internal issues within the agricultural sector, like inefficient farm management and an ageing farming population, as well as external factors, such as instability of input markets (e.g., rising global raw material prices), inefficiency in the agricultural distribution structure, climate change and policy limitations, combined with increased imports of agricultural products from foreign markets since the opening of the Korean agriculture market in the 1990s. Diminishing agricultural profitability has led to stagnant agricultural income, further accelerating the decline in agricultural workforce and the ageing population in rural areas. Without improvements in agricultural profitability, it will be more difficult to secure new labor for the agricultural sector down the road. In particular, this could hinder active farming activities such as agricultural investments in households that are highly

Farm Income by Component, 2003~2023 (Unit: 1,000 KRW)

Legend: Agricultural Income, Non-agricultural Income, Transfer Income, Non-recurring Income
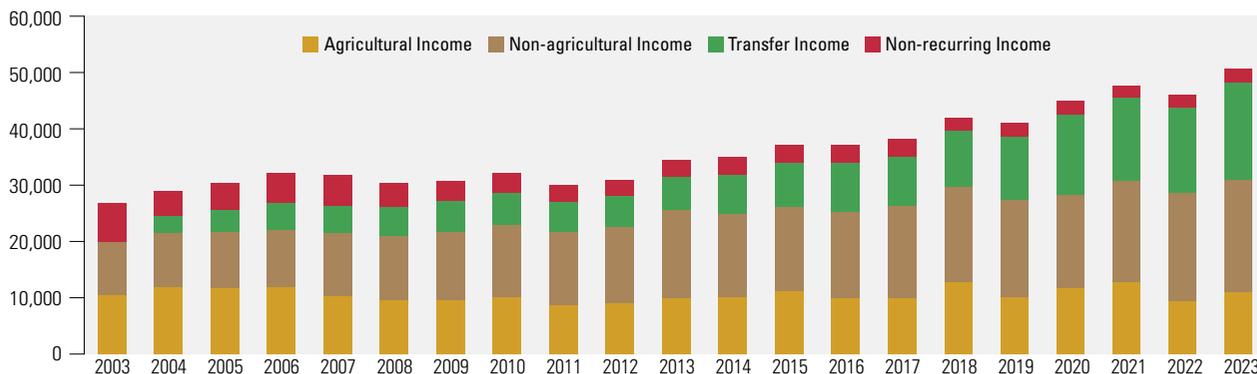
Source: Statistics Korea, Farms' Economic Survey (https://kosis.kr, retrieved on Sep 4, 2024)
Note 1 : Farm Income=Recurring Income+Non-recurring Income
Note 2 : Recurring Income=Agricultural Income+Non-agricultural Income+Transfer Income

dependent on agriculture, posing an obstacle to food security. Now is the time to beef up our efforts to enhance agricultural profitability, increase agricultural income and achieve agricultural competitiveness and food security.

Need to reinforce efforts for conservation and practical utilization of food-related genetic resources (○ SDG 2.5.1)

For sustainability of humankind, it is critical to ensure food security in a stable manner and lay the groundwork for providing high quality food, in response to variously changing agricultural environments, such as climate change and population and industrial transitions. Securing animal and plant generic resources is significant in many aspects, including food production, biodiversity and the conservation and utilization of biological resources. In this context, SDG 2.5.1 monitors the number of animal and plant genetic resources for food and agriculture/ livestock that are secured in the mid- to long-term conservation facilities in sufficient quantities to enable species restoration in case of extinction. The mid/long-term conservation facilities, such as genetic banks, are the most reliable means of preserving genetic resources for food and agriculture (GRFA).

The number of Korea's local livestock species with secured genetic resources sufficient for restoration was reported to be 26 in 2020. Local species are known to exist only in a single country. As animal and plant genetic resources are associated with various sectors, including food, livestock, forests and oceans, it is essential to implement measures for their practical utilization, alongside conservation efforts. In other words, it is necessary to develop value-added food and associated products based on conserved genetic resources and overcome existing limitations in agricultural technologies through development and utilization of beneficial genes. To this end, the development and application of technologies related to generic resources should follow.

Recent increases in food prices due to extreme weather conditions and changing production factors (○ SDG 2.c.1)

To ensure that people lead a healthy life, it is necessary to achieve food security, enabling them to purchase and consume safe and nutritious food without economic or social difficulties. It is very crucial to curb excessive fluctuations in food prices and ensure the

Number of local breeds for which sufficient genetic resources are stored for reconstitution, 2014~2020 (Unit: Species)
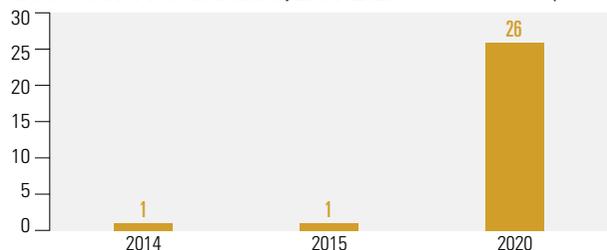
Source: FAO(https://unstats.un.org/sdgs/dataportal, retrieved on Jan 10, 2025)

normal functioning of the food market, for ending hunger and accomplishing food security. As an essential good vital for human life, agricultural produce has an inflexible nature, meaning that demand remains relatively unchanged despite price fluctuations. On the other hand, food supply is heavily affected by weather changes. Agricultural produce has greater price volatility due to supply changes, compared to other goods. Thus, a price hike could restrict access to food, particularly for the vulnerable. The Indicator of Food Price Anomalies (IFPA) is used to assess whether food prices are abnormally high. According the IFPA, prices are defined as follows: 'normal' for values from –0.5 to less than 0.5, 'slightly high' from 0.5 to under 1.0 and 'abnormally high' for 1.0 or higher.

In OECD countries, the average of the IFPA remained in the 'normal' range from -0.5 to 0.5 starting in 2011. However, it rose to 'slightly high' at 0.71 in 2020 due to food market instabilities caused by COVID-19 and the Ukraine War, and changing weather conditions. It further escalated to 'abnormally high' at 1.38 in 2022 and 1.44 in 2023. South Korea also ranked 'abnormally high' at 1.08 in 2020 due to the pandemic and then dropped to 'slightly high' at 0.61 in 2021. However, it returned to the 'normal' range at –0.32 in 2022 and 0.16 in 2023. In Japan, which has similar grain supply/demand conditions to South Korea, the IFPA remained in the normal range in 2020 and 2021, but it went up to 0.91 in 2022 and recently surged to 2.36 (abnormally high) in 2023. As for Japan, this increase was driven by excessive demand due to concerns over rising grain prices fueled by frequent earthquakes in recent days, combined with supply constrains in the global grain market. The United States, one of grain exporters, was also classified as 'abnormally high' at 1.48 in 2022, indicating that stable food prices through secured supply chains are very crucial not only for grain importers but also for exporters.

Looking at the trend of IFPA, South Korea had a relatively

high growth rate of IFPA, ranging from 4.4% in 2020 through 5.9% to 5.5% in 2023. The average growth rate from 2001 to 2023 was calculated at 4.1%, which is slightly higher than the OECD average (3.9%) for the same period. In other countries, Japan, a grain importer like South Korea, recorded an IFPA growth rate of 1.2%, while the United States, an exporter of agricultural produce, reached 2.6%. There are some limitations in simply comparing IFPA since macroeconomic conditions like inflation and currency supply vary from country to country. However, given the fact that South Korea has a relatively higher food price index and IFPA than major countries, it is crucial to ensure stable supply of food and improve access to food for economically vulnerable individuals.

With food self-sufficiency and grain self-sufficiency standing at 49.3% and 22.3% in 2022, respectively, South Korea relies on imports for 80% of its grain supply. Recently, concerns over the international grain market have intensified due to extreme weather events, such as El Niño and La Niña, a decline in grain production in the main producer countries due to the Ukraine War and the resulting potential for expansion of food protectionism. In addition, there is growing consumption of food and meat in newly emerging nations like China, and the grain demand is also increasing for the production of biofuels. Concerns over global grain price fluctuations are piling up on both the demand and supply sides. Disruptions in the global grain supply chain is likely to happen more often, with more frequent and stronger impact on the prices of domestic agricultural products. Given the limitations in expanding the domestic grain production, it is necessary to put in place fundamental measures to ensure a stable supply of overseas grains and minimize price impacts. To effectively respond to fluctuations in the global grain market and promote food production and distribution at home and abroad, continuous attention and investments are needed to enhance the grain self-sufficiency in the domestic market, develop overseas agriculture, nurture experts and provide information and secure stakes in overseas distribution terminals. Since rising agricultural prices are more likely to worsen food insecurity among the low-income class, it is also necessary to proactively implement supportive policies for vulnerable groups, such as food vouchers.

Indicators of Food Price Anomalies (IFPA) in Major Countries, 2011~2023
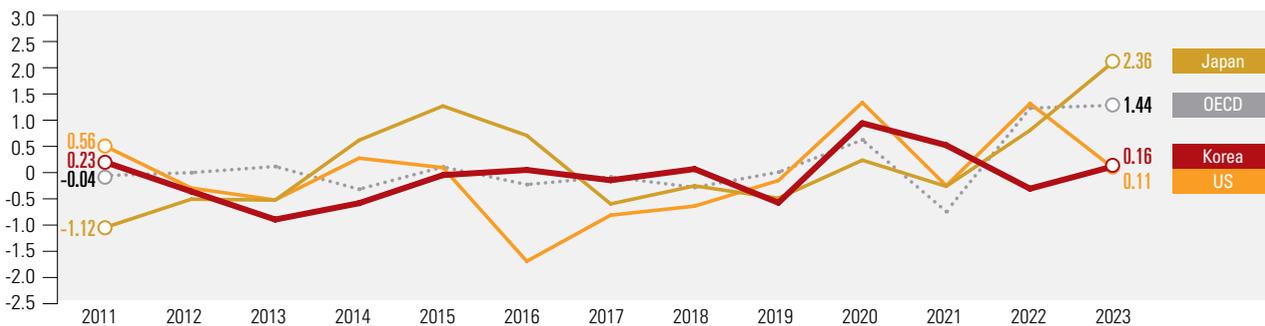
Source: FAO, FAOSTAT(https://www.fao.org/faostat/en/#data/SDGB, retrieved on Sep 23, 2024)

Food Price Inflation in Major Countries, 2001~2023
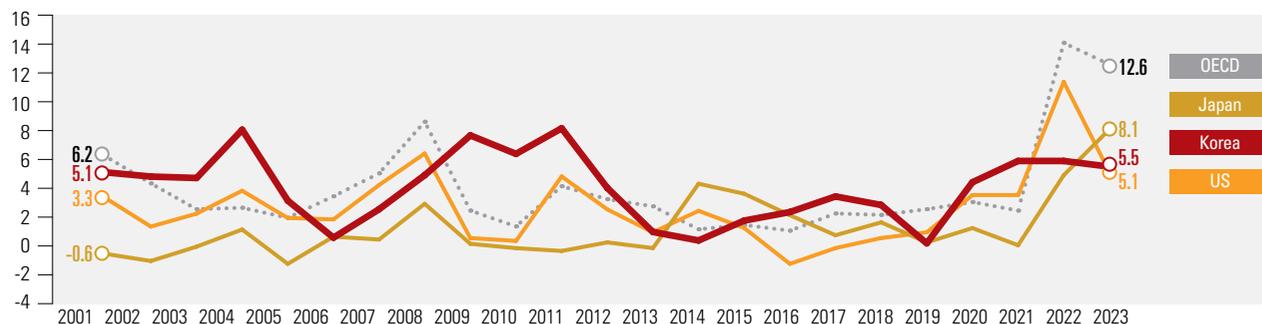
Source: FAO, FAOSTAT Consumer prices, Food indices(2015=100), (https://www.fao.org/faostat/en/#data/CP, retrieved on Sep 23, 2024)

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

SDG 3 aims to ensure health for all worldwide and provide high quality medical services. Across the globe, a decade of progress in life expectancy has been nullified due to the COVID-19 pandemic. Although most health-related indicators have shown signs of improvement, the progress remains too slow to meet the 2030 goals. In South Korea, the suicide mortality rate has noticeably increased in recent years. While the density of health workers, including physicians and nurses, has steadily increased, it is considered low compared to OECD countries. Meanwhile, with a high vaccination rate, the government has been recognized for its robust public health response capacities.

» **In 2023, suicide mortality rate increased by 7.1% year-on-year to 22.7 per 100,000 population.**
- The suicide rate significantly varies depending on gender, age and region, reaching 31 for men, and 29.4 and 28.6 in Chungnam and Chungbuk , respectively.
- Overall, it has declined since 2011, but it was still the highest among OECD countries (10.6 on average) in 2021.

» **Among children aged 1 to 6, the proportion of those vaccinated in 2023 ranged from 89.2% and 96.4%, depending on their age.**
- South Korea has a high immunization rate against diphtheria, tetanus, pertussis, and pneumococcus compared to OECD countries.

» **The number of health workers has steadily increased since 2011, with 2.7 physicians (including oriental doctors) and 5.2 nurses per 100,000 population in 2023, but these figures are still considered low compared to OECD countries.**
- The number of major health workers, including physicians (and oriental doctors), nurses, dentists and pharmacists, reached 8.9 per 1,000 population in 2022, accounting for 65% of the OECD average (13.8).

» **In the International Heath Regulations (IHR) core capacities, which assess a nation's public health response capacities, South Korea achieved a perfect score in 13 out of 15 areas in 2023, reaching the highest level of 99.1% among OECD members.**
- The assessment revealed some room for improvements in the following two areas: IHR Coordination and National IHR Focal Point (93%) and Risk Communication and Community Engagement (93%).

The suicide mortality rate (intentional self-harm) has declined over the past decade, but increased in 2023 by 8.5% compared to the last year
(⟳ SDG 3.4.2)

Suicide can occur at any age and in any region. Suicide can occur at any age and in any region, often linked to social and cultural factors. The World Health Organization (WHO) reports that 77% of suicides worldwide in 2019 occurred in low- and mid-income countries, and 58% of them were committed by individuals under the age of 50. According to OECD 2023 data, suicide rates vary significantly among countries, with men's suicide rates nearly three times higher than women's.

Since suicide could be influenced not only by physical and mental health conditions, such as loss, loneliness and diseases, but also external shocks, like climate and financial crises, its time-series changes can vary depending on countries. That said, suicide statistics are under influences of various factors, such as registration methods, individuals who fill out death reports and cultural aspects like social stigma, requiring caution when comparing and interpreting the data.

In 2023, the number of suicide deaths in South Korea stood at 13,978, with the Age-standardized suicide mortality rate reported at 22.7 per 100,000 population for the same year. After hitting an all-time high of 28.8 per 100,000 population in 2011, the rate declined to 20.7 in 2017 and then fluctuated around 22. However, it increased by 7.1% year on year, reaching around 22.7 in 2023. The suicide rate of men was more than double that of women, and their changing trends by gender followed a similar pattern to that of the entire population.

The suicide rate for women decreased from 17.9 per 100,000 population in 2011 to 12.0 in 2017, before rising to 14.8 in 2023 whereas the suicide rate for men declined from

Age-standardized Suicide Mortality Rates, 2011~2023

(Unit: person per 100,000 population)

Men: 41.1 (2011), 35.6 (2012), 36.3 (2013), 34.6 (2014), 32.9 (2015), 31.6 (2016), 30.0 (2017), 32.7 (2018), 31.7 (2019), 29.9 (2020), 30.0 (2021), 29.2 (2022), 31.0 (2023)

Total: 28.8 (2011), 25.1 (2012), 25.1 (2013), 23.9 (2014), 22.7 (2015), 21.9 (2016), 20.7 (2017), 22.6 (2018), 22.6 (2019), 21.9 (2020), 22.1 (2021), 21.2 (2022), 22.7 (2023)

Women: 17.9 (2011), 15.7 (2012), 15.0 (2013), 14.0 (2014), 13.3 (2015), 13.0 (2016), 12.0 (2017), 13.0 (2018), 14.0 (2019), 14.4 (2020), 14.7 (2021), 13.5 (2022), 14.8 (2023)
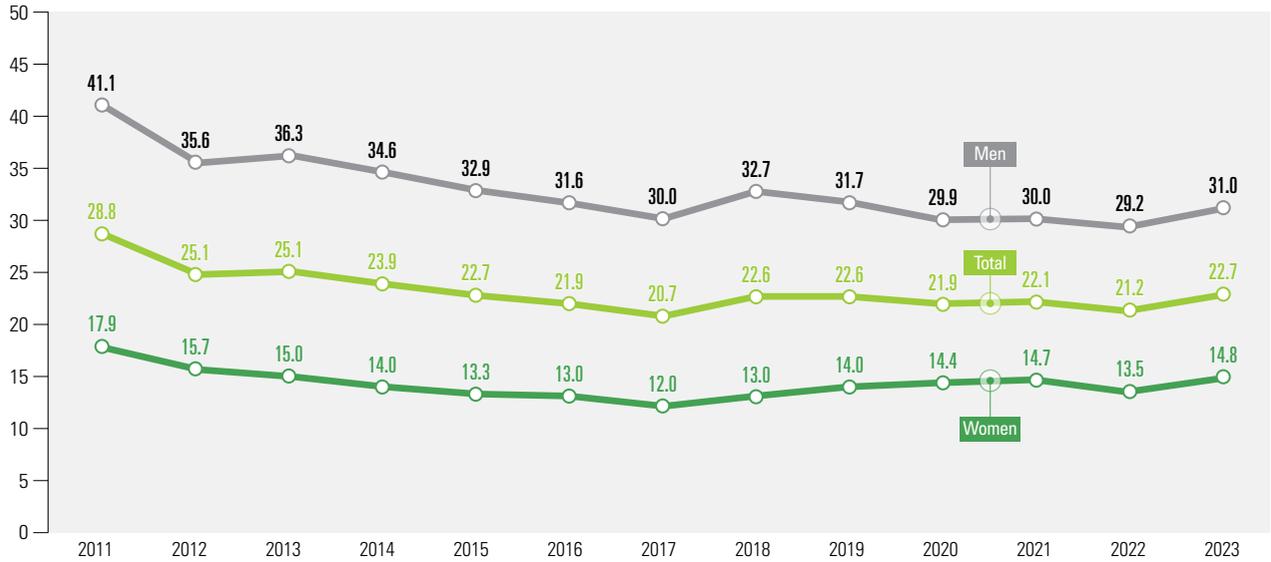
Source: Statistics Korea, Cause-of-death Statistics (https://www.index.go.kr/unity/potal/sdg/SDGMain.do, retrieved on Jan 25, 2025)
Note : The age-standardized suicide mortality rate is adjusted to account for differences in age structure

Suicide Mortality Rates by Region, 2011~2023

(Unit: person per 100,000 population)

■ 2011   ■ 2023

Region	2011	2023
Gangwon	37.7	26.0
Incheon	31.2	24.6
Seoul	24.6	19.0
Gyeonggi	29.2	21.2
Chungbuk	33.6	28.6
Gyeongbuk	30.0	25.8
Chungnam	36.5	29.4
Sejong		19.2
Daejeon	29.0	23.2
Daegu	27.5	24.4
Ulsan	25.5	28.3
Jeonbuk	31.6	20.9
Gwangju	26.1	23.7
Gyeongnam	29.2	24.1
Busan	28.6	23.5
Jeonnam	27.8	23.3
Jeju	28.5	27.3
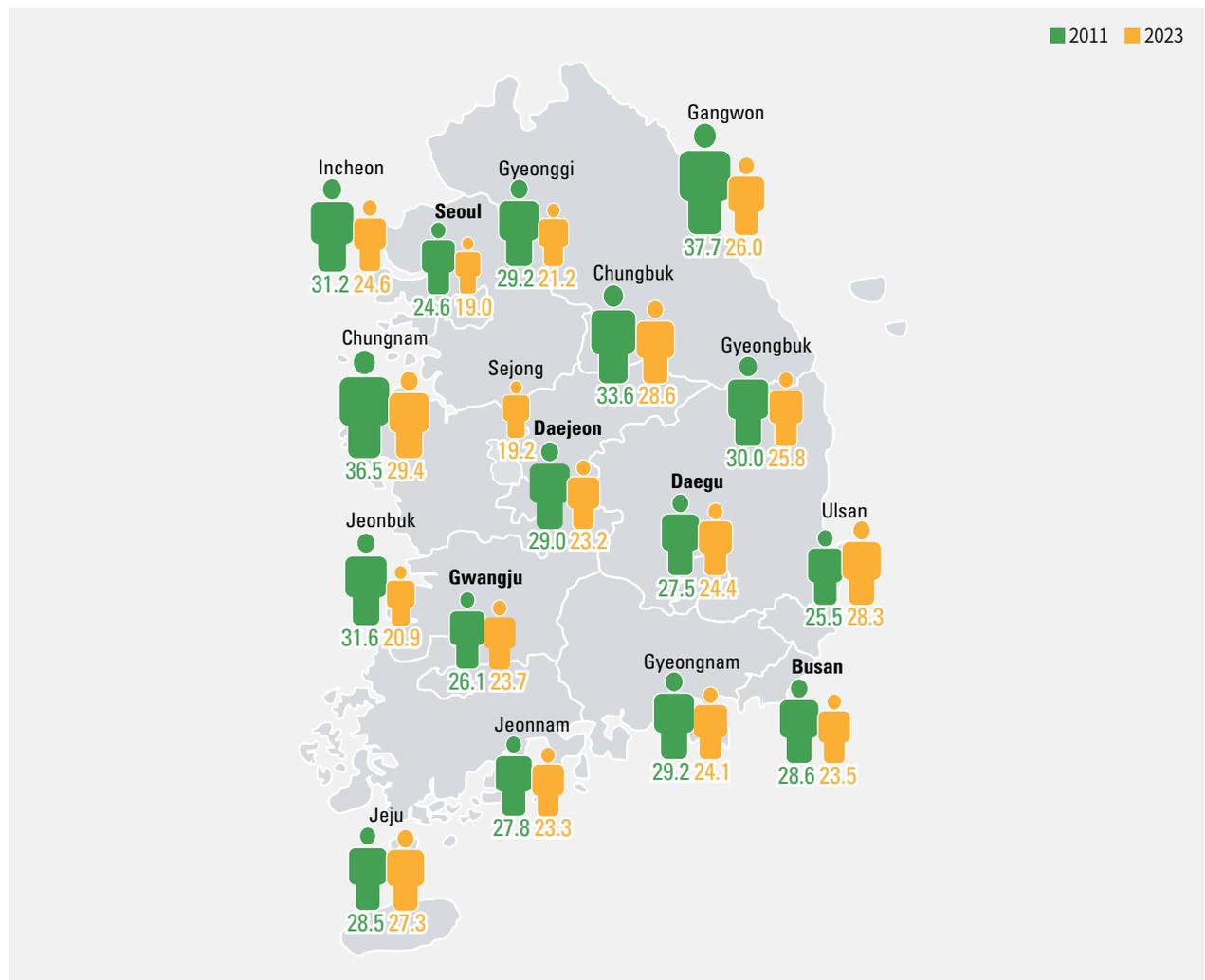
Source: Statistics Korea, Cause-of-death Statistics (https://kosis.kr, retrieved on Jan 25, 2025)

Suicide Mortality Rates in OECD Countries (intentional self-harm), 2011~2021　　　　　(Unit: person per 100,000 population)
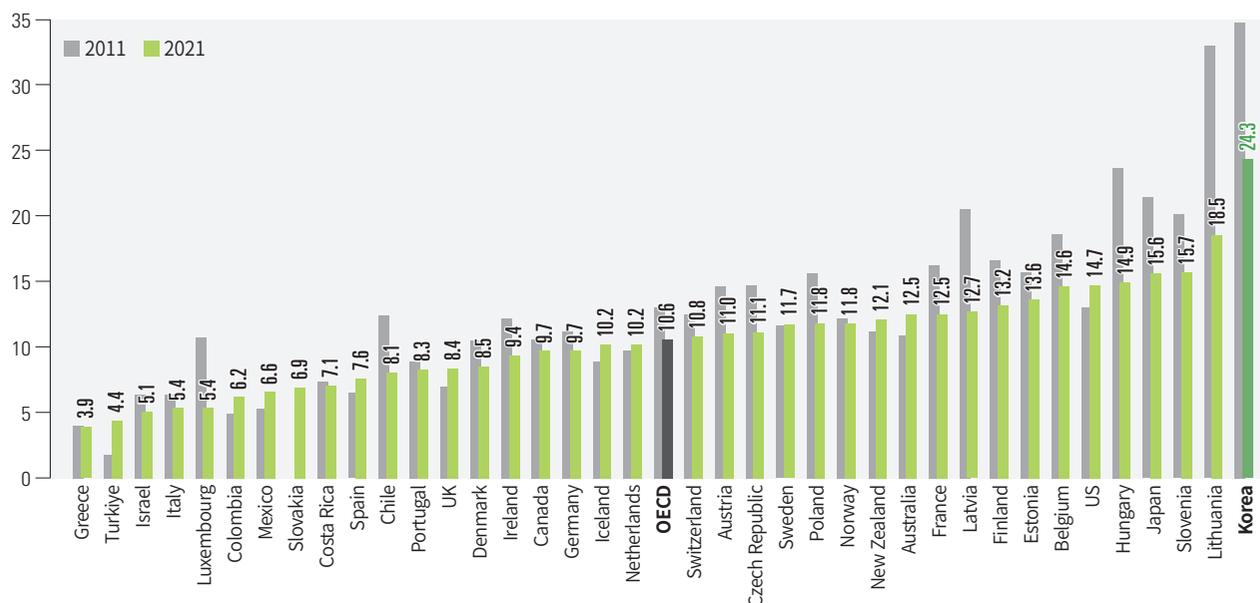
Source: OECD, OECD Data Explorer Intentional self-harm(https://data-explorer.oecd.org, retrieved on Sep 22, 2024)
Note : This graph is based on 2020 figures for Belgium, Costa Rica, France, Germany, Greece, Ireland, Italy, Slovenia and the United Kingdom, the 2019 figures for Portugal and Türkiye, and the 2016 figures for Norway and New Zealand.

41.1 to 30.0 during the same period and then increased to 31.0. Looking at figures by region in 2023, suicide rates were relatively higher in Chungnam (29.4) and Chungbuk(28.6), and lower in Sejong (19.2), and Seoul (19.0) The suicide rate declined compared to 2011 in all cities and provinces, except for Ulsan (a rise by 2.8).

Comparing suicide rates across OECD countries using standardized demographic structure, South Korea recorded a suicide rate of 24.3 per 100,000 population in 2021, ranking highest among OECD members (OECD average: 10.6). Countries with low suicide rates include Greece (3.9 in 2020), Türkiye (4.4 in 2019), Israel (5.1), Italy (5.4 in 2020), and Luxembourg (5.4) while countries with higher suicides rates are Lithuania (18.5), Slovenia (15.7 in 2020), Japan (15.6) as well as South Korea. In terms of a successful decline in suicide rates, South Korea achieved a reduction of 10.4 compared to 2011, which is the second largest success after Lithuania which reduced its rate by 14.4. However, given the nation's current suicide rate and trends, stronger policy efforts are needed.

To this end, inclusive and comprehensive policies are required, along with cooperation with other sectors associated with suicide prevention, such as health, education, labor and media.

Immunization Coverage of DTP, measles and pneumococcus has been maintained at a high level (⟳ SDG 3.b.1)

Vaccination remains a key measure for preventing infectious diseases. Immunization is a global health success story, saving millions of lives every year. In particular, immunization currently prevents 3.5 million to 5 million deaths every year from diseases like diphtheria, tetanus, pertussis, influenza and measles. As seen in 2019 when the COVID-19 pandemic swept the world, immunization is very critical in preventing and controlling the outbreak of infectious diseases, serving as an essential tool for global health security.

The national immunization program recommended by the government as essential vaccines include Hepatitis A (HepA), Hepatitis B (HepB), Bacillus Calmette-Guérin (BCG) for tuberculosis, Diphtheria-Tetanus-Pertussis (DTaP), Inactivated Poliovirus Vaccine (IPV), Type B Haemophilus influenzae (Hib), Pneumococcal Conjugate Vaccine (PCV), Measles-Mumps-Rubella (MMR), Varicella (VAR), and Japanese Encephalitis (JE), targeting children aged 1 to 6. In 2023, the proportion of fully vaccinated children stood at 96.4% for 1-year-olds, 92.9% for 2-year-olds, 89.2% for 3-year-olds and 89.8% for 6-year-olds according to the standard vaccination schedule. Despite

Immunization Rates in Major OECD Countries, 2022

(Unit: %)

Country	DTP3	MCV2	PCV3	HPV
OECD	94	88	89	59
Korea	98	95	97	65
Greece	99	83	96	N/A
Netherlands	93	85	90	64
Norway	97	94	95	91
New Zealand	89	83	86	55
Denmark	97	94	96	78
Germany	91	93	82	54
Latvia	95	86	87	62
Luxembourg	99	90	96	14
Lithuania	90	87	81	63
Mexico	83	82	84	80
US	94	95	84	50
Belgium	98	83	94	69
Sweden	94	91	94	83
Switzerland	96	94	89	71
Spain	93	92	92	81
Slovakia	97	96	96	14
Slovenia	89	92	61	45
Iceland	92	80	84	85
Ireland	93	N/A	84	79
Estonia	85	68	N/A	43
UK	92	87	90	56
Austria	84	94	N/A	53
Israel	98	93	95	57
Italy	95	85	92	39
Japan	99	95	96	7
Czech Republic	94	90	N/A	N/A
Chile	96	53	93	69
Canada	92	79	85	86
Costa Rica	95	75	92	71
Colombia	87	84	85	11
Turkiye	99	94	95	N/A
Portugal	99	96	98	89
Poland	90	95	61	N/A
France	96	90	95	42
Finland	91	92	87	61
Hungary	99	99	99	74
Australia	94	91	96	58

Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Sep 24, 2024)

Full Vaccination Rate under National Immunization Program for Children, 2018~2023 (Unit: %)

	2018	2019	2020	2021	2022	2023	
1-year-olds	96.8	96.5	97.1	97.2	96.1	96.4	
2-year-olds	94.7	94.2	93.7	94.2	93.5	92.9	
3-year-olds	90.8	91.5	91.0	90.0	89.7	89.2	
6-year-olds	88.3	84.8	83.5	86.1	88.6	89.8	
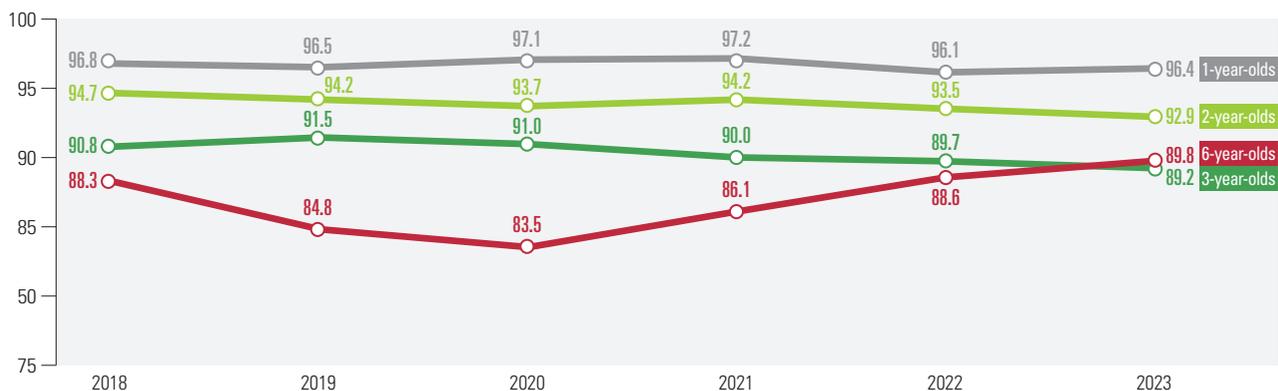
Source: Korea Disease Control and Prevention Agency, National Immunization Rates for Children (https://kosis.kr, retrieved on Jan 25, 2025)
Note : This is based on the proportion of children who have received all recommended doses of each vaccine appropriate for their age, in accordance with the standard vaccination schedule.

some fluctuations over the past six years, these figures were comparable to that in 2018. For children aged 6, the immunization rate fell from 88.3% in 2018 to 83.5% in 2020, but it rebounded to a record high of 89.8% in 2023.

Given the status of four vaccines compared globally, the OECD averages in 2022 were as follows: 94% for the third dose of Diphtheria-Tetanus-Pertussis (DTP3), 88% for the second dose of Measles-Containing Vaccine (MCV2), 89% for the third dose of Pneumococcal Conjugate Vaccine (PCV3), and 59% for the Human Papillomavirus (HPV) vaccine. Korea's immunization rates stood at 98%, 95%, 97%, and 65% respectively, higher than the OECD averages. The immunization rates for DTP3, MCV2, PCV2 showed

little gap between OECD countries, but it was not the case for HPV vaccination. A substantial disparity was observed in HPV immunization rates among countries, such as Japan (7%), Colombia (11%), Slovakia (14%), Norway (91%) and Portugal (89%).

Despite the increase, the number of health workers has still fallen short of that in OECD countries (⟳ SDG 3.c.1)

Health workers are critical elements in the operation of the healthcare system. The WHO believes that ensuring the use of healthcare services and achieving a high level of public health depend on the availability, accessibility, acceptability

Health Worker Density, 2011~2023 (Unit: person per 1,000 population)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Nurses	2.4	2.4	2.7	2.9	3.1	3.5	3.6	3.8	4.2	4.3	4.6	4.9	5.2	
Physicians	2.0	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.6	2.7	
Pharmacists	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	
Dentists	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
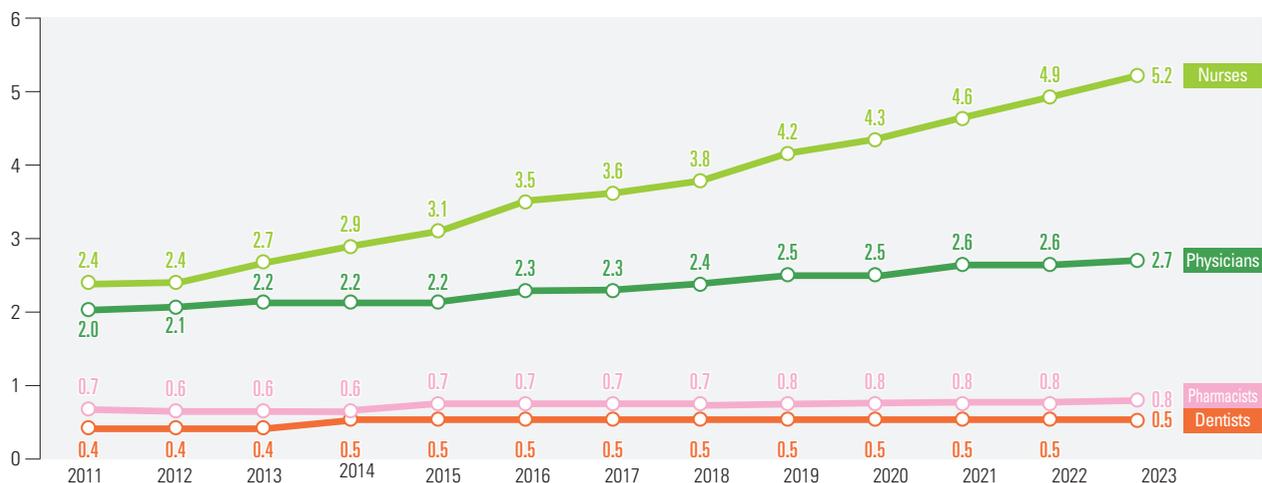
Source: National Health Insurance Service, Health Insurance Statistics (https://www.index.go.kr/unity/potal/sdg/SDGMain.do, retrieved on Jan 25, 2025)
Note 1 : Major health workers are limited to physicians (including oriental doctors), dentists, nurses and pharmacists, as defined for UN comparisons.
Note 2 : This is based on the number of health workers per 1,000 population, using the projected population(2013.12).

Health Worker Density in OECD Countries, 2022
(Unit: person per 1,000 population)
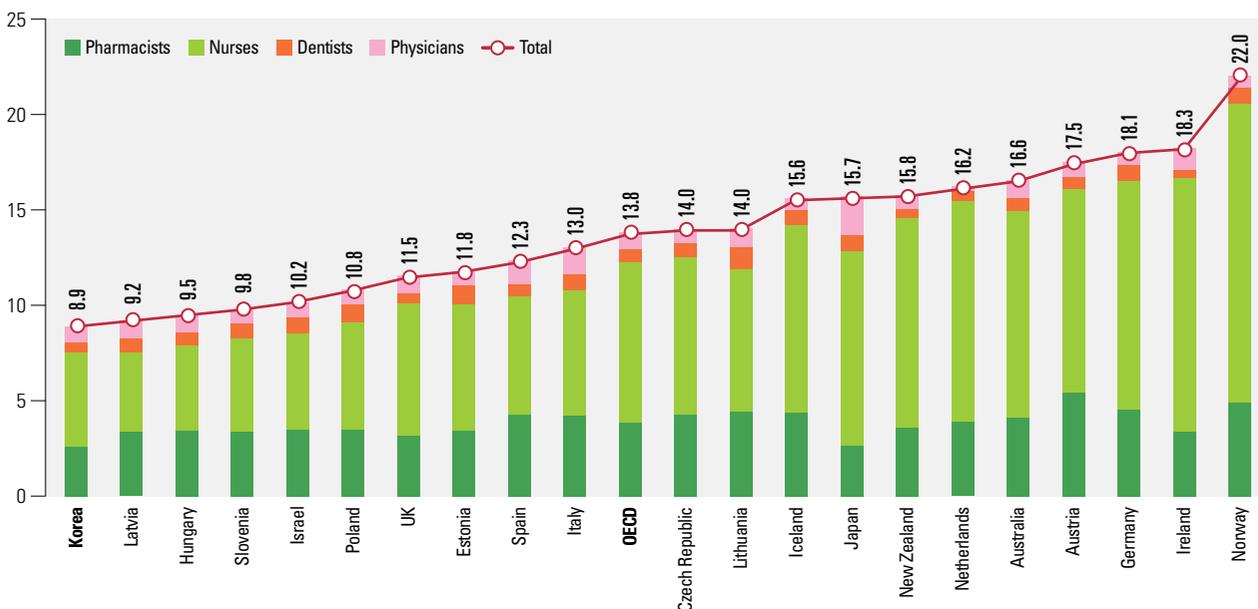
Source: OECD, OECD Data Explorer(https://data-explorer.oecd.org, retrieved on Sep 22, 2024)
Note 1 : According to the global standards, physicians include oriental doctors.
Note 2 : Number of practicing health workers per 1,000 population
Note 3 : Countries that have not provided data for at least one type of occupation (physicians, dentists, nurses or pharmacists) are excluded (Belgium, Canada, France, Greece, Mexico, Portugal, Switzerland and the United States).

and quality of health workers. That said, even countries with relatively better socioeconomic situations face challenges in training, employment and deployment of health workers. In some cases, it is considered even more challenging to dispatch health workers to rural or remote areas suffering from persistent shortage of manpower caused by the mismatch between population demands and education/employment strategies.

Although the number of main health workers in South Korea varies depending on type of occupation, it has been on an increase over the past 10 years. The number of physicians (including oriental doctors) increased by 31.3% from 2.0 per 1,000 population in 2011 to 2.7 in 2023. During the same period, the number of nurses saw the biggest increase among all health workers, nearly doubling from 2.4 to 5.2. In addition, the number of dentists and pharmacists also rose by 28.1% and 18.8%, respectively over the same period.

The number of health workers in Korea has steadily risen across all types of occupation, but it is still considered low compared to OECD countries. In 2022, the OECD average stood at 13.8 (3.8 physicians and 8.4 nurses) per 1,000 population, which is 1.6 times higher than Korea's. It this context, it is noteworthy that the number of physicians in

Attainment Level of 15 Core Capacities
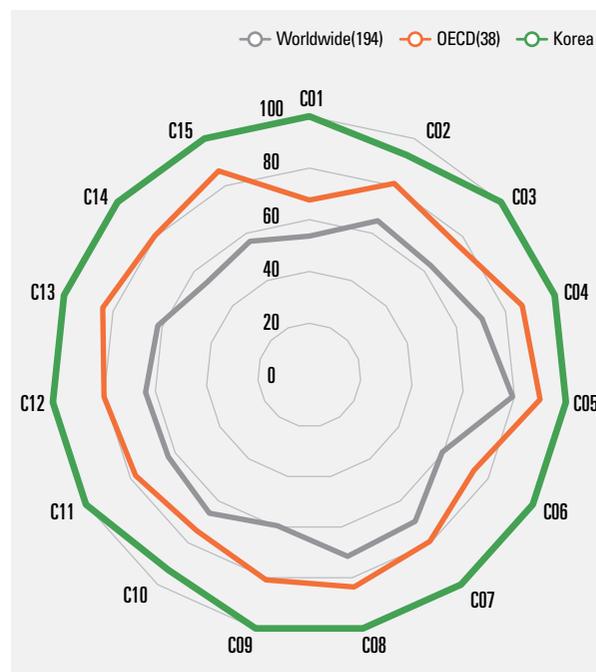
Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved in Sep 24, 2024)
Note : Core capacities (all) refer to the average attainment level (%) of the 15 capacities.

OECD countries widely ranges from 2.6 (South Korea) to 5.4 (Austria) while that of nurses spans from 4.2 (Latvia) to 15.6 (Norway), indicating a large gap between countries.

International Health Regulations (IHR) Core Capacities and Attainment Level by Capacity, 2023   (Unit: %)

Country	Value
Korea	99.1
Japan	98.7
Denmark	96.7
Canada	96.2
Norway	95.9
UK	94.9
Switzerland	91.1
US	90.5
Australia	89.3
Sweden	88.1
Lithuania	86.3
Israel	86.2
France	86.1
Germany	85.1
New Zealand	84.7
Netherlands	84.3
Finland	83.7
Portugal	83.2
Chile	83.1
Spain	80.9
Slovenia	80.9
OECD	80.2
Mexico	78.7
Czech Republic	77.3
Belgium	76.1
Türkiye	75.1
Iceland	73.6
Poland	73.3
Estonia	72.2
Hungary	70.9
Italy	70.7
Ireland	70.3
Latvia	68.1
Austria	66.9
Luxembourg	66.6
Colombia	65.9
Costa Rica	65.3
Greece	60.1
Slovakia	50.1

Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved in Sep 24, 2024)
Note : Core capacities (all) refer to the average attainment level (%) of the 15 capacities.

100% attainment in 13 out of fifteen items in the assessment of the IHR core capacities (⊘ SDG 3.d.1)

The International Health Regulations (IHR) are legal regulations among WHO members designed to ensure and enhance the detection, evaluation, notification and response capacities in the event of public health crises. Each country is obligated to maintain its minimum core capacities for surveillance and response to global public health emergencies. In 2021, the WHO amended its State Parties Self-Assessment (SPAR) based on the lessons learned from the COVID-19 pandemic. The amended SPAR (2021) consists of 35 indicators regarding 15 core capacities.

The fifteen core capacities include ① policy, legal and normative instruments to implement IHR, ② IHR coordination and national IHR focal point, ③ financing, ④ laboratory, ⑤ surveillance, ⑥ human resources, ⑦ health emergency management, ⑧ health services provision, infection prevention and control, risk communication and community engagement, points of entry and border health, zoonotic diseases, food safety, chemical events, and radiation emergencies. During the World Health Assembly held in May 2024, the decision was made to add four more, but they have not yet been established as indicators.

South Korea attained 100% in 13 areas, with the exception of two (② IHR coordination and national IHR focal point: 93%, risk communication and community engagement: 93%) in the 2023 assessment of the IHR core capacities. Its average score across the 15 areas stood at 99.1%, which is exceptionally high compared to the global average of 194 countries (63.8%) and the OECD average of 38 countries (80.2%). The nation also received scores of 95.3% in 2021, 98.7% in 2022 and 99.1% in 2023 in three assessments conducted each year, highlighting its strengthened health response capacities.

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

SDG 4 aims to ensure quality education for all. However, various indicators show that there has been lackluster progress toward global goals, such as the achievement level of basic academic skills, educational infrastructure and the enrollment rate of young children. In particular, progress was heavily affected during the COVID-19 pandemic. That said, in South Korea, concerns over learning loss during the pandemic didn't materialize in the international academic achievement indicator of PISA. Although the decline in adults' participation in lifelong learning has not fully recovered yet, the enrollment rate of young children and the literacy rate among adults have recorded all-time highs.

>> **In 2022, the proportion of 15-year-old adolescents reaching the minimum proficiency level was 85.3% in reading and 83.8% in mathematics, which is higher than the OECD average (73.7% in reading, 68.9% in math) and is comparable to the pre-COVID level in 2018.**
   - It remained in the 90% range until 2012, but it has stayed at the mid-80% level since 2015.
   - The proportion of girls reaching the minimum proficiency level in both reading and math was higher than that of boys.

>> **The enrollment rate of young children (ages 3 to 5) temporarily declined in 2019 and 2020 due to the pandemic, but began recovering in 2021, reaching an all-time high of 94.3% in 2022.**
   - South Korea had a lower enrollment rate at 93.3% for five-year-olds than European countries, such as France (99.7%) and Italy (95.4%), as well as Japan (97.1%), but higher than the United States (84.2%).

>> **The participation rate in lifelong learning among adults significantly dropped in 2021 due to the pandemic, and then it rebounded to 32.3% in 2023.**
   - Most participants in lifelong learning engaged in non-formal education (31.9%), rather than formal education (0.6%).
   - The participation in lifelong learning among vulnerable groups (the undereducated, elderly, low-income households, residents in non-metropolitan areas, the disadvantaged class) was lower than that of their counterparts (the highly educated, youth, high-income households, those living in metropolitan areas, the advantaged class).
   - The regional disparity in participation in lifelong learning narrowed down in 2023, compared to 2022.

>> **The proportion of adults with sufficient literacy skills to lead daily life has been steadily rising since 2014, reaching 83.4% in 2023.**
   - The literacy rate among adults was higher for men (86.7%) than for women (80.1%).

The proportion of adolescents reaching the minimum proficiency level has remained at the mid-80% level even after the COVID-19 pandemic (○ SDG 4.1.1)

SDG 4.1.1 is an indicator that monitors whether the education system in each country achieves the goal of "ensuring quality education" by securing basic academic skills for students. For this indicator, data from the following two international academic assessments can be used: the OECD's PISA and IEA's TIMSS.

In Dec 2023, the 2022 PISA results were announced, four years after the release of the 2018 results, following the COVID-19 pandemic. This SDG is based on the results of the most recent PISA assessment conducted in 2022. The

2022 PISA results categorize academic achievements in reading, mathematics, and science of 15-year-old students into six levels in each country, with Level 1 representing the lowest achievement and Level 6 the highest. Under this SDG, students at Level 2 or higher are considered to have reached the 'minimum proficiency level.'

Among adolescents aged 15 in South Korea, the proportion of those reaching the minimum proficiency level hovered around 90% in both reading and mathematics until 2012, but later it dramatically dropped and has remained in the mid-80% range since 2015. Due to the pandemic, there were concerns over a decline in students' basic academic skills as school education was conducted online in 2020 and 2021. However, no noticeable change was observed in the ratio

Proportion of Adolescents Reaching the Minimum Proficiency Level (15-old-years, Reading & Math), 2012~2022

(Unit: %)
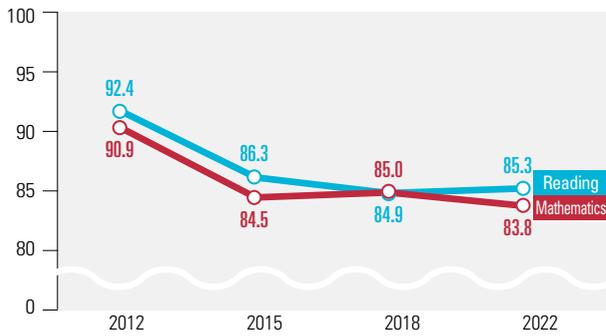
Source: OECD, Programme for International Student Assessment(PISA)(https://www.index.go.kr/sdg, retrieved on Jan 6, 2025)
Note 1: PISA is an assessment conducted for 15-year-old students in participating countries; and in South Korea, 352 middle school students and 6,482 high school students took the assessment in 2022.
Note 2: Academic attainment is categorized into six levels for each subject, and anyone achieving Level 2 or above is considered to have reached the minimum proficiency level.

of students achieving the minimum proficiency level when comparing the 2022 PISA results (85.3% in reading and 83.8% in mathematics) with those of the 2018 results (84.9% in reading and 85.0% in mathematics). In fact, the proportion in reading increased by 0.4%p in 2022 compared to 2018.

There is a gender gap in the proportion of adolescents reaching the minimum proficiency level between boys and girls. According the 2022 PISA results, the ratio of female students achieving the level was higher in both reading and mathematics compared to male students. This is interesting because it is somewhat different from PISA's average scores.

For reading, the average score of girls (533) was higher than that of boys (499), but boys (530) excelled girls (525) in terms of the average score of mathematics. This can be interpreted that boys obtained a higher average score in mathematics than girls, but had a lower percentage reaching the minimum proficiency level. This result can be attributed to a higher dispersion in academic achievements among boys, especially in mathematics, compared to girls. Compared to the 2018 PISA results, the gender gap slightly widened. Back in 2018, the gender gap was 1.2%p in mathematics and 7.6%p in reading, but in 2022, this widened to 3.1%p in mathematics and 8.9%p in reading. The proportion of girls reaching the minimum proficiency level was higher than that of boys in both mathematics and reading, for both years the assessment was conducted, with the gender gap further widening over the four years.

Compared to the OECD average of adolescents reaching the minimum proficiency level, South Korea had higher scores in both subjects (85.3% in reading and 83.8% in mathematics) than the OECD average (73.8% in reading and 68.9% in mathematics). In fact, South Korea is known for its internationally high ranking in PISA scores, making such results not surprising.

Although there were some concerns over learning loss during the pandemic, the 2022 PISA results showed that there was no significant reduction in the ratio of adolescents

Proportion of Adolescents Reaching the Minimum Proficiency Level (15-year-olds, Reading and Math), 2018, 2022

(Unit: %)

Source: OECD, Programme for International Student Assessment(PISA)(https://www.index.go.kr/sdg, retrieved on Jan 6, 2025)
Note 1: PISA is an assessment conducted for 15-year-old students in participating countries; and in South Korea, 352 middle school students and 6,482 high school students took the assessment in 2022.
Note 2: Academic attainment is categorized into six levels for each subject, and anyone achieving Level 2 or above is considered to have reached the minimum proficiency level.

hitting the minimum proficiency level and the nation managed to maintain the previous level. That said, as the importance of every and each talent is expected to grow due to low birth rates and diminishing school-age population, it is necessary to set a bar higher for this indicator compared to the past and pay more policy efforts.

Steady increase in the enrollment rate of young children, reaching 95% (◑ SDG 4.2.2)

Children's early learning experiences can affect not only their development and overall well-being but also have an impact on their lifelong academic achievements and social success. Therefore, SDG 4 sets and monitors the ratio of early-age education experience as an indicator in each country. South Korea uses the proportion of young children enrolled in daycare/educational institutes (child care centers and kindergartens) among those aged 3 to 5, also known as the enrollment rate in early childhood. The ratio has seen a dramatic increase since the introduction of Nuri (kindergarten-level) Curriculum in 2012. It has maintained over 90% since 2013, increasing to 93.4% in 2017. Although it slightly declined to around 91% in 2019 and 2020 during the COVID-19 pandemic, it hit the record high of 94.3% in 2022 and 2023.

This indicator is globally calculated based on the country-specific data collected through international education statistics of UOE (UNESCO/OECD/Eurostat) and the
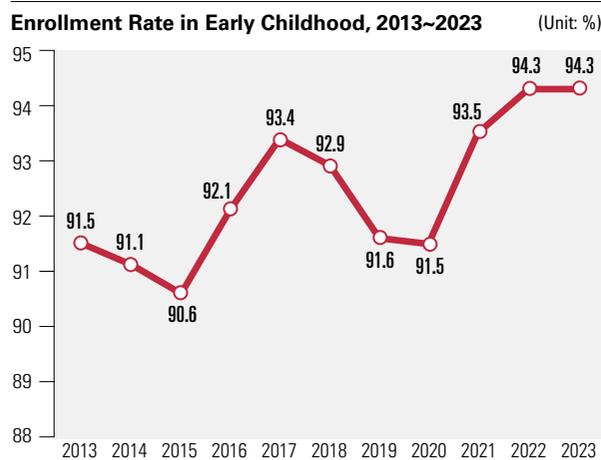
UN's population data. The global statistics for this indicator are based on the proportion of children participating in the organized learning one year before the official primary entry age in each country. In South Korea, the statistics are calculated for 5-year-old children. The enrollment rate for the 5-year-old boys stood at 93.5%, which is slightly higher by 0.3%p compared to girls (93.2%). The overall enrollment rate for both boys and girls reached 93.3%, which is lower than that of European countries, such as France (99.7%) and Italy (95.4%), as well as Japan (97.1%), but higher than that of the United States (84.2%).

However, caution is required when interpreting the data as Korea's enrollment rate does not include any private education, including English kindergartens. In a nut shell,

Proportion of Children Participating in Organized Learning One Year before the Official Primary Entry Age, by Gender, 2021 (Unit: %)
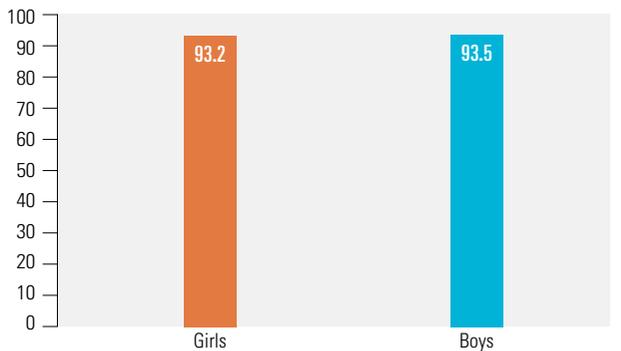
Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Sep 10, 2024)
Note 1: This graph represents the proportion of 5-year-old children participating in South Korea.

Proportion of Children Participating in Organized Learning One Year Before the Official Primary Entry Age in Major Countries, 2021 (Unit: %)
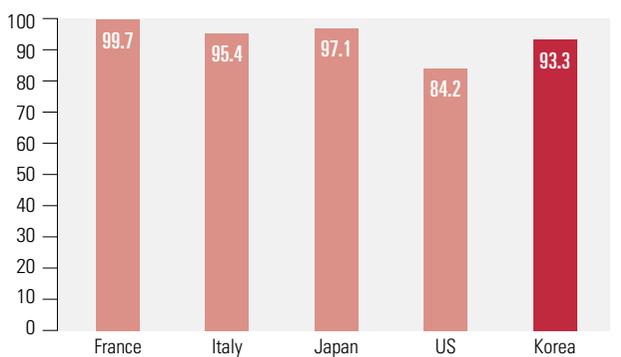
Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Sep 10, 2024)
Note 1: This graph represents the proportion of 5-year-old children participating in South Korea.
Note 2: Major countries were selected based on Korea's key benchmarking countries among those with available data.

Enrollment Rate in Early Childhood, 2013~2023 (Unit: %)

Source: Ministry of Health and Welfare, Statistics of Pre-kindergartens and Users; Korean Educational Development Institute, Basic Educational Statistics (https://www.index.go.kr/sdg, retrieved on Jan 31, 2025)
Note 1: This graph represents the proportion of young children aged 3 to 5 attending kindergarten or pre-k.

the nation's enrollment rate cannot be considered low. Given the cases of other countries, such as France, achieving almost full enrollment, there is still room for more policy efforts to increase the proportion of 5-year-old children attending kindergarten, especially in public education rather than private.

Despite the recovery of the adult participation rate in lifelong learning after COVID-19, participation among vulnerable groups has remained low (○ SDG 4.3.1)

SDG 4 emphasizes the opportunities of quality education for people in all age groups, including school-age population and adolescents. In this regard, SDG 4.3.1 serves as an indicator that monitors the proportion of adults participating in formal and non-formal lifelong learning. As the labor market and social/cultural environments are expected to change rapidly in the future society, lifelong learning, such as upskilling or reskilling, becomes even more important.

The adult participation rate in lifelong learning hovered over 40% until 2020, but it sharply declined to 30.7% in 2021 when COVID-19 wreaked havoc on the economy. Since then, the participation rate has showed signs of recovery, increasing to 32.3% in 2023. Meanwhile, the percentages of adults participating in formal education and non-formal

Adult Participation Rate in Lifelong Learning, 2017~2023 (Unit: %)

■ Formal Education　■ Non-formal Education　—○— Total (Formal/Non-formal Education)

Year	2017	2018	2019	2020	2021	2022	2023
Total	34.4	41.2	41.7	40.0	30.7	28.5	32.3
Non-formal	33.4	40.4	40.9	39.3	30.2	28.0	31.9
Formal	1.9	2.3	1.5	1.4	0.8	0.6	0.6
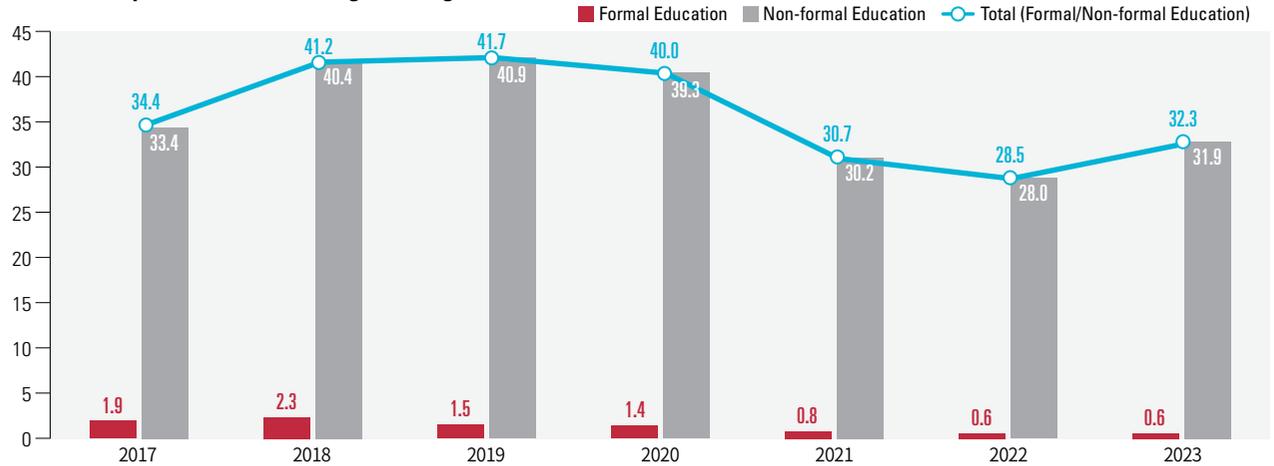
Source: Korean Educational Development Institute, National Lifelong Learning Survey for Individual Learners
Note 1 : Since the survey subject changed from the population aged 25 to 69 to those aged 25 to 79 in 2017, the data from 2016 and earlier have not been provided.
Note 2 : Until 2020, this survey covered a year from July of the previous year to June of the year being surveyed. Starting in 2021, the survey covers a year from Jan to Dec of the previous year.
Note 3 : Formal education refers to education that leads to a diploma or degree through a regular educational process, such as elementary, middle, high school, or university while non-formal education refers to education provided through programs or curricula operated by continuing education institutions as structured learning activities other than formal education.

Adult Participation Rate in Lifelong Learning by Characteristics, 2023 (Unit: %)

Gender		Academic Attainment			Age						Monthly Household Income (KRW)				Regional Scale			Vulnerable Group	
Women	Men	Mid. School Grad. or below	High School Grad.	Univ. Grad. or above	Ages 25 to 29	Ages 30 to 39	Ages 40 to 49	Ages 50 to 59	Ages 60 to 69	Ages 70 to 79	Less than 1.5 M	1.5 M to less than 3 M	3M to less than 5M	5 M or higher	Seoul & Metropolitan Area	Small/Mid Cities	Rural Areas	Disadvantaged	Advantaged
33.5	31.2	22.1	25.5	39.9	44.8	39.6	32.6	30.7	25.9	23.0	21.2	28.7	31.2	36.1	32.7	32.2	31.7	22.0	32.8

Source: Korean Educational Development institute, 2023 Korean Adult Lifelong Learning Survey

education stood at 0.6% and 31.9% in 2023, respectively, indicating that most of participants engaged in non-formal education. By demographic characteristics, groups generally considered vulnerable (the undereducated, elderly, low-income households, residents in rural areas and those in the bottom 50% of the median income) had lower participation rates than their respective counterparts (the highly educated, youth, high-income households, residents in urban areas, the advantaged group). However, it is noteworthy that in 2023, women's participation rate exceeded that of men, and the gap in participation driven by residential areas narrowed down in 2023 (32.7% in Seoul and Metropolitan areas, 31.7% in rural areas) compared to 2022 (29.5% in Seoul and Metropolitan areas, 23.8% in rural areas).

Considering the participation rate before COVID-19, greater efforts are needed to boost adult participation in lifelong learning in the future. As lifelong learning for adults is expected to become more important in the foreseeable future, it is essential to set a bar higher than a record high in the past. In addition, ongoing efforts toward a full-fledged digital transition and improving academic achievement of the elderly will serve as factors that could narrow the gap between groups participating in lifelong learning down the road. To this end, the government should make steady policy efforts to ensure that no group is excluded from lifelong learning due to cost and accessibility challenges.

A rise in the adult literacy rate, leading to a reduction in the gender gap (◯ SDG 4.6.1)

SDG 4.6.1 is an indicator that monitors the proportion of the population equipped with the minimum level of literacy and numeracy skills among (adolescents and) adults. The "minimum level of skills" is globally defined as Level 2 in the OECD PIAAC (Programme for the International Assessment of Adult Competencies). In South Korea, it is defined as Level 4 in the Adult Literacy Survey, which measures the literacy skills of adults aged 18 or higher based on their reading, writing and counting capacities and utilization. Level

Proportion of Population with Sufficient Literacy Skills for Daily Life by Gender, 2014~2023 (Unit: %)
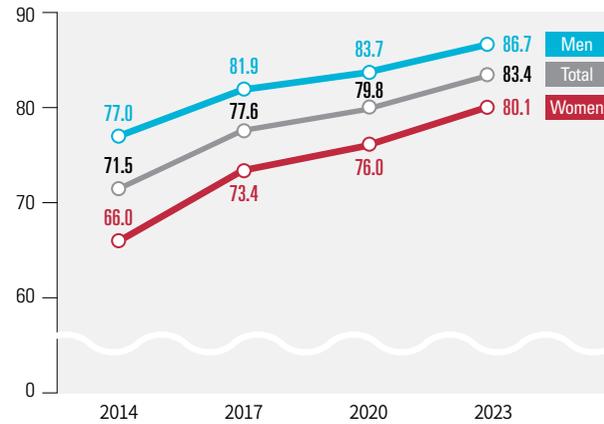
Source: National Institute for Lifelong Education, Adult Literacy Survey
Note 1: This graph shows the percentage of the population with sufficient literacy skills (reading, writing and counting, etc.) needed to lead daily life, i.e., equivalent to middle school graduates or higher.

4 or above is considered as the "level with sufficient literacy skills needed to lead daily life (equivalent to a middle-school level or higher)."

According to the Adult Literacy Survey, the proportion of adults equipped with sufficient literacy skills (Level 4 or above) has seen steady growth. To be specific, the percentage grew by 11.9%p over the past decade from 71.5% in 2014 to 83.4% in 2023. This trend resonates with Korea's educational pattern, where younger generations tend to have higher educational achievements. In other words, the percentage of literate individuals have steadily increased as youths with higher academic achievements continue to enter the adult population while the elderly with lower academic attainment are exiting from the population. There is also a gender gap in the adult literacy rate. Men's literacy has consistently been higher than women's since 2014. In 2023, the literacy rate was 86.7% for men and 80.1% for women, indicating a gender disparity. However, such a gender gap has gradually narrowed down from 11.0%p in 2014 to 6.6%p in 2023.

In the future, the adult literacy rate in Korea will continue to rise. That said, constant policy support is needed to help the illiterate lead their lives without difficulties in the rapidly changing future society.

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Definition
- **Upskilling :** It refers to the act of improving existing skills or acquiring new skills to maintain competitiveness in the labor market.
- **Reskilling :** It refers to the act of acquiring completely new skills to enter a career or industry different from what one has previously done.

5 GENDER EQUALITY

Achieve gender equality and empower all women and girls

SDG 5 aims to resolve discrimination against women and girls in all realms of life, including politics, economy, society, labor, education, culture and safety. Around the world, women continue to suffer from forced marriage even at a young age and female genital mutilation. At the current pace, it is also estimated to take 176 years to ease the gender gap in the managerial positions. In South Korea, the ratio of female lawmakers, senior public officials in managerial roles and corporate executives has still remained low. Despite the emergence of new crimes targeting women, such as dating violence, stalking and illegal filming, the arrest rate for the digital sexual crimes has declined.

>> **The proportion of female legislators increased from 2.0% in 1988 to 20.0% in 2024; however, the figure was only 14.2% in constituencies that account for most of parliamentary seats.**
- Out of female lawmakers, there has been a noticeable rise in the proportion of those serving a second term or longer, which is a telltale sign that their influences are growing in the parliament.

>> **At the national and local government levels, the ratio of female public officials in managerial positions rose to 23.2% and 30.8%, respectively in 2023; however, it's still low. Worse yet, female representation was even lower among executives of public organizations, local public enterprises and private companies.**

>> **In 2022, over 10,000 cases of dating violence and stalking crimes occurred respectively, with the proportion of female victims amounting to 59.9% and 81.2%.**

>> **The daily use of smartphones and the Internet has led to the emergence of new forms of sexual violence against women and children.**
- Recently, digital sexual crimes have been increasing, such as child sexual abuse materials and obscene contents via communication media. In addition, the manipulation and dissemination of fake videos, and threats/coercion using the recorded materials are also emerging as new types of sexual crimes.
- Despite an increase in digital sexual crimes, their arrest rates have declined. In particular, the arrest rates for fake videos manipulated/disseminated as well as coercion and threats using recorded materials were reported at only 48.2% and 61.4%, respectively in 2023.

Although female representation has grown in the parliament, it remains low by global standards (⟳ SDG 5.5.1)

The percentage of female legislators in the national parliament, which was only 2.0% in 1988, gradually increased to 20.0% in 2024. In particular, it dramatically rose in 2004 when the Public Official Election Act was revised in the run-up to the 2004 national elections, stipulating that the ratio of female nominees shall be 50% or higher among proportional representation candidates. This indicates that

Proportion of Seats held by Women in National Parliament, 1988~2024 (Unit: %)
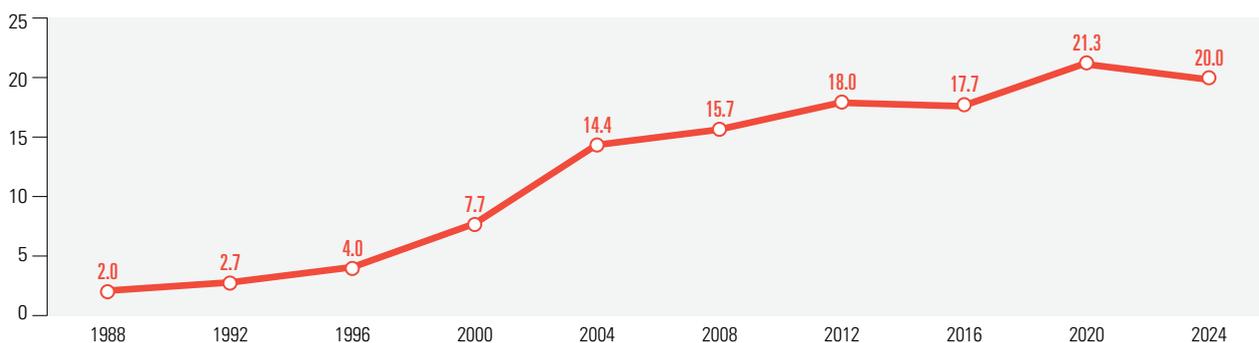
Source: National Assembly Secretariat, Open Parliament Information (https://open.assembly.go.kr/, retrieved on Aug 28, 2024); National Election Commission, Election Statistics System (http://info.nec.go.kr, retrieved on Aug 28, 2024)
Note 1 : This graph is based on the number of lawmakers, combining those in constituency and proportional representation.
Note 2 : The by-election results are reflected in the data up to 2020 while the year 2024 is based on the statistics of the electees.

Proportion of Seats held by Women in Constituencies and Proportional Representation in National Parliaments, 1988~2024   (Unit: %)
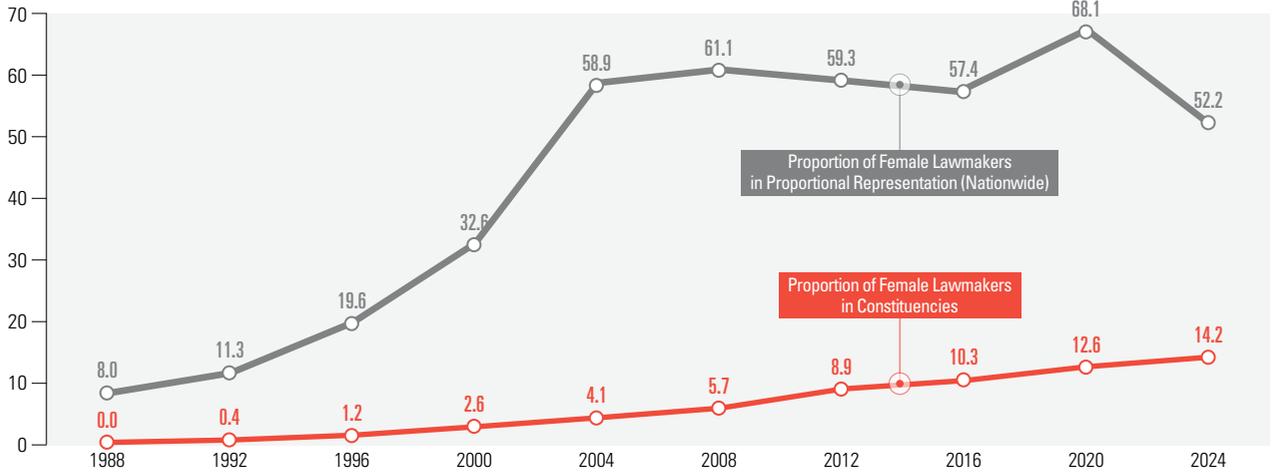
Proportion of Female Lawmakers in Proportional Representation (Nationwide)

Proportion of Female Lawmakers in Constituencies

Source: National Assembly Secretariat, Open Parliament Information (https://open.assembly.go.kr/, retrieved on Aug 28, 2024); National Election Commission, Election Statistics System (http://info.nec.go.kr, retrieved on Aug 28, 2024)
Note　: The by-election results are reflected in the data up to 2020 while the year 2024 is based on the statistics of the electees.

Ratio of Terms Served by Lawmakers in National Parliaments, 2004~2024   (Unit: %)

Women-1st Term　Women-2nd Term　Women-3rd Term

Men-1st Term　Men-2nd Term　Men-3rd Term
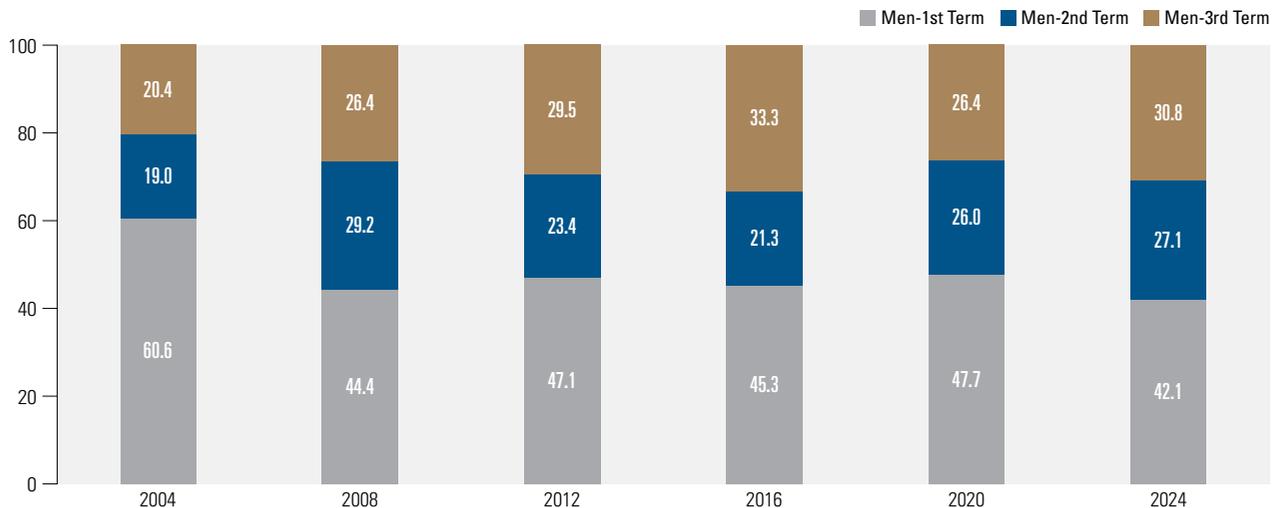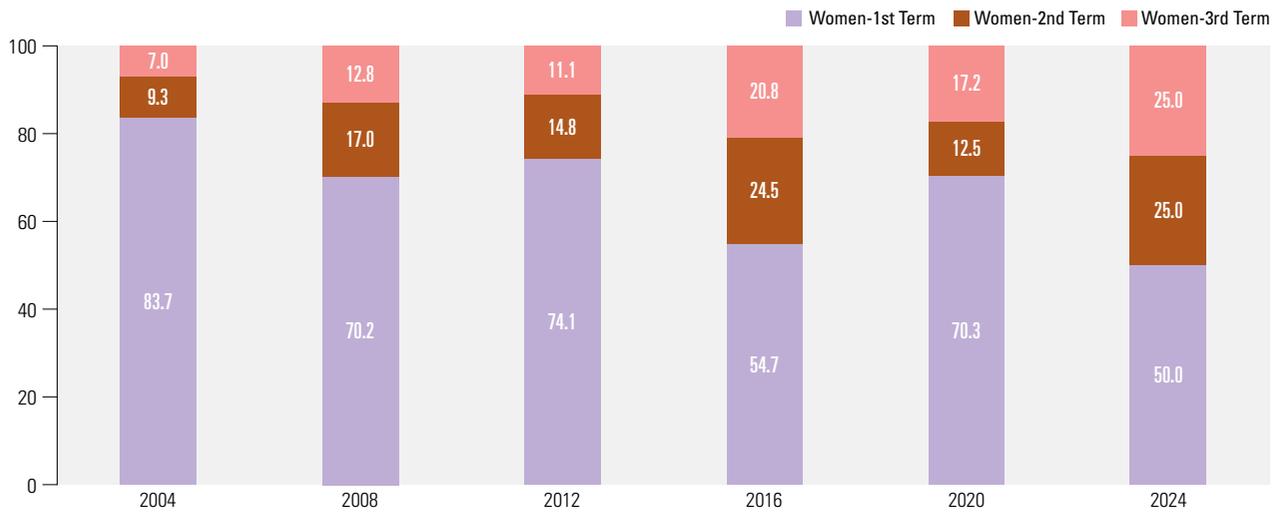
Source: National Assembly Secretariat, Open Parliament Information (https://open.assembly.go.kr/, retrieved on Sep 6, 2024)
Note 1 : This graph is based on the number of lawmakers, combining those in constituency and proportional representation.
Note 2 : The by-election results are reflected in the data up to 2020 while the year 2024 is based on the statistics of the elected.

Proportion of Seats held by Women in National Parliaments of OECD Countries (Unit: %)

Country	%
Mexico (2024)	50.2
Costa Rica (2022)	49.1
Sweden (2022)	46.7
Finland (2023)	46.0
Iceland (2021)	46.0
New Zealand (2023)	45.5
Denmark (2022)	45.3
Norway (2021)	44.4
Spain (2023)	44.3
Belgium (2024)	41.3
UK (2024)	40.5
Netherlands (2023)	38.7
Switzerland (2023)	38.5
Australia (2022)	38.0
Slovenia (2022)	37.8
Austria (2024)	36.1
France (2024)	36.1
Chile (2021)	35.5
Germany (2021)	35.3
OECD	34.1
Luxembourg (2023)	33.3
Portugal (2024)	32.6
Italy (2022)	32.3
Latvia (2022)	32.0
Canada (2021)	30.7
Estonia (2023)	29.7
Poland (2023)	29.6
Colombia (2022)	29.4
US (2024)	28.7
Lithuania (2024)	28.4
Czech Republic (2021)	26.0
Ireland (2024)	25.3
Israel (2022)	25.0
Greece (2023)	23.0
Slovakia (2023)	22.7
Korea (2024)	20.0
Türkiye (2023)	19.9
Japan (2024)	15.7
Hungary (2022)	14.6

Source: IPU, Parline Data, Monthly ranking of women in national parliaments (https://data.ipu.org/women-ranking, retrieved on Jan 7, 2025)
Note : For countries with bicameral legislatures, this is calculated based on the number of female members in lower chambers.

the female quota in the proportional representation has been an effective means of ensuring women's advancement into parliament. Plus, the livelihood of female candidates being elected was further enhanced through another legal amendment in 2005, which ensures odd numbers to be assigned to women when they are nominated as proportional candidates. That said, in 2024, the ratio of women elected still remained modest at best (14.2%) in constituencies that account for most of the parliamentary seats. Under the current election system where constituency seats (254) far outnumber those in proportional representation (46), there are limitations to increasing female representation in parliament if the ratio of women elected continues to hold the status quo in constituencies.

The number of terms served by lawmakers is a key indicator of influences an individual lawmaker has in parliament. A higher number of terms means greater operational experiences, policy expertise and political negotiation skills in parliament. It can also increase the likelihood of serving as chairman in the Standing

Committee, which is pivotal to parliamentary operations. Before the female quota in proportional representation was introduced, the number of female lawmakers was so small that it was statistically insignificant to track the ratio of female lawmakers by the number of terms served. In 2004 when the female quota was first implemented, the proportion of female lawmakers serving a second and third term or more stood at 9.3% and 7.0% whereas it was recorded at 19.0% and 20.4% for male counterparts, showing a considerable gap. That said, the ratio of female lawmakers serving multiple terms remarkably increased over the past two decades, reaching 25.0% for both second- and third-term lawmakers in the 2024 elections, significantly narrowing the gap with male lawmakers (27.1% for the second term and 30.8% for the third term or more).

Although the proportion of female lawmakers has increased over the past 30 years, it still pales in comparison to OECD countries. Based on the results of the national elections held as recently as in 2024, the proportion of female lawmakers in both constituencies and proportional

Share of Women in Managerial Positions (GR 4 or higher) out of Public Officials in National Government, 2011~2023 (Unit: %)
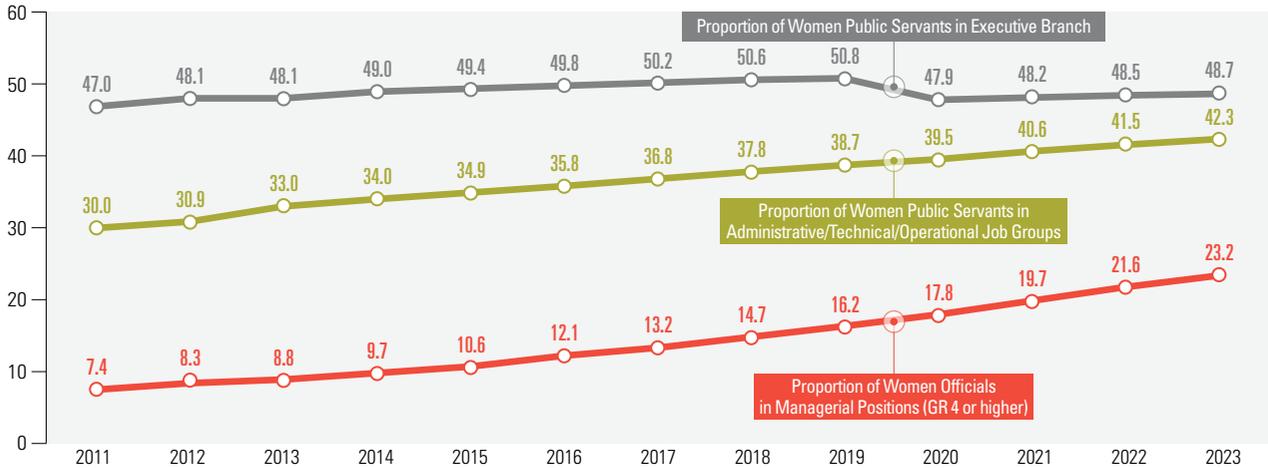
Source: Ministry of Personnel Management, 2024 Statistical Yearbook for Personnel Innovation; Korean Women's Development Institute, Gender Statistics Information System (https://gsis.kwdi.re.kr, retrieved on Aug 28, 2024)
Note 1 : This is based on public servants in the executive branch, excluding those in the legislative branch, judicial branch, Constitutional Court and National Election Commission.
Note 2 : Administrative/technical/operational job groups exclude those in special positions (foreign affairs, police, fire-fighting, inspection, training), political positions and privileged government positions. Out of public servants in general-service positions, excluded are those in specialized, research, technical, postal positions; specialized officials; and those under flex-time and normal/special/temporary-term schemes.
Note 3 : The ratio of women in managerial positions (GR 4 or higher) is based on administrative/technical/operational job groups with figures available for the female ratio in each rank.

Share of Women in Managerial Positions (GR 5 or higher) out of Public Officials in Local Governments, 2011~2023 (Unit: %)
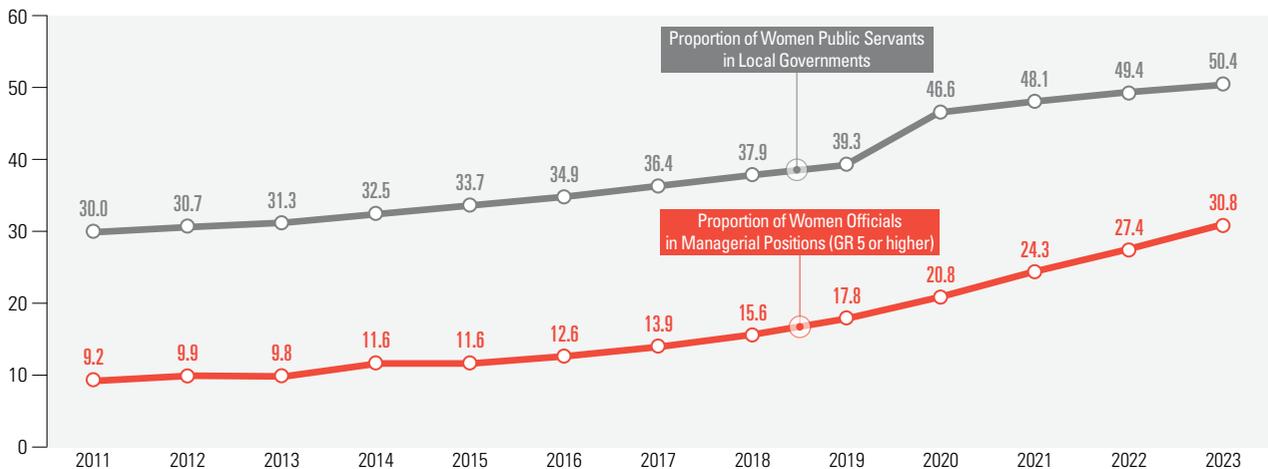
Source: Ministry of the Interior and Safety, Statistics of Female Public Servants in Local Governments (as of Dec 31, 2023)(https://www.mois.go.kr/frt/bbs/type001/commonSelectBoardArticle.do?bbsId=BBSMSTR_000000000051&nttId=110482, retrieved on Aug 28, 2024)
Note 1 : This is based on the number of public servants in local governments, excluding self-governing training institutes.
Note 2 : Local public officials on GR 5 or higher include high-level officials, those in general services (incl. ordinary-term system) on GR 1 to 5, those in the ordinary-term system on GR 5, researchers and senior technical advisors, those in privileged government positions equivalent to GR 1 to 5, special career officials on Group A and those in the exclusive positions on GR 5 or higher.

representation combined was equal to 20.0%, which is 14.1%p lower than the OECD average of 34.1%. This places South Korea nearly at the bottom, 35th out of 38 OECD members, indicating that female representation in the national parliament is far from enough.

Women's low representation in managerial positions of the national and local governments (SDG 5.5.2)

In 2023, the proportion of female public servants stood at 48.7% in the national government and 50.4% in local governments, respectively. However, the ratio of female public officials in managerial positions has remained low. A detailed look at the administrative, technical and operational job groups provides a more accurate picture of the current state: female public servants accounted for 42.3% out of the total workforce while those in managerial positions (Grade 4 or higher) almost halved to 23.2%.

In local governments, the share of female public servants has been steadily on the rise, as has the proportion of female officials in the managerial positions (Grade 5 or higher).

Share of Female Employees, Managers and Executives in Public Organizations, Local Public Enterprises and Private Companies, 2014~2023 (Unit: %)

Public Institution	Local Public Enterprises	Private Enterprise
—O— Ratio of female executives in public orgs. w/ 1,000 employees or more	—O— Ratio of female executives in local public enterprises w/ 1,000 employees or more	—O— Ratio of female executives in private companies w/ 1,000 employees or more
--O-- Ratio of female executives in public orgs. w/ 500 to less than 1,000 employees	--O-- Ratio of female executives in local public enterprises w/ 500 to less than 1,000 employees	--O-- Ratio of female executives in private companies w/ 500 to less than 1,000 employees

Source: Ministry of Employment and Labor, Employment & Labor White Paper and AA Worker Analysis Report by Gender

Note : This shows the ratio of female executives in corresponding organizations when the Affirmative Action has been implemented. The measure has expanded to cover local public enterprises and corporations under the Local Public Enterprises Act since 2018.

In 2023, female public servants took up 50.4% out of the total workforce; however, the female ratio dropped to 30.8% among the managerial positions. This indicates that female public officials remain underrepresented in the managerial roles. Having said that, the gap has narrowed each year, declining from 25.8%p in 2020, 23.8%p in 2021, 22.0%p in 2022 to 19.6%p in 2023, showing a gradual improvement in gender disparity among managerial-level public officials.

Women's underrepresentation among executives in public organizations, local public enterprises and private companies (⟳ SDG 5.5.2)

Executives have decision-making authorities over major agendas in companies or organizations. Therefore, female representation can be measured by the ratio of female executives. It has been found that the ratio of female executives is extremely low in public organizations, local public enterprises and private companies. Since 2006, when the Affirmative Action was introduced to tentatively favor a certain gender for alleviating sexual discrimination in employment, the proportion of female employees and managers has been on a gradual increase in public organizations and local public enterprises. Although the share of female executives has increased in public organizations and private companies compared to a decade ago, it still

Number and Ratio of Dating Violence Victims, 2017~2022
(Unit: person, %)
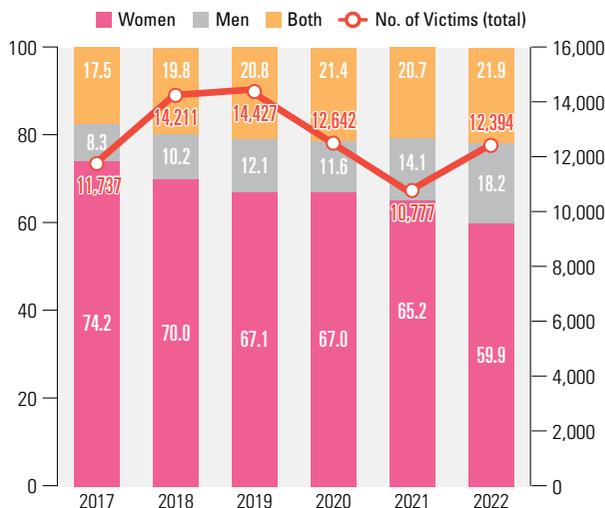
Source: Korean Women's Development Institute (Hyojeong Kim et al., 2023) pp.76~77(Original Source: National Police Agency's internal data)

remains low. In 2023, the ratio of female executives in public organizations with 1,000 employees or more stood at 7.2% while the figure was only 12.5% in private companies. As for local public enterprises which tend to have a relative small ratio of female employment, the proportion of female executives has never exceeded the 5% mark since the collection of statistics began in 2018. Out of 11 local public enterprises with 1,000 employees or more, there was not even a single female executive in 2023. Even 147 smaller

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Number and Ratio of Stalking Victims, 2022 (Unit: person, %)

Women ■ Men ■ Unidentified

264
2.5%

1,723
16.3%

8,558
81.2%
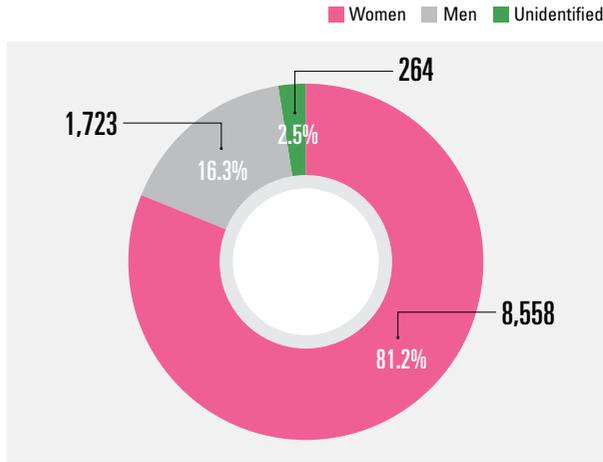
Source: Korean Women's Development Institute (Hyojeong Kim, et al., 2023) p.83(Original Source: National Police Agency's internal data)

local public enterprises with fewer than 1,000 employees had only 4 female executives (2.1%).

A noticeable decline in the arrest rate for digital sexual crimes amid ever-more diversifying violence against women
(⟳ SDG 5.2.1 / SDG 5.2.2)

Dating violence refers to violent crimes that occur in romantic relationships, including assault, injury, arrest, confinement, threats, sexual violence or other minor offenses. The number of dating violence victims peaked at 14,427 in 2019, and then slightly decreased during the COVID-19 pandemic. However, more than 10,000 people fall victim to dating violence each year, including 12,394 victims in 2022. Although the proportion of female victims has been on a decrease from 74.2% in 2017, women still accounted for the majority of victims at 59.9% (7,420 victims) in 2022. Stalking, on the other hand, refers to a crime involving persistent physical or psychological harassment against a victim's will. Previously, it was classified as a minor offense 'persistent harassment'; however, the Act on the Punishment of Stalking was enforced in Oct 2021, making it possible to punish stalking with sentences or fines. Under the Act, the number of victims amounted to 10,545 in 2022, of which 81.2% were women.

The daily use of smartphones and the Internet has given rise to a growing number of sexual violence in new forms, disproportionately targeting women. A case in point is illegal filming using cameras and cyber sexual violence. Illegal filming cases peaked in 2015, showing some fluctuations afterward and maintaining a range of 5,000 to 6,000 cases per year. In 2023, women accounted for 86.5% of illegal filming victims, indicating that women are more likely to fall victim to this crime.

Besides illegal filming using cameras, as mentioned above, digital sexual crimes include obscene contents via

Proportion of Female Victims of Illegal Filming (Unit: %)

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
%	82.6	83.3	81.1	85.3	82.9	81.3	84.8	75.9	77.7	86.5
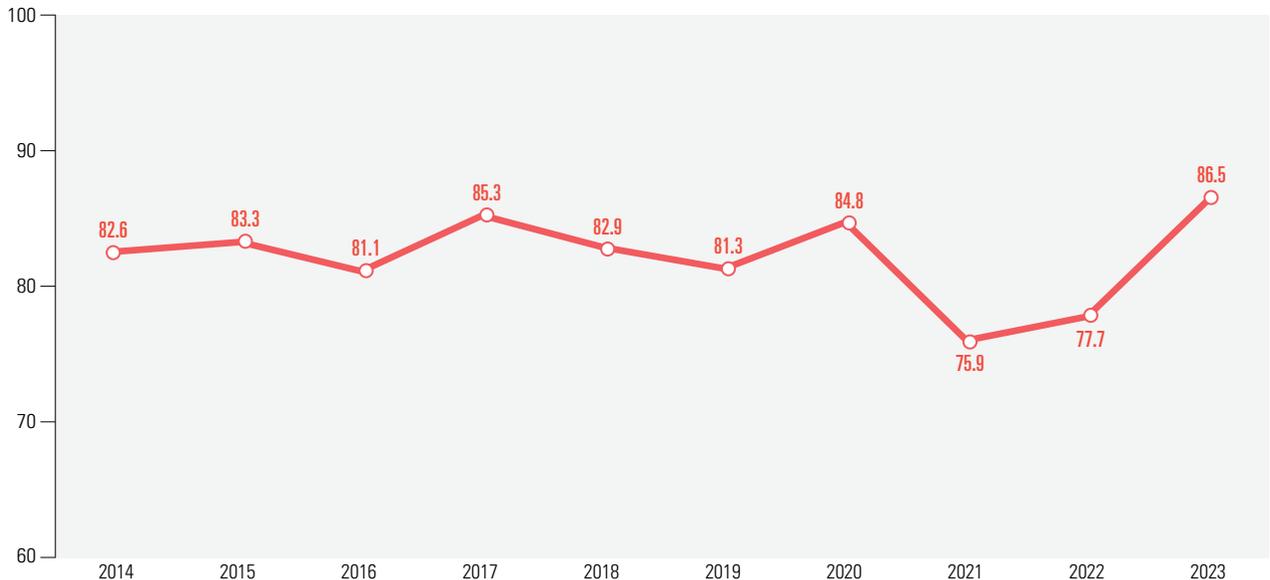
Source: National Police Agency, 2023 Police Statistical Yearbook
Note : This refers to 'crimes involving filming and dissemination, using cameras.' It was referred to as 'crimes involving filming using cameras' until 2019.)

Number of Digital Sexual Crimes and Arrest Rate, 2015~2023

(Unit: No. of cases, %)

Legend:
- Illegal Filming_ No. of Cases
- Obscenities via Communication Media_ No. of Cases
- Fake Videos_ No. of Cases
- Threats/Coercion_ No. of Cases
- Child Sexual Abuse Materials_ No. of Cases
- Illegal Filming_ Arrest Rate
- Obscenities via Communication Media_ Arrest Rate
- Fake Videos_ Arrest Rate
- Threats/Coercion_ Arrest Rate
- Child Sexual Abuse Materials_ Arrest Rate
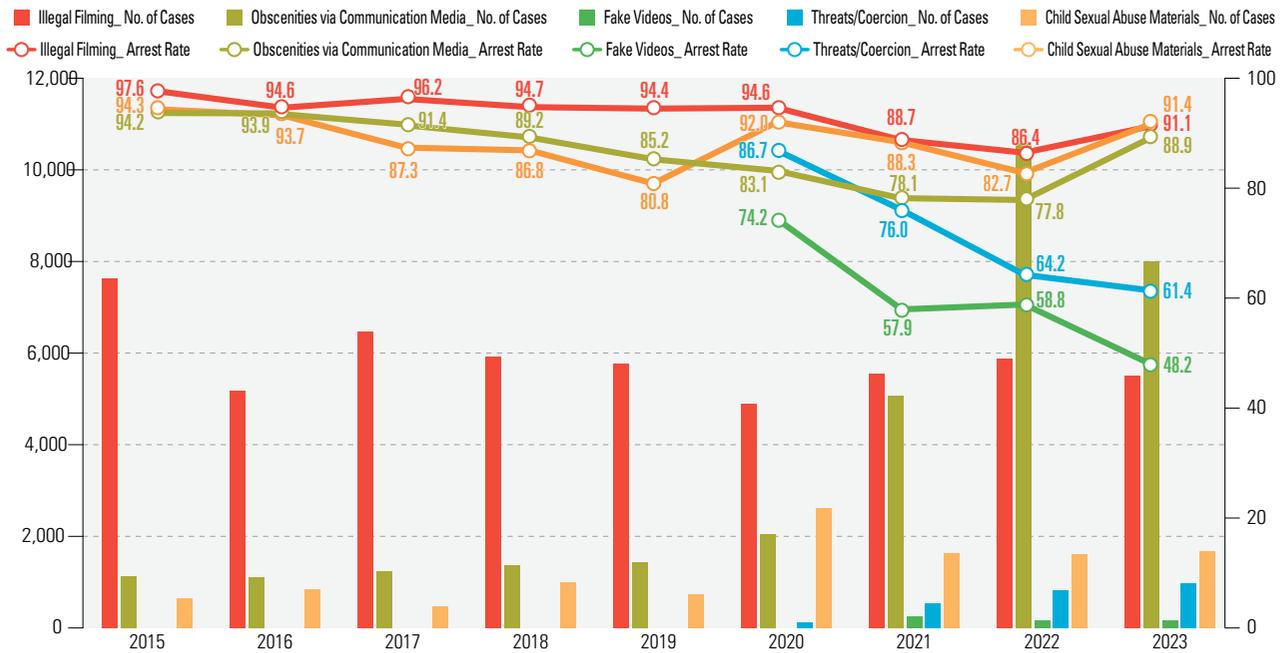
Source: National Police Agency, Crime Statistics
Note 1 : 'Filming using cameras' was changed to 'filming and dissemination, using cameras' starting from 2020.
Note 2 : 'Creation/distribution of obscene contents' was changed to 'creation/distribution of child sexual abuse materials' starting from 2019.
Note 3 : Arrest Rate=(No. of Arrests/No. of Incidents)×100

communication media, manipulation and dissemination of fake videos, threats and coercion using recorded materials, and the possession, creation and distribution of child sexual abuse materials. The number of obscenities via communication media was around 1,000 cases each year until 2019. Starting from 2020, however, it soured, exceeding 10,000 cases in 2022 and reaching 8,004 in 2023. The number of crimes involving child sexual abuse materials was less than 1,000 case per year until 2019, but it skyrocketed to 2,621 cases in 2020, with 1,674 cases reported in 2023. Since 2020, two new crimes have been added to the statistics: manipulation/dissemination of fake videos and threats/coercion using recorded materials, with 168 and 970 cases reported respectively in 2023. Along with generative artificial intelligence (AI) and deepfake technologies that make it easier to manipulate and combine images, it is expected that

digital sexual crimes will become more widespread due to fake videos.

Looking at the arrest rates of digital sexual crimes, up until 2016, illegal filming, child sexual abuse materials and obscenities via communication media all had high arrest rates of over 90%, but these rates gradually declined in 2021 and 2022 before rising up again to 91.1%, 91.4% and 88.9% respectively in 2023. In particular, the arrest rates were disappointingly low at 48.2% and 61.4% for the two new crime types that have recently garnered much attention- manipulation/dissemination of fake videos and threats/ coercion using recorded materials. Cyber sexual crimes are dangerous and have enormous social repercussions as it is practically impossible to fully get rid of images and videos due to their rapid spread and repetitive reproduction on the web, and anyone can fall victim.

Definition

- **Affirmative Action**：As a measure introduced in 2006 to tentatively favor a certain gender to alleviate sexual discrimination in employment or promote gender equality, it requires public institutes, local public corporations and companies with 500 full-time employees or more to submit an implementation plan if their ratio of female workers and managers is below the industrial average depending on their size, and keeps track of their implementation.
- **Deepfake**：As a compound word combining 'deep learning' and 'fake,' it refers to a technology that creates fake contents based on images, videos or voices of actual people, using generative AI technologies.

6 CLEAN WATER AND SANITATION

Ensure availability and sustainable management of water and sanitation for all

Safe drinking water and sanitation services, the water quality of freshwater resources and the protection of water-related ecosystems can contribute to preservation of the environment and better quality of life, and lay the groundwork for economic prosperity. Across the globe, about 2 billion population have limited access to safe drinking water and half of the global population suffers from serious water scarcity for six months or more each year. In contrast, South Korea has made outstanding strides in improving the regional disparity in access to public water services (waterworks) and has revised its laws and regulations to enhance the implementation of integrated water resources management (IWRM) by unifying water management responsibilities into one entity. However, the water stress levels and water-use efficiency in each industry highlight the need to enhance water-use efficiency in the agriculture sector.

» **Compared to 2011, the penetration of public waterworks has steadily increased, reaching 99.5% in 2023 nationwide.**
- The coverage rate amounted to 96.4% even in rural areas, indicating significant improvements in the regional disparity in access to drinking water services.

» **In 2021, Korea's water stress level ranked second highest at 85.2% among OECD members, and it has remained stagnant since 2002.**
- By industry, agriculture (50.2%) experienced the most water stress and had the least water-use efficiency (1.07 dollars/m^3), with the slowest improvement, requiring more policy efforts to enhance efficiency in the use of agricultural water.

» **The degree of IWRM implementation was evaluated as "high" (81 points) in 2023, marking a consecutive increase since 2017 (68 points).**
- Although the enabling environment has been in place for full implementation of IWRM, such as unified water management practices and the enforcement of the Framework Act on Water Management (2019) and National/Basin Water Management Plan (2021~ present), improvement is still needed for financing.

Improving regional disparities in access to drinking water services through the continuous supply of public waterworks (◎ SDG 6.1.1.)

In 2023, the water supply ratio reached 97.9% in metropolitan and local areas nationwide, nearly achieving full coverage. In the same year, the ratio in rural areas (-myeon) nationwide stood at 83.5%, up 24.4%p from 59.1% in 2011. Despite this improvement, the water supply ratio in rural areas lagged behind by 14.4%p compared to the national coverage. Meanwhile, the coverage of public

Water Supply Rates, 2011~2023 (Unit: %)

Nationwide: 94.6 (2011), 95.1 (2012), 95.7 (2013), 96.1 (2014), 96.5 (2015), 96.4 (2016), 96.8 (2017), 97.0 (2018), 97.3 (2019), 97.4 (2020), 97.7 (2021), 97.8 (2022), 97.9 (2023)

Rural Areas: 59.1 (2011), 62.6 (2012), 66.4 (2013), 69.1 (2014), 71.0 (2015), 72.8 (2016), 75.6 (2017), 77.0 (2018), 78.6 (2019), 80.2 (2020), 81.6 (2021), 82.8 (2022), 83.5 (2023)
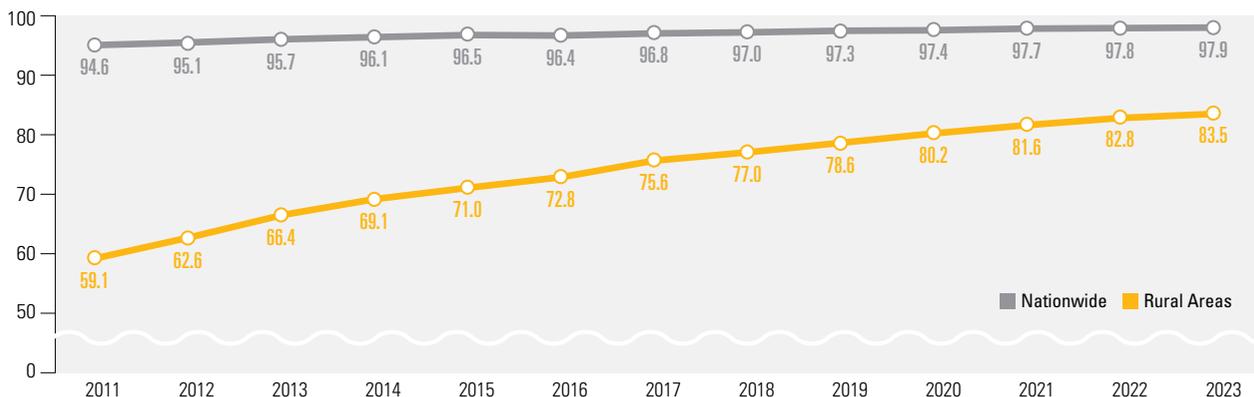
Source: Ministry of Environment, 2023 Waterworks Statistics
Note : This excludes village water systems and small-scale water facilities. The waster supply rate in rural areas is based on areas (-myeon) nationwide.

Coverage Rate of Public Water Supply (Waterworks), 2011~2023 (Unit: %)

Source: Ministry of Environment, 2023 Waterworks Statistics
Note : The coverage rate encompasses all the metropolitan and local water supply, village water systems and small-scale water facilities.

waterworks, including metropolitan and local water supply as well as village water systems and small-scale water facilities, was equal to 99.5% nationwide and 96.4% in rural areas, indicating that the gap between national and rural areas was only 3.1%p. This suggests that village water systems and small-scale water facilities have contributed to alleviating the regional disparity in drinking water services in areas with little access to the metropolitan and local water supply.

More efforts needed to alleviate water stress, taking into account water-use efficiency in each industry (⟳ SDG 6.4.1 / SDG 6.4.2)

SDG 6.4 aims to address water scarcity by promoting water use in an effective manner. This goal focuses on both environmental and economic indicators regarding sustainable withdrawal and supply of freshwater, i.e., the level of water stress and water-use efficiency. First, as an environmental indicator of using freshwater resources, the level of water stress (SDG 6.4.2) represents the amount withdrawn out of available freshwater resources, which is also known as 'withdrawal intensity.' It is expressed as the ratio of water

withdrawn by major industrial sectors to the total renewable freshwater resources, excluding the environmental flow required to sustain the freshwater ecosystem. In 2021, South Korea's level of water stress was reported at 85.2% in 2021. It has remained stable without noticeable fluctuations since 2002. By industry, agriculture suffers from the highest water stress (50.2%), distantly followed by 21.0% in services and 14.0% in the industrial sector. Among OECD members, Israel ranked highest with a water stress level of 132.0% while South Korea came in second.

Considered as an economic indicator in the use of freshwater resources, on the other hand, the water-use efficiency (SDG 6.4.1) is measured as the ratio of value added to water used (dollars/㎥), which represents the amount of water used to produce a unit of value added. The water-use efficiency across all the industries has steadily improved, except for the year 2020, and it increased by 1.32 times in 2021 compared to 2011. In 2021, water-use efficiency improved year-on-year across all the industries, reaching 1.07 dollars/㎥ in agriculture, 116.86 dollars/㎥ in the industrial sector and 149.05 dollars/㎥ in services. Water-

Water-use Efficiency by Industry, 2011~2021 (Unit: USD/㎥)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
All	42.83	43.84	45.36	46.77	49.39	50.54	52.11	53.66	54.95	54.37	56.55
Agriculture	1.02	1.04	1.03	1.04	1.04	0.99	1.02	0.99	0.97	1.02	1.07
Industrial	96.23	97.33	100.87	101.90	104.19	107.67	113.99	115.89	113.27	110.80	116.86
Services	102.71	105.52	108.81	113.14	129.97	130.96	133.05	138.16	145.19	144.36	149.05

Source: UN, SDG Indicators Database (https://unstats.un.org/sdgs/dataportal, retrieved on Dec 23, 2024)

Water Stress Levels in OECD Countries, 2021

Country	Value
Israel	132.0
Korea	85.2
Belgium	51.9
Mexico	45.0
Turkiye	43.4
Spain	43.3
Japan	36.0
Germany	35.4
Poland	32.1
Italy	29.6
US	28.2
Denmark	26.4
Ireland	22.2
France	21.6
Greece	20.7
Czech Republic	20.5
Netherlands	16.1
UK	14.4
Portugal	12.3
Estonia	10.8
Chile	9.0
Austria	8.7
Hungary	8.1
New Zealand	8.0
Finland	7.1
Switzerland	6.5
Slovenia	6.3
Costa Rica	5.9
Australia	4.6
Colombia	4.4
Luxembourg	4.0
Canada	3.7
Sweden	3.6
Slovakia	2.4
Norway	2.0
Lithuania	1.8
Latvia	1.1
Iceland	0.4

Source: FAO, AQUASTAT(https://data.apps.fao.org/aquastat, retrieved on Sep 21, 2024)

Note : Water stress of the indicator 6.4.2 has been defined as the total fresh water withdrawn(TFWW) divided by the difference between total renewable freshwater resources(TRWR) and the envi\-ronmental water requirements(Env.) after considering the environmental flow requirements(EFR), multiplied by 100. Different threshold levels for the indicator can be used in some countries to reflect their unique goals for climate and water management. Water Stress(%) = [TWW / (TRWR − Env.)] × 100

Water-use Efficiency Changes by Industry (Compared to 2011), 2011~2021

(Unit: Year 2011=1)
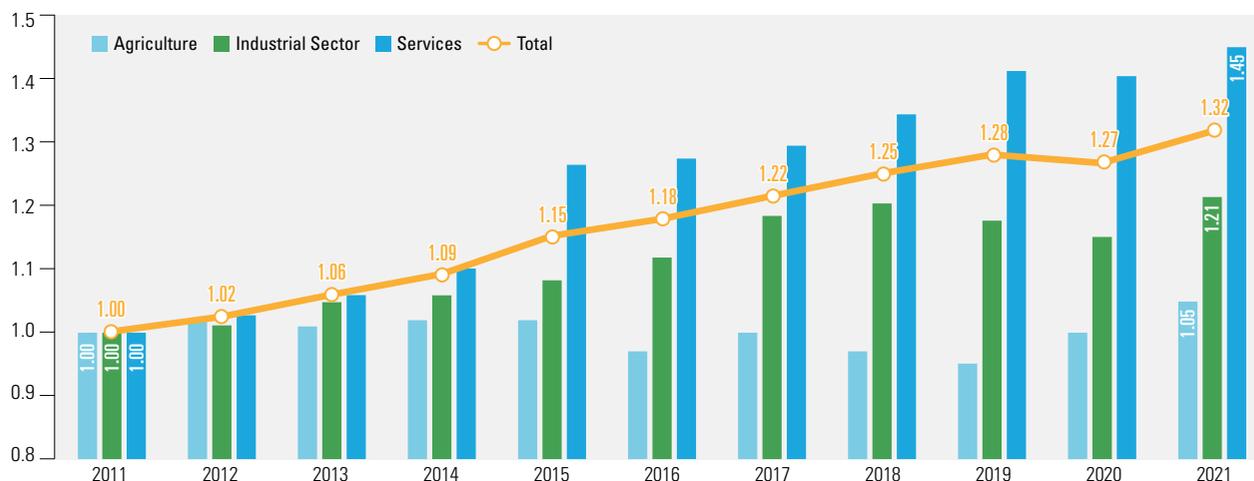
Source: UN, SDG Indicators Database (https://unstats.un.org/sdgs/dataportal, retrieved on Dec 23, 2024)

use efficiency has a lot to do with the industrial structure. The services, which account for the largest share (63.8%) of value added in the economy, show a similar trend to the water-use efficiency of all industries. In 2021, agriculture took up 58.9% of the total amount withdrawn in Korea, but its share of value added was just less than 1.6%. This clearly indicates that it is important to deploy policy efforts to enhance water-use efficiency in the agricultural sector. To this end, the 1st Basic Plan on National Water Management (2021 ~ 2030) set the efficient use of agricultural water as its strategic goal, laying the groundwork for effective management of agricultural water through the automated management for agricultural water and the establishment of a system to survey the demand for agricultural water.

Maintaining the 'high' level of IWRM (Integrated Water Resources Management) implementation (SDG 6.5.1)

IWRM (Integrated Water Resources Management) refers to a process that promotes 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. It is not only a science-based management tool that pursues various values associated with water management, such as environmental sustainability, social fairness and economic efficiency, but it is also an integrated approach that encompasses other issues, like policy environments, institutions and financing. Its degree of implementation has been monitored since it was established as a new water management paradigm through the 1992 Dublin Declaration and the Rio Summit, and was later introduced as SDG indicator (6.5.1).

IWRM provides a management framework that coordinates many aspects related to SDG 6. With this, it supports the achievement of SDG 6 by addressing diverse water-related, socio-economic demands and pressures in an integrated fashion. Its degree of implementation is evaluated every three years across 33 items in the following four domains: enabling environment, institutions and participation, management instruments and financing. The evaluation results are provided as scores from 0 to 100, divided into 6 grades from 'very low' to 'very high'.

In 2023, Korea's degree of implementation was rated at 81 points, placing it the 'high' range (71 ~ 90 points). Starting from 68 points (slightly high) in 2017, the nation saw steady improvement, reaching 76 points (high) in 2020. Notably, three domains, namely the enabling environment, institutions and participation and management instruments, continued to be evaluated as 'high' in both 2022 and 2023. To be specific, a remarkable improvement was observed in the enabling environment, rising from 44 points (slightly low) in 2017 to 71 points (high) in 2020, and it further increased to 83 points in 2023. This progress is attributed to the integration of water management practices under the Ministry of Environment, which were previously divided between the Ministry of Land, Infrastructure and Transport and the Ministry of Environment. In addition, the Framework Act on Water Management came into effect in 2019, to unify and regulate relevant tasks and practices, followed by the establishment of the 1st Basic Plan on National Water Management (2021~2030) in 2021 and the

Degree of IWRM Implementation, 2017~2023 (Unit: points)
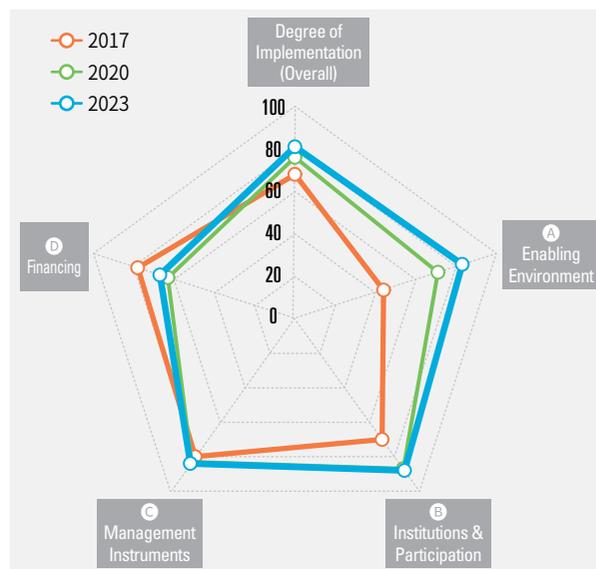
Source: IWRM Data Portal, country reports(https://iwrmdataportal.unepdhi.org, retrieved on Dec 23, 2024)
Note : Caution is needed when making a comparison since some evaluation items are different for the year 2017.

Comprehensive Water Management Plan (2021~2030) for specific basins, such as Han River, Geum River, Nakdong River, Yeongsan River and Seomjin River, building the robust legal and policy foundations for IWRM. In terms of financing, with the establishment of a water management framework, such as national or basin-specific committees, associated budgets have been operational. Meanwhile, financing and IWRM budget at sub-national and basin levels were scored only at 67 points, requiring more efforts to secure funds for integrated water management. IWRM also includes survey items (1.2.c, 2.2.e, 3.2.d, 4.2.c) regarding transboundary cooperation. South Korea faces some challenges in this area, with limited cooperation at best, as the North is its only adjacent nation, resulting in lower scores.

In OECD countries, the average degree of IWRM implementation was scored at 76.5 points. With 81 points, Korea is slightly above the average, ranking 18th among 38 OECD members. Countries rated 'very high' with 91 points or higher include France, Denmark, Japan, Luxembourg, Spain and Austria. Most European countries were evaluated as 'high,' along with South Korea. In contrast, countries like Chile (26 points), Mexico (41 points) and Colombia (41 points) showed a low degree of implementation.

IWRM Evaluation by Item, 2017~2023

(Unit: points)

			Item
1. Enabling Environment	1.1 National Level	a	Policy (national)
		b	Laws (national)
		c	Plans (national)
	1.2 Other Levels	a	Policy (subnational)
		b	Plans (basin/aquifer)
		c	Transboundary agreements
		d	Regulations (sub-national)
2. Institutions & Participation	2.1 National Level	a	Institutions (national)
		b	Cross-sector coordination
		c	Public Participation (national)
		d	Private sector participation
		e	Developing IWRM Capacity
	2.2 Other Levels	a	Basin/aquifer orgs.
		b	Public participation (Local)
		c	Vulnerable groups participation
		d	Gender mainstreaming
		e	Transboundary WRM organizations
		f	Institutions (sub-national)
3. Management Instruments	3.1	a	Monitoring
		b	Sustainable & efficient use
		c	Pollution control
		d	Ecosystems & biodiversity
		e	Disaster risk reduction
	3.2	a	Basin management
		b	Aquifer management
		c	Data & info. sharing
		d	Transboundary data & info. sharing
4. Financing	4.1	a	WR infrastructure budget
		b	IWRM budget (national)
	4.2	a	WR infrastructure budget (sub-national)
		b	Revenue raising
		c	Transboundary financing
		d	IWRM budget (sub-national/basin)

Legend: ■ 2023 ■ 2020 ■ 2017

Source: IWRM Data Portal, country reports(https://iwrmdataportal.unepdhi.org, retrieved on Dec 23, 2024)
Note : There was no point for 1.2.c, 1.2.d, 2.2.c, 2.2.d, 2.2.e, 2.2.f, 3.2.d, 4.2.c, 4.2.d in 2017 (n/a). Zero point was given to 2.2.e, 4.2.c in 2020 and 2023.

Degree of IWRM Implementation by OECD Country, 2023

(Unit: points)
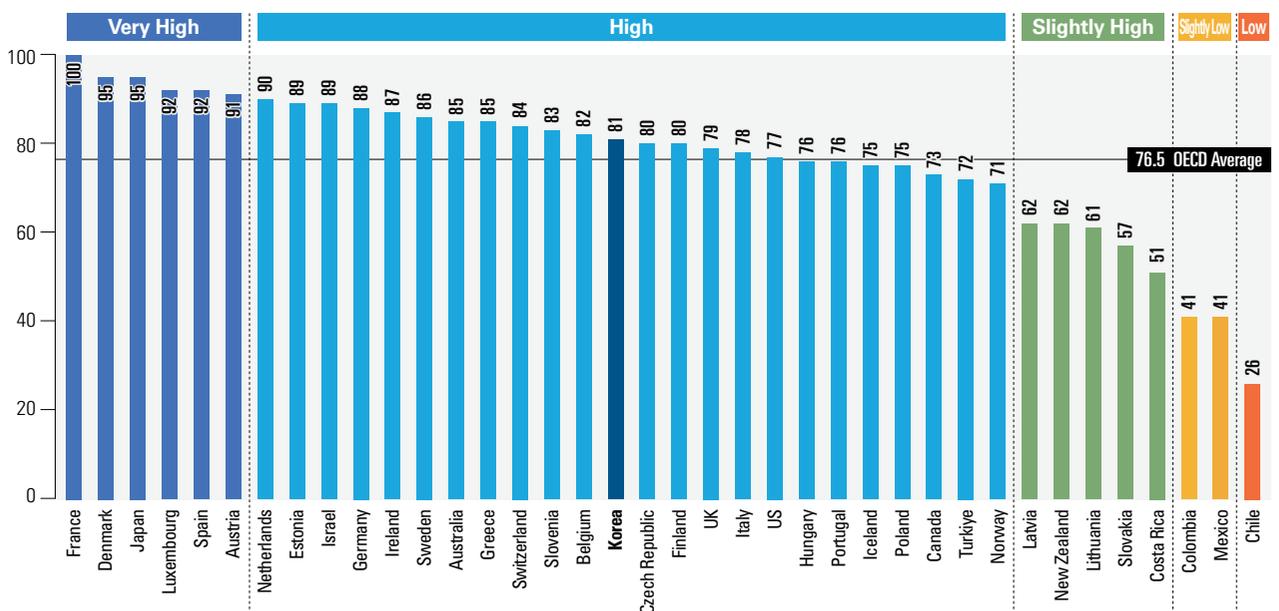
Category	Country	Points
Very High	France	100
	Denmark	95
	Japan	95
	Luxembourg	92
	Spain	92
	Austria	91
High	Netherlands	90
	Estonia	89
	Israel	89
	Germany	88
	Ireland	87
	Sweden	86
	Australia	85
	Greece	85
	Switzerland	84
	Slovenia	83
	Belgium	82
	Korea	81
	Czech Republic	80
	Finland	80
	UK	79
	Italy	78
	US	77
	Hungary	76
	Portugal	76
	Iceland	75
	Poland	75
	Canada	73
	Türkiye	72
	Norway	71
Slightly High	Latvia	62
	New Zealand	62
	Lithuania	61
	Slovakia	57
	Costa Rica	51
Slightly Low	Colombia	41
	Mexico	41
Low	Chile	26

76.5 OECD Average

Source: IWRM Data Portal, country reports(https://iwrmdataportal.unepdhi.org, retrieved on Dec 23, 2024)

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

SDG 7 aims to ensure access to sustainable energy for all at an affordable price. Amid climate crisis on a global scale, the transition from a fossil fuel-oriented energy system to renewable energy has been recognized as a crucial task. Across the world, the capacity of renewable energy has been rapidly increasing, and the number of population without access to electricity services and clean fuels for cooking has sharply decreased in developing countries. However, such progress has been slowed down due to COVID-19 and war. In South Korea, with the enforcement of carbon neutrality policies, there have been steady improvements in the production and share of new/renewable energy as well as energy efficiency, but the improvement in energy efficiency has recently slowed down.

> **》 The production of new and renewable energy has continued to increase due to the expansion of renewable energy and carbon neutrality policies.**
> - The production of new and renewable energy soared from 2011 to 2023 at an annual growth rate of 13.9%, and there was a noticeable increase in both the share of new/renewable energy in primary energy (1.3% in 2011→ 5.7% in 2023) and the share of renewable energy consumption in final energy(1.4% in 2011→ 3.7% in 2021).
> - In particular, the share of photovoltaic power rapidly increased from 5.6% in 2011 to 41.9% in 2023.
> - Among OECD countries, South Korea had one of lowest shares of renewable energy consumption, but its level of production remained in the middle rank at 21st.
>
> **》 Despite an increase in energy consumption due to economic growth, the nation's energy intensity has steadily improved since the mid-1990s, though its rate of improvement has slowed down since 2010.**
> - Korea still ranked at the bottom of energy efficiency indicator (0.122 TOE/1,000USD in 2022) among OECD countries.
> - Although there are some limitations to improvement due to a manufacturing-oriented, energy-intensive industrial structure, policies have currently been put in place to enhance energy efficiency, targeting energy-guzzling companies.

The production and share of new and renewable energy have continued to rise (○ SDG 7.2.1)

The production of new and renewable energy has been on a steady increase, driven by the expansion of renewable energy and the government's policies, such as carbon neutrality. The production grew 4.8 times from 3.57 million TOE in 2011 to 17.058 million TOE in 2023, with an annual growth rate of 13.9% over the same period. The annual average growth rate for the past three years (2021 to 2023) stood at 10.4%, continuing the previous upward trends. As an effort to attain the '2030 Nationally Determined Contribution (NDC)', this is the result of diversified policies aimed at increasing utilities' mandatory supply ratio of new and renewable energy from 7.0% to 12.5% in accordance with the Renewable Energy Portfolio Standard (RPS).

In order to grasp the relative scale of new and renewable energy, it is necessary to find out the share of new and renewable energy production in primary energy, including fossil fuels. Primary energy refers to raw energy created in a natural state over a longer period of time, including coal, oil, natural gas, hydroelectric power, atomic energy, solar energy, photovoltaic energy, wind power, biomass and geothermal energy. The share of new and renewable energy production was only 1.3% in 2011, but later it increased to 2.1% in 2014, 3.4% in 2018 and 4.3% in 2020, and reached 5.7% in 2023.

There has also been a continuous rise in the share of renewable energy in the final energy consumption. Final energy refers to the energy actually used in the end-use sectors, such as industries, transportation, households and commerce. Renewable energy excludes non-renewable wastes and includes heat and electricity estimated to be generated from renewable energy sources. The share of renewable energy increased from 1.4% in 2011 to 2.9% in 2014 and recorded 3.2% in 2018, surpassing the 3% range. Later, it further rose to 3.7% in 2021.

A change in the production share of new and renewable energy sources was also observed. In 2011, the shares of production were reported at 31.0% for waste (excluding

Production and Supply Ratio of New and Renewable Energy, 2011~2023   (Unit: 1,000TOE, %)
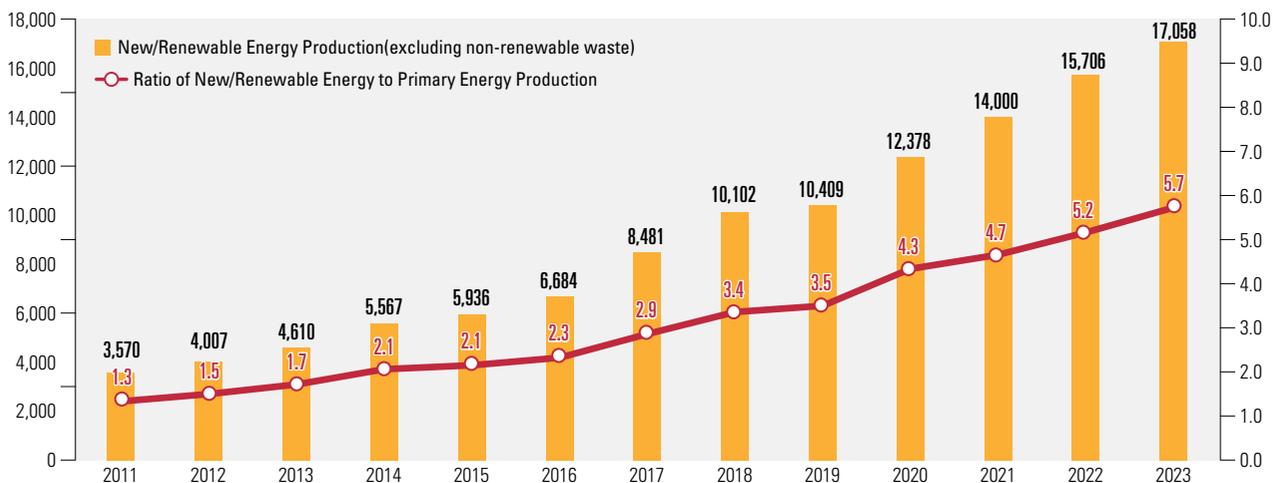
Source: Ministry of Trade, Industry and Energy·Korea Energy Economics Institute, 2024 Yearbook of Energy Statistics
Note 1: New energy refers to the energy obtained by converting the existing fossil fuels or utilizing electricity or heat through chemical reactions of hydrogen, oxygen and other elements. It includes hydrogen energy, fuel cells and coal liquefaction/gasification energy. On the other hand, renewable energy refers to the energy, including solar energy, wind power and hydroelectric power, derived by converting renewable energy sources, such as sunlight, water, geothermal heat, precipitation and biomass.
Note 2: In accordance with the revision of the Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy (effective from Oct 1, 2019), non-renewable energy has been excluded from waste-to-energy. Thus, the share of renewable and non-renewable wastes separately calculated (as of 2019) has been retroactively applied to data prior to 2019.

Share of Renewable Energy in Final Energy Consumption, 2011~2021   (Unit: %)
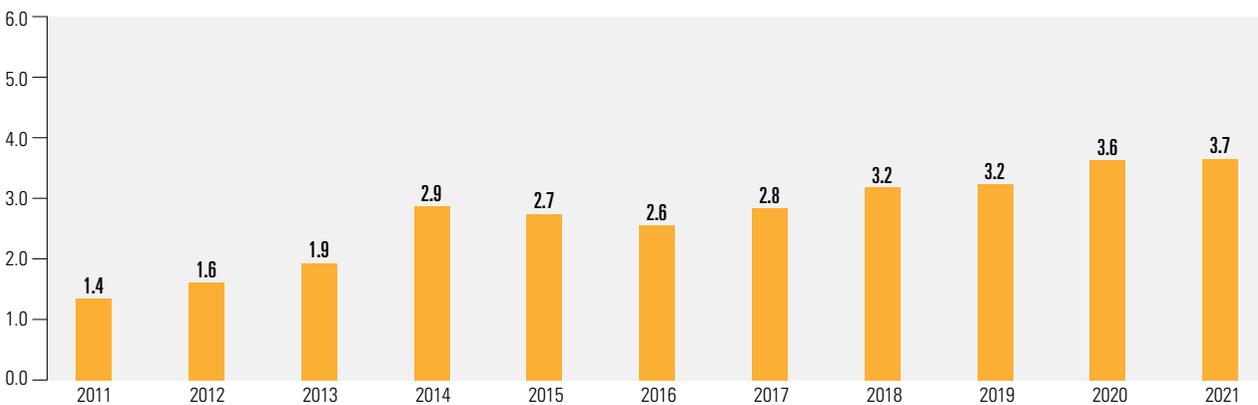
Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Nov 5, 2024)

non-renewable waste), 27.0% for hydroelectric power and biomass and only 5.6% for photovoltaic power. However, these shares changed dramatically, reaching 41.9% for photovoltaic power, 29.5% for biomass and 8.2% for waste in 2023, indicating a rapid increase in photovoltaic power. This can be understood as a result of the government's policy to expand deployment of renewable energy and the declining production costs driven by advancements in renewable energy technologies.

In the comparison of the share of renewable energy consumption (in 2021) in final energy and the scale of renewable energy production (in 2022) among the 38 OECD countries, South Korea ranked at the bottom in the share of renewable energy consumption, but placed 21st in terms of the production scale, which is considered a middle rank. This can be attributed to its huge energy consumption in absolute terms, due to its industrial structure that is highly dependent on manufacturing, despite its rising production of renewable energy in line with its carbon neutrality policy. In OECD members, countries with high renewable energy production include the United States, Canada, Germany, Japan and Türkiye. However, the shares of renewable energy to their final energy consumption were not that high as follows: 10.9% in the United States (35th), 23.8% in Canada (16th), 17.6% in Germany (22nd), 8.8% in Japan (36th) and 12.0% in Türkiye (33rd).

Share of Production by New and Renewable Energy Source, 2011, 2023

(Unit: %)
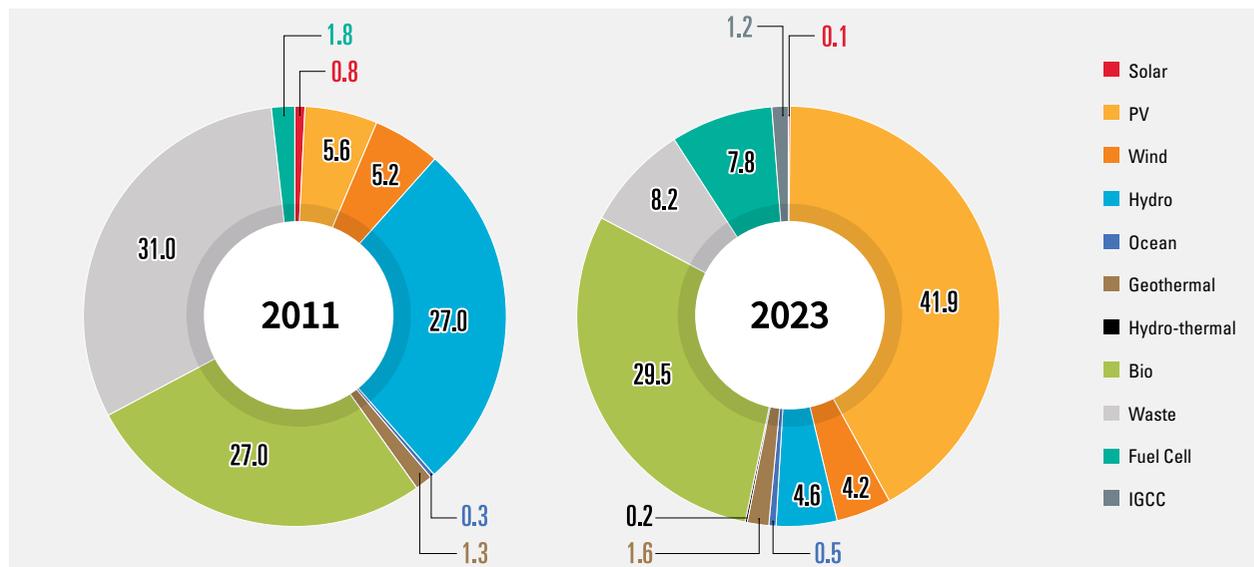
2011
- 1.8
- 0.8
- 5.6
- 5.2
- 31.0
- 27.0
- 27.0
- 0.3
- 1.3

2023
- 1.2
- 0.1
- 7.8
- 8.2
- 41.9
- 29.5
- 4.6
- 4.2
- 0.2
- 1.6
- 0.5

Legend:
- Solar
- PV
- Wind
- Hydro
- Ocean
- Geothermal
- Hydro-thermal
- Bio
- Waste
- Fuel Cell
- IGCC

Source: Ministry of Trade, Industry and Energy·Korea Energy Economics Institute, 2024 Yearbook of Energy Statistics
Note : In accordance with the revision of the Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy (effective from Oct 1, 2019), non-renewable energy has been excluded from waste-to-energy. Thus, the share of renewable and non-renewable wastes separately calculated (as of 2019) has been retroactively applied to data prior to 2019.

Production and Share of Renewable Energy in Final Energy Consumption by OECD Country

(Unit: 1,000 TOE, %)

Renewable energy production

Country	Value
US	187,665
Canada	50,015
Germany	47,625
Japan	29,014
Turkiye	26,540
France	26,279
Italy	25,400
Sweden	22,014
UK	21,483
Spain	18,400
Mexico	17,929
OECD	16,674
Norway	14,165
Poland	13,124
Chile	12,391
Finland	12,119
Australia	12,101
Colombia	10,540
Austria	9,800
New Zealand	8,571
Netherlands	8,331
Korea	6,933
Denmark	6,495
Portugal	5,666
Iceland	5,349
Czech Republic	5,067
Belgium	5,030
Switzerland	4,971
Greece	3,437
Hungary	3,252
Costa Rica	2,590
Slovakia	2,062
Latvia	1,906
Ireland	1,748
Lithuania	1,708
Estonia	1,320
Israel	1,174
Slovenia	983
Luxembourg	398

Share of Renewable Energy in Final Energy Consumption(2021)

Country	Value
Iceland	82.4
Norway	61.4
Sweden	57.9
Finland	50.2
Latvia	44.0
Denmark	39.5
Estonia	38.0
Austria	36.0
Costa Rica	34.2
Lithuania	33.2
Portugal	32.3
Colombia	29.7
New Zealand	28.9
Switzerland	27.7
Chile	24.2
Canada	23.8
Slovenia	23.4
Greece	21.5
Luxembourg	20.5
Spain	19.0
Slovakia	17.9
Germany	17.6
Italy	17.5
Czech Republic	17.2
France	16.3
Hungary	15.3
Poland	15.2
Mexico	13.0
Ireland	12.7
Australia	12.3
OECD	12.3
Netherlands	12.2
UK	12.2
Turkiye	12.0
Belgium	11.7
US	10.9
Japan	8.8
Israel	6.2
Korea	3.7

Source: IEA, World Energy Balances(https://www.iea.org/data-and-statistics/data-product/world-energy-balances#indicators, retrieved on Sep 24, 2024); World Bank Group, World Bank Open Data(https://data.worldbank.org/indicator/EG.FEC.RNEW.ZS?most_recent_year_desc=false&view=chart, retrieved on Nov 5, 2024)

Despite continuous improvement in national energy intensity, the rate of improvement has slowed down (◎ SDG 7.3.1)

Energy intensity is a major indicator that assesses energy efficiency in a certain region or a country. It is defined as the ratio of energy consumption to economic output, such as gross domestic product (GDP). Higher energy intensity means that more energy is required to a unit of economic activity. By monitoring a change in this energy intensity, it is possible to determine whether a nation's energy efficiency has improved. In 2022, South Korea was ranked as the 10th largest energy consumer. This increase in energy consumption has been driven by the industrial sector that accounts for about 61% (126.40 million tons in 2023) of the nation's final energy consumption. However, despite an increase in energy consumption due to economic growth, energy intensity steadily declined to 0.133 in 2023, after rising from 0.181 (TOE/million KRW) in 1990 and hitting a record high of 0.200 in 1993. From 1990 to 2023, energy intensity improved by an annual growth rate of 0.93%, with particularly rapid improvement at a rate of 1.38% since 2000. This can be interpreted as a result of the transition to high value-added industries, such as services and IT industry, along with the government's continual regulations and incentives

to enhance energy efficiency in sectors, like industry, construction and transportation following the enactment of Energy Use Rationalization Act in the early 1990s.

Despite its steady improvement in energy intensity, South Korea has remained in one of the lowest ranks among OECD members in terms of energy-use efficiency. In 2022, the average energy intensity (TOE/1,000 USD) of the 38 OECD countries stood at only 0.084, but South Korea recorded 0.122, which is the fourth largest after Iceland (0.295), Canada (0.165), and Finland (0.123). Even for the improvement in energy intensity over a certain period, South Korea showed a different pattern from that of other OECD countries. From 2000 to 2010, energy intensity in OECD countries improved at an average annual rate of 1.4%, followed by a steeper rate of improvement at 2.4% per year after 2010. This trend was also observed in major economies, including the United Kingdom (2.4% → 3.9%), Germany (1.0% → 3.0%), Japan (0.9% → 2.6%) and the United States (2.0% → 2.4%). However, South Korea saw a slowdown in its improvement rate from 1.8% from 2000 to 2010 to 1.5% from 2010 to 2022.

Compared to major economies, the higher energy intensity and slower improvement rate in South Korea are mainly attributed to the nation's energy-intensive industrial

**Energy Intensity & Final Energy Consumtpion by Sector, 1990~2023** (Unit: TOE/million KRW, million TOE)
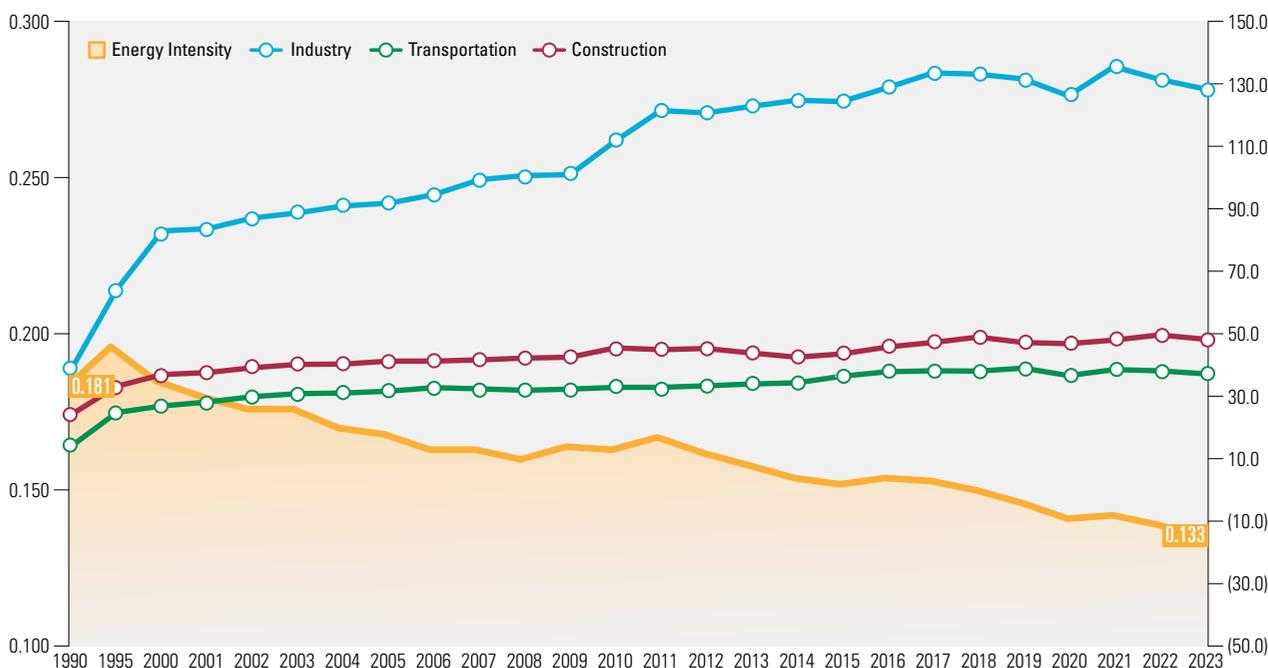
Source: Ministry of Trade, Industry and Energy·Korea Energy Economics Institute, 2024 Yearbook of Energy Statistics
Note : Energy intensity is defined as the ratio of primary energy supply to gross domestic product (GDP), by applying actual GDP (in 2020) estimated under the chain-weighted method.

Energy Intensity by OECD Country, 2022   (Unit: TOE/1,000USD, 2015 PPP)

Comparison of Energy Intensity Improvement Rates among Major OECD Countries

■ 2000-2010   ■ 2010-2022

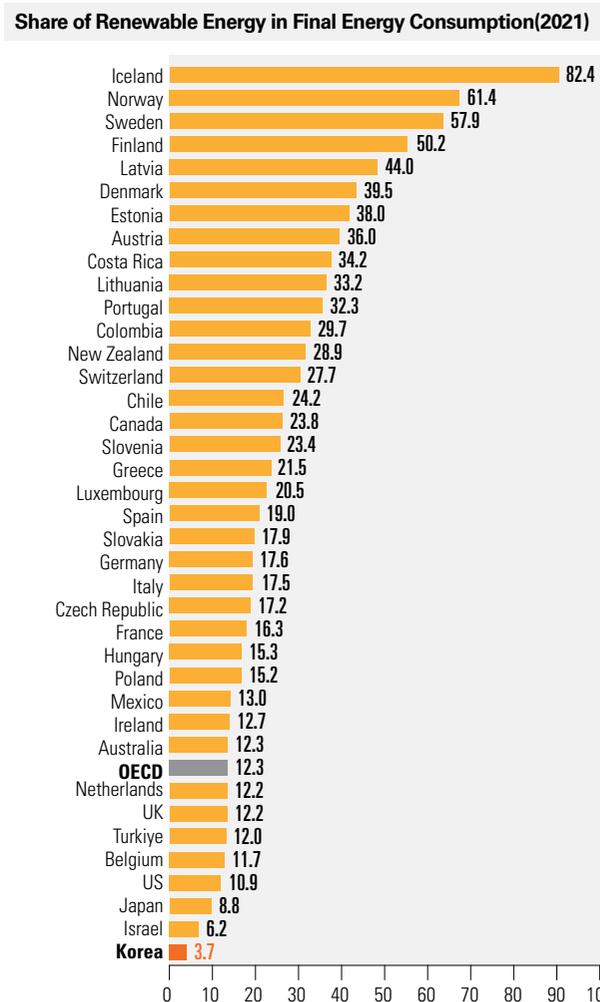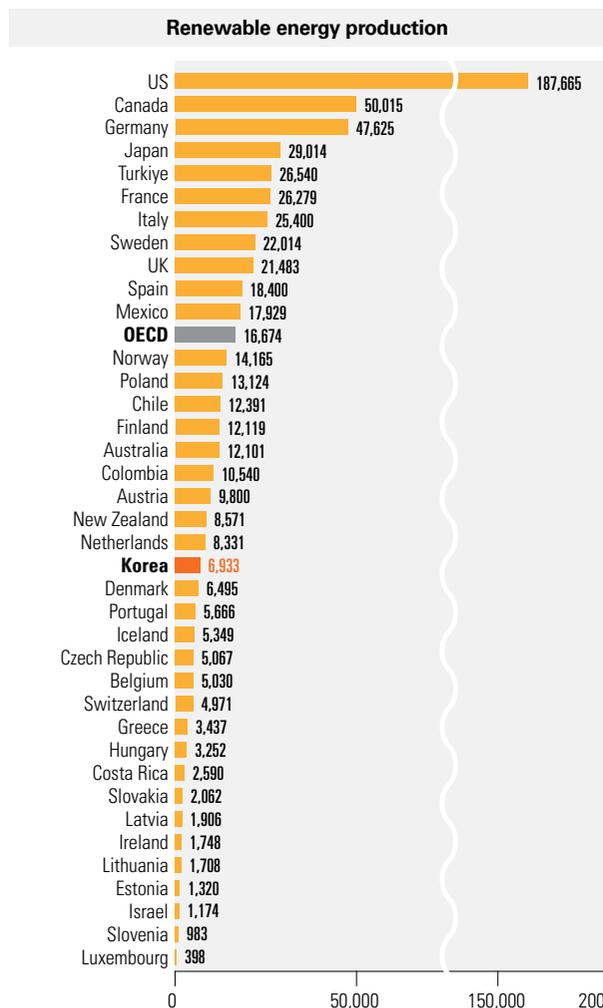| Country	2000-2010	2010-2022
UK	2.4%	3.9%
Germany	1.0%	3.0%
Japan	0.9%	2.6%
US	2.0%	2.4%
OECD	1.4%	2.4%
Korea	1.8%	1.5%

Energy Intensity values: Iceland 0.295, Canada 0.165, Finland 0.123, **Korea 0.122**, US 0.102, Czech Republic 0.101, Estonia 0.100, Australia 0.097, New Zealand 0.091, Chile 0.089, Slovakia 0.089, Belgium 0.087, OECD 0.084, Sweden 0.081, Slovenia 0.079, Hungary 0.077, Poland 0.077, Mexico 0.075, Japan 0.074, Latvia 0.073, France 0.072, Norway 0.072, Austria 0.066, Greece 0.065, Lithuania 0.065, Germany 0.064, Netherlands 0.064, Spain 0.064, Israel 0.059, Italy 0.059, Portugal 0.057, Turkey 0.056, Colombia 0.053, Costa Rica 0.050, UK 0.050, Denmark 0.047, Luxembourg 0.043, Switzerland 0.037, Ireland 0.024

structure centering on manufacturing, such as steelmaking, petrochemicals and semiconductors. These industries consume relatively more energy, with a tendency to increase energy consumption in proportion to economic growth. In 2022, energy consumption in Korea's manufacturing sector took up 96% out of the total industrial sectors. Manufacturing also accounted for 25.6% of GDP, which is the highest level among OECD countries, including major economies, such as the United Kingdom (8.1%), the United States (10.5%, 2021), Germany (18.3%), and Japan (19.2%). In response, the government signed the 'Korea Energy Efficiency Partnership 30 (KEEP30)' with the nation's top 30 energy-consuming companies (200,000 TOE or more per year) in Oct 2022, implementing rigorous policies to improve its energy intensity to the level of advanced nations. Under this partnership, large-scale, energy-guzzling companies are committed to achieving a goal of improving energy intensity by 1% or higher each year for the next 5 years while the government plans to provide incentives, including technology development, tax breaks, and infrastructure establishment, based on the outcomes of implementation evaluation.

Definition

- **Primary Energy** : This refers to raw energy created in a natural state over a longer period of time.
- **Final Energy** : This refers to all energy actually used in end-use sectors, such as industry, transportation, households and commerce.
- **New Energy** : This refers to the energy obtained by converting existing fossil fuels or using electricity or heat through chemical reactions of elements, such as oxygen and hydrogen.
- **Renewable Energy** : This refers to the energy derived by converting renewable energy sources, such as sunlight, water, geothermal heat, precipitation and biomass.
- **Energy Intensity** : This refers to the ratio of energy consumption to economic output, such as gross domestic product (GDP).
- **KEEP30** : This refers to an agreement signed between the government and large-scale, energy-guzzling businesses (200,000 TOE or more per year) to encourage the improvement of energy efficiency, with incentives to be offered in case of achieving the goal of energy intensity improvement.

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

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all SDG 8 aims to promote decent jobs through inclusive and sustainable economic growth. Globally, there are still many obstacles hindering the progress toward SDG 8, such as COVID-19, trade conflicts, rising debts in developing countries and war. The growth rate of per-capita real GDP rebounded around the world in 2021 before slowing down in the following year. In 2023, the global unemployment hit a record low of 5%, but further improvements are needed in the quality of jobs and inclusive employment. South Korea's real GDP per capita posted a low growth rate in 2023, but employment conditions, as reflected in unemployment and employment rates, are improving. In addition, while the number of industrial accidents has recently increased, deaths as a result of the fatal accidents have declined.

>> **The growth rate of real GDP per capita was 1.3% in 2023, the lowest level since 2011, except for 2020 when COVID-19 was at its peak. That said, it is considered favorable compared to major advanced nations.**
  • However, with inflation at 3.9%, the improvement in quality of life felt much slower.

>> **The growth rate of real GDP per employed person stood at 0.2% in 2023, which is the lowest since 2011, excluding the period affected by the COVID-19 pandemic and base effects. It is hard to consider this as favorable compared to major advanced nations.**
  • However, the growth rate of real GDP per hour worked has not significantly deviated from the trends of the past decade.

>> **South Korea has maintained a low unemployment rate for three consecutive years, reaching 2.8% in 2024. Considering the employment rate as well, its job conditions are showing signs of improvement.**
  • With the employment rate rapidly rising among women, the unemployment rate among the elderly aged 60 or older increased by 0.3%p year on year.

>> **The accident rate of workers stood at 0.66%, showing an upward trend since 2018; however, the death rate broke away from stagnation and declined to 0.98‰ while the accidental death rate showed a steady reduction, reaching 0.39‰.**
  • Although it is difficult to grasp the actual trends of industrial safety solely with indicators due to the recent revision of systems and regulations and changes in business profile since 2011, there have been signs of improvement in fatal accidents over the recent years.

Worsening growth rate of real GDP per capita, that indicates the pace at which the average quality of life is improving (○ SDG 8.1.1)

The per-capita real GDP serves as an indicator that shows the average quality of life while its annual growth rate reflects the extent of improvements. After showing a steady growth rate of the 2% range starting from 2011, the real GDP per capita declined to 2.0% in 2019. It even plummeted to –0.8% in 2020 when COVID-19 wreaked havoc on the nation, but it immediately rebounded to 4.7% in 2021. In 2022 right after the pandemic, it grew by 2.9% again, but the growth rate slowed to 1.3% in 2023 due to weak consumption driven by sluggish investments and net exports. Despite this growth, the quality of life felt by the people was much worse. In the same year, as inflation hit 3.9%, significantly outpacing the GDP deflator, the impact of rising prices further dragged daily life down.

Korea's growth rate of per-capita real GDP has remained favorable compared to major OECD countries. Its growth rate has steadily remained decent since 2011 and even the decline in 2023 was a universal phenomenon, as observed in other major countries. Among five major countries, namely the United Kingdom, Germany, France, the United States and Japan, only two managed to increase their growth rate in 2023: the United States, which is 'growing alone,' and Japan, which has recently succeeded in an economic rebound. The rest of countries have stalled in their growth rates, with Germany and the United Kingdom experiencing significant negative growth. Considering the pandemic situation, South Korea maintained fairly positive growth compared to others.

Growth Rate of Real GDP per Capita, 2011~2023

(Unit: %)
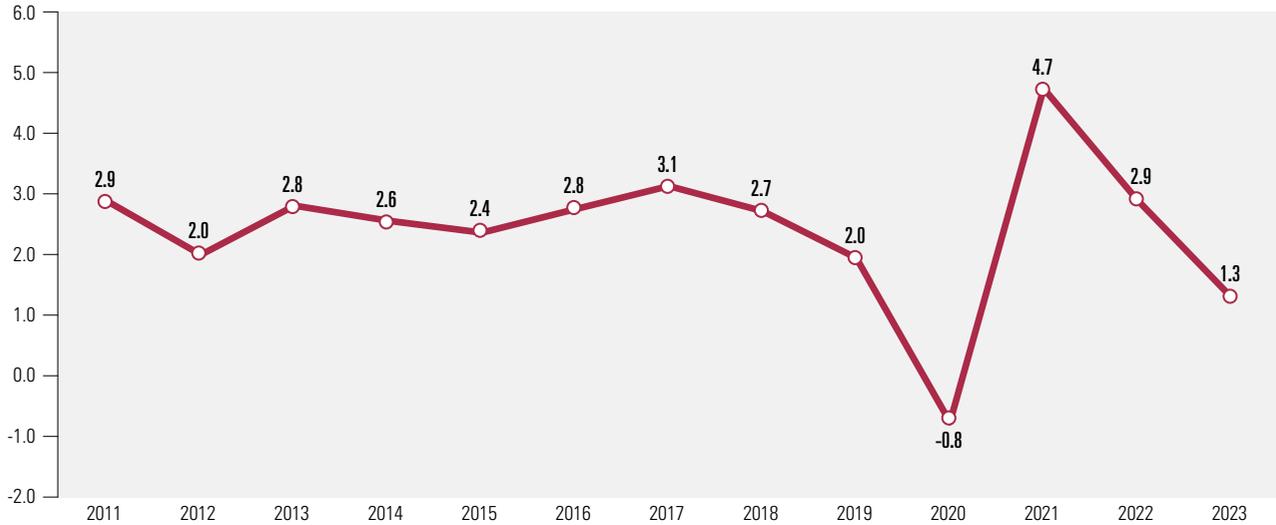
Source: Bank of Korea, National Account (https://kosis.kr, retrieved on July 31, 2024)
Note : This graph shows growth rates of real GDP per capita compared to the previous year by dividing per-capita nominal GDP (KRW) by the GDP deflator (2020=100).

Growth Rates of Per-capita GDP in Major OECD Countries, 2011~2023
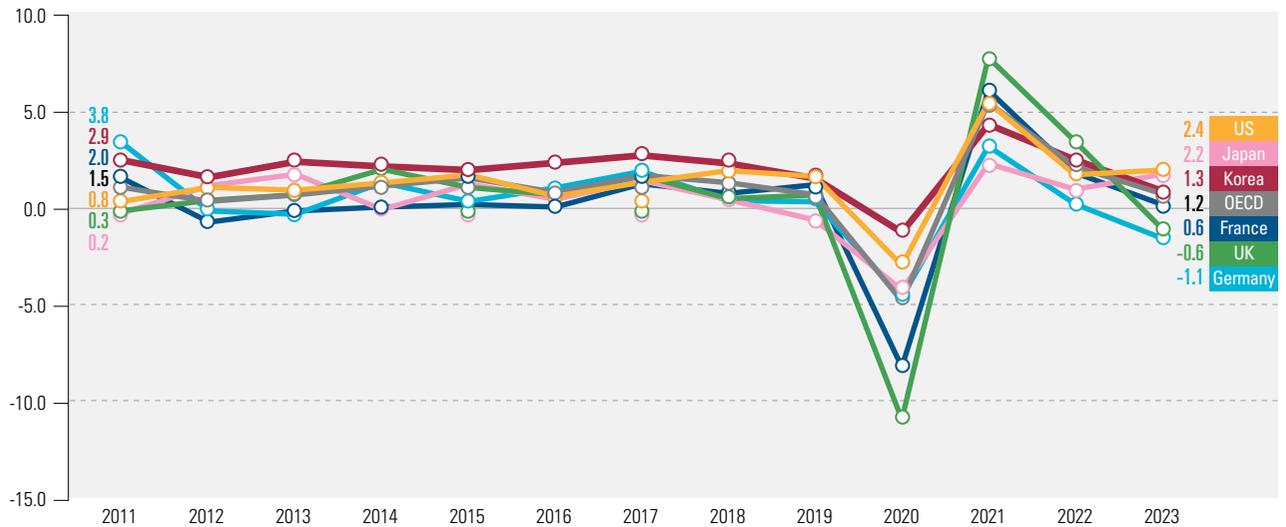
(Unit: %)

Source: OECD, OECD Data Explorer(https://data-explorer.oecd.org, retrieved on Feb 5, 2025)
Note 1 : This is based on PPP exchange rate (fixed USD price in 2020).
Note 2 : This graph shows growth rates of real GDP per capita compared to the previous year.

In 2020, the nation saw the least decline in its growth rate among major economies, and similar to other countries, it managed to rebound in 2021.

Declining growth rate of real GDP per employed person that indicates the pace at which the average labor productivity is improving (◉ SDG 8.2.1)

The real GDP per employed person is commonly used as an indicator of labor productivity. Its growth rate shows the extent of improvement in human capital. That said, this indicator is heavily affected by the amount of investments in physical capital, so it might not be appropriate to assess the improvement in human capital in a country over a longer period or compare human capital between countries at a single point in time. However, it is meaningful to examine a country's trend or compare changes in trends among countries over a short time period.

Korea's growth rate of real GDP per employed person

Growth Rate of Real GDP per Employed Person, 2011~2023   (Unit: %)
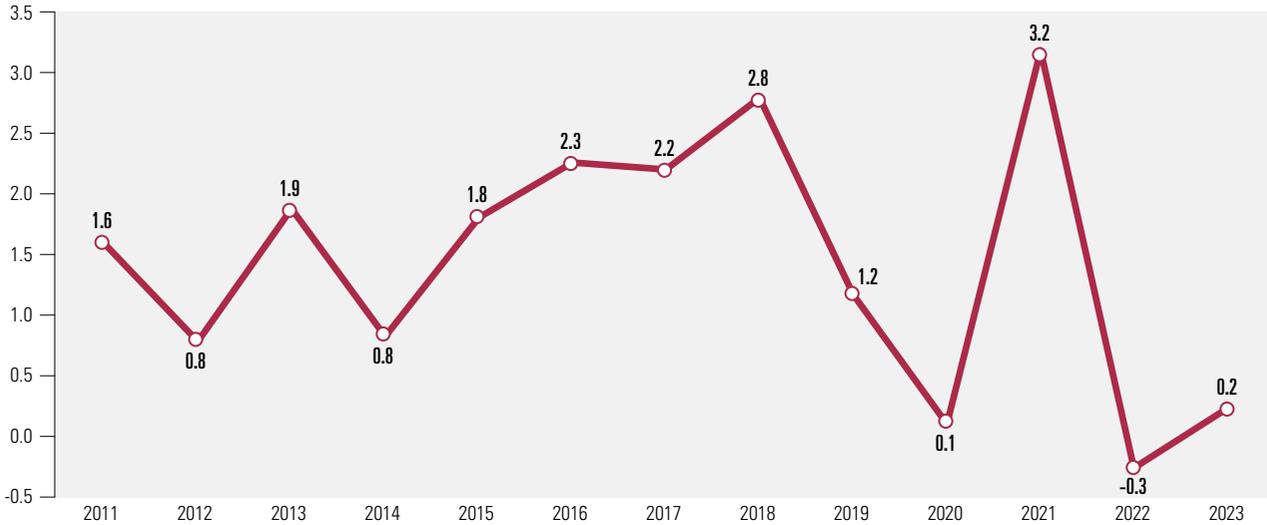
Source: Bank of Korea, National Account; Statistics Korea, Economically Active Population Survey (https://kosis.kr, retrieved on July 31, 2024)
Note : This graph shows growth rates of real GDP per employed person compared to the previous year, by dividing nominal GDP (KRW) by the GDP deflator and then by the number of employed individuals.

Growth Rates of GDP per Employed Person in Major OECD Countries, 2011~2023   (Unit: %)
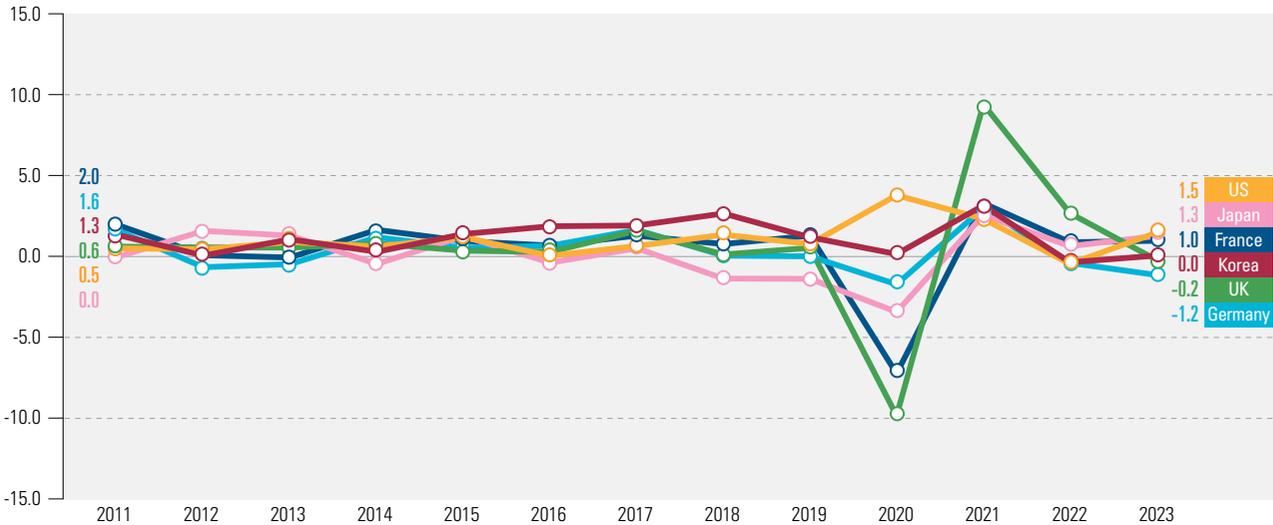
Source: ILO, ILOSTAT(https://ilostat.ilo.org/topics/sdg, retrieved on Feb 5, 2025)
Note 1 : This is based on PPP exchange rate (fixed USD price in 2021).
Note 2 : This graph shows growth rates of real GDP per employed person compared to the previous year

stood at only 0.2% in 2023, which is considerably low compared to the mid-to-late 1% range observed in the 2010s. The growth rate of −0.3% in 2022, following the growth rate of 3.2% in 2021, is considered to have been affected by base effects to some degree. Given this context, it is still unusual to see growth rates of around 0% for two consecutive years in 2022 and 2023. However, the negative growth in 2022 was attributed to an unusual increase in the number of employed individuals during the year, and

it is not exceptionally low compared to a decade ago if the growth rate of real GDP is calculated per hour worked, not per employed person. Despite this, the growth rate of GDP per hour worked in 2022 and 2023 was only 2% on average, indicating that there was indeed a slight decline compared to the past.

Such negative situations in South Korea were also observed by comparision with major OECD countries. Considering the base effects, the growth rate over the recent two years in 2022

and 2023 was low compared to other countries. In 2022, countries other than the United States and Germany achieved positive growth. Among the five major countries (the United Kingdom, Germany, France, the United States and Japan), the United Kingdom, which saw a decline due to the base effects in 2023, and Germany, which recently experienced a sudden deterioration, had lower growth rates than Korea.

The unemployment rate of the elderly aged 60 or higher rose compared to the previous year, with a rapid increase in the employment rate among women (⟳ SDG 8.5.2)

The unemployment rate is not only a measure of the underutilization of laborforce provided but also an indicator of labor market conditions where proper jobs are not available for those seeking a job. In South Korea, the unemployment rate increased year on year by 0.1%p to 2.8% in 2024, maintaining a considerably low level for the recent three years. Compared to 2020 when the unemployment peaked out, such a decline in the unemployment was observed in all age groups. In particular, it was noticeable among those in their 20s. The unemployment rate for the elderly in their 60s or older also dropped by 0.7%p compared to 2020, but it rose by 0.3%p year on year in 2024. This increase was relatively large compared to other age groups, excluding the population aged 15 to 19. Meanwhile, the unemployment rate in Korea has remained considerably low compared to major OECD countries, with

Unemployment Rate by Sex and Age, 2011~2024 (Unit: %)
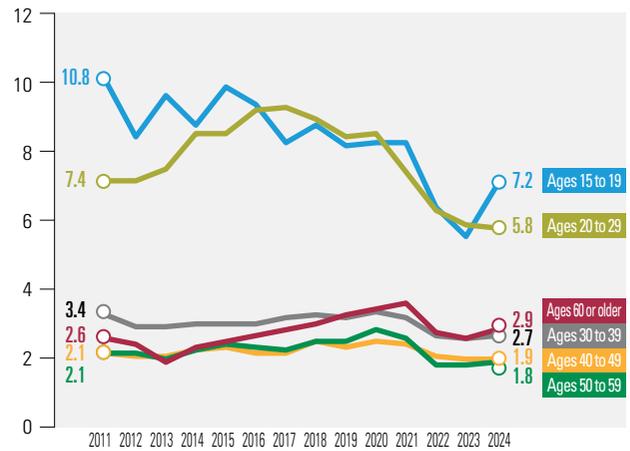
Source: Statistics Korea, Economically Active Population Survey (https://kosis.kr, retrieved on Jan 17, 2025)

Employment Rate by Gender and Age, 2011~2024 (Unit: %)
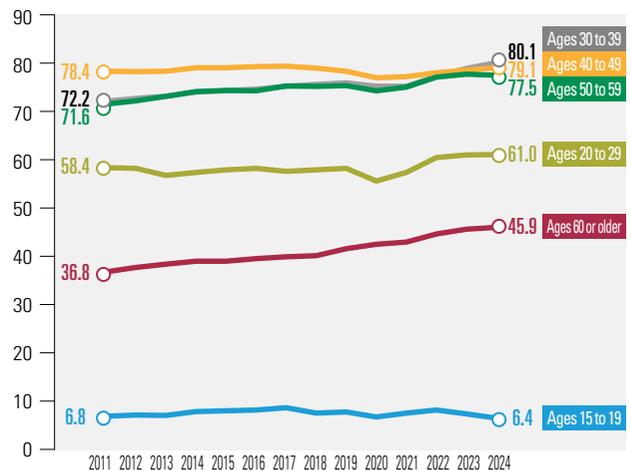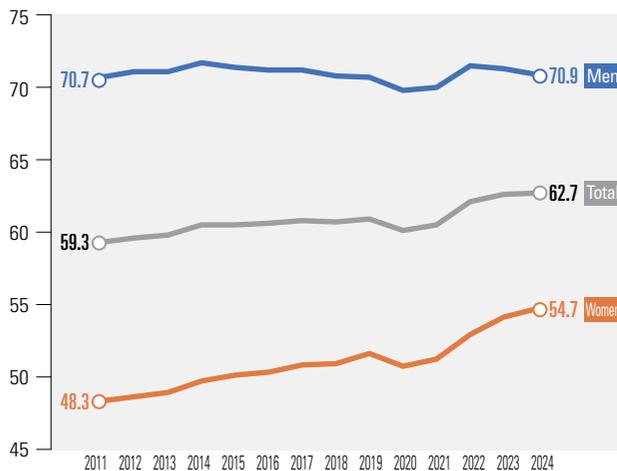
Source: Statistics Korea, Economically Active Population Survey (https://kosis.kr, retrieved on Jan 17, 2025)

Unemployment Rate in Major OECD Countries, 2011~2023 (Unit: %)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
France	9.2												7.3
US	8.9												3.6
UK	8.2												4.0
Germany	6.0												3.1
Japan	4.6												2.6
Korea	3.0												2.7
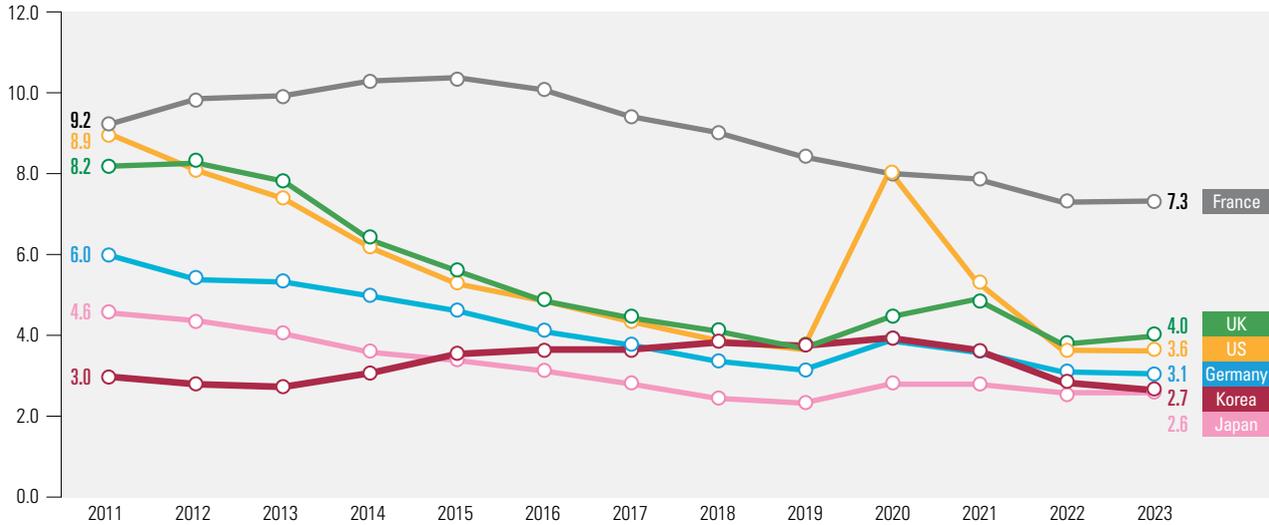
relatively greater improvements observed in the aftermath of the pandemic.

A decline in the unemployment rate usually indicates a brisk labor market, but it can also suggest otherwise if the decrease in unemployment is due to a rise in those exiting from the labor market. Thus, it is necessary to take a look at the employment rate as well to properly interpret a decline in the unemployment rate. In South Korea, the employment rate has been recently growing at a rapid pace, with a particularly sharp increase among women. In 2024, men's employment rate dropped by 0.4%p year on year whereas the rate for women increased by 0.6%p, contributing to maintaining a slight increase of 0.1%p in the overall employment rate. By age group, the employment rate increased across all age groups, except for those in their 50s (a 0.2%p reduction) and aged 15 to 19 (a 0.8%p decrease). In particular, the largest increase (1.2%p) was observed among individuals in their 30s.

It is hard to say the full employment indicator recently observed in many countries, including South Korea, fully reflects the reality as it is. In South Korea, this can be identified with the labor underutilization indicators. Labor

Accident Rate and Death Rate, 2011~2023 (Unit: %, ‰)
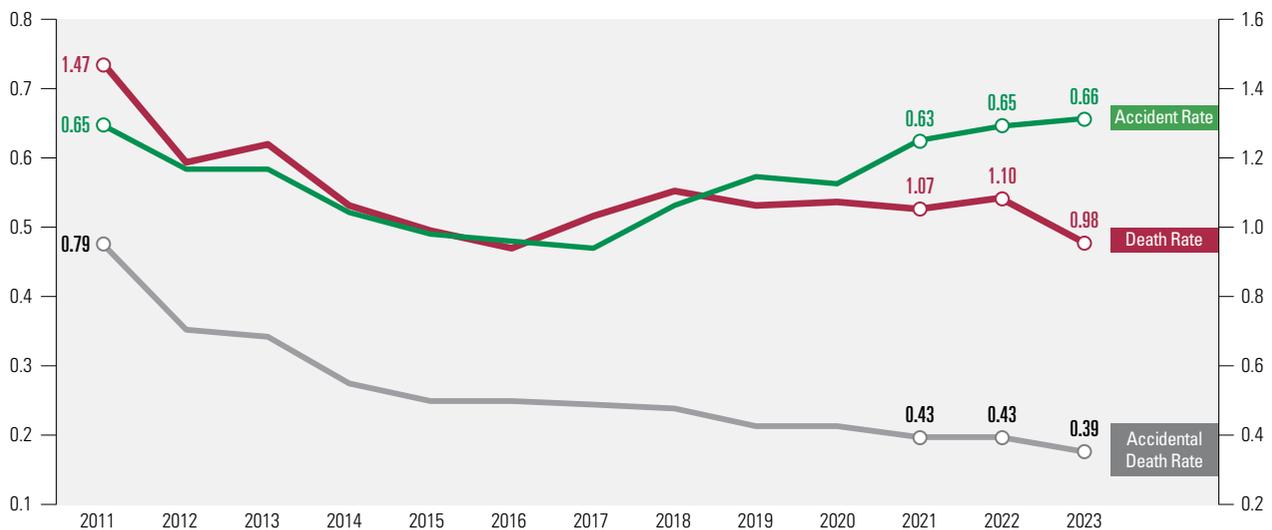
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Death Rate	1.47										1.07	1.10	0.98
Accident Rate	0.65										0.63	0.65	0.66
Accidental Death Rate	0.79										0.43	0.43	0.39

Underutilization Indicator 1, which considers underemployed workers dissatisfied with their working hours, recently exceeded 5% while Labor Underutilization Indicator 3 recorded 8.8% in 2024, including the economically inactive population, such as individuals capable of working but not engaging in any activity to find a job or those looking for a job despite not being currently available to work. Nevertheless, as these indicators have been recently improving at rapid pace, it is difficult to deny the ongoing labor market recovery, as seen in the recent decline in the unemployment rate.

A reduction in the death rate caused by industrial accidents (◯ SDG 8.8.1)

The safety of industrial environments can be assessed by examining the occurrence of industrial accidents. The accident rate refers to the percentage of workers experiencing industrial accidents while the death rate, which measures the occurrence of fatal industrial accidents, is expressed as the number of deaths from industrial accidents per 10,000 workers. The accident rate, which had steadily declined until 2017, turned to an increase in 2018 and, it has continued

Death Rate by Business Scale, 2011~2023 (Unit: ‰)
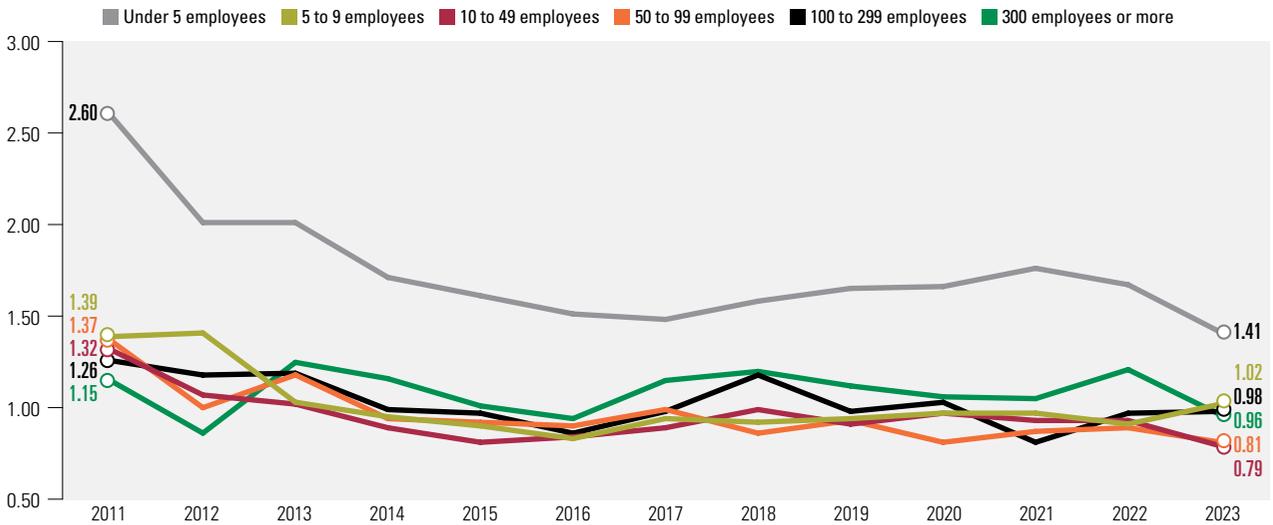
Under 5 employees | 5 to 9 employees | 10 to 49 employees | 50 to 99 employees | 100 to 299 employees | 300 employees or more

Source: Ministry of Employment and Labor, Industrial Accident Status (https://www.index.go.kr/unity/potal/eNara/main/EnaraMain.do, retrieved on Aug 1, 2024)
Note : Since 2012, deaths from traffic accidents, physical activity events and violent acts outside the business sites have been excluded if 1 year or longer elapses from the date of accident. However, deaths from traffic accidents outside business sites are included in the transportation and dining/accommodation sectors.

Death Rate by Business Type, 2011~2023 (Unit: ‰)
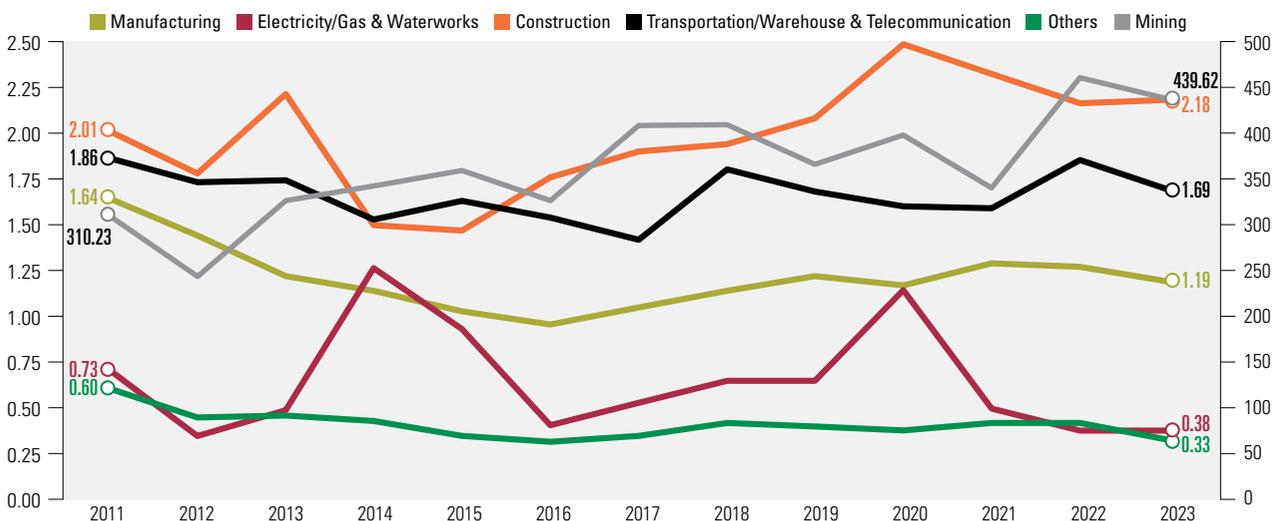
Manufacturing | Electricity/Gas & Waterworks | Construction | Transportation/Warehouse & Telecommunication | Others | Mining

Source: Ministry of Employment and Labor, Industrial Accident Status (https://www.index.go.kr/unity/potal/eNara/main/EnaraMain.do, retrieved on Aug 1, 2024)
Note : Since 2012, deaths from traffic accidents, physical activity events and violent acts outside the business sites have been excluded if 1 year or longer elapses from the date of accident. However, deaths from traffic accidents outside business sites are included in the transportation and dining/accommodation sectors.

(Unit: ‰)

Accidental Death Rate in Major OECD Countries, 2011~2022

0.79 Korea 0.43
0.51 US 0.53
0.31 France 0.26
0.20 Japan 0.15
0.12 Germany 0.07
0.07 UK 0.08

2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022
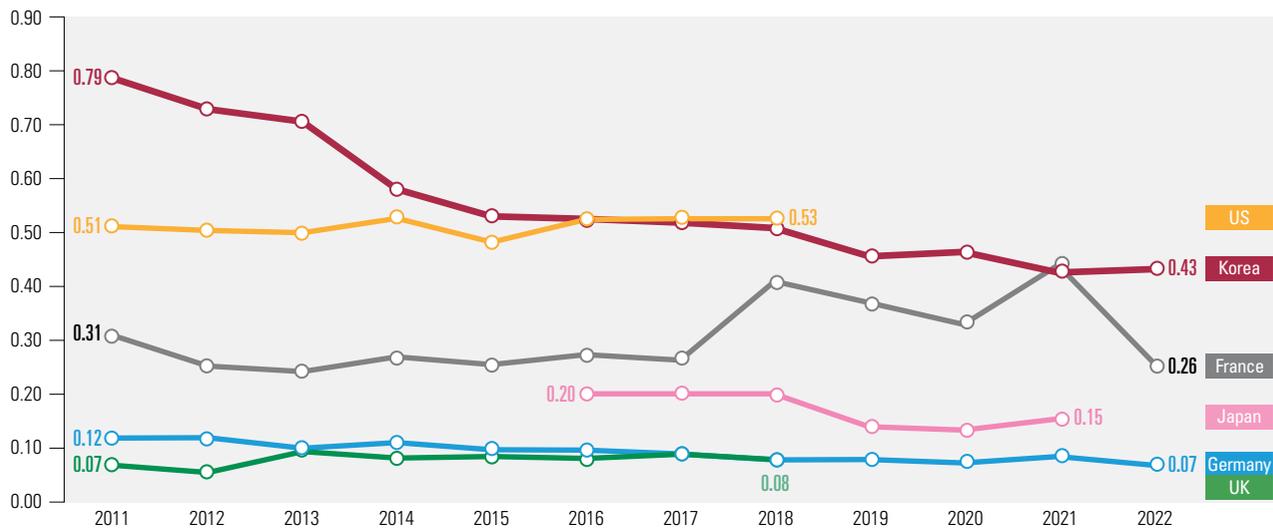
Source: ILO, ILOSTAT(https://ilostat.ilo.org/topics/sdg, retrieved on July 31, 2024)
Note : It is difficult to make a simple comparison since data sources vary depending on countries. The data is based on the records of industrial accident compensation for South Korea, France and Germany, supervisory records for the United Kingdom and Japan (since 2020), and investigation results for the United States and Japan (prior to 2019).

to rise since then. Recently, the accident rate has returned to levels comparable to those in the early 2010s. In general, the death rate decreased until 2016, but experienced a temporary increase in 2017, with little fluctuation thereafter. However, it has remained considerably low compared to the early 2010s. Unlike the accident rate or death rate, the accidental death rate has seen a steady reduction since 2011. Compared to the most recent years (2022 and 2023), the accident rate increased by 0.01%p from 0.65% to 0.66% whereas the death rate decreased by 0.12‰p from 1.10‰ to 0.98‰ and the accidental death rate dropped by 0.04‰p from 0.43‰ to 0.39‰. Korea's fatal accident rate has remained still high compared to OECD countries, but it is rapidly declining, getting closer to the levels seen in other major countries.

On Jan 27, 2022, the Serious Accident Punishment Act came into effect for businesses with 50 employees or more, but no noticeable reduction has been observed in the accident rate and the death rate. In 2022, there was a temporary spike in the number of deaths due to (pre-existing) conditions in the mining sector, and on July 1 of the same year, the criteria

for workers in certain business types to apply for industrial accident insurance were revised, leading to a surge in the number of delivery workers, who are considered to have a higher accident rate, being covered by the insurance.

Looking at the business scale, the death rate has slightly decreased with some fluctuations since 2011, except for businesses with fewer than five employees. Following a downward trend, the rate began to increase among those under 5 employees in 2018, and quickly returned to a decline in 2022. In 2023, it fell year on year across all business scales, excluding those with 5 to 9 employees and 100 to 299 employees. Unlike the death rate, the accidental death rate has declined throughout all businesses since 2011. By business type, the death rate has slightly declined across most sectors after going through some fluctuations since 2011, except for construction and mining. The accidental death rate has also showed a decrease since 2011 in all sectors, excluding construction. Even within the construction sector, it has been reduced since 2020.

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Definition
• **Accident Rate :** (number. of accidents ÷ number. of workers)×100
• **Death Rate :** (number. of deaths ÷ number. of workers)×10,000
• **Accidental Death Rate :** (number. of accidental deaths ÷ number. of workers)×10,000

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

SDG 9 seeks to promote each country's self-sufficient growth through sustainable industrialization, focusing on manufacturing which has served as a major growth engine for global economic development, employment and social stability. Across the world, the manufacturing sector has experienced low growth due to COVID-19 and geopolitical pressures. To ensure the inclusive and sustainable industrialization that SDG 9 purses, it is essential to boost investments in research and development, expand access to ICT technologies and further accelerate the green transition. For South Korea highly dependent on manufacturing, it is crucial to monitor changes in manufacturing value added and employment. Meanwhile, the scale of its R&D budget and workforce, which reflects its commitment to innovation, has remained world-class.

» **Manufacturing value added as a proportion of GDP stood at 25.6% in 2023, which is relatively high compared to major countries, but it has been decreasing since 2011.**
  - In 2022, the proportion of manufacturing value added in South Korea ranked second among OECD countries, following Ireland (38%) and significantly exceeded the global average (16.1%) and the OECD average (14.4%).
  - It is necessary to carefully monitor the recent decline in the proportion of manufacturing value added (from 29.0% in 2011 to 25.6% in 2023), to secure national competitiveness in changing trade conditions.

» **Manufacturing employment as a proportion of total employment continued to fall from 17.6% in 2015 to 15.6% in 2024.**
  - The proportion of manufacturing employment for men was almost double that of women, and during the same period, the ratio of women employed in manufacturing experienced a faster decline, further widening the gender gap.
  - In 2022, the proportion of manufacturing employment (16.0%) was slightly higher than the OECD average (13.4%).

» **Over the past 20 years, there has been a remarkable increase in the absolute scale of R&D expenditure, its proportion relative to GDP and the size of R&D personnel.**
  - R&D expenditure as a proportion of GDP has more than doubled from 2.3% in 2003 to 5.2% in 2022 over the past two decades, maintaining second place after Israel (6.0%) among OECD countries.
  - The number of full-time equivalent (FTE) researchers has steadily increased (from 3.3 per 1,000 population in 2003 to 9.4 in 2022), making it one of the highest among OECD countries. The proportion of female researchers saw a significant increase (from 11.4% in 2003 to 23.0% in 2022).

Declining manufacturing value added as a proportion of GDP despite being world-class (◎ SDG 9.2.1)

Manufacturing plays a key role in job creation and social stability, serving as the backbone of national growth. In particular, strengthening manufacturing competitiveness is very crucial for South Korea, known as a manufacturing powerhouse. Manufacturing value added as a proportion of GDP refers to the share of manufacturing that takes up out of the total GDP. Korea's manufacturing value added as a proportion of GDP has declined in general from 29.0% in 2011, despite slight fluctuations each year. After falling to 27.5% in 2016, it rebounded to 28.0% in 2017 due to the reshoring policy implemented during the mid-2010s.

Manufacturing Value Added as Proportion of GDP, 2011~2023
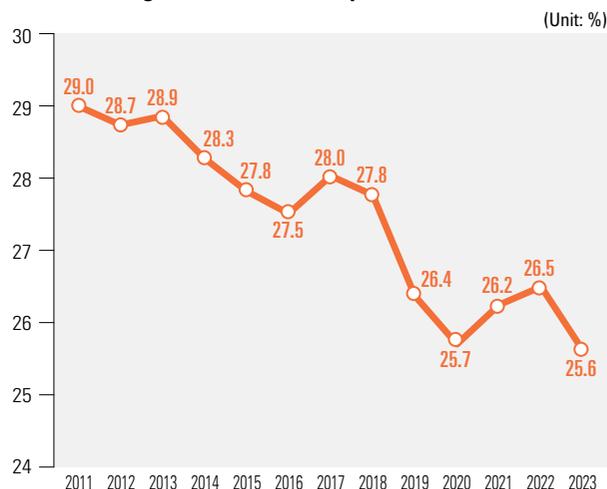
(Unit: %)

Source: Bank of Korea, Economic Statistical System (https://ecos.bok.or.kr/#/SearchStat, retrieved on Sep 19, 2024)
Note : This is based on the value added as of 2020.
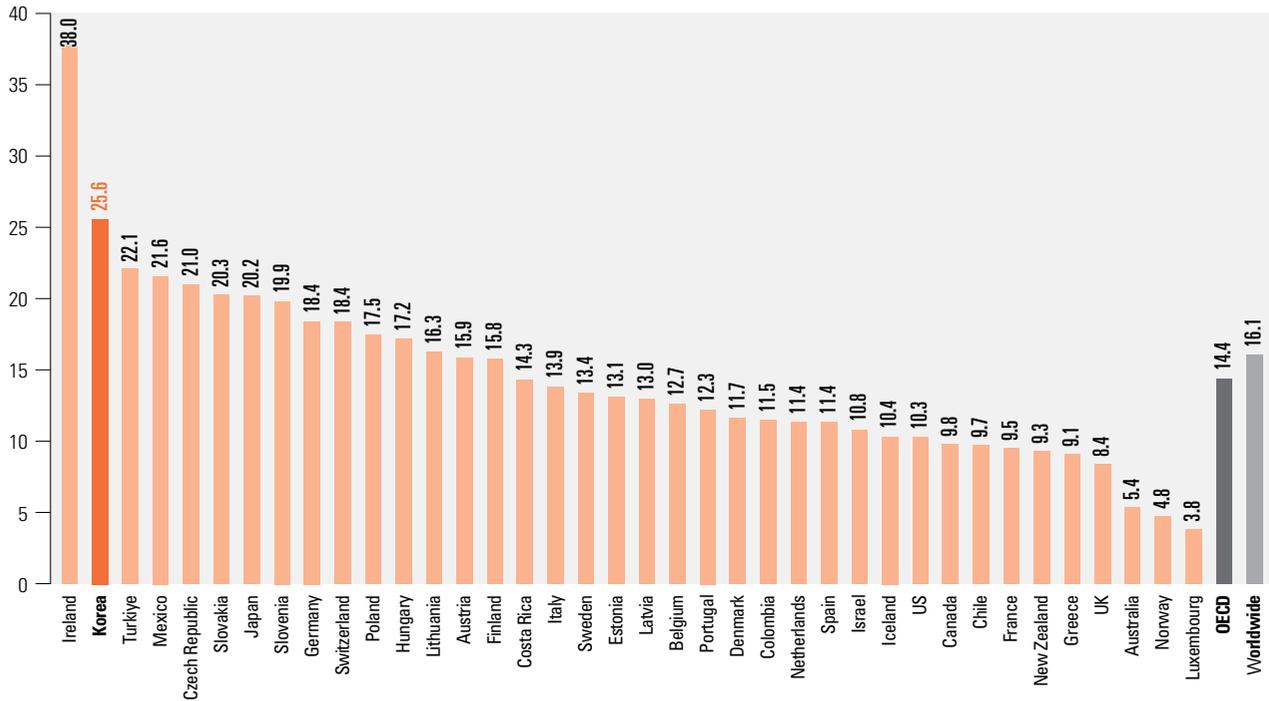
Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Sep 14, 2024)
Note : This was created after being adjusted depending on the economic scale for international comparison.

However, it declined to 25.7% in 2020 under the impact of COVID-19, and later it rose slightly but dropped again to 25.6% in 2023, marking its lowest level since 2011. Under the current global trade conditions with rising protectionism mainly in advanced industries, it is essential to enhance manufacture value added and maintain an appropriate manufacturing value added as a proportion of GDP, in order to secure national competitiveness.

Korea's manufacturing value added as a proportion of GDP stood at 25.6% in 2022, exceeding the global average of 16.1% and the OECD average of 14.4%. Among OECD countries, South Korea ranked second after Ireland (38.0%), followed by Türkiye (22.1%), Mexico (21.6%) and the Czech Republic (21.0%). Japan and Germany, both manufacturing powerhouses, recorded manufacturing value added at 20.2% and 18.4%, respectively.

In China, which has a high share of manufacturing, although it is not an OECD member, its manufacturing value added as a proportion of GDP saw a steady reduction from 32.1% in 2011 to 27.1% in 2022. Although this figure was slightly above South Korea's, the similar downward trend was also observed in China.

Amid the decline in manufacturing employment, the proportion of female employees in the sector remained at half that of men (○ SDG 9.2.2)

Manufacturing employment as a proportion of total employment refers to the share of workers employed in manufacturing out of the total employment. With industrial advancement, the share of manufacturing employment has gradually declined across the globe. Such a trend has been more noticeable in advanced nations. In South Korea, which has a manufacturing-oriented industrial structure, the proportion of manufacturing employment steadily decreased from 17.6% in 2015 to 15.6% in 2024. There is also a large gender disparity in manufacturing employment. The proportion of men employed in the manufacturing sector was nearly twice as high as that of women. Although the employment declined for both men and women, the decrease was even more pronounced for women. For instance, it dropped from 20.6% for men and 12.1% for women in 2013 to 20.1% for men and 9.9% for women in 2024. Moving forward, it is necessary to narrow down the gender wage gap and enhance diversity and inclusiveness in the manufacturing sector by implementing measures to increase

Share of Manufacturing in Total Employment, 2013~2024 (Unit: %)

Source: Statistics Korea, Economically Active Population Survey (https://kosis.kr, retrieved on Jan 31, 2024)

Share of Manufacturing in Total Employment by OECD Country, 2022 (Unit: %)
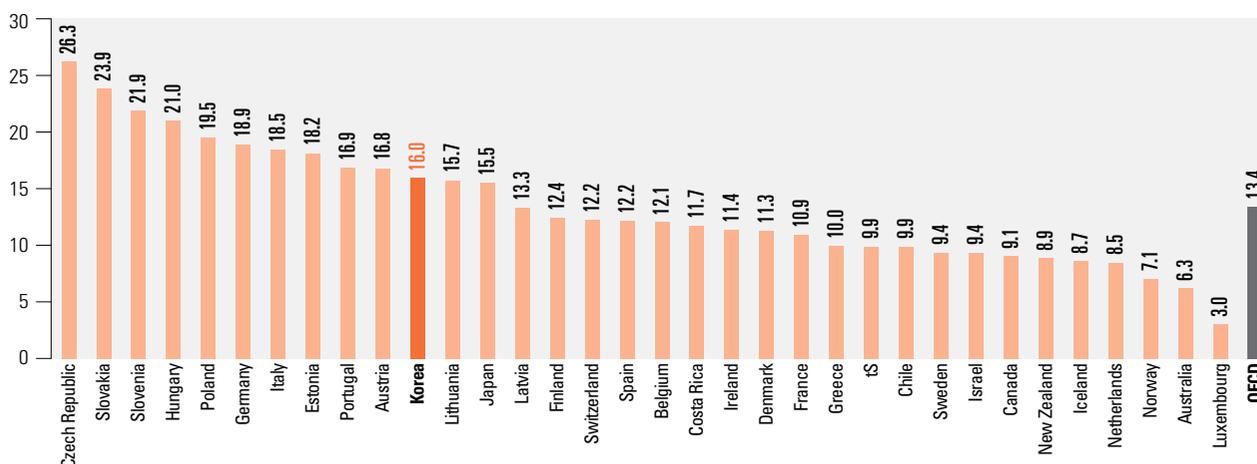
Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Sep 14, 2024)

women's employment in high-paying manufacturing jobs.

Globally, the share of manufacturing in total employment is higher in Eastern European countries. Among 34 OECD countries with data released in 2022, the top five countries with highest manufacturing employment are the Czech Republic (26.3%), Slovakia (23.9%), Slovenia (21.9%), Hungary (21.0%) and Poland (19.5%). Korea's share of manufacturing employment was 16.0%, higher than the OECD average of 13.4%. In Germany and Japan, their shares of manufacturing in total employment stood at 18.9% and 15.5%, respectively. South Korea ranked second among OECD countries in manufacturing value added as a proportion of GDP, but its manufacturing employment is not relatively high. This can be attributed to several positive factors, including the automation and innovation of manufacturing processes and the transition to capital-intensive industries from labor-intensive ones. On the other hand, it can be interpreted as a result of jobless growth.

A noticeable increase in the share of enterprises engaged in R&D activities and the proportion of female researchers, amid growing R&D capital and human resources (⟳ SDG 9.5.1 ／ SDG 9.5.2)

The size of research and development (R&D) expenditure and researchers are major indicators that represent the level of R&D infrastructure in a country. South Korea's R&D expenditure has seen steady growth over the past 20 years, reaching 112.6 trillion KRW in 2022. Considering the different economic scales of countries during the same period, the proportion of R&D expenditure relative to GDP more than doubled, from 2.3% to 5.2%. R&D expenditure as a proportion of GDP is calculated by dividing the total R&D expenditures spent

R&D Expenditure as Proportion of GDP and Share of R&D Activities Performed by Different Entities, 2003~2022 (Unit: %)

Legend: R&D Expenditure as Proportion of GDP | Public Research Institute | Univ. | Enterprise

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Enterprise	76.1	76.7	76.9	77.3	76.2	75.4	73.8	74.8	76.5	77.9	78.5	78.2	77.5	77.7	79.4	80.3	80.3	79.1	79.1	79.4
Univ.	10.1	9.9	9.9	10.0	10.7	11.1	11.1	10.8	10.1	9.5	9.2	9.0	9.1	9.1	8.5	8.2	8.3	9.0	9.1	9.1
Public Research Institute	13.8	13.4	13.2	12.8	13.1	13.5	14.7	14.4	13.4	12.5	12.2	12.7	13.4	13.1	12.1	11.5	11.4	11.9	11.7	11.5
R&D Expenditure as Proportion of GDP	2.3	2.4	2.5	2.7	2.9	3.0	3.2	3.3	3.6	3.9	4.0	4.1	4.0	4.0	4.3	4.5	4.6	4.8	4.9	5.2

Source: Ministry of Science and ICT, Research and Development Activity Survey (https://kosis.kr, retrieved on Sep 15, 2024)

R&D Expenditure as Proportion of GDP in OECD Countries, 2022 (Unit: %)

Country	Value
Israel	6.0
Korea	5.2
US	3.6
Sweden	3.4
Belgium	3.4
Japan	3.4
Switzerland (2021)	3.3
Austria	3.2
Germany	3.1
Finland	3.0
UK (2021)	2.9
Denmark	2.9
Iceland	2.6
Netherlands	2.3
France	2.2
Slovenia	2.1
Czech Republic	2.0
Australia (2021)	1.9
Estonia	1.8
Canada	1.7
Portugal	1.7
Norway	1.6
Greece	1.5
New Zealand (2021)	1.5
Poland	1.5
Spain	1.4
Hungary	1.4
Italy	1.4
Türkiye	1.3
Lithuania	1.1
Slovakia	1.0
Luxembourg	1.0
Ireland	1.0
Latvia	0.8
Chile (2021)	0.4
Colombia (2020)	0.3
Costa Rica (2021)	0.3
Mexico	0.3
OECD	2.1

Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Jan 26, 2025)

for a year by various entities, such as enterprises, public research institutes and universities in both the private and public sectors, by GDP. Given the R&D expenditure by entity, the share of public research institutes declined from 13.8% in 2003 to 11.5% in 2022 whereas the proportion of enterprises grew to 79.4% from 76.1% for the same period, indicating enterprises' active engagement in R&D activities.

Korea's R&D expenditure as a proportion of GDP has remained at a global level. In 2022, South Korea came in second (5.2%) after Israel (6.0%) among OECD countries. It was much higher than the OECD average (2.1%) and also exceeded the third-place United States (3.6%) by a considerable gap.

The size of researchers deployed to R&D tasks can be determined by the number of full-time equivalent (FTE) researchers, calculated based on their actual participation rate in R&D activities. The number of FTE researchers in South Korea steadily increased from 3.3 per 1,000 population in 2003 to 9.4 in 2022, successfully expanding the pool of researchers. Notably, the proportion of female researchers rose from 11.4% to 23.0% during the same period, resulting in a shift in the gender ratio of researchers. However, considering that the percentage of female researchers has remained low compared to male counterparts, it is necessary to more actively put in place measures for further improvements.

Compared to OECD countries, South Korea also has a high density of R&D researchers. In 2022, the number

of FTE researchers (9.4) per 1,000 population was the highest among the 34 OECD countries for which data was released in 2021, far exceeding the OECD average (5.1). Northern European countries also succeeded in securing R&D researchers, taking the upper rankings following South Korea, such as Denmark (8.7), Sweden (8.6), Finland (8.1) and Norway (7.4). Considering this, South Korea can be considered as a nation equipped with world-class R&D infrastructure in terms of capital and human resources. However, as its R&D budget was cut in 2024, it is crucial to closely monitor any signs of diminished national innovation and changes in the size of researchers.

R&D Researcher Density and Share of Women, 2003~2022　　　(Unit: Person per 1,000 population, %)
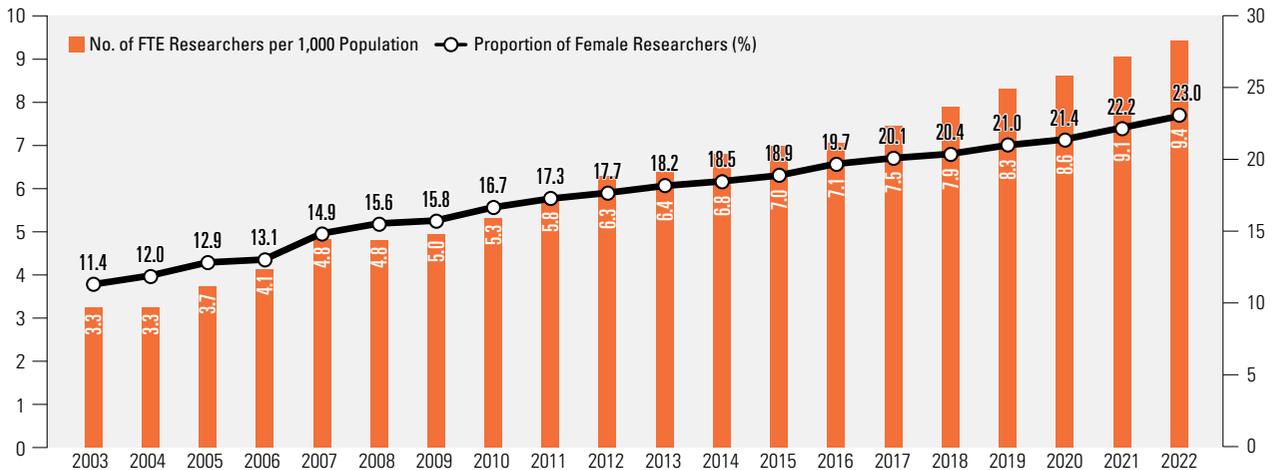
Source: Ministry of Science and ICT, Research and Development Activity Survey (https://kosis.kr, retrieved on Sep 15, 2024)
Note : This is based on the number of full-time equivalent (FTE) researchers per 100,000 population.

R&D Researcher Density in OECD Countries, 2022　　　(Unit: person/1,000 population)
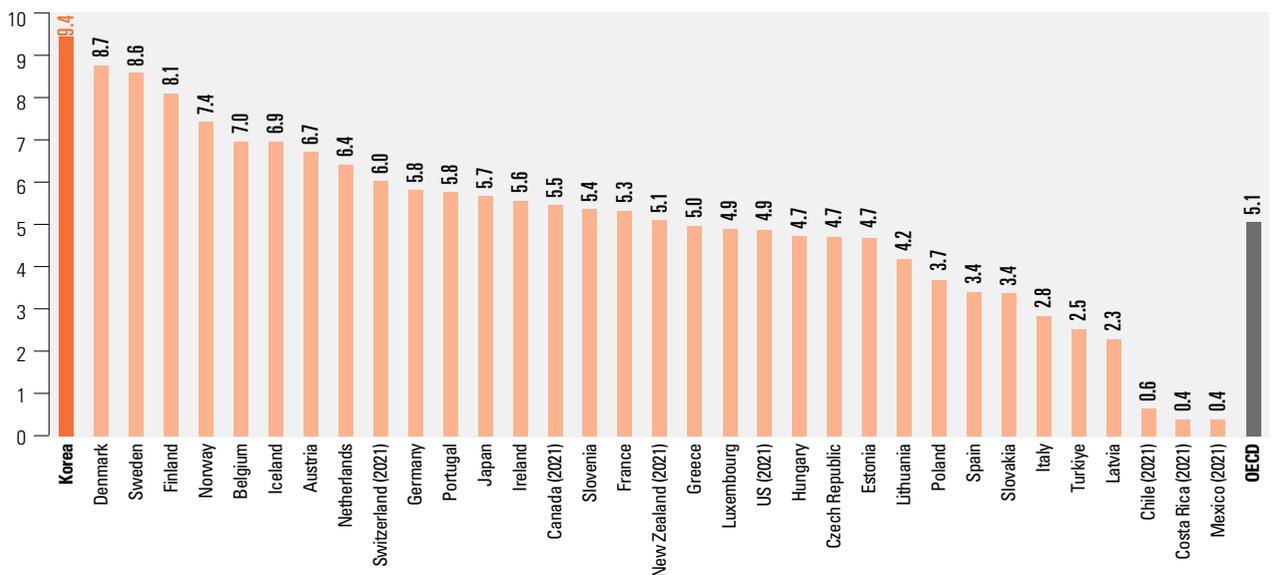
Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Jan 26, 2025)
Note : This is based on the number of full-time equivalent (FTE) researchers per 100,000 population.

Definition

- **Reshoring :** It refers to the practice of transferring particular production activities that were moved overseas back to the country from which they were originally relocated.
- **Full-time Equivalent (FTE) Researcher :** It refers to professionals calculated based on their actual participation rate in research activities, depending on the extent of their devotion to R&D projects out of their overall job duties.

Reduce inequality within and among countries

SDG 10 aims to reduce income inequality, improve laws, systems and regulations that contribute to unequal opportunities, processes and results, and alleviate inequality in all forms by ensuring the free and safe labor mobility between countries. Across the globe, the rapid income growth in the bottom 40% has been stagnant due to COVID-19, and inequality between countries has also intensified. In 2022, the number of forcibly displaced people reached a record high. In South Korea, there was noticeable growth in household income and expenditures among the lowest income quintile, yet the increasing Gini coefficient for net wealth signals worsening asset inequality.

>> **The average real household income stood at 64.39 million KRW in 2023, increasing by 11.9% compared to 2016.**
- From 2016 to 2023, household income grew at a faster pace among the low-income class.
- In 2023, the average (nominal) income of male-headed households was 1.9 times that of female-headed households.
- The average household income of elderly and disabled households was relatively low, and for elderly households, their average income even fell short of half of the overall average.

>> **In 2023, the average monthly real expenditure of households nationwide rose by 1.3% compared to 2019, recovering from the decline driven by the COVID-19 pandemic.**
- Real expenditures among the lowest quintile increased by 10.6% compared to 2019, showing resilience even during the pandemic.

>> **The Gini coefficient for disposable income has been on a steady decline since 2011, reaching 0.323 in 2023.**
- The Gini coefficient for net wealth has been rising since 2018, indicating worsening net wealth inequality.

>> **South Korea recorded a social mobility index of 71.4, ranking in the mid-tier among OECD countries.**
- The country received high scores in technology access, education, and healthcare but lower scores in fair wage distribution, social protection, and working conditions, highlighting areas for improvement.

Low average income of elderly households despite rising real household incomes (⊙ SDG 10.1.1)

In South Korea, the average real household income reached 64.39 million KRW in 2023, an increase of 11.9% from 57.53 million KRW in 2016. Looking at income quintiles, household income in the first quintile (low-income class) rose by 27.3% from 2016, standing at 13.49 million KRW in 2023. Over the same period, household income grew at a slower pace in higher income quintiles, narrowing down the income gap. Household income in the fifth income quintile (high-income class) was 148.78 million KRW in 2023, increasing by only 10.0% compared to 2016. By gender of household heads, the average household income (nominal) in 2023 was 81.85 million KRW for male-headed households whereas it nearly halved to 42.99 million KRW for households with female heads, indicating a 1.9-fold gap. Income also varied depending on household heads' level of academic attainment, recording 45.13 million KRW for

middle school graduates, 65.24 million KRW for high school graduates, and 93.42 million KRW for university graduates. Comparing to the average household income (nominal) of all households, reported at 71.85 million KRW in 2023, multicultural households with 75.15 million KRW were the only group to exceed the overall average, while elderly (30.88 million KRW), disabled (48.88 million KRW, 2022) and single-parent (60.71 million KRW) households lagged behind the average. In particular, the household income of the elderly even fell short of half the overall average, highlighting the need for the government's close monitoring and intervention.

The average monthly real expenditure (based on the standard price in 2020) of households, including single-person households, nationwide was equal to 2.5 million KRW in 2023, an increase of 1.3% from 2.47 million KRW in 2019. In 2020, it declined by 2.8% year on year due to the COVID-19 pandemic, but it rebounded and rose by 1.4% in 2021, 0.7%

Real Household Income by Income Quintile, 2011~2023

(Unit: 10,000 KRW)
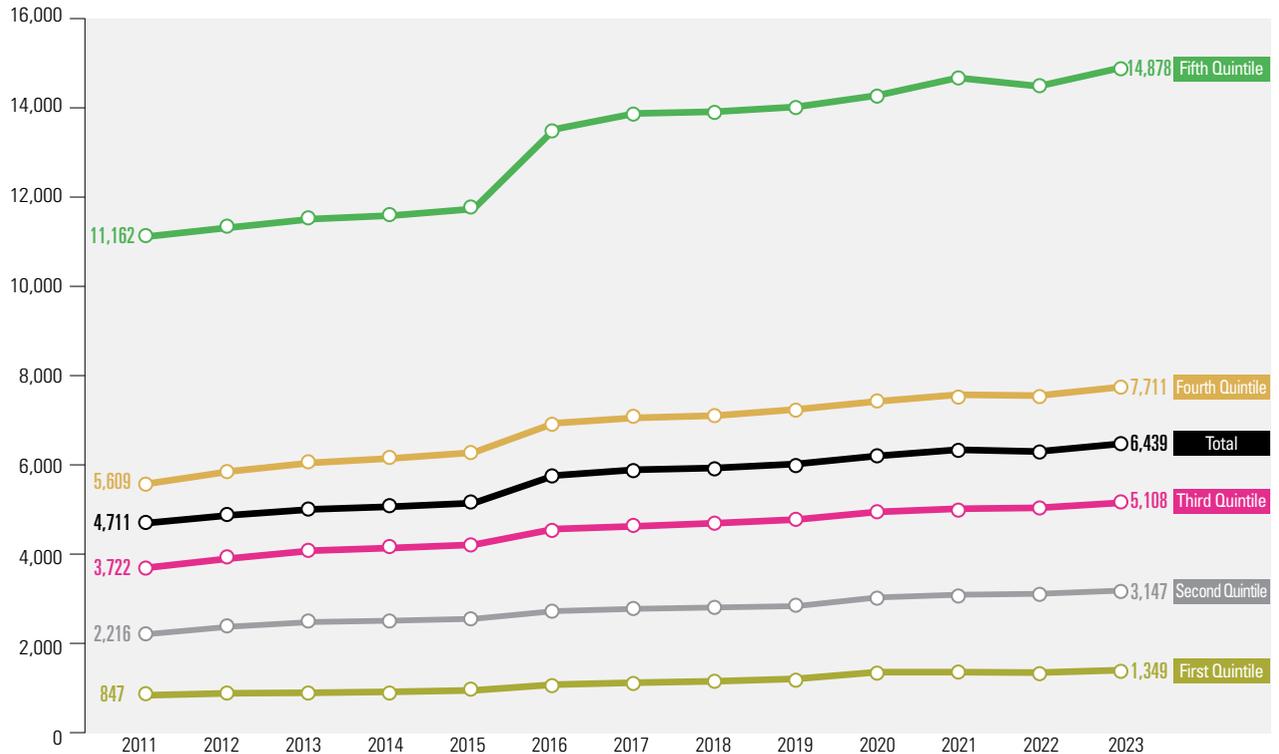
Source: Statistics Korea·Bank of Korea·Financial Supervisory Service, Survey of Household Finances and Living Conditions (https://kosis.kr, retrieved on Jan 19, 2025)
Note 1 : This is based on real income (based on the standard price in 2020) by applying the consumer price index (year 2020 =100) to nominal income.
Note 2 : It is difficult to directly compare with data prior to 2015 since data from 2016 has been supplemented with administrative data and interviews from the National Tax Service and the Ministry of Health and Welfare.

Household Income by Household Characteristics, 2023

(Unit: 10,000 KRW)
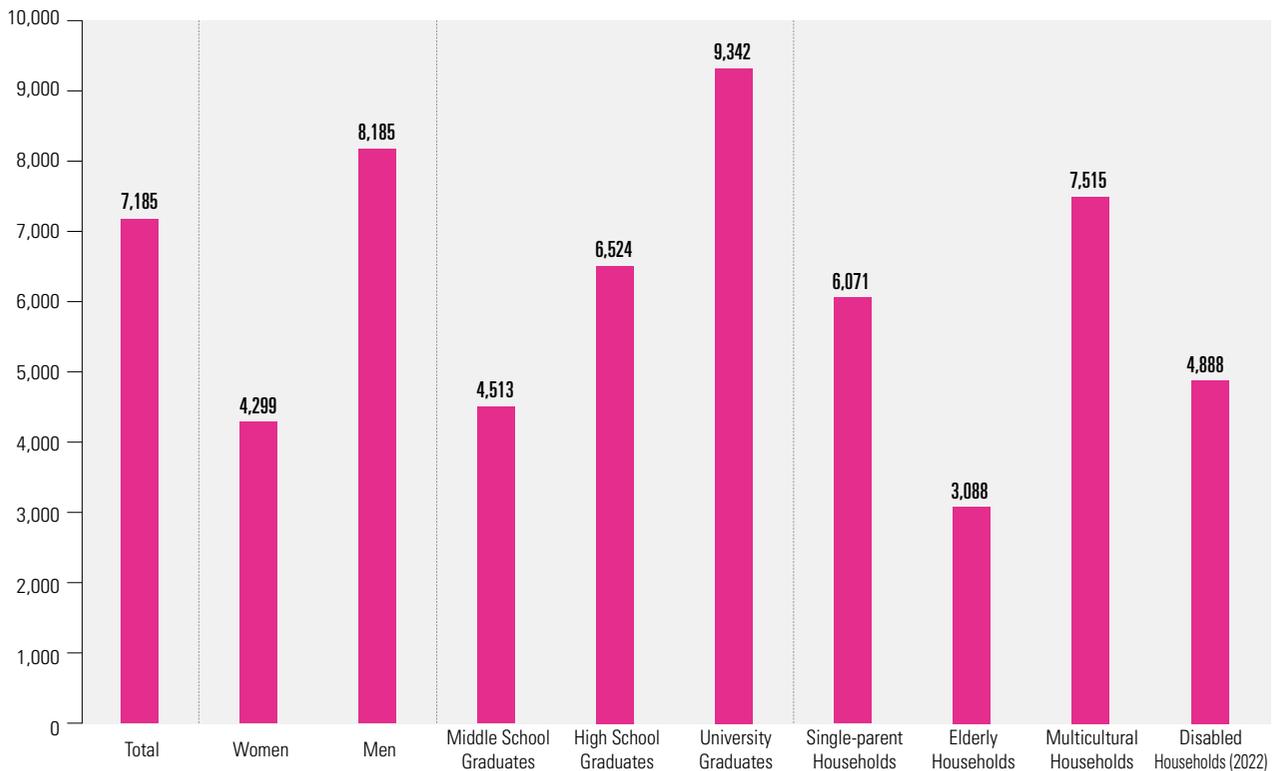
Source: Statistics Korea·Bank of Korea·Financial Supervisory Service, Survey of Household Finances and Living Conditions (https://kosis.kr, retrieved on Jan 19, 2025)
Note 1 : This is based on nominal income.
Note 2 : The data from 2022 was used for disabled households.

Average Monthly Real Expenditures by Income Quintiles, 2019~2023   (Unit: KRW)
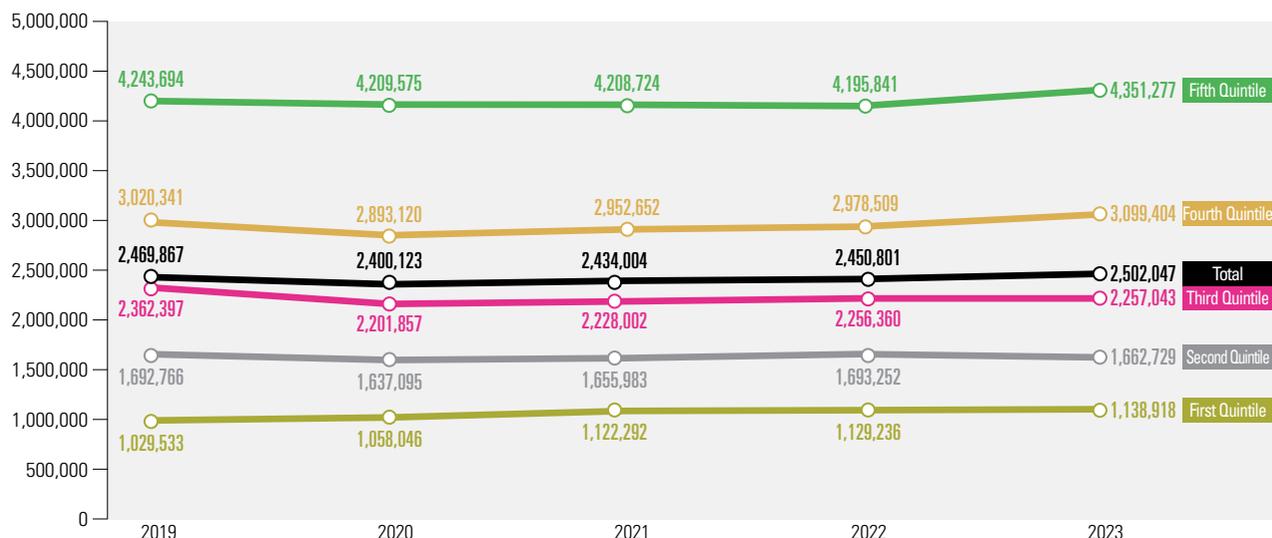
Source: Statistics Korea, Household Trend Survey (https://kosis.kr, retrieved on Jan 19, 2025)
Note : Real expenditures are based on the standard price in 2020.

in 2022 and 2.1% in 2023, respectively, compared to the previous year. To be specific, the real expenditures in the first quintile did not decrease in 2020. Instead, they increased by 2.8% year on year, growing by 10.6% from 2019 to 2023. As for the second and third quintiles, even in 2023, they failed to fully recover from the decline that occurred in 2010, shrinking by 1.8% and 4.5% respectively, compared to 2019. Last but not least, the fourth and fifth quintiles saw a 2% increase only over the same period.

Disposable income Gini coefficient continues to decline, but asset inequality worsens
(SDG 10.4.2)

As an indicator of income inequality, the Gini coefficient measures how equally income is distributed among different groups. It ranges from 0 to 1, with 0 representing perfect equality and 1 representing perfect inequality. The Gini coefficient for disposable income in South Korea steadily decreased from 0.387 in 2011 to 0.323 in 2023. Over the

Gini Coefficient for Income and Wealth, 2011~2024

Source: Statistics Korea·Bank of Korea·Financial Supervisory Service, Survey of Households Finances and Living Conditions (https://kosis.kr, retrieved on Jan 24, 2025)
Note 1 : Market income= earned income + business income + property income + private transfer income – private transfer expenditure
Note 2 : Disposable income = market income + public transfer income – public transfer expenditure
Note 3 : Since 2011, the income distribution index has been created, using administrative data. Statistical estimation was used to complement data for earlier years (from 2011 to 2014) during which administrative data was not obtained.

Gini Coefficient and Redistributive Impact of Fiscal Policy in OECD Countries, 2022

■ Gini coefficient for disposable income   ■ Redistributive impact of fiscal policy(%p)

Gini coefficient	Country	Redistributive impact
0.226	Slovakia	34.14
0.244	Slovenia	33.77
0.249	Czech Republic	27.44
0.250	Belgium	37.80
0.250	Iceland	21.57
0.262	Norway	28.39
0.268	Denmark	32.79
0.270	Poland	28.71
0.274	Finland	35.65
0.285	Austria	34.73
0.285	Ireland	36.98
0.288	Netherlands	26.30
0.290	Sweden	25.20
0.294	Hungary	22.10
0.296	Luxembourg	27.63
0.297	France	33.26
0.300	Canada	27.48
0.303	Germany	25.94
0.313	Switzerland	14.32
0.316	Greece	26.50
0.316	Spain	26.69
0.319	Australia	23.33
0.319	Italy	25.92
0.321	Estonia	22.27
0.324	**Korea**	13.70
0.326	New Zealand	22.69
0.332	Portugal	27.98
0.338	Japan	17.35
0.340	Latvia	18.17
0.345	Israel	27.75
0.360	Lithuania	17.72
0.365	UK	23.08
0.396	US	22.40
0.400	Mexico	2.28
0.427	Turkiye	19.05
0.448	Chile	5.91
0.472	Costa Rica	9.01
0.548	Colombia	6.45

Source: OECD Data Explorer (https://data-explorer.oecd.org, retrieved on Feb 10, 2025)
Note 1: The most recent data was used for some countries with no available data from 2022.

same period, the Gini coefficient for market income also underwent a gradual decline from 0.418 to 0.392.

The Gini coefficient for market income indicates income inequality based purely on market income without any government involvement. On the other hand, the Gini coefficient for disposable income serves as an indicator of inequality calculated with income that individuals can dispose of on their own, including transfer income received from the government, less taxes and social insurance premiums. Therefore, a wider gap between the two coefficients means that social welfare policies have a greater effect on mitigating income inequality. As seen in the differential between the two, the redistributive impact of fiscal policy steadily increased from 0.031 in 2011, reaching an all-time high of 0.077 in 2020.

Since then, it has decreased each year, dropping to 0.069 in 2023. Net wealth refers to assets after excluding debts from total assets. The Gini coefficient for net wealth shows the level of net wealth inequality, caused by inheritance or grants. It declined from 0.619 in 2011 to 0.584 in 2017, but it rose each year and reached 0.612 in 2024, which indicates growing net wealth inequality in South Korea.

In 2022, Korea's Gini coefficient for disposable income stood at 0.324, ranking 14th among the 38 OECD countries, lower than that of the United States (0.396) and Japan (0.338). Out of OECD members, countries in Latin America had particularly high Gini coefficients, including Colombia (0.548), Costa Rico (0.472), and Chile (0.448). On the other hand, countries with lower Gini coefficient

Social Mobility Index by OECD Country, 2020

Country	Score
Denmark	85.2
Norway	83.6
Finland	83.6
Sweden	83.5
Iceland	82.7
Netherlands	82.4
Switzerland	82.1
Belgium	80.1
Austria	80.1
Luxembourg	79.8
Germany	78.8
France	76.7
Slovenia	76.4
Canada	76.1
Japan	76.1
Australia	75.1
Ireland	75.0
Czech Republic	74.7
UK	74.4
New Zealand	74.3
Estonia	73.5
Portugal	72.0
Korea	71.4
Lithuania	70.5
US	70.4
Spain	70.0
Poland	69.1
Latvia	69.0
Slovakia	68.5
Israel	68.1
Italy	67.4
Hungary	65.8
Costa Rica	61.6
Chile	60.3
Greece	59.8
Mexico	52.6
Türkiye	51.3
Colombia	50.3

Source: World Economic Forum, 2020, The Global Social Mobility Report 2020: Equality, Opportunity and a New Economic Imperative

included Slovakia (0.226), Slovenia (0.244), the Czech Republic (0.249), Iceland (0.250) and Belgium (0.250), indicating that incomes are distributed in a relatively equitable manner in these countries.

The highest redistributive impact of fiscal policy was observed in the following order: Belgium (37.80%p), Ireland (36.98%p), Finland (35.65%p), and Austria (34.73%p). South Korea's redistributive impact ranked 34th among the 38 OECD countries, meaning that only four countries had a lower redistributive impact than Korea, namely Costa Rico (9.01%p), Colombia (6.45%p), Chile (5.91%p) and Mexico (2.28%p).

South Korea ranked in the middle tier among OECD countries, requiring further improvements in fair wage distribution, social protection and working conditions (◉ SDG 10.4.2)

The World Economic Forum (WEF) announced its social mobility index in 2020. Social mobility refers to the movement of social classes or hierarchical positions of specific individuals or groups (Wonju Seo, 2013). In other words, it describes the movement process within or between generations or among absolute or relative socioeconomic classes. On July 3, 2024, the government released the 'Roadmap for Dynamic Economy', presenting its goals

to implement a dynamic economy by ensuring equitable opportunities and improving social mobility as main pillars. To this end, it selected several action items, such as equal opportunities, fair compensation, innovation of education systems, protection of the vulnerable and reinforcement of support for restarting.

The WEF's social mobility index assesses social mobility across 10 pillars, including health, access to education, educational quality and equity, lifelong learning, technology access, fair wage distribution, working conditions, work opportunities, social protection and inclusive institutions. South Korea scored 71.4 points, ranking 25th out of 82 countries and 23rd among the 38 OECD members. South Korea had higher scores in technology access (92.4) and health (91.1). Compared to other countries, it also had higher scores in kindergarten enrollment rate (94.9%) and academic achievements (with only 0.3% of young children falling short of the minimum proficiency level), along with a low student-to-teacher ratio. Although the unemployment rate was relatively low, there was a high proportion of vulnerable workers (23.4%). Since scores were low in fair income distribution (41.7), social protection (55.4) and working conditions (61.3), it is necessary to make improvements in these areas (World Economic Forum, 2020).

11 SUSTAINABLE CITIES AND COMMUNITIES

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

SDG 11 aims to ensure inclusiveness, safety, resilience and sustainability in cities and human settlements where we live. More than half of the world's population resides in urban areas, but urban areas still face various issues, including the quality of residential environments, equitable access to public transit, air pollution impacts on health, and access to space infrastructure. In South Korea, there have been overall improvements in the quality of residential environments and the creation of park areas, but the progress in reducing the concentration of fine particulate matter (PM2.5) in the air has stagnated.

>> **The proportion of households living below the minimum residential standards has been on a steady decrease, along with a narrowing gap in the rent-to-income ratio (RIR) among income quintile. However, more efforts are needed to ease the housing cost burden on vulnerable groups.**
- In 2023, the number of households living below the minimum residential standards was recorded at 777,000 or 3.6% out of the total households, with those below the area and facility standards accounting for 2.7% and 2.3%, respectively.
- The median rent-to-income ratio stands at 15.8% while the rent-to-income ratio for low-income households has remained under 20% since 2020, indicating a narrowing gap between income groups. However, more policy efforts are still needed to reduce the housing cost burden on vulnerable groups and prevent them from being excluded from housing support.

>> **The population-weighted average level of fine particulate matter (PM2.5) has stagnated since 2020, reaching $19\mu g/m^3$ in 2023. This falls short of the national air quality standards ($15\mu g/m^3$) and the threshold recommended by the WHO (AQG level, $5\mu g/m^3$).**
- In 2022, Korea's concentration of fine particulate matter (PM2.5) ranked 3rd among OECD countries, with the number of premature deaths due to air pollution reaching 42.7 per 100,000 population in 2019, which is 1.5 times higher than the OECD average.

>> **The area created as spatial facilities, such as parks, squares and green spaces, has continued to increase, but the per-capita park area in Seoul remains less than half of the national average, indicating the need to continuously expand parks and green spaces to provide urban residents with green recreational areas.**
- The area designated as spatial facilities (squares, parks, green spaces, recreational parks, public open spaces) under the municipal/county plans stood at $1,202km^2$ in 2023, of which 87.7% has actually been developed.
- The park area developed nationwide increased by 46.9% from 2014 to 2023, and for the same period, the per-capita park area also grew from $7.9m^2$ to $11.6m^2$. However, the per-capita park area in Seoul was just $4.6m^2$, less than half of the national average.

>> **Out of seven special and metropolitan cities, five experienced a reduction in urban population in 2020 compared to 2010. During the same period, the urbanized area increased in all seven cities.**
- The ratio of land consumption rate to population growth rate was high in Ulsan and Incheon, indicating inefficient use of land.
- In addition, it is necessary to assess land-use efficiency and implement mid/long-term strategies in response to the declining population, in regions where urbanized areas are growing despite population reduction.

The proportion of households living in inadequate housing has declined, but more efforts are needed to alleviate rent burdens (⊙ SDG 11.1.1)

Under the Housing Act, the minimum residential standards consist of the area standard based on the number of household members, the facility standard requiring a dedicated stand-up kitchen, flush toilet(s) and a bathing facility, and the bedroom standard based on the number of rooms. Any household falling short of any of these standards is considered to be living below the minimum residential standards. In 2023, the number of households below the minimum residential standards nationwide stood at 777,000, accounting for 3.6% of total population, a 0.3%p decrease year on year. The proportion of households below the minimum residential standards dramatically decreased each year, dropping from 16.6% in 2006, when the survey began, to 5.4% in 2014. This decline has continued since then, indicating steady improvements in physical residential environments. By

standard type, the proportions of households below the area, facility and bedroom standards were 2.7%, 2.3% and 0.2% in 2023, respectively. Among these, households below the facility standard saw the largest year-on-year reduction by 0.3%p. Meanwhile, as the residential area per household and per person has steadily increased, it is necessary to reflect this change in the area standard of the minimum residential standards which have remained unchanged since their revision in 2011 to more accurately assess the quality of residential life.

The rent-to-income ratio of renting households (RIR) refers to the proportion of housing rent relative to the total income of tenant households, indicating the burden of housing costs on those without homeownership. In 2023, the median rent-to-income ratio decreased by 0.2%p year on year to 15.8%. That said, the average RIR rose by 0.9%p to 22.7% compared to the previous year. As the RIR tends to be affected by land prices, the Greater Seoul area recorded the highest median RIR at 20.3%, followed by metropolitan areas (15.3%) and provincial areas (13.0%). By income group, the low-income households had the highest median RIR (19.8%), followed by the high-income quintile (18.7%). The high RIR among the high-income households is attributed to large lump-sum deposits for housing. Among the low-income households, the median RIR hovered in the upper range of 20% until 2014, but has stayed below 20% since 2020, showing a lower housing cost burden and a narrowing gap between income groups. However, 18.8% of total households reported feeling "very" burdened by rents and loan repayments. In particular, the proportions of households

Ratio of Households below Minimum Residential Standards, 2006~2023 (Unit: %)
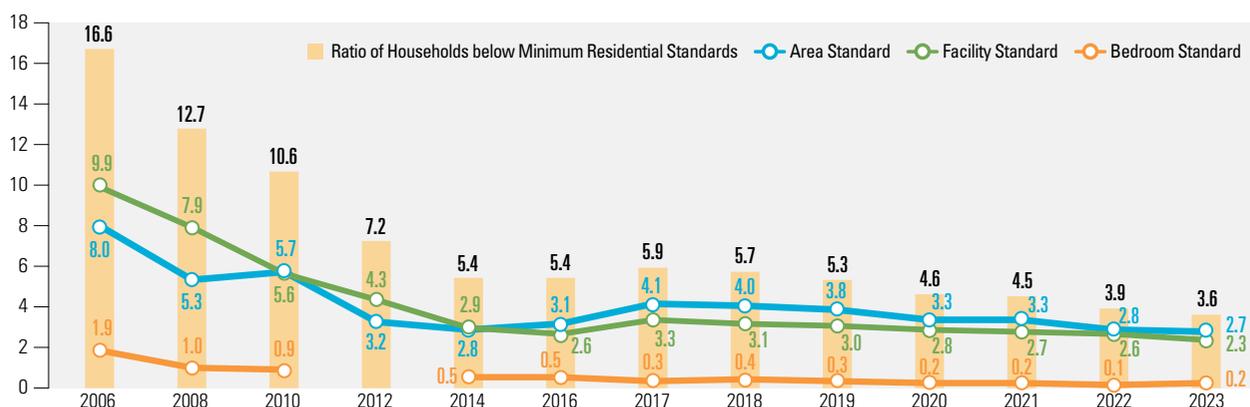
Source: Ministry of Land, Infrastructure and Transport, 2023 Housing Survey: (Ordinary households) Research Report
Note 1 : This survey was conducted on a biennial basis until 2016, but it has been changed to an annual survey since 2017.
Note 2 : Households below the minimum residential standards refer to those falling short of any of the following criteria under the Housing Act: area standard (the usable area is less than 14m^2 for one person, 26m^2 for two people, 36m^2 for three people, 43m^2 for four people, 46m^2 for five people and 55m^2 for six people depending on the number of household members); facility standard (at least one of the following essential facilities such as a dedicated stand-up kitchen, flush toilet(s) and bathing facility is not equipped); and bedroom standard (the number of rooms is fewer than one for one person, one for two people, two for three people, three for four people or five people, or four for six people depending on the number of household members.)
Note 3 : It is estimated that the change in the survey approach to residential areas in 2017 contributed to the increase in the number of households below the area standard.

Rent-to-income Ratio (RIR) by Income Group, 2006~2023 (Unit: %)

Source: Ministry of Land, Infrastructure and Transport, 2023 Housing Survey: (Ordinary households) Research Report
Note 1 : This is based on the median value by income group.
Note 2 : Rent-to-income Ratio (RIR)=(monthly median rent÷monthly median household income)×100
Note 3 : This survey was conducted on a biennial basis until 2016, but it has been changed to an annual survey since 2017.

that felt "very" or "somewhat" burdened were 78.2%, 75.1% and 74.2% respectively, among those paying monthly rent with a deposit, those paying monthly rent without a deposit, and those making a lump-sum deposit without monthly rent and receiving a refund at the end of leasing contract.

According to a study (Mina Kang et al., 2020) conducted by the Korea Research Institute for Human Settlements, vulnerable groups - defined as households below the minimum residential standards, those bearing excessive housing costs (the RIR of 30% or higher) and those living in non-residential spaces - amounted to 2,925,000 in 2019. Among them, only 21.0% benefited from the government's housing support policies. In order to alleviate the excessive housing cost imposed on low-income and vulnerable households and make sure they are not neglected from policy support, it is necessary to enhance policy efficiency by strengthening housing support as well as coordinating various housing policies across ministries and reinforcing inter-ministerial cooperation.

Stagnant improvement in the concentration of fine particulate matter (PM$_{2.5}$) (⟳ SDG 11.6.2)

With a diameter of 2.5㎛ or less, fine particulate matter (PM$_{2.5}$) is extremely small, allowing it to enter the lungs when inhaled and potentially causing various pulmonary diseases, stroke and heart diseases. This fine dust is often generated by industrial activities, exhaust gases from vehicles and transboundary air pollutants, and can also be secondarily formed through chemical reactions of air pollutants. In South Korea, there was a frequent occurrence of high-

Annual Average Concentration of Fine Particulate Matter (PM$_{2.5}$), 2015~2023 (Unit: μg/㎥)
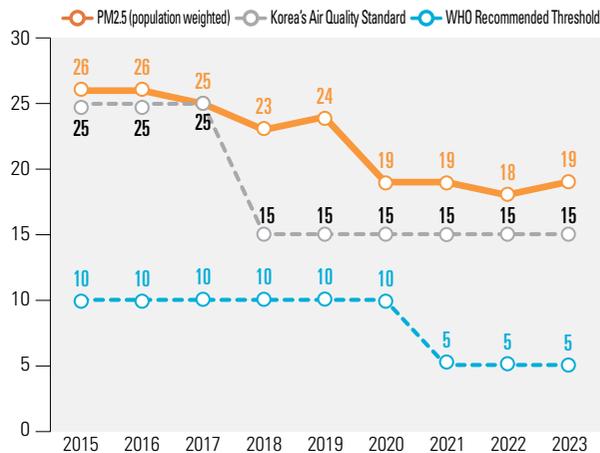
Source: National Institute of Environmental Research, 2023 Air Quality Yearbook
Note 1 : This is population-weighted average of annual fine particulate matter levels (μg/㎥) in 17 cities and provinces nationwide.
Note 2 : This is based on the annual average concentration of fine particulate matter in accordance with the Clean Air Conservation Act, and the threshold has been reinforced from 25μg/㎥ to 15μg/㎥ since March 2018.
Note 3 : This is based on the annual average concentration of fine particulate matter in accordance with the WHO 'Air Quality Guidelines (AQG),' and the threshold has been reinforced from 10μg/㎥ to 5μg/㎥ since March 2021.

concentration fine particulate matter in the mid-2010s, requiring the reinforcement of relevant policies. In response, a series of regulations were introduced, such as the Special Countermeasures against Fine Particulate Matter (2016), the Special Act on the Reduction and Management of Fine Dust (2018), the Seasonal Management System of Fine Dust (2019) and the 3rd Comprehensive Plan to Improve Air Quality, to ensure ongoing efforts to protect public health.

The population-weighted average pollution level caused by fine particulate matter (PM2.5) nationwide was recorded at 19 μg/㎥ in 2023. It gradually declined from 26μg/㎥ in 2015 and

85

Concentration of Fine Particulate Matter (PM$_{2.5}$) by OECD Country, 2022 (Unit: μg/㎥)
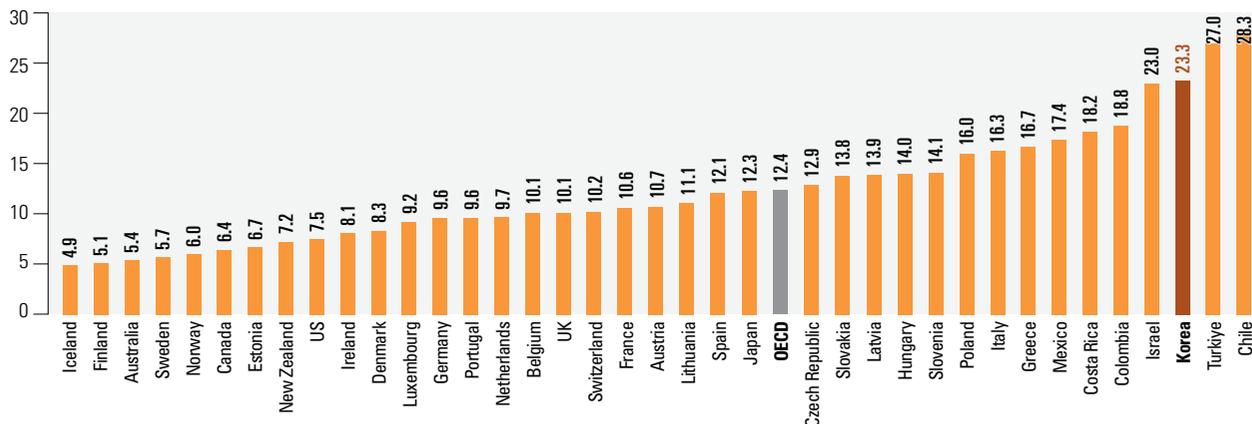
Source: This graph was created based on data from Sachs, J. D. et al., 2024, Sustainable Development Report 2024.
Note : The estimates in this graph are based on satellite images.

further decreased to 19μg/㎥ due to the spread of COVID-19 in 2020 and the resultant slowdown of industrial activities. Since then, it has stagnated without significant fluctuations. This still falls short of the national air quality standards (15 μg/㎥) and the threshold recommended by the WHO (AQG level, 5μg/㎥). In 2022, South Korea ranked 3rd in PM2.5 concentration among the 38 OECD countries. According to the OECD (2023), the number of premature deaths due to air pollution in 2019 amounted to 42.7 per 100,000 population, which is 1.48 times higher than the OECD average (28.9) and 9.28 time higher than Iceland which had the lowest mortality rate (4.6). Under the 3rd Comprehensive Plan to Improve Air Quality (2023-2032) devised at the end of 2022, the government set a goal to reduce annual average concentration of fine particulate matter nationwide to 13μg/㎥ by 2027 and 12 μg/㎥ by 2032. To this end, the government has been working to mitigate emissions from the industrial and transportation

sectors, reinforce public health management through health risk assessments, and address transboundary pollution coming from long distances in East Asia through international cooperation.

Need to expand spatial facilities, such as parks, to enhance satisfaction with residential environments (⟳ SDG 11.7.1)

This SDG aims to ensure universal access to public green spaces for the sustainability of cities and residential areas. Under the National Land Planning and Utilization Act, spatial facilities refer to squares, parks, green areas, recreational areas and public open spaces, which are designated and developed as infrastructure for leisure and welfare of residents in accordance with municipal and county plans. The area designated as spatial facilities nationwide in 2023 stood at 1,202㎢, of which 87.7% (1,054㎢) had been actually developed. The area designated as spatial facilities dropped by 17.3% in 2020 compared to

Area of Spatial Facilities Designated/Developed, 2016~2023 (Unit: ㎢, %)
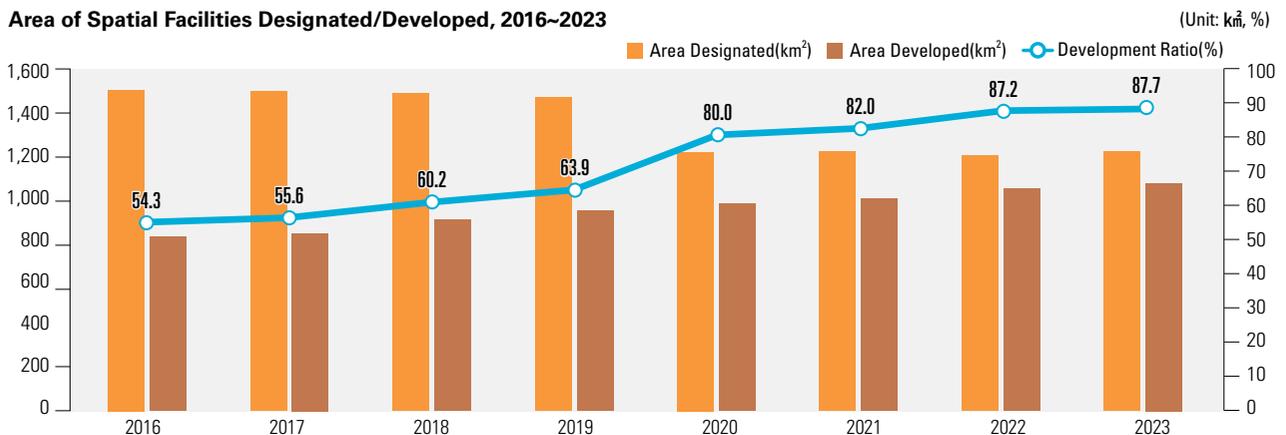
Source: Korea Land and Geospatial Informatix Corporation, Urban Planning Status (https://kosis.kr, retrieved on Jan 5, 2025)
Note : This graph shows the area designated or developed as spatial facilities (squares, parks, green areas, recreation areas, public open spaces) in accordance with municipal/county plans.

Park, Green, Recreational Areas Developed, 2014~2023 (Unit: ㎢, ㎡/person)
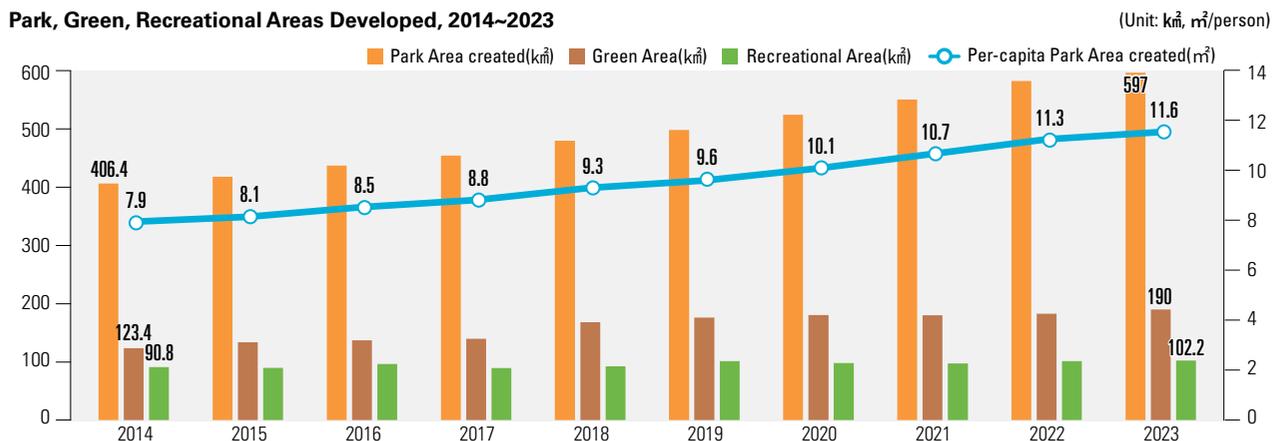
Source: Korea Land and Geospatial Informatix Corporation, 2024, 2023 Urban Planning Status

the previous year due to the Urban Park Sunset Program which lifted the designation of planned urban facilities that had remained undeveloped for more than 20 years. Despite this, the area actually developed has continued to increase. By facility type, the area of parks created saw an increase by 46.9% compared to 2014, reaching 597㎢ in total in 2023. The per-capita park area also grew from 7.9㎡ to 11.6㎡ during the same period. However, the per-capita park area created in Seoul was only 4.6㎡, which is less than half of the national average. Thus, continued efforts are needed to expand parks and green areas, so as to enhance the quality of urban environments and provide urban residents with more green areas for resting.

Expanding cities despite decreasing population (◎ SDG 11.3.1)

SDG 11.3.1 measures the ratio of land consumption rate to population growth rate, serving as an indicator to assess the pace of urban expansion relative to the speed of population change. This indicator helps determine whether a city is growing at an appropriate rate in line with a population increase. However, as it is based on the urban sprawl driven by population growth, caution is needed when interpreting data for regions with declining populations, such as South Korea.

Looking at the change in the populations of seven special and metropolitan cities and their urbanized area between 2010 and 2020, the urban population decreased in five cities, except for Incheon (6.9%) and Ulsan (0.7%), whereas the urbanized area increased in all seven cities. Notably, the growth rate of the urbanized area was as high as 14% in Incheon, Busan and Gwangju during the same period while it was just 2.1% to 6.0% in the remaining four cities. As a result, the ratio of land consumption rate to population growth rate stood at 8.96 in Ulsan and 2.21 in Incheon where the populations increased. It can be interpreted that the urbanized area grew faster than the speed of population growth over the past decade. This suggests inefficient land use considering the population growth. Meanwhile, Busan and Gwangju saw a population decrease or stagnation, but their urbanized areas significantly expanded. Therefore, in these cities, it is also necessary to assess land-use efficiency and implement mid/long-term strategies in response to the declining population.

Population Growth Rate and Land Consumption Rate in 2020, compared to 2010 (Unit: %)
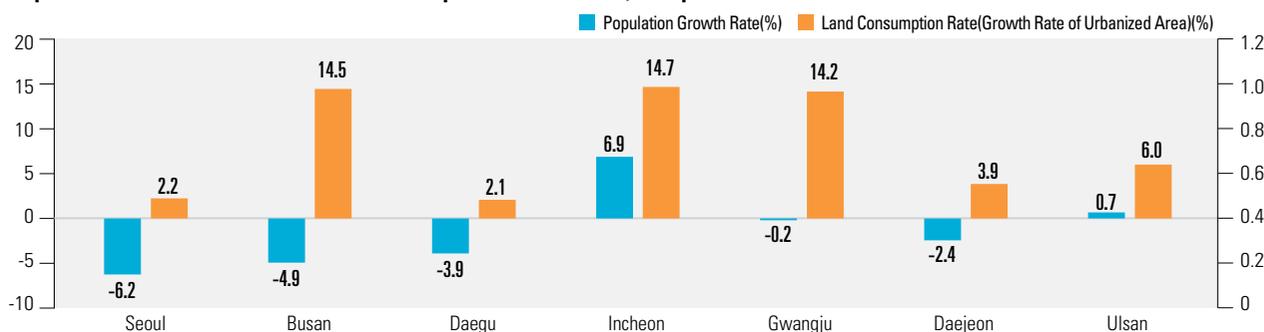
	Seoul	Busan	Daegu	Incheon	Gwangju	Daejeon	Ulsan
Ratio of Land Consumption Rate to Population Growth Rate	-0.35	-2.86	-0.52	2.21	-71.57	-1.56	8.96

Source: Korea Land and Geospatial Informatix Corporation, Urban Planning Status (https://kosis.kr, retrieved on Jan 17, 2025)
Note 1: The urban population refer to the population residing in urban areas (including residential, commercial, industrial and green areas) based on land zoning, out of registered population.
Note 2: The urbanized area was calculated as the sum of residential, commercial and industrial area out of urban areas, excluding green areas, based on land zoning.
Note 3: The population growth rate and land consumption rate are both expressed as % growth rate of the respective urban population and urbanized area.
Note 4: The population growth rate, calculated using natural logarithms, was used to come up with the ratio of land consumption rate to population growth rate.
Note 5: Caution is required when this graph is used since it could differ from figures estimated by the UN.

Definition

- **Minimum Residential Standards :** This refers to standards defined to assess the people's convenience of residential life, including the minimum residential area, the number of rooms per purpose, essential facilities, structure/performance and environments. These standards vary from country to country.
- **Spatial Facilities :** This refers to five facilities, namely squares, parks, green areas, recreational areas and public open spaces, which are essential physical facilities required to maintain urban functions.
- **Land Consumption Rate :** This is the degree of urbanization in a non-urban area, i.e., the growth rate of urbanized areas

Ensuring sustainable consumption and production patterns

SDG Goal 12 aims to enhance resource efficiency across the entire production, distribution, and consumption process, minimize pollutant emissions, and transition the economy toward a circular structure. Globally, food loss rates during production, processing, and wholesale stages reach 13.2%, while waste at the retail and consumption stages stands at 19%. Additionally, the rapidly growing issue of electronic waste remains far from resolution. In South Korea, there is a pressing need to manage and reduce food loss and waste throughout the supply chain while also improving recycling rates for municipal waste, particularly synthetic plastic waste. Meanwhile, fossil fuel subsidies, which had been gradually decreasing, have surged sharply in response to the recent global energy crisis.

» **In 2022, South Korea's per capita annual food waste generation was 108.0 kg, highlighting the need for enhanced reduction measures.**
  • Food loss at the production and manufacturing stages, including vegetable and animal residues, increased by 40.6% compared to 2011, necessitating reduction efforts across the supply chain.

» **The generation of hazardous waste has also continued to grow, reaching 120 kg per capita in 2022, up from 72.1 kg in 2011**
  • While the hazardous waste recycling rate has steadily increased since 2011, reaching 65.0% in 2022, recent progress has stagnated.

» **The overall recycling rate, encompassing municipal, industrial, and designated waste, stood at 77.9% in 2022—an increase of 9.1 percentage points compared to 2011. However, municipal waste had the lowest recycling rate at 56.9%.**
  • Synthetic plastic and paper waste constitute a significant portion of municipal waste but have relatively low recycling rates, highlighting the need for improvement.

» **In 2022, fossil fuel subsidies accounted for 0.43% of GDP, a relatively low level among OECD countries. However, the global energy crisis triggered by the war in Ukraine has led to a sharp increase in subsidies worldwide.**

» **With the enactment of the Act on Promotion of Transition to Circular Economy and Society at the end of 2022, various policy measures will be implemented to promote a circular economy across all stages, from production and distribution to usage, disposal, and reintegration as recycled materials.**

Rising food waste calls for intensified reduction efforts (⟳ SDG 12.3.1)

Food Loss and Waste (FLW) refers to the overall concept encompassing both the loss and disposal of food throughout the entire supply chain, from harvest to consumption. Food loss occurs during the production, processing, and wholesale distribution stages, while food waste refers to discarded food at the retail and consumer stages. In South Korea's waste statistics, food waste is classified as a specific type of waste, which is further divided into municipal waste and general business waste. Municipal waste includes food waste generated from residential homes, as well as from small restaurants and retail businesses that produce less than 300 kg of waste per day. General business waste includes waste from restaurants and retail businesses generating 300 kg or

more of waste per day. The UN SDG database categorizes food waste sources into households, food service, and retail sectors, but South Korea's waste statistics do not fully align with this classification.

As of 2022, South Korea's total food waste amounted to 5.55 million tons per year, with a per capita food waste generation of 108.0 kg annually. Per capita food waste increased steadily from 90.4 kg in 2013, peaking at 114.2 kg in 2018 before declining. However, in 2022, it rose again compared to the previous year. In waste classification, municipal waste includes not only food waste from residences but also an estimated 29% from small restaurants. Even considering this, households remain the largest source of food waste. SDG 12.3 aims to halve food waste at the retail and consumer levels, yet South Korea's food waste has recently

Food Waste Generation (Food Waste Volume) and Animal & Vegetable Residues, 2011–2022

(Unit: tons/year, kg/person/year)

Legend: ■ Food Waste (Municipal Waste)　■ Food Waste (General business Waste)　▢ Animal and Vegetable Residues　–○– Per Capita Food Waste (kg/person/year)

Per Capita Food Waste (kg/person/year) by year:
- 2011: 97.4
- 2012: 94.9
- 2013: 90.4
- 2014: 97.4
- 2015: 108.7
- 2016: 111.0
- 2017: 112.1
- 2018: 114.2
- 2019: 112.6
- 2020: 109.2
- 2021: 105.2
- 2022: 108.0
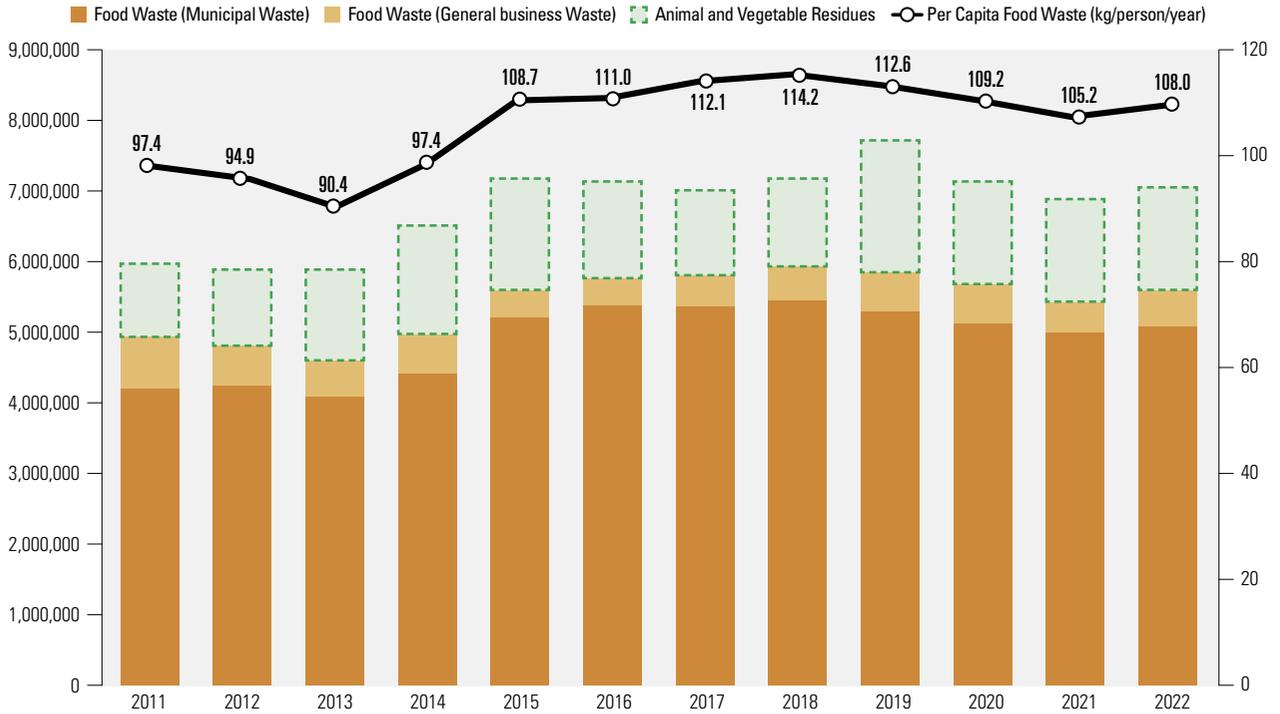
Source: Ministry of Environment, National Waste Generation and Treatment Statistics (https://kosis.kr, retrieved on January 18, 2025)
Note 1: Food waste includes both separately collected waste and mixed disposal under the volume-based waste fee system.
Note 2: Per capita food waste generation is calculated by dividing the total amount of municipal waste and general business waste by the registered population.
Note 3: Animal and vegetable residues are classified as regulated business waste. While some waste from the accommodation, food service, and retail sectors falls under this category, most is reported as general business food waste. As a result, only municipal and general business waste are included in food waste quantification.

Per Capita Food Waste by OECD Country, 2022

(Unit: kg/person/year)

Country	kg/person/year
Mexico	214.7
Canada	188.1
Australia	176.9
Israel	170.9
Portugal	168.0
Switzerland	167.4
Türkiye	162.7
US	158.6
Costa Rica	157.9
Chile	145.5
Colombia	137.0
Korea	133.4
Italy	132.5
Greece	122.1
Luxembourg	119.4
Austria	115.0
Germany	109.0
Latvia	109.0
Denmark	107.0
Norway	106.9
Iceland	104.1
New Zealand	103.6
Lithuania	98.0
Ireland	95.9
UK	95.2
France	89.0
Belgium	85.0
Estonia	84.2
Japan	80.6
Sweden	79.0
Czech Republic	79.0
Finland	77.0
Netherlands	76.0
Poland	73.0
Hungary	72.0
Spain	71.9
Slovakia	69.0
Slovenia	63.0

115.7 OECD

Source: UN, SDG Indicators Database (https://unstats.un.org/sdgs/dataportal, retrieved on November 2, 2024)
Note : The data for Korea is sourced from the UN SDG database and may differ from the official national statistics on food waste.

increased. Policies targeting reduction at the consumer level, particularly in households, are necessary. Since 2015, measures such as RFID(Radio-Fiequency Identification) based pay-as-you-throw (PAYT) systems and local government food waste reduction evaluation programs have been implemented. However, effective monitoring and enforcement are needed to ensure these policies achieve tangible reductions.

South Korea lacks precise statistics on food loss, but it is partially reflected in "animal and vegetable residues," a category within business waste that includes byproducts from food and beverage manufacturing. The volume of animal and vegetable residues increased by 40.6% in 2022 compared to 2011. The Ministry of Agriculture, Food, and Rural Affairs has identified upcycling food processing byproducts—which were traditionally used as animal feed or compost—as one of its top 10 food tech initiatives. This initiative encourages repurposing these byproducts for use in food production and industrial materials. To align these policy efforts with UN

SDG monitoring, it is essential to develop and manage food loss statistics systematically.

The per capita annual food waste of OECD countries collected in the UN SDG database averaged 115.7 kg across 38 member countries in 2022. In Korea, per capita annual food waste was reported as 133.4 kg, with 95.0 kg from households, 24.7 kg from the food service sector, and 13.7 kg from the retail sector. However, this figure is based on a research study rather than the official statistics of the Korean government. In contrast, Korea's official food waste statistics estimate per capita food waste at 108.0 kg, which is significantly lower than the UN SDG figure. Based on the domestic estimate of 108.0 kg, Korea's food waste generation is slightly below the OECD average and comparable to Denmark (107.0 kg) and Germany (109.0 kg). However, when compared to countries with significantly lower waste levels, such as the Netherlands (76.0 kg) and Japan (80.6 kg), there is room for further reduction in Korea's food waste.

Per Capita Hazardous Waste Generation and Share by Treatment Type, 2011~2022   (Unit: kg/Person/Year, %)

Legend: Recycling | Incineration | Landfilling | Other (including dewatering and shredding) | Per capita hazardous waste generation

Year	Recycling	Incineration	Landfilling	Other	Per capita hazardous waste generation
2011	57.1	18.2	18.7	6.1	72.1
2012	54.4	16.3	23.0	6.3	89.5
2013	59.1	17.1	19.1	4.7	88.6
2014	57.3	16.0	19.2	7.5	93.7
2015	57.5	16.3	19.9	6.3	94.9
2016	56.0	16.8	21.1	6.1	97.3
2017	56.2	15.1	21.8	6.8	105.1
2018	60.0	14.8	20.2	5.0	108.4
2019	62.5	14.5	18.2	4.8	109.5
2020	63.7	13.6	17.6	5.1	108.2
2021	65.3	13.5	14.7	6.5	115.8
2022	65.0	13.1	15.4	6.5	120.0

Source: Ministry of Environment, National Waste Generation and Treatment Status (https://kosis.kr, retrieved on January 18, 2025)
Note 1: Hazardous waste includes business-designated waste and medical waste.
Note 2: Per capita generation is calculated by dividing the total amount by the registered population.
Note 3: Until 2018, due to differences in statistical classification, the amount classified as "Other" was calculated by adding "Final Storage Amount" to "Other Treatment Amount" and subtracting "Carried-Over Amount from the Previous Year."

Per Capita Hazardous Waste Generation and Recycling Rate by OECD Country, 2020

(Unit: kg/person/year, %)

Generation

Recycling Rate
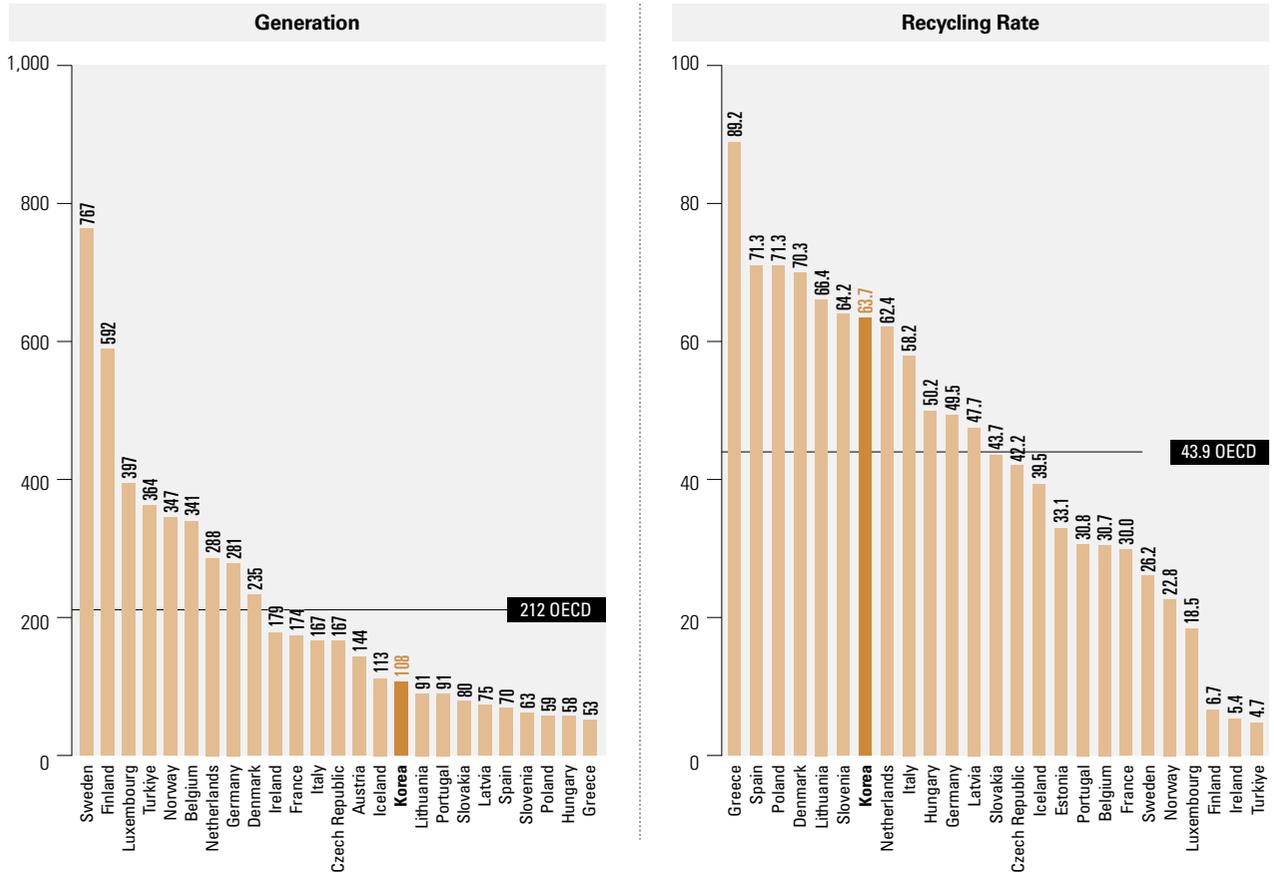
Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on November 2, 2024)
Note : The recycling rate data for Korea is based on domestic statistics from the Ministry of Environment, National Waste Generation and Treatment Status.

Business-Designated Waste Generation by Leading Industries, 2011~2022

(Unit: tons/year)

Manufacture of Medical Substances and Pharmaceuticals
Manufacture of Other Machinery and Equipment
Manufacture of Chemicals and Chemical Products (Excluding Pharmaceuticals)
Primary Metal Manufacturing
Manufacture of Electronic Components, Computers, Visual, Audio, and Communication Equipment

Source: Ministry of Environment, National Waste Generation and Treatment Status (https://kosis.kr, retrieved on November 2, 2024)
Note : Top five industries in terms of business-designated waste generation as of 2022.

Source: Ministry of Environment, National Waste Generation and Treatment Status (https://kosis.kr, retrieved on November 2, 2024)
Note : Top five types of business-designated waste generation as of 2022.

Increase in hazardous waste generation, while recycling rates remain stagnant (⟳ SDG 12.4.2)

Hazardous waste is classified as designated waste under Korean law and includes business-designated waste and medical waste. In 2022, Korea's per capita annual hazardous waste generation reached 120.0 kg, marking a 66.5% increase from 72.1 kg in 2011. In 2022, hazardous waste was processed primarily through recycling (65.0%), followed by landfilling (15.4%), incineration (13.1%), and other methods (6.5%). Korea's per capita hazardous waste generation is relatively low compared to other OECD countries. However, ongoing management is required to address the accumulation of landfill waste and the pollutants released from hazardous waste recycling and incineration facilities. Despite this, Korea maintains one of the highest hazardous waste recycling rates among OECD nations.

Examining the distribution of business-designated waste by industry in 2022, the manufacture of electronic components, computers, visual, audio, and communication equipment, primary metal manufacturing, and manufacture of chemicals and chemical products (excluding pharmaceuticals) each accounted for more than 15% of the total waste generated. The electronic components and related manufacturing industry, now the largest contributor, experienced an 82.2% increase in waste generation compared to 2011, rising from the second-largest source to the top position. Additionally, the manufacture of other machinery and equipment, which currently holds a 4.3% share, has shown a notable upward trend in recent years. In terms of waste composition, as of 2022, other waste organic solvents, waste oil, and waste acids each represented over 20% of the total hazardous waste generated. All three categories have seen significant growth, with increases of 90.5%, 57.0%, and 116.3%, respectively, compared to 2011.

Recycling rate remains high but stagnant, need to improve municipal waste recycling rate (⟳ SDG 12.5.1)

Korea's recycling rate, calculated by combining municipal waste, business waste, and designated waste (including medical waste), has generally increased from 68.8% in 2011 to 77.9% in 2022. By major waste source, the 2022 recycling rates were 56.9% for municipal waste, 67.7% for general business waste, 84.1% for regulated business waste,

Recycling Rates by Major Waste Source, 2011~2022

(Unit: %)
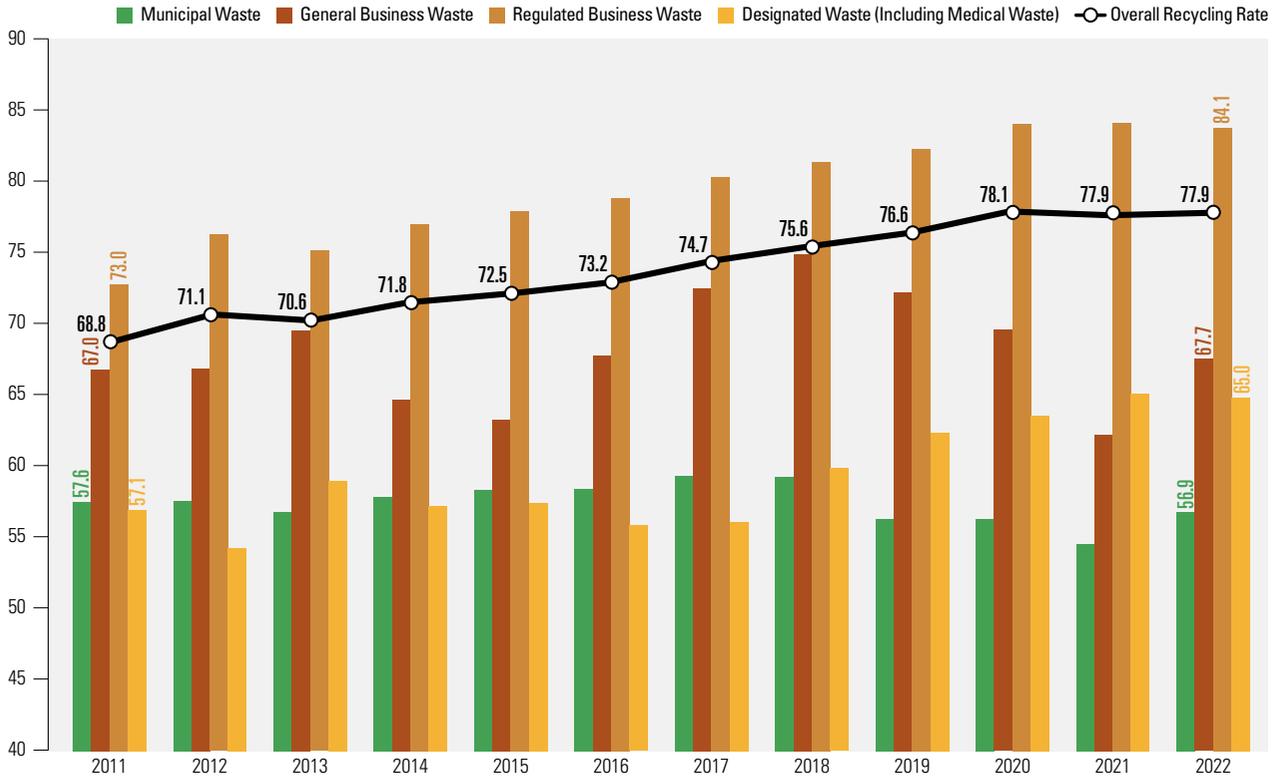
Legend: Municipal Waste | General Business Waste | Regulated Business Waste | Designated Waste (Including Medical Waste) | Overall Recycling Rate

Overall Recycling Rate values: 68.8 (2011), 71.1 (2012), 70.6 (2013), 71.8 (2014), 72.5 (2015), 73.2 (2016), 74.7 (2017), 75.6 (2018), 76.6 (2019), 78.1 (2020), 77.9 (2021), 77.9 (2022)

2011: Municipal 57.6, General Business 67.0, Regulated 73.0, Designated 57.1
2022: Municipal 56.9, General Business 67.7, Regulated 84.1, Designated 65.0

Source: Ministry of Environment, National Waste Generation and Treatment Status (https://kosis.kr, retrieved on November 2, 2024)

Recycling Rates and Share of Major Municipal Waste Categories, 2022

(Unit: %)
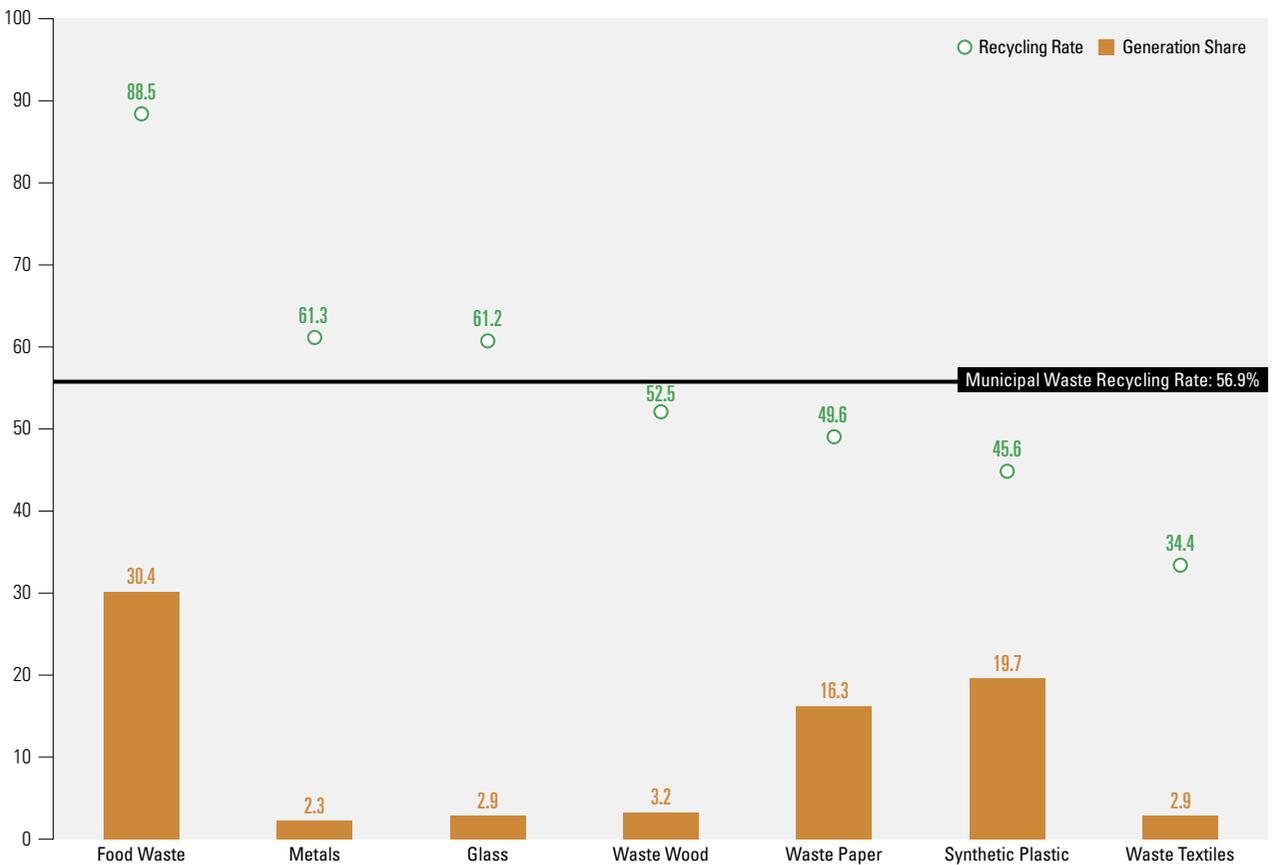
Legend: Recycling Rate | Generation Share

Municipal Waste Recycling Rate: 56.9%

Recycling Rate: Food Waste 88.5, Metals 61.3, Glass 61.2, Waste Wood 52.5, Waste Paper 49.6, Synthetic Plastic 45.6, Waste Textiles 34.4

Generation Share: Food Waste 30.4, Metals 2.3, Glass 2.9, Waste Wood 3.2, Waste Paper 16.3, Synthetic Plastic 19.7, Waste Textiles 2.9

Source: Ministry of Environment, National Waste Generation and Treatment Status (https://kosis.kr, retrieved on November 2, 2024)

Municipal Solid Waste Recycling Rates by OECD Country, 2021
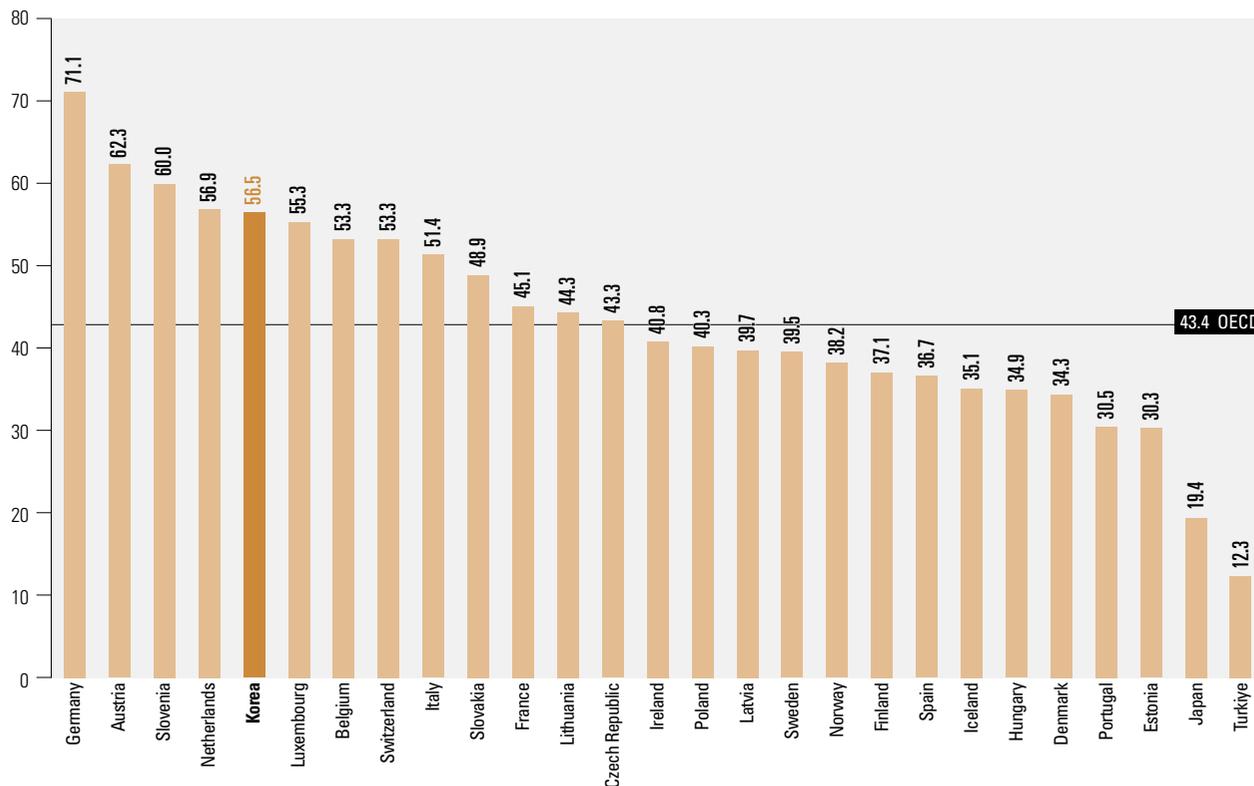
Source: UN, SDG Indicators Database (https://unstats.un.org/sdgs/dataportal, retrieved on August 1, 2024)
Note 1: Municipal solid waste includes municipal waste and general business waste.
Note 2: Data for Korea, Austria, the Netherlands, Italy, Ireland, Latvia, Iceland, Japan, and Türkiye is based on 2020 figures.

and 65.0% for designated waste (including medical waste). Among these, municipal waste had the lowest recycling rate. Since the 2010s, the municipal waste recycling rate has stayed between the mid and high 50% range. While it peaked at 59.5% in 2017, it has since declined again.

Among municipal waste, which has a relatively low recycling rate, the breakdown by major waste categories shows that textiles (34.4%), waste synthetic resins (45.6%), waste paper (49.6%), and waste wood (52.5%) have lower recycling rates than the average. Among these, synthetic plastic waste and waste paper account for 19.7% and 16.3% of total waste generation, respectively, making it even more crucial to improve their recycling rates.

According to the UN SDG database, Korea's municipal solid waste (MSW) recycling rate stands at 56.5%, significantly exceeding the OECD average of 43.4%, placing it among the top-performing countries. However, since Korea calculates its recycling rate based on the amount of waste received at recycling facilities, the actual recycling rate, which excludes residual waste, may be lower.

Increase in fossil fuel subsidies amid the energy crisis (◉ SDG 12.c.1)

The SDG 12.c target aims to gradually phase out inefficient fossil fuel subsidies that encourage energy waste. In 2022, Korea's fossil fuel subsidies as a percentage of GDP stood at 0.43%. While the ratio had remained around 0.10% since 2011, showing a gradual decline, it surged sharply in 2021 and 2022. This trend is not unique to Korea. According to the International Energy Agency (IEA), the global energy crisis triggered by Russia's invasion of Ukraine led to a record surge in fossil fuel subsidies worldwide. In 2022, government fossil fuel subsidies reached an all-time high of $1 trillion globally, double the previous year's amount and more than five times the level in 2020. Among the 29 OECD member countries with data collected in the UN SDG database from 2020 to 2022, Korea's fossil fuel subsidy ratio (2022) remains relatively low compared to other nations. However, the rate of increase in Korea has exceeded the OECD average in recent years.

Fossil Fuel Subsidies as a Percentage of GDP, 2011~2022

(Unit: %)

Year	Value
2011	0.14
2012	0.13
2013	0.14
2014	0.14
2015	0.12
2016	0.09
2017	0.09
2018	0.09
2019	0.09
2020	0.08
2021	0.15
2022	0.43
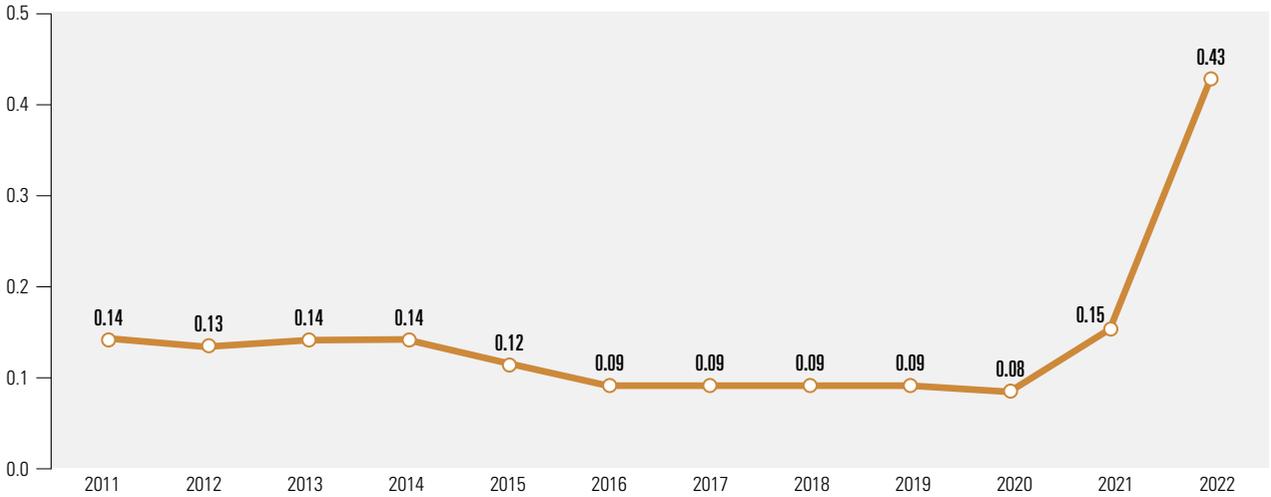
Source: UN, SDG Indicators Database (https://unstats.un.org/sdgs/dataportal, retrieved on July 29, 2024)

Fossil Fuel Subsidies as a Percentage of GDP by OECD Country, 2022

(Unit: %)

Legend: ■ Fossil Fuel Subsidies as a Percentage of GDP in 2022 ▲ Increase Factor in 2022 Compared to 2020

3.9 : OECD Average Increase Factor
1.0 OECD

Country	Fossil Fuel Subsidies (%)	Increase Factor
Mexico	3.59	3.9
Hungary	3.21	25.9
Netherlands	2.70	1.6
Italy	2.56	4.1
Colombia	2.29	5.9
Belgium	1.50	1.8
Portugal	1.35	4.1
France	1.11	3.5
Ireland	1.06	1.8
Spain	1.04	7.0
Estonia	1.02	6.9
Latvia	0.76	1.3
Lithuania	0.75	0.8
Sweden	0.70	2.2
Japan	0.66	13.0
Austria	0.64	4.5
Australia	0.57	1.1
Slovenia	0.51	2.8
Israel	0.49	1.6
Finland	0.47	0.8
Czech Republic	0.45	2.5
Korea	0.43	5.1
Costa Rica	0.29	2.2
Switzerland	0.29	1.4
Canada	0.25	1.1
Türkiye	0.19	0.6
New Zealand	0.13	2.7
Norway	0.08	1.1
Denmark	0.06	0.9

Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on July 29, 2024)
Note : Comparison of 29 countries with available data from 2020 to 2022

Supporting sustainable consumption and production through Act on Promotion of Transition to Circular Economy and Society
(⟳ SDG 12.1.1)

The Act on Promotion of Transition to Circular Economy and Society was enacted in December 2022 and came into effect on January 1, 2024. This legislation aims to establish a sustainable circular economy society by optimizing resource use across the entire product lifecycle—from production and distribution to consumption—minimizing waste generation, and promoting the recycling and reuse of materials. The law lays the institutional groundwork for incorporating circular materials, enhancing product recyclability, promoting the recycling of packaging materials, recognizing circular resources, and labeling products made from recycled materials. By ensuring resource circulation at every stage—from production and distribution to usage and disposal—it enables materials to be reintegrated as raw inputs for new products. A key aspect of this law is the circular resource system, which reclassifies certain low-risk, highly recyclable materials—previously considered waste—as circular resources. This exempts them from traditional waste regulations, promoting their reuse. The law also mandates policies to raise public awareness of the circular economy and foster a culture of resource circulation throughout society. In addition to managing recycling rates and final disposal rates (landfilling rates) as national indicators, the law introduces waste reduction rates as a key metric. This comprehensive approach is expected to strengthen resource circularity while improving key SDG Goal 12 indicators, particularly those related to food waste and hazardous waste reduction.

Definition
- **Municipal Waste :** Waste generated from households or small businesses that produce less than 300 kg per day
- **Business Waste :** Waste generated from businesses that produce 300 kg or more per day
- **General Business Waste :** Waste generated from businesses that is similar in nature to household waste
- **Regulated Business Waste :** Business waste generated in connection with the installation and operation of discharge facilities
- **Designated Waste :** A subset of business waste that includes hazardous materials such as waste oil, waste acids, and medical waste, which may pose risks to the environment or human health
- **Business-Designated Waste :** Designated waste excluding medical waste

Take urgent action to combat climate change and its impacts

Global temperatures continue to rise unabated, leading to extreme weather events and disasters worldwide. In 2022, global greenhouse gas emissions reached an all-time high. According to the Intergovernmental Panel on Climate Change (IPCC), the trajectory of future climate change will depend on the level of human intervention. Now is the time to intensify bold efforts to expand the possibilities for a more sustainable future. In South Korea, the decline in greenhouse gas emissions in 2022 offers a positive signal. However, there remains a pressing need to strengthen responses to the human toll of extreme weather events such as heatwaves and heavy rainfall.

>> **In 2022, total GHG emissions stood at 724.29 million tons of CO_2 equivalent, marking a 2.3% decrease from the previous year.**
  - Compared to the peak emissions in 2018, emissions declined by 7.6% even as real GDP grew by 8.7%.
  - Per capita emissions in 2022 were 14.0 tons, reflecting a 2.0% decrease from the previous year.
  - Emissions per unit of GDP continued to decline, reaching 367.9 tons per 1 billion KRW.

>> **In 2023, the number of missing and deceased persons due to natural disasters totaled 140, equating to 0.27 per 100,000 people.**
  - From 2018 to 2023, 62.8% of casualties resulted from heatwaves, while 28.7% were due to heavy rainfall, highlighting the need for stronger disaster response measures against climate change-induced extreme weather events.

>> **South Korea is actively developing and implementing disaster risk reduction (DRR)strategies in alignment with the Sendai Framework for Disaster Risk Reduction at both the national and local levels.**
  - Since 2019, the country has maintained a perfect score across all categories in the implementation of national disaster risk reduction strategies.
  - In accordance with the Countermeasures Against Natural Disasters Act, Framework Act on the Management of Disasters and Safety, Framework Act on Carbon Neutrality and Green Growth for Climate Crisis Response, all local governments have also established and are implementing disaster risk reduction strategies.

Greenhouse gas emissions in 2022 decreased by 2.3% compared to the previous year
(⟳ SDG 13.2.2)

In 2022, South Korea's total greenhouse gas emissions were recorded at 724.29 million tons of CO_2 equivalent, reflecting a 2.3% decrease from 740.98 million tons in 2021. After peaking in 2018, emissions declined by 3.1% in 2019 and 6.1% in 2020. However, due to economic recovery and base effects following the COVID-19 pandemic, emissions temporarily increased by 3.9% in 2021 before returning to a downward trend. The 2022 total emissions represent a 7.6% reduction compared to the 2018 peak of 783.87 million tons. Notably, while real GDP grew by 2.6% in 2022 compared to the previous year, greenhouse gas emissions continued to decline, indicating a decoupling of economic growth from emissions. Compared to 2018, real GDP increased by 8.7%, while total emissions decreased by 7.6%.

By sector, the energy sector accounted for 76.2% of the nation's total emissions in 2022, emitting 551.89 million tons, a 2.6% decrease from the previous year. The industrial processes sector recorded 131.26 million tons, representing 18.1% of total emissions, with a 1.1% decrease from the previous year. Meanwhile, emissions from the agriculture and waste sectors accounted for 3.2% and 2.5%, respectively, showing declines of less than 1% year-over-year. In the land use, land-use change, and forestry (LULUCF) sector, net emissions and removals also decreased by 3.0% from the previous year, reaching -37.83 million tons in 2022. Including these removals, South Korea's net greenhouse gas emissions for 2022 were calculated at 686.46 million tons.

In the energy sector, emissions from the steel industry decreased by 8.6 million tons due to operational shutdowns caused by Typhoon Hinnamnor and the global economic slowdown. The chemical industry also saw a reduction of

Greenhouse Gas Emissions by Sector, 1990~2022

(Unit: million tons CO$_2$eq.)
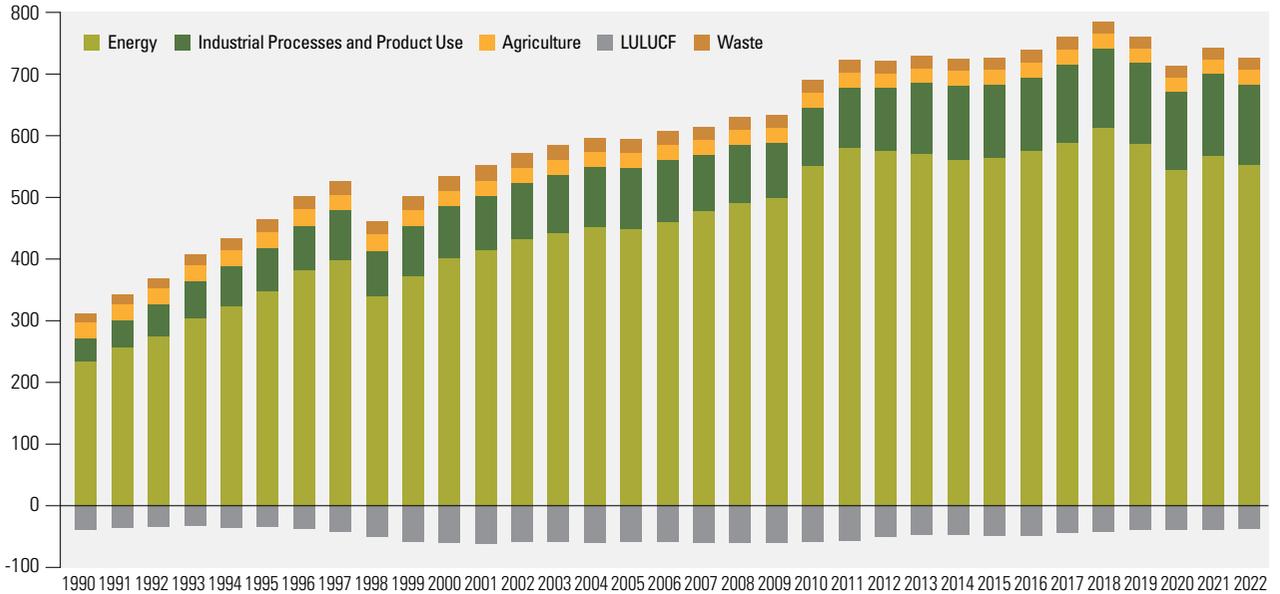
Legend: Energy · Industrial Processes and Product Use · Agriculture · LULUCF · Waste

Source: Ministry of Environment, Greenhouse Gas Inventory and Research Center, 2024 National Greenhouse Gas Inventory (https://www.gir.go.kr, retrieved on January 6, 2025)
Note   : Emissions calculated based on the 2006 IPCC Guidelines

Per Capita and GDP-Based Greenhouse Gas Emissions, 1990~2022

(Unit: tons CO$_2$eq. per person, tons CO$_2$eq. per billion KRW)
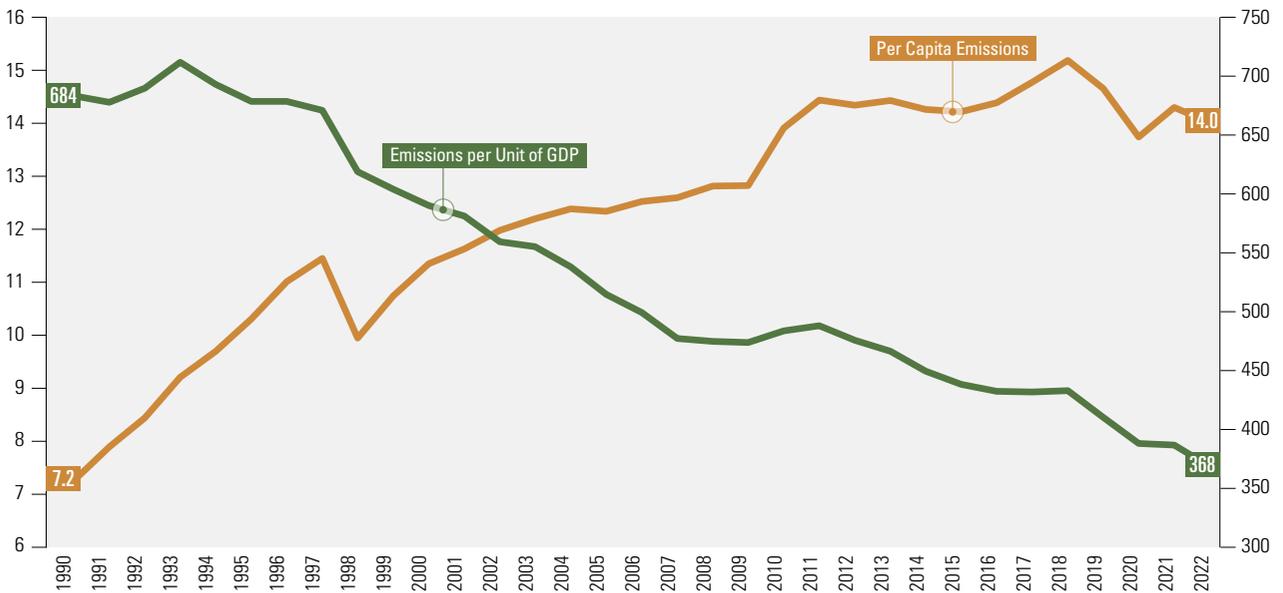
Per Capita Emissions

Emissions per Unit of GDP

684 ... 368

7.2 ... 14.0

Source: Ministry of Environment, Greenhouse Gas Inventory and Research Center, 2024 National Greenhouse Gas Inventory (https://www.gir.go.kr, retrieved on January 6, 2025)
Note   : Emissions calculated based on the 2006 IPCC Guidelines

2.7 million tons, primarily due to the expansion of global production facilities and a decline in operating rates at domestic naphtha cracking facilities (NCCs). In the power and heat generation sector, emissions fell by 2.6 million tons as coal and gas power generation declined while nuclear and renewable energy sources increased. In the industrial processes sector, emissions from the electronics industry

decreased by 1.9 million tons due to improved efficiency in fluorinated greenhouse gas (F-gas) reduction systems. However, emissions in the refrigeration and air conditioning sector recorded a 2.8 million-ton rise in emissions, driven by the increased net consumption of HFCs, as an ozone-depleting substances (ODS) substitute. Additionally, emissions from the forestry sector increased by 1.1 million

Differences in Greenhouse Gas Emissions by Estimation Guidelines, 1990–2022
(Unit: thousand tons CO_2eq.)
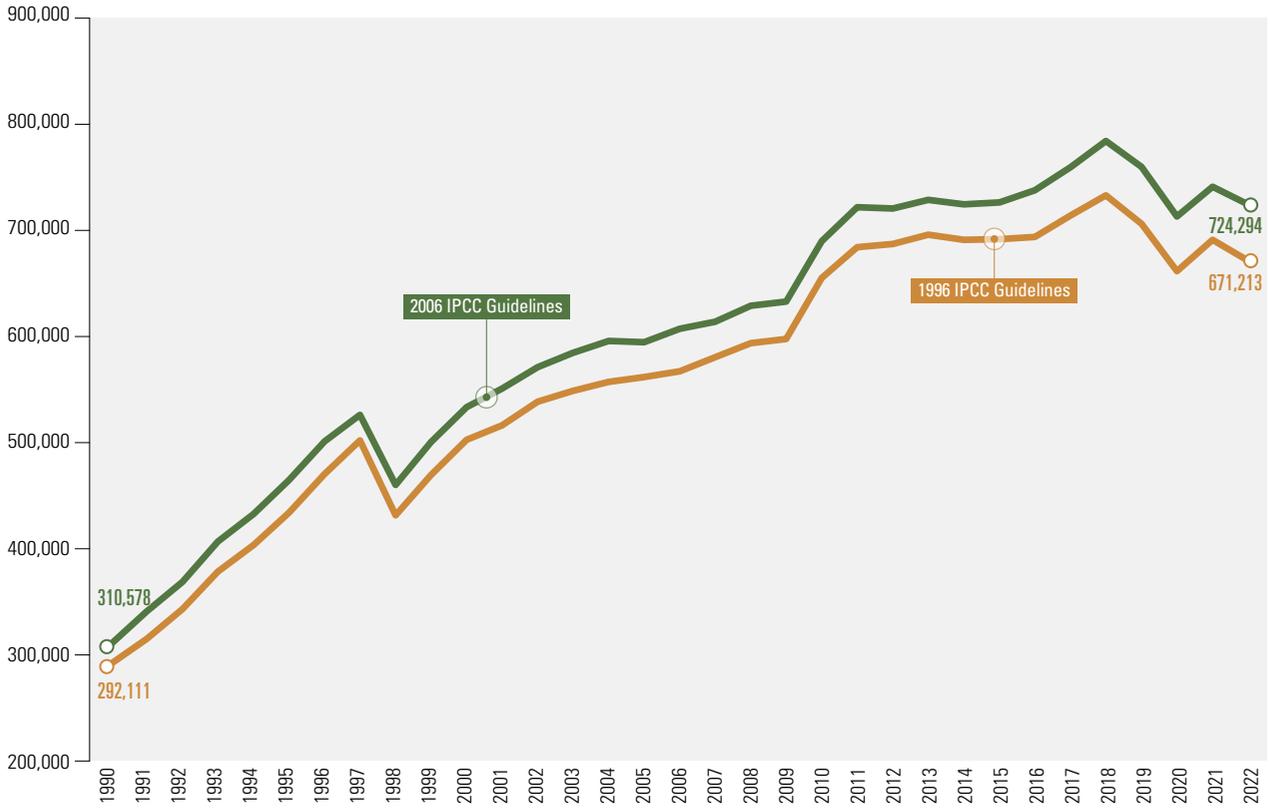
2006 IPCC Guidelines
1996 IPCC Guidelines

310,578
292,111
724,294
671,213

Source: Ministry of Environment, Greenhouse Gas Inventory and Research Center, 2024 National Greenhouse Gas Inventory (https://www.gir.go.kr, Retrieved on January 6, 2025)

Total Greenhouse Gas Emissions by OECD Country, 2021
(Unit: thousand tons CO_2eq.)

Country	Emissions
US	6,340,228
Japan	1,162,196
Germany	759,600
Korea	676,648
Canada	670,428
Turkiye	564,390
Australia	527,276
UK	429,489
Italy	413,125
France	411,626
Poland	399,369
Spain	288,509
Netherlands	167,072
Czech Republic	119,425
Belgium	110,196
New Zealand	81,809
Israel	78,663
Greece	78,004
Austria	77,360
Hungary	63,745
Ireland	61,755
Portugal	56,302
Norway	49,255
Sweden	47,723
Finland	47,604
Switzerland	45,138
Denmark	43,569
Slovakia	41,206
Lithuania	20,214
Slovenia	16,074
Estonia	12,579
Latvia	10,747
Luxembourg	9,383
Iceland	4,631

Source: OECD, OECD Data Explorer (https://data-explorer.oecd.org, 2024.10.27. retrieved on October 27, 2024)

Per Capita Greenhouse Gas Emissions by OECD Country, 2021

(Unit: tCO$_2$eq. per person)

Country	Value
Australia	20.5
US	19.1
Canada	17.5
New Zealand	16.0
Luxembourg	14.7
Korea	**13.1**
Iceland	12.4
Ireland	12.3
Czech Republic	11.4
Poland	10.5
Belgium	9.5
Netherlands	9.5
Estonia	9.5
Japan	9.3
Germany	9.1
Norway	9.1
Austria	8.6
Finland	8.6
Israel	8.4
Slovenia	7.6
Slovakia	7.6
Denmark	7.4
Greece	7.4
Lithuania	7.3
Italy	7.0
Türkiye	6.7
Hungary	6.6
UK	6.4
Spain	6.1
France	6.1
Latvia	5.7
Portugal	5.4
Switzerland	5.2
Sweden	4.6

Source: OECD, OECD Data Explorer (https://data-explorer.oecd.org, retrieved on October 27, 2024)

Greenhouse Gas Emissions per GDP by OECD Country, 2021

(Unit: tCO$_2$eq. per 1,000 USD)

Country	Value
Australia	0.412
New Zealand	0.392
Canada	0.387
Poland	0.312
US	0.309
Korea	**0.302**
Czech Republic	0.298
Greece	0.262
Estonia	0.260
Iceland	0.248
Slovakia	0.223
Japan	0.221
Türkiye	0.213
Israel	0.207
Slovenia	0.203
Hungary	0.201
Lithuania	0.195
Belgium	0.195
Latvia	0.191
Finland	0.187
Germany	0.184
Italy	0.179
Netherlands	0.175
Austria	0.170
Spain	0.170
Portugal	0.169
UK	0.148
Norway	0.144
France	0.143
Denmark	0.136
Luxembourg	0.130
Ireland	0.122
Sweden	0.088
Switzerland	0.075

Source: OECD, OECD Data Explorer (https://data-explorer.oecd.org, retrieved on October 27, 2024)

tons, largely due to the impact of large-scale wildfires in Uljin.

As total emissions declined, per capita greenhouse gas emissions also returned to a downward trend, reaching 14.0 tons in 2022, a 2.0% decrease from the previous year. With the population decreasing slightly by 0.2%, the larger reduction in total emissions led to a further decline in per capita emissions.

Despite the increase in total emissions in 2021 due to economic recovery and base effects, emissions per unit of GDP continued to decrease, falling 0.4% from the previous year. In 2022, this trend accelerated, with a 4.7% decline, bringing emissions per 1 billion KRW of GDP to 367.9 tons. This indicates improved emission efficiency, as total emissions declined despite economic growth, leading to a more sustainable emissions intensity.

The "2024 National Greenhouse Gas Inventory (1990–2022)," released in early 2025, presents emissions data calculated under the latest international standards established by the Paris Agreement, specifically adhering to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Consequently, emissions estimated using the updated guidelines show a slight increase compared to those previously calculated under the 1996 IPCC Guidelines. The 2006 guidelines introduced several key revisions, including the addition of nitrogen trifluoride (NF_3) as a recognized greenhouse gas, updates to global warming potential (GWP) values, and the inclusion of new emission sources such as abandoned mines and urea-based diesel exhaust fluid (DEF). Furthermore, enhancements in oxidation rates, calculation methodologies, and emission factors, along with improved baseline statistical data, were incorporated to increase the accuracy and reliability of emission estimates.

As of 2021, greenhouse gas emissions among OECD countries are comparable. Due to post-COVID-19 economic recovery and base effects, emissions increased in most OECD countries, including South Korea, compared to the previous year. South Korea's total emissions in 2021 amounted to 676.65 million tons, ranking 4th among 34 OECD member countries with available data, following the United States (6,340.23 million tons), Japan (1,162.2 million tons), and Germany (759.6 million tons). In 2020, South Korea ranked 5th, following the United States, Japan, Germany, and Canada, but in 2021, it moved up one position, narrowly surpassing Canada (670.43 million tons).

South Korea's per capita emissions in 2021 stood at 13.1 tons, ranking 6th among OECD countries, following Australia (20.5 tons), the United States (19.1 tons), Canada (17.5 tons), New Zealand (16.0 tons), and Luxembourg (14.7 tons), maintaining the same ranking as in 2020. Similarly, South Korea's emissions per $1,000 of GDP were 0.302 tons, ranking 6th after Australia (0.412 tons), New Zealand (0.392 tons), Canada (0.387 tons), Poland (0.312 tons), and the United States (0.309 tons), also unchanged from 2020.

Enhanced response measures needed to mitigate damages from extreme weather events such as heatwaves and heavy rainfall (⊘ SDG 13.1.1)

SDG Target 13.1 aims to strengthen adaptive and resilience capacities in response to climate-related risks and natural disasters. While the number of casualties from natural disasters fluctuates annually, the overall trend over the past two decades indicates a decline in missing and deceased persons due to such events. This decrease can be attributed to improved forecasting and warning systems, as well as faster and more efficient rescue operations.

Since 2018, heatwaves have been included in natural disaster casualty statistics, leading to a rise in reported victims. However, the number of missing and deceased persons per 100,000 people had remained below 0.15 since 2012. In 2023, however, the total number of casualties from natural disasters surged to 140, raising the figure to 0.27 per 100,000 people, marking a significant increase.

Among natural disasters, fatalities caused by heatwaves have been recorded annually since 2018, with 48 deaths in 2018, 30 in 2019, 29 in 2020, 39 in 2021, and 34 in 2022. In 2023, however, the number surged to 85, marking the highest heatwave-related death toll since heatwaves were officially classified as natural disasters. Consequently, the proportion of heatwave-related casualties among all missing and deceased persons in 2023 rose sharply to 60.7%, and over the period 2018–2023, heatwaves accounted for 62.8% of the 422 total casualties, highlighting the need for continued attention and response measures. Meanwhile,

Number of Deaths and Missing Persons Attributed to Disasters per 100,000 population, 1998~2023 (Unit: persons per 100,000 population)
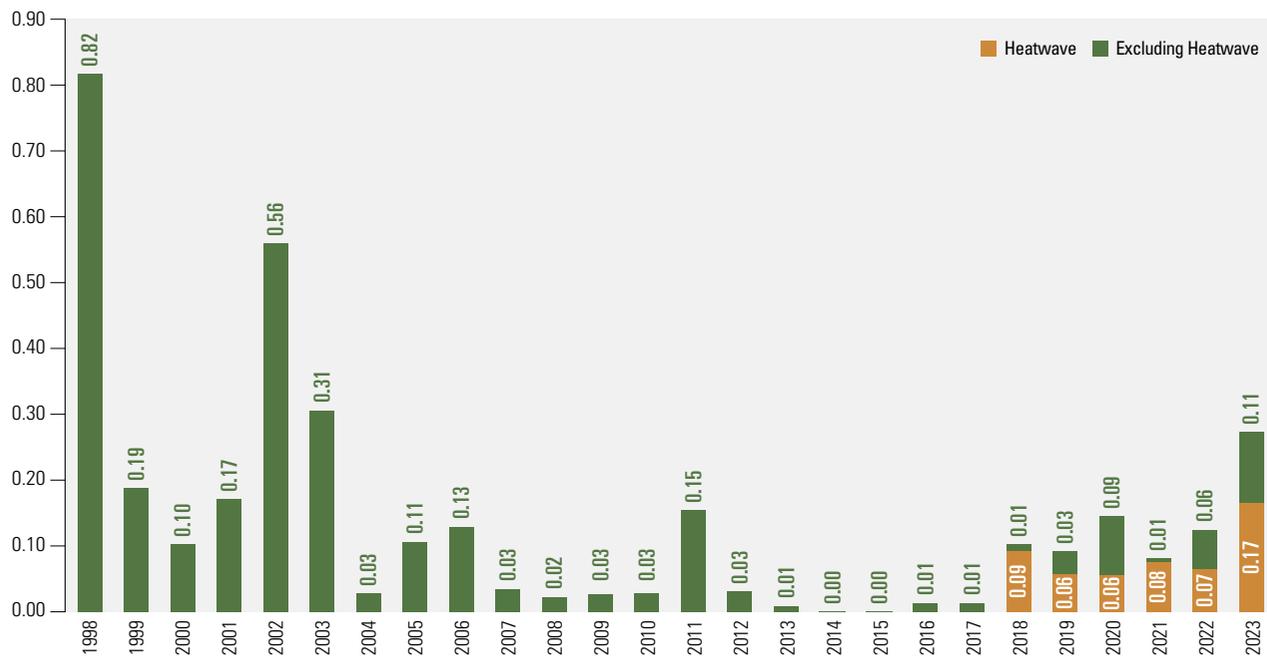
Source: Ministry of the Interior and Safety, Disaster Yearbook (Retrieved on February 10, 2025)
Note 1: The number of missing and deceased persons due to natural disasters is calculated by dividing the annual casualties by the registered population of the corresponding year.
Note 2: Since 2018, casualties caused by heatwaves have been included.

Number of Deaths and Missing Persons by Type of Natural Disaster, 2014~2023 (Unit: persons)

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heavy Rainfall	2	-	1	7	2	-	44	3	19	53
Typhoon	-	-	6	-	2	18	2	-	11	-
Typhoon & Heavy Rainfall	-	-	-	-	1	-	-	-	-	-
Heavy Snowfall	-	-	-	-	-	-	-	-	-	-
Cold Wave	Not Accounted For									2
Heatwave	Not Accounted For				48	30	29	39	34	85
Total	2	0	7	7	53	48	75	42	64	140

Source: Ministry of the Interior and Safety, Disaster Yearbook (Retrieved on February 10, 2025)

in 2023, 53 out of 140 casualties (37.9%) resulted from heavy rainfall, making it the second leading cause of natural disaster-related deaths after heatwaves. Between 2018 and 2023, 28.7% of all casualties were attributed to heavy rainfall, further underscoring the risks posed by extreme precipitation. With climate change intensifying, the frequency and severity of extreme weather events such as heatwaves and heavy rainfall are expected to rise, increasing the likelihood of disasters. As the impacts of extreme weather vary by region, a multifaceted approach is essential to enhancing regional climate adaptation capacities and

strengthening localized disaster response efforts.

Among the 21 OECD countries with available data from 2020 to 2022, South Korea recorded 9.9 casualties per 100,000 people in 2021, ranking 9th in terms of natural disaster-related human losses (missing, deceased, and directly affected persons). Three countries reported over 100 casualties per 100,000 people, with Lithuania (251.84 in 2021), the United States (139.66 in 2021), and Portugal (116.82 in 2021) experiencing the highest impacts. Following these, Denmark (77.01 in 2022), Sweden (66.88 in 2022), Switzerland (52.70 in 2021), New Zealand (46.28

Casualties from Natural Disasters by OECD Country, 2022　　　　　　　　　　　　　　　(Unit: persons per 100,000 population)

Country	Value
Lithuania	251.84
US	139.66
Portugal	116.82
Denmark	77.01
Sweden	66.88
Switzerland	52.70
New Zealand	46.28
Australia	28.23
Korea	9.90
France	3.05
Colombia	0.45
Mexico	0.41
UK	0.16
Türkiye	0.14
Austria	0.12
Japan	0.12
Italy	0.08
Chile	0.01
Costa Rica	0.00
Hungary	0.00
Slovenia	0.00
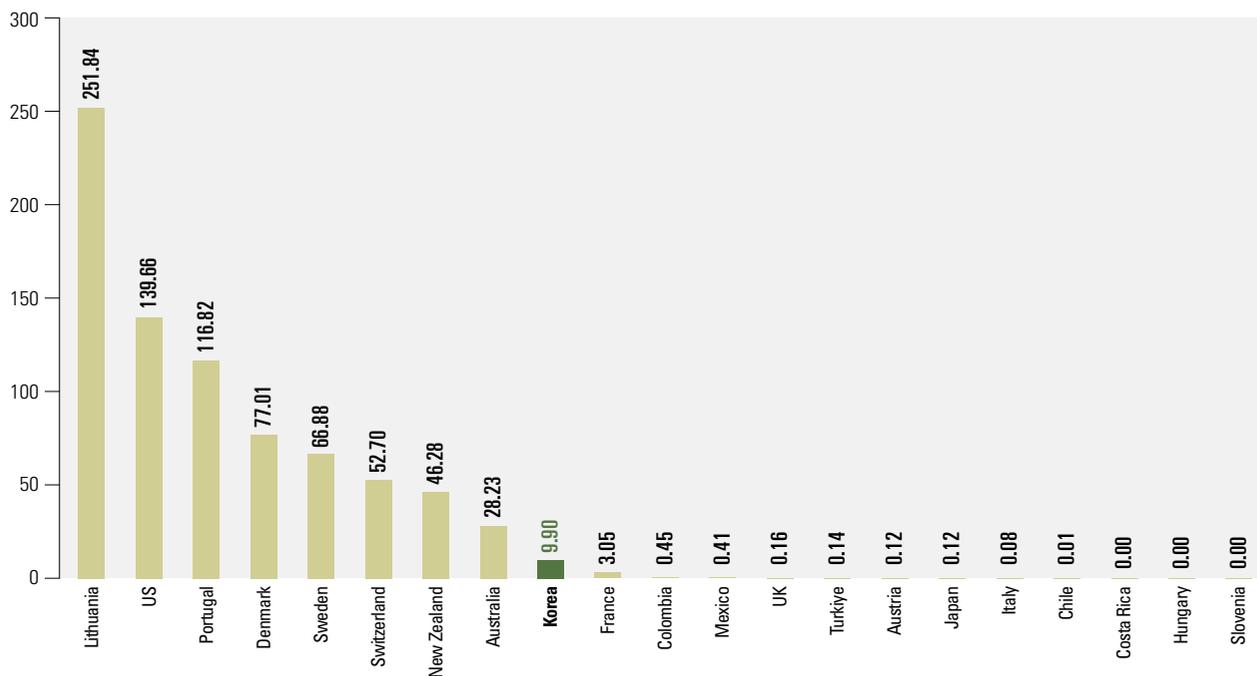
Source: UN, SDG Indicators Database (https://unstats.un.org/sdgs/dataportal, retrieved on January 21, 2025)
Note 1: This data includes both natural and human-induced disasters, accounting for direct impacts such as injuries, along with deaths and missing persons.
Note 2: The data for South Korea, Lithuania, the United States, Portugal, Switzerland, Türkiye, and Japan is from 2021, while France, the United Kingdom, and Austria have data from 2020.

in 2022), and Australia (28.23 in 2022) recorded the next highest casualty rates.

Ongoing implementation of national and local policies for disaster risk reduction
(⟳ SDG 13.1.2/ 13.1.3)

The United Nations Office for Disaster Risk Reduction (UNDRR) holds the World Conference on Disaster Risk Reduction (WCDRR) every ten years. In 2015, during the third WCDRR, the Sendai Framework was introduced as a global strategy for disaster risk reduction. The Sendai Framework sets an expected outcome of achieving a substantial reduction in loss of lives, livelihoods, and health, as well as in the economic, physical, social, cultural, and environmental losses experienced by individuals, businesses, communities, and nations by 2030. To achieve this, the framework outlines seven global targets. Under SDG indicator 13.1.2, countries are assessed on whether they have adopted and implemented national-level disaster risk reduction strategies in line with the Sendai Framework. Additionally, SDG indicator 13.1.3 examines whether local governments have developed and implemented their own

disaster risk reduction strategies in accordance with national frameworks.

The implementation score of national disaster risk reduction (DRR) strategies is evaluated based on ten key criteria, assessing whether the strategies: ① Have different timescales, with clearly defined targets, indicators, and time frames ② Aim at preventing the creation of new risks ③ Aim at reducing existing risks ④ Aim at strengthening economic, social, health, and environmental resilience ⑤ Address the recommendations of understanding disaster risk ⑥ Address the recommendations of strengthening disaster risk governance to manage disaster risk ⑦ Address the recommendations of investing in disaster risk reduction for resilience ⑧ Address the recommendations of enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction ⑨ Promote policy coherence relevant to disaster risk reduction such as sustainable development, poverty eradication, and climate change, notably with the SDGs and the Paris Agreement ⑩ Have mechanisms to follow-up, periodically assess and publicly report on progress. Each element is scored on a five-point scale (0, 0.25, 0.5, 0.75, and 1), and
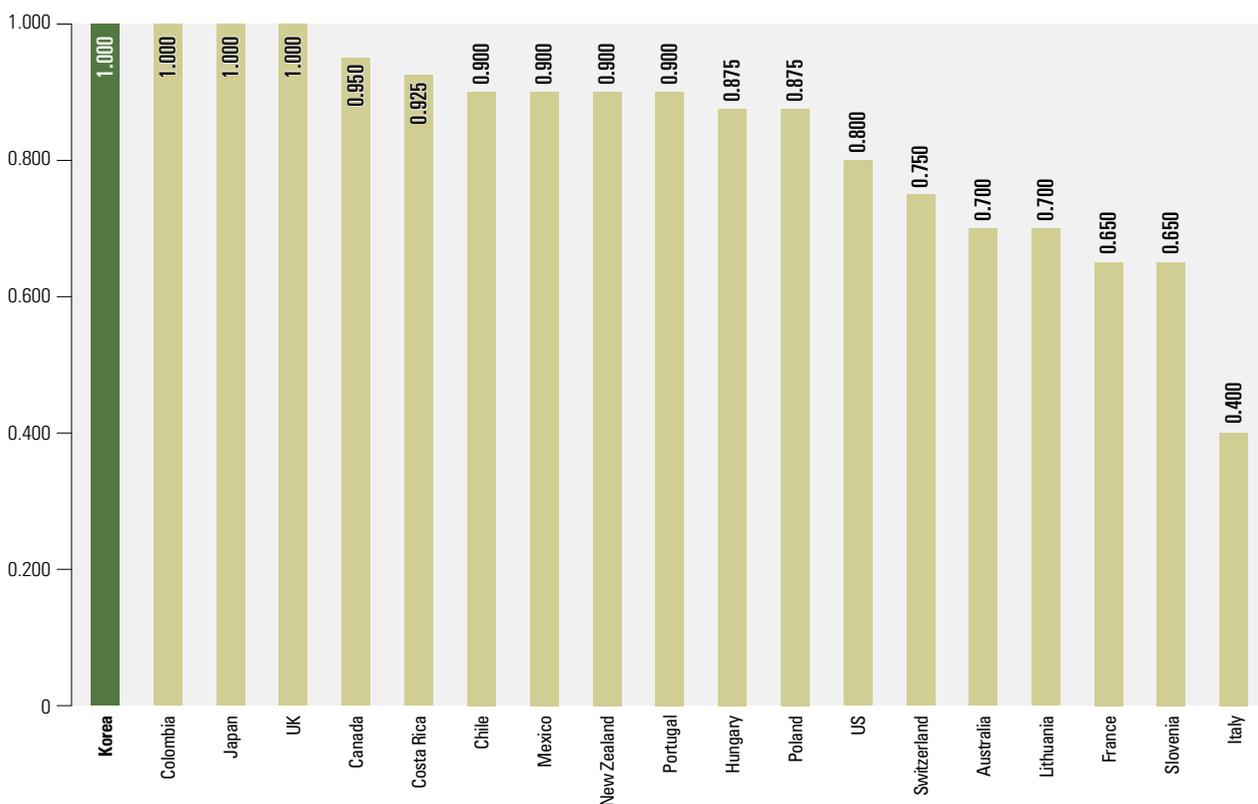
Source: UN, SDG Indicators Database (https://unstats.un.org/sdgs/dataportal, retrieved on September 12, 2024)

the average score across all elements determines the national disaster risk reduction (DRR) strategy implementation score.

In this assessment, South Korea received a score of 0.95 from 2015 to 2018 but has maintained a perfect score of 1.0 across all ten elements since 2019. During 2015–2018, South Korea scored 0.5 in Element 9 (Policy Coherence); however, it now fully meets this criterion by establishing and implementing policies and plans related to natural and man-made disasters, as well as climate crisis adaptation, under multiple legal frameworks, including the Framework Act on the Management of Disasters and Safety, the Countermeasures Against Natural Disasters Act, and the Framework Act on Carbon Neutrality and Green Growth for Climate Crisis Response.

According to the UN SDG Database, as of 2021, 19 out of 38 OECD countries had available DRR strategy implementation scores. South Korea, along with Japan, the United Kingdom, and Colombia, received a perfect score of 1.0. Other countries with relatively high scores above 0.9 included Canada (0.950), Costa Rica (0.925), Chile, Mexico, New

Zealand, and Portugal (each 0.900). In contrast, Italy (0.400), France, and Slovenia (each 0.650) received lower evaluations.

In South Korea, disaster response measures are established under the Framework Act on the Management of Disasters and Safety and the Countermeasures Against Natural Disasters Act. Article 3(1) of the Framework Act on the Management of Disasters and Safety defines a "disaster" as an event that causes or may cause harm to the lives, bodies, and property of the people, as well as damage to the nation. Based on this definition, natural disasters include typhoons, floods, heavy rain, strong winds, high waves, tsunamis, heavy snowfall, cold waves, lightning, droughts, heatwaves, earthquakes, yellow dust, harmful algal blooms, tidal variations, volcanic activity, and the fall or collision of natural space objects. Additionally, social disasters encompass fires, collapses, explosions, aviation, maritime, and traffic accidents, chemical, biological, and radiological incidents, environmental pollution accidents, mass crowd incidents, the spread of infectious diseases or animal epidemics, fine dust pollution, and the fall or collision of artificial space objects.

Proportion of Local Governments that Adopt and Implement Local DRR Strategies by OECD Country, 2021   (Unit: %)
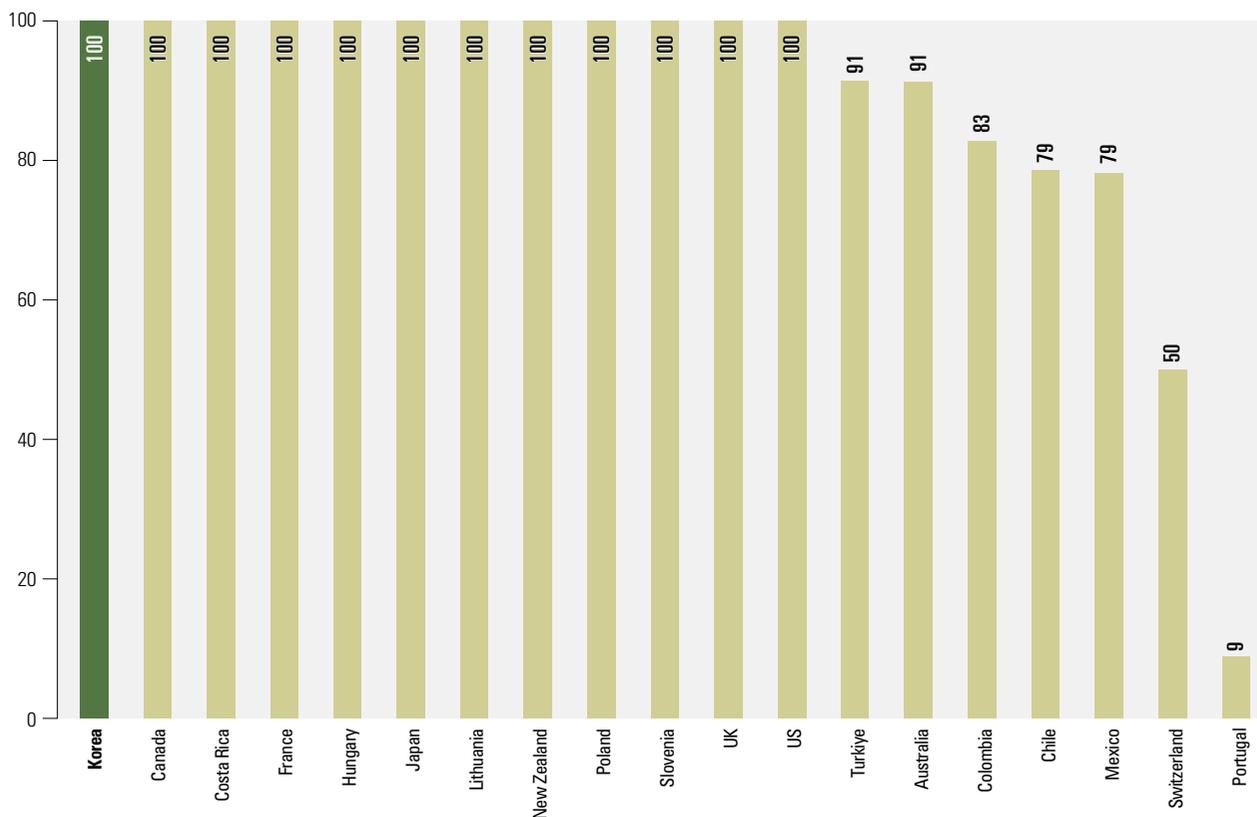
To protect the nation and its people from disasters, provincial governors, mayors, county governors, and district chiefs are required to establish basic safety management plans and comprehensive natural disaster mitigation plans for their respective jurisdictions. The law mandates the formulation of various disaster risk reduction (DRR) strategies, including the operation of safety management organizations, the development and implementation of disaster crisis management manuals, the establishment and execution of basic disaster preparedness training plans, the designation of high-risk areas for natural disasters and the formulation of mitigation plans, the development of comprehensive flood and stormwater management plans, the implementation of measures to reduce urban stormwater runoff, and the creation and utilization of disaster risk maps. Additionally, under the Framework Act on Carbon Neutrality and Green Growth for Climate Crisis Response, local governments are required to develop and implement climate crisis adaptation plans. Accordingly, local-level DRR strategies are being established and executed to prevent and mitigate the impacts of natural disasters, social disasters, and climate change.

SDG Indicator 13.1.3 assesses the proportion of local governments that have adopted disaster risk reduction (DRR) strategies in line with national strategies. Under South Korea's legal and institutional framework, all 17 metropolitan governments and 226 municipal governments have established DRR-related plans, maintaining a 100% implementation rate since 2015. According to the UN SDG Database, as of 2021, data from 19 OECD member countries is available. Among them, 12 countries, including South Korea, the United States, the United Kingdom, and Japan have achieved 100% local government DRR strategy adoption.

14 LIFE BELOW WATER
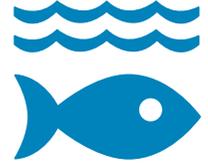
Conserve and sustainably use the oceans, seas, and marine resources for sustainable development

SDG 14 aims to conserve marine ecosystems and manage fishery activities and resources in a sustainable manner. Oceans around the globe have faced various challenges, such as acidification, rising water temperatures, eutrophication, pollution, and the depletion of fishery resources. In the waters off the Korean Peninsula, negative signs have also been observed, such as rising temperatures, a decline in fishery production and marine acidification. In response, the government has engaged in policy efforts to enhance sustainability, including the expansion of the Total Allowance Catch (TAC), Fish Stock Rebuilding Project and reinforced implementation of international regulations on deep-sea fisheries.

» **According to the marine environmental measuring network, ocean acidification stayed within an annual average range of pH 8.10 to pH 8.17 from 2011 to 2023.**
- The long-term monitoring of ocean acidification showed that the pH level of surface waters in Korea declined about by 0.019 every 10 years, which is similar to the rate of acidification in Japan and oceans around the world.
- Ocean acidification in 21 OECD countries was reported to range from pH 7.71 to pH 8.24 on average per country.

» **The R&D budget for marine fisheries began to see a distinct increase in 2011, and reached a record high of 915.2 billion KRW in 2023 before sharply falling to 751.8 billion KRW in 2024. This mostly aligns with the changing pattern of the government's overall R&D budget.**
- Out of the government's R&D budget, the share for marine fisheries ranged from 2.84% to 2.94% from 2020 to 2024, but this represents a decline from the 3% range observed from 2013 to 2019.
- The share of the R&D budget for marine fisheries out of total R&D expenditures in both the private and public sectors remained between 0.7% and 0.8% from 2011 to 2023.

» **The amount of marine waste collected by the central and local governments has increased over the past decease, reaching 131,931 tons in 2023, with a y-o-y increase of 4.7%.**
- In 2023, 50.1% by weight of marine waste in South Korea.

» **The coastal and offshore fishery production continued to decline from an annual average of 1.51 million tons in the 1980s to 0.93 million tons in the 2020s.**
- The government has engaged in policy efforts based on the Fish Stock Rebuilding Plan to restore and sustainably manage overfished fishery resources.
- The Total Allowance Catch (TAC) expanded its coverage to include 15 fishery species and 17 fishery types in 2024, and it is expected to cover all fishing vessels in 2027 for the first time in the world.

» **The government has implemented policies to eliminate IUU fishing in deep-sea fisheries and comply with international regulations, such as the provision of compliance information, monitoring reinforcement and the expansion of human resources.**
- The number of illegal, unreported and unregulated (IUU) fishing activities conducted in deep-sea fisheries was 'none' in both 2022 and 2023.

The annual average pH of seawater remained between 8.10 and 8.17 (◐ SDG 14.3.1)

Ocean acidification (pH) is a crucial indicator of how much the sea has acidified due to carbon dioxide absorbed into the sea from the air. Acidity (pH) refers to the concentration of hydrogen ions, measured on a scale of 0 to 14. A pH lower than 7 is considered acidic while a pH higher than 7 is alkaline. The average ocean pH is typically around 8.1, but it can decrease due to ocean acidification. A lower pH in the seawater can cause calcium carbonate, the main component of many marine organisms' shells, to dissolve, posing a threat to their survival. This indicator plays a key role in assessing the progress of ocean acidification and coming up with measures to minimize its impacts.

To monitor ocean acidification the UN recommends using designated observation stations where buoys managed by the UNESCO Intergovernmental Oceanographic Commission (IOC) have been installed. While such

Average Ocean Acidification of Korea (Surface pH), 2011~2023 (Unit: pH)
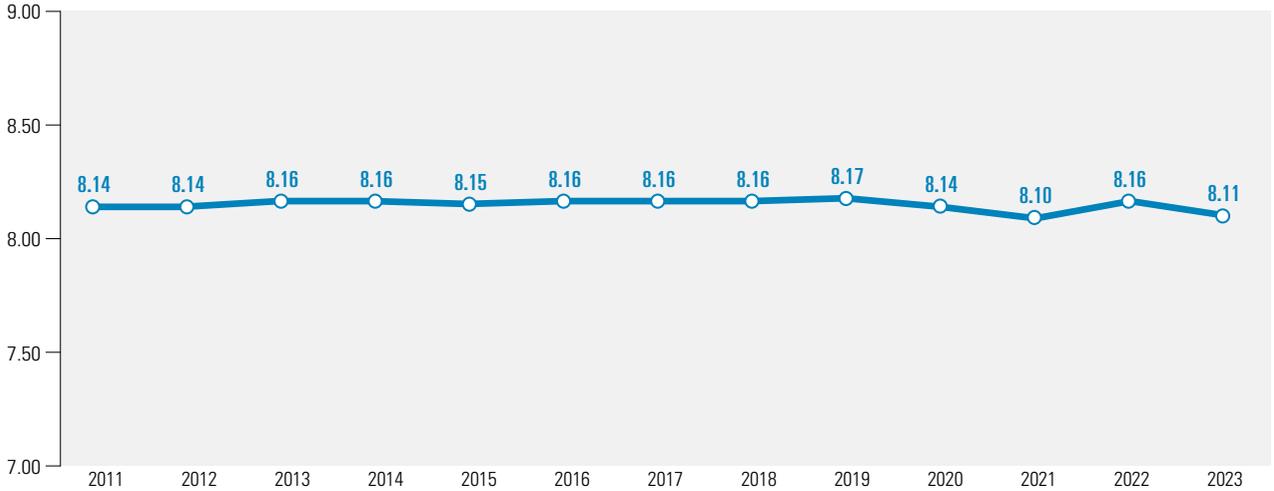
Source: Ministry of Oceans and Fisheries, Marine Environmental Measuring Network (Marine Environment Information System https://www.meis.go.kr/portal/main.do, retrieved on Sep 23, 2024)
Note   : Outliers are excluded.

Average Ocean Acidification by OECD Country, 2023 (Unit: pH)
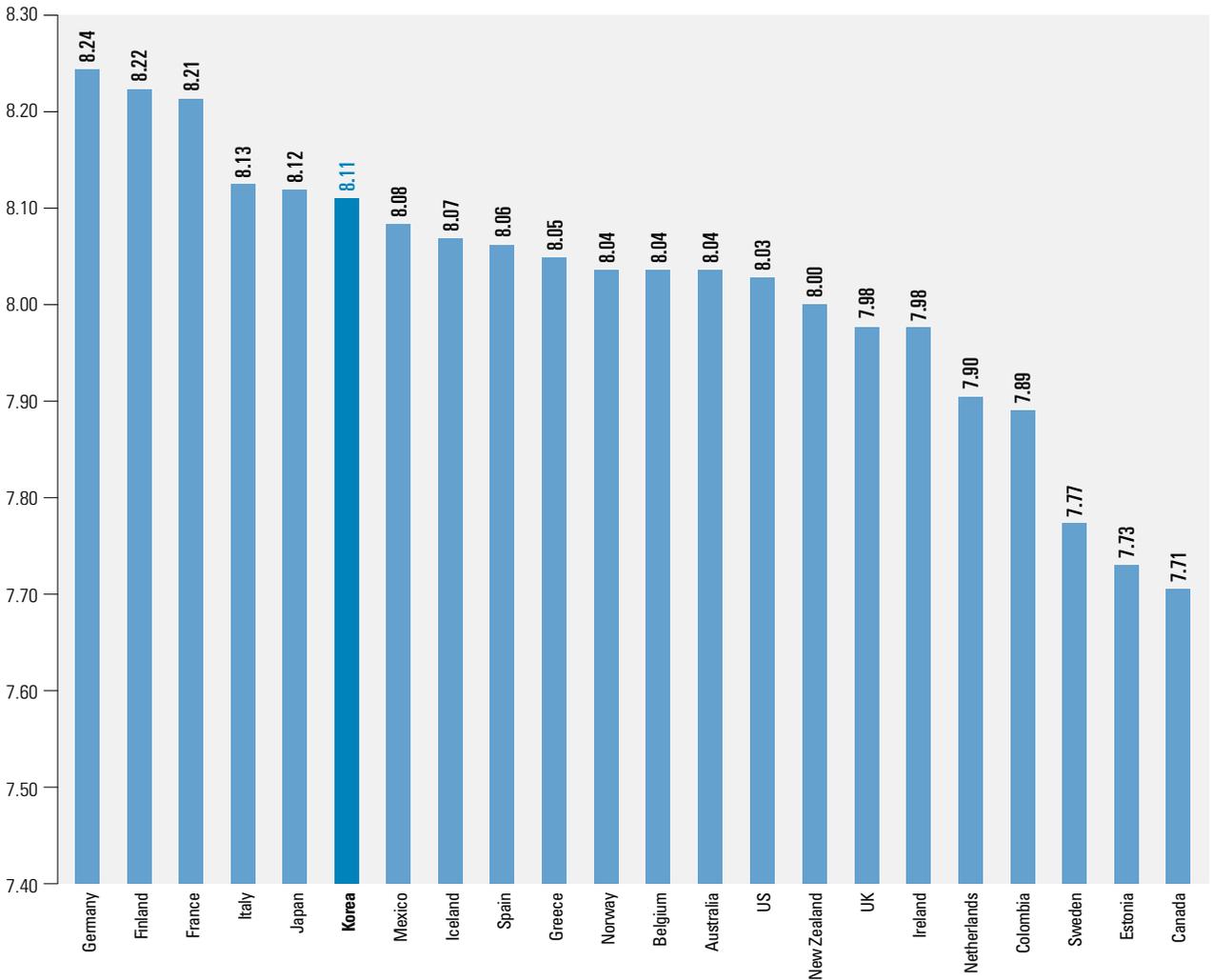
Source: UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Aug 17, 2024); Ministry of Oceans and Fisheries, Marine Environmental Measuring Network (Marine Environment Information System https://www.meis.go.kr/portal/main.do, retrieved on Sep 23, 2024)
Note   : The 2019 data was used for Finland, Japan, the United Kingdom, and the Netherlands; the 2021 data for France, Italy, Spain, Australia, Ireland and Sweden; the 2022 data for Germany, Greece, Norway, Belgium and Canada; the 2023 data for South Korea, Mexico, Iceland, the United States, Colombia, New Zealand, and Estonia.

representative measuring stations have not been designated in South Korea, the marine environmental measuring network measures surface pH at about 425 coastal stations nationwide on four occasions each year. An analysis of these measurement records indicated that the annual average pH remained within the range from 8.10 to 8.17 without any noticeable fluctuation from 2011 to 2023. Most recently, it posted a pH of 8.11 in 2023. Meanwhile, in 2022, the National Institute of Fisheries Science announced the long-term monitoring results of marine acidification observed over 8 years at 83 stations throughout Korean waters. According to the observations, the surface pH declined by approximately 0.019 every 10 years, indicating that acidification has occurred at a pace similar to that of global oceans or Japan, a neighboring country. These measurement results regarding the changes in marine pH can serve as crucial baseline data for research on marine acidification and the development of measures for the future.

Let us compare the average marine acidity of the agreed measuring stations in of 21 OECD countries, whose data were submitted to the UN SDG database, with data from Korea's marine environmental measuring network. According to the latest data measured in each nation from 2016 to 2023, the average marine acidity across 22 countries, including South Korea, ranged from pH 7.71 to pH 8.24. Although there are limitations in making a direct comparison between countries due to different baseline years from one country to another, the data showed that countries with relatively low pH levels in seawater were Canada (7.71), Estonia (7.73), and Sweden (7.77). Countries like Colombia (7.89), the Netherlands (7.90), Ireland and the United Kingdom (7.98) also stayed within the range of pH 7.8 to pH 8.0. In addition, the acidity was also reported to be between pH 8.0 and less than pH 8.1 for nine countries: (the United States, Mexico, Australia, New Zealand, Iceland, Norway, Belgium, Spain and Greece); between pH 8.1 and less than pH 8.2 for South Korea, Japan and Italy; and between pH 8.2 and less than 8.3 for France, Germany and Finland.

The level of marine acidification in South Korea has not yet reached a critical point. However, ongoing and systematic monitoring is needed for a more accurate evaluation, combined with intensive studies on regions heavily affected by local acidification and research on partial pressures of carbon dioxide (pCO2) in seawater.

The R&D budget for marine fisheries continued to increase before a decline in 2024 (⟳ SDG 14.a.1)

The R&D budget for marine fisheries has seen remarkable growth over the past 10 years. The budget, which was 402.1 billion KRW in 2011, steadily increased and more than doubled in 2023, reaching 915.2 billion KRW and recording

Government's Total R&D Budget & R&D Budget for Marine and Fisheries Sector 2011~2024   (Unit: 100 million KRW)
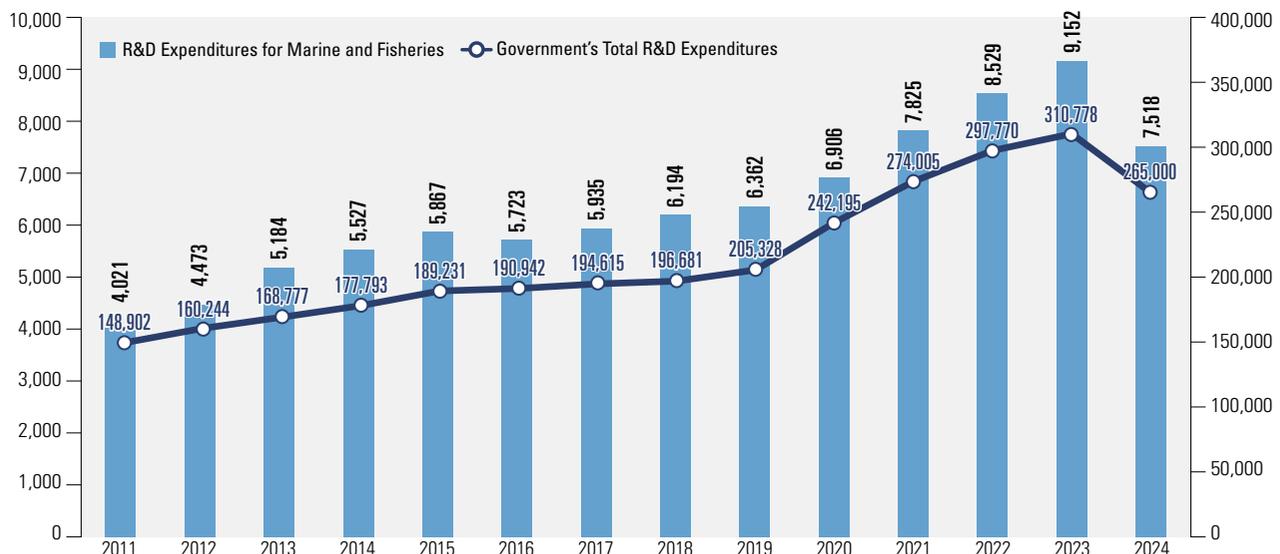
Legend: R&D Expenditures for Marine and Fisheries; Government's Total R&D Expenditures

Year	R&D Expenditures for Marine and Fisheries	Government's Total R&D Expenditures
2011	4,021	148,902
2012	4,473	160,244
2013	5,184	168,777
2014	5,527	177,793
2015	5,867	189,231
2016	5,723	190,942
2017	5,935	194,615
2018	6,194	196,681
2019	6,362	205,328
2020	6,906	242,195
2021	7,825	274,005
2022	8,529	297,770
2023	9,152	310,778
2024	7,518	265,000

Source: Ministry of Science and ICT, National R&D Statistics (https://kosis.kr, retrieved on Sep 25, 2024); Ministry of Science and ICT, 2025, 2025 Comprehensive Implementation Plan on the R&D Programs of the Ministry of Science and ICT; Ministry of Oceans and Fisheries, Implementation Plan to Nurture Marine Science and Technology (SDG Indicator Portal https://www.index.go.kr, retrieved on July 23, 2024)

Source: Ministry of Science and ICT, National R&D Statistics (https://kosis.kr, retrieved on Sep 25, 2024); Ministry of Science and ICT, 2025 Comprehensive Implementation Plan on the R&D Programs of the Ministry of Science and ICT; Ministry of Science and ICT-KISTEP, Survey on R&D Activities (e-National Indicators https://www.index.go.kr, retrieved on Feb 13, 2025); Ministry of Oceans and Fisheries, Implementation Plan to Nurture Marine Science and Technology (SDG Indicator Portal https://www.index.go.kr, retrieved on July 23, 2024)

an all-time high. In particular, its year-on-year growth rate ranged from 7% to 13% each year from 2020 to 2023, showing rapid growth. However, this long-term growth was cut short in 2024. The R&D budget for marine fisheries in 2024 decreased by 17.9% compared to the previous year, dropping to 751.8 billion KRW. This even fell short of the 2021 budget, representing a setback of the budget, which had increased in recent years, back down to the level of several years ago.

The trend in the R&D budget for marine fisheries is not significantly different from the changes seen in the government's total R&D budget. The government's total R&D budget also doubled from 14.9 trillion KRW in 2011 to 31.1 trillion KRW in 2023. Notably, since 2020, it has shown a very steep increase of 18.0%, 13.1%, 8.7% and 4.4% each year compared to the previous year, before experiencing a decline of 14.7% year on year in 2024.

The share of marine fishery budget out of the government's total R&D budget stayed unchanged at 2.84% to 2.94% in 2020 and 2024 when there were sudden increases and decreases in both budgets. In 2023, the marine fishery budget rose by 7.3% year on year, growing more than 4.4%

growth of the government's total budget. As a result, the share of the marine fishery budget reached 2.94%, with an increase of 0.08%p year on year. However, it declined to 2.84% in 2024, similar to previous levels. This change indicates a shift in the priority of marine fisheries within the government's R&D costs. The share of the R&D budget for the marine fishery sector reached the 3% range from 2013 to 2019, but has since fallen below that. Meanwhile, data on total R&D costs in the private and public sectors, including the government, companies, public research institutes and universities, was compiled until 2022. According to the data, the share of the R&D budget for marine fisheries in total R&D costs fluctuated within a stable range, from around 0.8% from 2011 to 2016 to around 0.7% from 2017 to 2022.

Amid the increasing amount of marine waste collected, the proportion of plastic has still remained high (⊙ SDG 14.1.1)

The central and local governments collect marine waste through the Marine Waste Purification Project and Coastal Waste Deposition Collection Project. As a result, the amount

Amount of Marine Waste Collected by Type, 2011~2023

(Unit: tons)
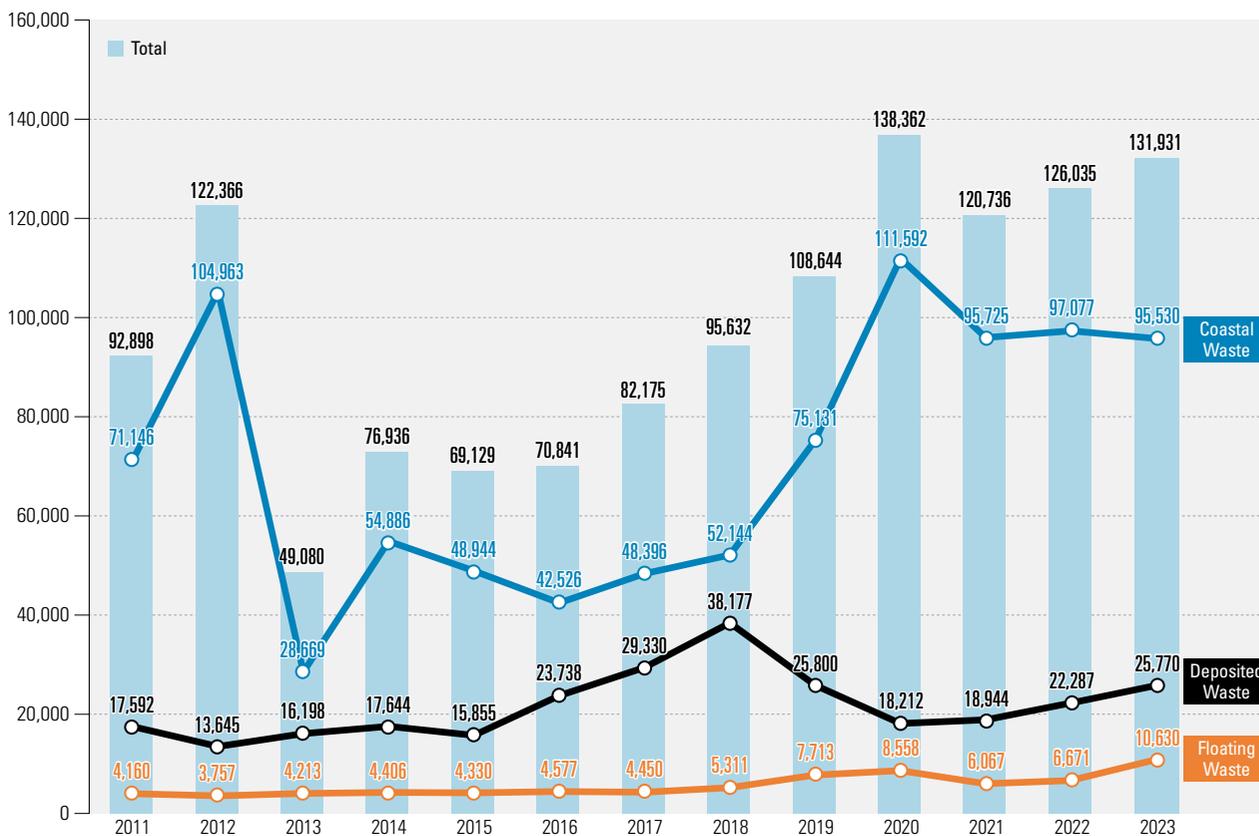
Source: Ministry of Oceans and Fisheries, Marine Environment Information System (https://www.meis.go.kr/portal/main.do, retrieved on Sep 26, 2024)

Plastic Waste out of Total Coastal Waste in Korea, 2018~2023

(Unit: No. of Plastics, kg, %)

Category	2018	2019	2020	2021	2022	2023
Plastic Weight (kg)	2,585.1	1,698.6	1,014.9	2,899.4	2,136.7	2,078.9
Ratio of Plastic Weight to the Total Coastal Waste (%)	58.8	62.9	46.0	51.3	49.2	50.0

Source: Ministry of Oceans and Fisheries, Marine Environment Information System (https://www.meis.go.kr/portal/main.do, retrieved on Aug 17, 2024)
Note : This is based on monitoring data of the nation's marine waste starting from 2018 when the consistency of survey methods was secured. The survey was conducted at 40 stations nationwide from 2018 to 2020 and at 60 stations across the nation from 2021 to 2023.

of marine waste collected has increased over the past 10 years since 2013, reaching a total of 131,931 tons in 2023. By waste type, the coastal waste, which accounts for more than 70% of the total marine waste, saw a slight decline compared to the previous year, whereas the collection of floating waste and deposited waste increased by 4.7% year on year. The overall increase in waste collection can be interpreted as a result of reinforced policy efforts, together with heightened awareness of marine waste management. Collection of waste is important; however, what is more important is to prevent waste generation in the first place.

Plastic makes up the largest proportion of marine waste. During a survey conducted at 60 stations nationwide from 2021 to 2023, an overwhelming majority, and reached 49.2% to 51.3% by weight, almost half, indicating ongoing plastic pollution in Korea waters.

Expanding influences of declining in fish catches due to climate change (⊙ SDG 14.4.1)

SDG 14.4.1 is an indicator to assess whether fish species subject to fishing activities are maintained in a sustainable manner among the biological resources living in marine

ecosystems. In other words, it refers to the ratio of fish stocks within a sustainable level out of the total fishery resources.

The coastal and offshore fishery production in South Korea sharply declined from an annual average of 1.51 million tons in the past 1980s (1980 to 1989) to 1.16 million tons in the 2000s (2000 to 2009), further decreasing to 0.93 million tons in the recent 2020s (2020 to 2023). Popular fish species in Korea, such as mackerel, Japanese Common Squid and anchovies, increased from the 1980s until 2000. However, since the 2010s, the catch of Japanese Common Squid has plummeted while that of anchovies and mackerel has declined or stagnated. Meanwhile, the catch of yellowtail, horse mackerel and cavalla, classified as warm-current fish, has been steadily increasing over the past 40 years.

There are various factors affecting fishery resources, including climate change, excessive fishing, the catch of immature and small-sized fish, and the deterioration of habitat environments. Among them, an analysis conducted by the National Institute of Fisheries Science on climate change showed that the annual average temperature of surface waters in Korea increased by approximately 1.44°C over the past 56 years (1968 to 2023) while the global average surface temperature rose by only 0.70°C. This indicates that the water temperatures in Korea have increased more than twice as fast as the global average. In particular, the change in the surface temperature in the East Sea was the most significant, rising by 1.90°C, compared to 1.27°C in the West Sea and 1.15°C in the South Sea. It is known that a 1°C change in water temperature can have an impact equivalent to a 10°C change to aquatic lifeforms (cold-blooded animals). Therefore, the change in water temperature could significantly alter the environments for spawning and habitats. Furthermore, the fish catch in the coastal and offshore waters has further fluctuated due to natural and anthropogenic factors, such as climate change and excessive fishing.

The government has devised and implemented the Fish Stock Rebuilding Plan since 2005 to restore overfished fishery resources. In 2006, four fish species (sailfin sandfish, blue crab, long-legged octopus, small abalone) were selected for a pilot project. Since then, the number of target species has expanded, reaching 25 fish species selected for stock

Production of Coastal and Offshore Fisheries, 1980~2023 (Unit: 10,000 tons)
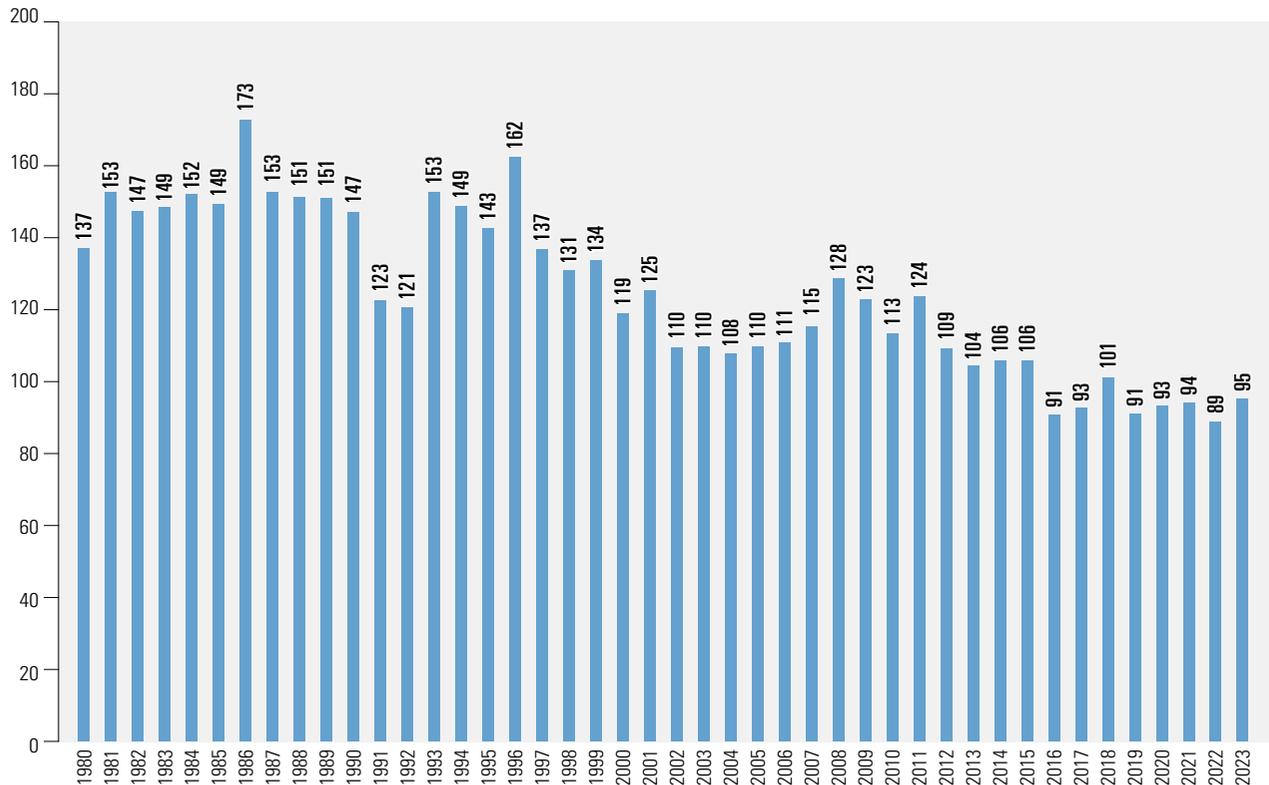
Source: Statistics Korea, Fisheries Production Statistics(https://kosis.kr, retrieved on Feb 6, 2025)

rebuilding in 2024. Under the Fish Stock Rebuilding Plan, the government has also carried out various programs, including the Total Allowable Catch (TAC), the Resources Creation Project (such as artificial fish banks, fishery seed release, sea farms), the Habitat Improvement Project (such as ocean forests and collection of discarded fishing gear) and the Fishing Vessel Buyback Program.

Among them, the TAC is one of the key tools for managing fishery resources in South Korea. It ensures sustainable fishery management by setting the annual catch limits per fish species. The TAC began in 1999 with four species and two fishery types, and expanded to cover 15 fish species and 17 fishery types in 2024. By 2027, the TAC is expected to be applied to all fishing vessels. Originally, the TAC has been applied to near-sea vessels with a capacity of 10 tons or more, but it will be expanded to cover coastal vessels with a capacity of less than 10 tons. Given the challenges coastal vessels may face in immediately implementing the

Catches of Mackerel, Japanese Common Squid, Anchovies and Yellowtail, 1980~2023   (Unit: tons)
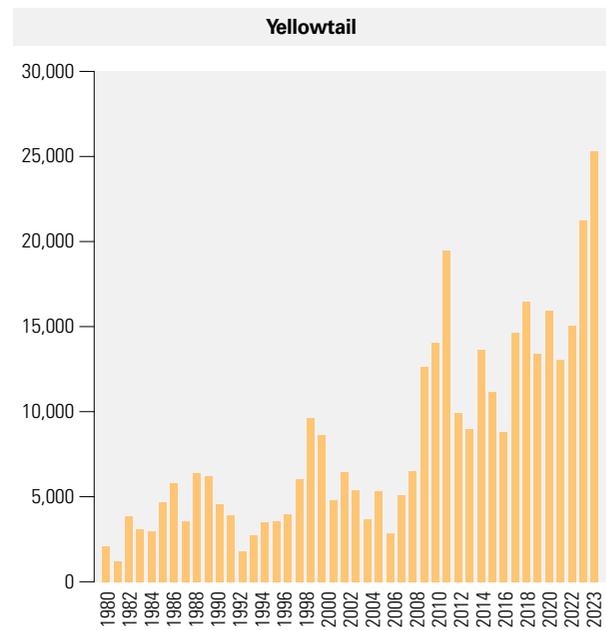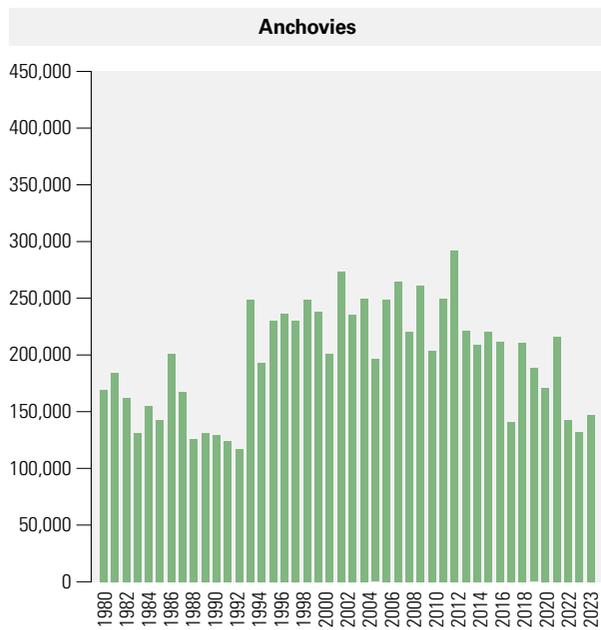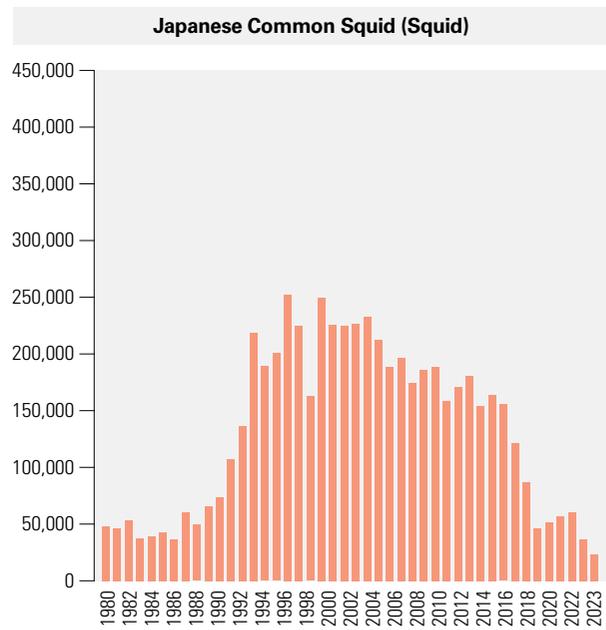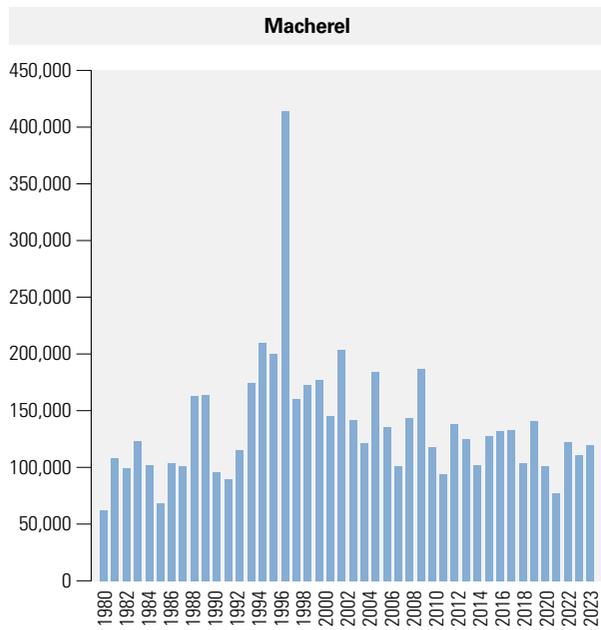
Source: Statistics Korea, Fisheries Production Statistics(https://kosis.kr, retrieved on Feb 6, 2025)

Fish Species and Fishery Types Covered by Total Allowable Catch (TAC), 2024

Year	Fish Species	Fishery Type
1999	Mackerel	Large purse seine fishery
1999	Saurel	Large purse seine fishery
1999	Snow crab	Offshore trap fishery
2001	Jeju conch	Communal fishing
2001	Saxidomus purpuratus	Fishing by diving
2001	Pen shell	Fishing by diving (Busan, Gyeongnam, Jeonnam)
2002	Queen crab	Offshore gill-net fishery, offshore trap fishery
2003	Blue crab	Coastal gill-net fishery (Incheon), offshore gill-net fishery, coastal trap fishery (Incheon)
2006	Squid	Large trawl fishery, offshore angling fishing, trawl fishery in the East Sea, large purse seine fishery, large pair trawling, offshore gill-net fishery
2009	Sailfin sandfish	Bottom trawling in the East Sea, trawl fishery in the East Sea
2009	Mottled stake	Offshore longline fishing (Incheon, Jeonnam), coastal composite fishing (Incheon, Jeonnam)
2019	Manila crab	Fishing by diving (Geoje, Gyeongnam)
2022	hairtail	Offshore longline fishing, offshore stow-net fishery, large purse seine fishery, large trawl fishery, pair trawling
2022	Yellow corvina	Offshore gill-net fishery, offshore stow-net fishery, large bottom trawling, large pari trawling
2022	Spanish mackerel	Large purse seine fishery, large pair trawling, mid-sized pair trawling in the Southwest Sea

Source: Korea Fisheries Resources Agency, Introduction of TAC (https://www.fira.or.kr/fira/fira_030601.jsp, retrieved on Oct 1, 2024)

TAC, the expansion will be carried out in three stages, such as preparation, practice and settlement, based on the system's implementation progress and acceptability of fishermen. The TAC, which is set to be the first in the world to cover all fishing vessels, will not only increase the population of target fish species but also promote qualitative growth, ensuring sustainable management of all fish species in Korean waters.

Faithfully implementing international instruments for sustainability of deep-sea fishery (⟳ SDG 14.6.1)
SDG 14.6.1 assesses the degree of implementation of international regulations, aimed at eradicating illegal, unreported and unregulated (IUU) fishing. While it is very challenging to measure the degree of implementation of various international instruments in a quantitative manner,

the international community requires all countries to faithfully comply with international regulations adopted to put an end to IUU fishing through monitoring.

According to the 4th Comprehensive Plan for Deep-sea Fishery Development of the Ministry of Oceans and Fisheries, fishery products from deep-sea fishing totaled 400,000 tons in 2022, accounting for 11% of the total fishery production of 3.61 million tons. However, marine products from deep-sea fishing made up 72% of Korea's 10th largest fishery export items and 34.3% out of its total exports of marine products. Since deep-sea fishery is typically conducted in open waters or the exclusive economic zones of other countries, it is mandatory to abide by the resource conservation regulations of the Regional Fishery Management Organization, which overseas respective fishing

No. of IUU Fishing Activities by Deep-sea Fishing Vessels in Korea, 2015~2023

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023
No. of Occurrence	15	none	2	none	3	1	1	none	none

Source: Ministry of Oceans and Fisheries (MOF), Survey on the Current State of Deep-sea Fisheries; MOF's internal materials

areas, as well as international standards governing high-sea fisheries. In addition, recognizing the importance of preventing and eradicating IUU fishing, the international community has continued to reinforce international regulations, such as conservation and management regulations. In South Korea, 'Advance Notification for Deep-sea Fishery Compliance' system has been implemented since 2023 to help deep-sea fishing vessels fully understand domestic and international fisheries regulations, as well as any changes in the conservation and management regulations of international fisheries organizations. Since 2022, there has not been a single case of IUU fishing committed by Korean deep-sea vessels, demonstrating their full compliance with the international regulations.

The 4th Comprehensive Plan for Deep-sea Fishery Development (2024 to 2028) includes a plan for 'advancement of IUU fishing monitoring system' in terms of institutions, personnel and technology, under the strategy of 'Leading International Regulations in Deep-sea Fisheries.' For institutions, the plan aims to expand surveillance of IUU fishing and strengthen efforts to detect fishing vessels suspected of being directly or indirectly involved in IUU fishing, in coordination with the Fisheries Monitoring Center (FMC), Regional Fisheries Management Organization (RFMO) and NGOs. Regarding personnel and technology, it also envisions expanding a pool of human resources to meet the international community's enhanced requirements for mandatory observer boarding and developing an e-monitoring system to prevent vessels without an observer on board from engaging in IUU fishing.

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• **International Observer :** A person designated by the International Fisheries Organization or an individual country to board an ocean-going fishing vessel to investigate fishing conditions, catch information, compliance with international norms, and collect scientific information on marine ecosystems.

15 LIFE ON LAND

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

SDG Goal 15 aims to conserve and enhance biodiversity and genetic diversity in terrestrial ecosystems while protecting forest ecosystems and endangered species. Globally, biodiversity is under threat due to factors such as deforestation, stagnation in the protection of Key Biodiversity Areas (KBAs), and the rise in illegal wildlife trade. In response, international efforts are becoming increasingly coordinated. In South Korea, forest area and the Red List Index continue to decline, and the proportion of protected areas relative to KBAs remains lower than in major countries. However, Korea is preparing to implement measures to achieve the protected area targets recommended by the international community.

> ≫ **As of 2023, forests covered 62.59% of Korea's land, a high proportion compared to major countries, but have been steadily declining due to land conversion.**
> - From 2010 to 2020, Korea's total forest area decreased by 1.1%. Excluding bamboo forests and non-stocked forest land, the decline in coniferous, broadleaf, and mixed forests reached 2.7%.
> - From 2019 to 2023, an average of 6,887 hectares of forest was converted annually, mainly for residential (20.4%) and industrial (13.6%) use.
> - The national forest cover ratio declined by 1.08 percentage points from 2010 to 2023, with all metropolitan cities and provinces experiencing a decrease.
>
> ≫ **In 2023, Korea's protected area coverage was 37.58% for land, 36.83% for freshwater, and 20.21% for mountains, below the OECD averages of 64.34%, 65.45%, and 60.28%.**
> - The Kunming-Montreal Global Biodiversity Framework (GBF), adopted in 2022, set a global target to expand protected areas (including OECMs) to 30% of total land and sea areas by 2030.
> - As of 2022, Korea's terrestrial protected areas covered 27,887.89 km² (including overlaps), accounting for 17.3% of its land area, with efforts underway to reach the 30% target.
>
> ≫ **Korea's Red List Index(RLI), indicating extinction risk, is 0.68 in 2024, down from 0.79 in 2000, showing a continued decline.**
> - From 2000 to 2024, Korea's index dropped by 0.11, the second-largest decline among OECD countries after France (-0.12).
> - In 2024, 21 of 38 OECD countries had a Red List Index of 0.90 or higher, highlighting Korea's gap.
> - Internationally, the Red List of Ecosystems (RLE) has been introduced as an indicator for habitat-based species protection, with Korea working on related data development.

Decline in forest cover across all metropolitan areas due to land conversion (⟳ SDG 15.1.1)

As of 2023, Korea's total forest area stands at 6,287,325 hectares, covering 62.59% of the national land—significantly higher than the OECD average of 36.17% (2020). In 1990, forests covered 6,476,030 hectares (65.23%), but have steadily declined over time, primarily due to land conversion. Between 2019 and 2023, an average of 6,887 hectares of forest was converted annually for other uses, mainly for residential (20.4%), industrial (13.6%), road (9.0%), agricultural (6.6%), golf course (3.5%), and cemetery (0.9%), land use.

Between 2010 and 2020, Korea's total forest area declined by 1.1%, from 6,368,843 hectares to 6,298,134 hectares. However, excluding bamboo forests and non-stocked forest land, the combined area of coniferous, broadleaf, and mixed forests in 2020 was 5,996,219 hectares, marking a 2.7% decrease from 2010.

By province, the largest forest areas in 2020 were in Gangwon (1,366,644 ha), Gyeongbuk (1,333,691 ha), Gyeongnam (698,810 ha), and Jeonnam (686,852 ha). In terms of forest proportion relative to total land area, Gangwon (81.20%), Gyeongbuk (70.07%), Gyeongnam (66.30%), Chungbuk (65.93%), and Ulsan (64.03%) had the highest ratios. Conversely, the smallest forest areas were in Seoul (15,323 ha) and Gwangju (18,944 ha), with

Forest Area as a Percentage of Total Land Area, 1990~2023

(Unit: %)

Source: Korea Forest Service, Statistical Yearbook of Forestry (Retrieved on February 12, 2025)

Proportion of Forest Land Conversion by Use, 2019~2023

(Unit: %)
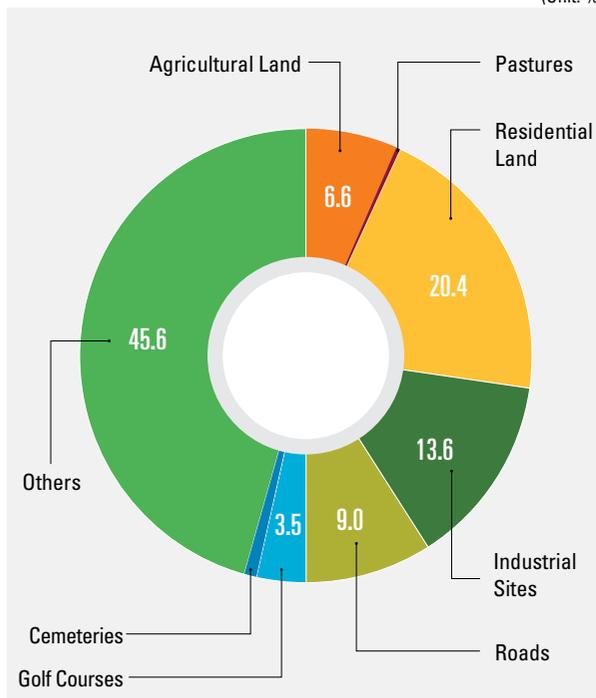
Source: Korea Forest Service, Statistical Yearbook of Forestry (Retrieved on February 12, 2025)
Note : Proportions based on the five-year average (2019–2023)

the lowest forest proportions recorded in Seoul (25.32%), Incheon (36.96%), and Gwangju (37.80%). From 2010 to 2023, the forest ratio declined from 63.67% in 2010 to 62.59% (-1.08 percentage points). From 2010 to 2020, with the largest decreases observed in Incheon (-2.31%p), Chungnam (-1.73%p), Gyeonggi (-1.60%p), Gwangju (-1.44%p), and Busan (-1.29%p).

Expansion of protected areas for terrestrial, freshwater, and mountain biodiversity
(SDG 15.1.2 / 15.4.1)

SDG 15.1.2 measures the proportion of Key Biodiversity Areas (KBAs) covered by Protected Areas (PAs) in terrestrial and freshwater ecosystems to assess the adequacy of conservation efforts. According to UN data, Korea's protected area coverage in 2023 was 37.58% for land and 36.83% for freshwater, significantly below the OECD averages of 64.34% and 65.45%, respectively. SDG 15.4.1 separately evaluates the proportion of protected areas within

Forest Area, Forest Cover Ratio, and Change in Forest Cover Ratio by Region (Comparison to 2010), 2020

(Unit: ha, %, %p)

Legend:
- Forest Area
- Forest Cover Ratio
- Change in Forest Cover Ratio Compared to 2010(%p)

Forest Area (green bars):
- Daegu: 15,323
- Incheon: 34,926
- Gwangju: 48,338
- Daejeon: 39,373
- Ulsan: 18,944
- Sejong: 29,764
- Gyeonggi: 68,001
- Gangwon: 24,849
- Chungbuk: 512,105
- Chungnam: 1,366,644
- Jeonbuk: 488,337
- Jeonnam: 404,097
- Gyeongbuk: 440,746
- Gyeongnam: 686,852
- Jeju: 1,333,691
- Gyeongnam: 698,810
- Jeju: 87,334

Forest Cover Ratio (orange circles):
- Daegu: 25.32
- Incheon: 45.35
- Gwangju: 54.71
- Daejeon: 36.96
- Ulsan: 37.80
- Sejong: 55.15
- Gyeonggi: 64.03
- Gangwon: 53.45
- Chungbuk: 50.23
- Chungnam: 81.20
- Jeonbuk: 65.93
- Jeonnam: 49.00
- Gyeongbuk: 54.62
- Gyeongnam: 55.62
- Gyeongbuk: 70.07
- Gyeongnam: 66.30
- Jeju: 47.20

Change in Forest Cover Ratio Compared to 2010 (%p) (blue bars):
- Daegu: -0.65
- Incheon: -1.29
- Gwangju: -0.68
- Daejeon: -2.31
- Ulsan: -1.44
- Sejong: -0.74
- Gyeonggi: -1.05
- Gangwon: -1.60
- Chungbuk: -0.78
- Chungnam: -0.77
- Jeonbuk: -1.73
- Jeonnam: -0.73
- Gyeongbuk: -1.11
- Gyeongnam: -0.50
- Gyeongnam: -0.82
- Jeju: -0.87

Source: Korea Forest Service, Statistical Yearbook of Forestry (Retrieved on February 12, 2025)

mountain KBAs. In 2023, Korea's mountain protected area coverage stood at just 20.21%, compared to the 60.28% average among 32 OECD countries with available data.

The Kunming-Montreal Global Biodiversity Framework (GBF), adopted at the 15th Conference of the Parties to the Convention on Biological Diversity (CBD) in 2022, set a global target to expand both terrestrial and marine protected areas to 30% each by 2030. This framework uses the proportion of total area designated as protected as a key indicator. To broaden conservation efforts, the framework introduced the concept of Other Effective area-based Conservation Measures (OECMs) alongside traditional Protected Areas (PAs). OECMs refer to areas that, while not officially designated as protected areas, are effectively managed for long-term biodiversity conservation.

At the end of 2023, Korea established the 5th National Biodiversity Strategy and the 2030 National Protected Area Expansion Roadmap to outline implementation measures for achieving the internationally recommended goal of expanding protected areas to 30% by 2030. As of 2022, Korea operates 29 types of protected areas under 16 different laws. Among the total protected area (27,887.89 km² of terrestrial land, including overlaps), major categories include Natural Environment Conservation Areas under the National Land Planning Act (24.0%), National Parks

Proportion of Protected Areas by Type, 2022 (Unit: %)

Legend:
- Natural Environment Conservation Area
- National Park
- Natural Monument Protection Area
- Forest Protection Zone (Watershed Conservation)
- Urban Nature Park Area
- Baekdudaegan Protection Area
- Ecological and scenic conservation area
- Special Countermeasure Area
- county park
- Forest Protection Zone (Forest Genetic Resources)
- Natural monument
- Riparian Zone (Four Major Rivers)
- Scenic spot
- Water Source Protection Area
- Forest protection area (landscape)
- Wildlife Protection Area
- Wetland conservation area
- Environmental Conservation Marine Area
- Ecological and scenic conservation area (city/province)
- Provincial Park
- Forest protection area (disaster prevention)
- Fisheries Resource Protection Area
- Special wildlife protection area

Source: Joint Government Ministries, 2023, 2030 National Protected Area Expansion Roadmap
Note : This represents terrestrial protected areas (land + freshwater); marine areas are excluded.

Proportion of Protected Areas within Key Biodiversity Areas (KBAs), 2023 (Unit: %)

Legend: Korea, OECD

	Korea	OECD
Terrestrial	37.58	64.34
Freshwater	36.83	65.45
Mountain	20.21	60.28
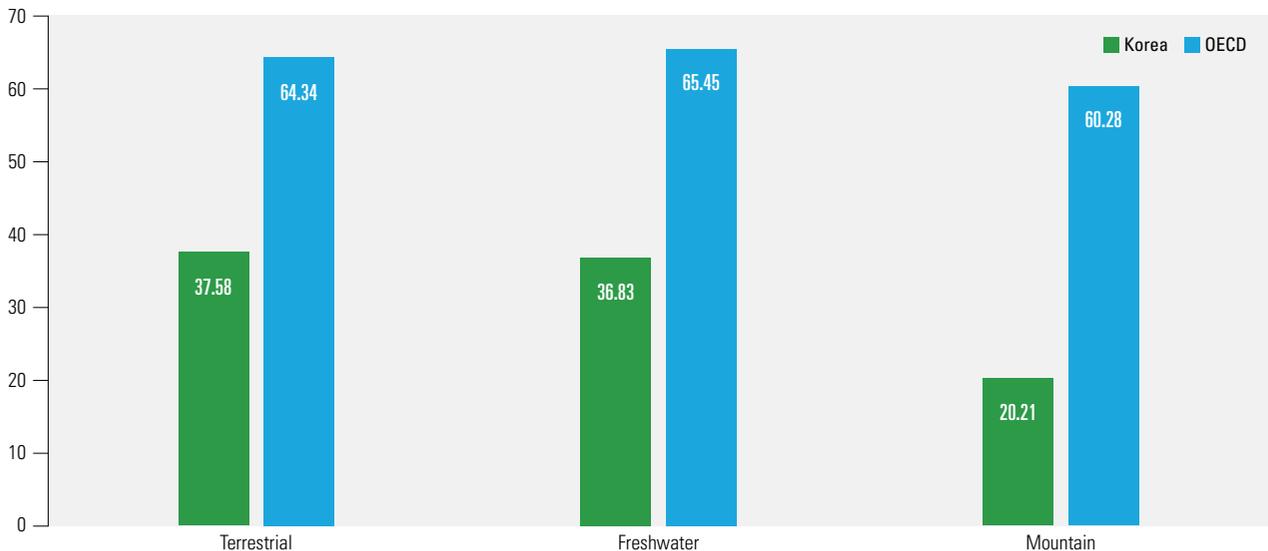
Source: UN, Sustainable Development Goals (https://kosis.kr, retrieved on October 3, 2024); UN, SDG Indicators Database (https://unstats.un.org/sdgs/dataportal, retrieved on February 3, 2025)
Note 1: Proportion of Key Biodiversity Areas (KBAs), as defined by IUCN, designated as protected areas
Note 2: For mountains, the OECD average is based on 32 countries, excluding Denmark, Estonia, Latvia, Lithuania, Luxembourg, and the Netherlands.

under the Natural Parks Act (14.4%), and Forest Protection Zones (including Watershed Conservation Areas) under the Forest Protection Act (10.5%). As of 2022, protected areas accounted for 17.1% of land and 21.6% of freshwater ecosystems, with an overall terrestrial protection rate of 17.3%. Korea is preparing to expand this coverage by establishing criteria and processes for recognizing and managing Other Effective area-based Conservation Measures (OECMs).

Expanding protected areas is challenging due to various factors, including insufficient monitoring and management of protected areas and their surroundings, a lack of research and surveys to identify new conservation sites, and inadequate compensation mechanisms for landowners in ecologically significant areas. The National Protected Area Expansion Roadmap involves seven government agencies, including the Ministry of Environment, Ministry of Oceans and Fisheries, Korea Forest Service, and Cultural Heritage Administration. This roadmap aims not only to increase the coverage of protected areas and OECMs but also to enhance systematic management through scientific assessments of key biodiversity areas, improve governance and the effectiveness of protected area management, and strengthen community support and coexistence measures, such as Payment for Ecosystem Service (PES), to minimize inconvenience for local residents.

Red List Index(RLI) continues to decline while Red List of Ecosystems (RLE) is under development
(⟳ SDG 15.5.1)

The international community uses the Red List Index (RLI) as a key indicator to comprehensively assess the status and threats to wildlife for extinction prevention and biodiversity conservation. Additionally, the Kunming-Montreal Global Biodiversity Framework (GBF) introduces the Red List of Ecosystems (RLE) as a habitat-based conservation and restoration tool for endangered species. Alongside the RLI, the RLE serves as a major indicator for species protection efforts.

The Red List Index (RLI) is based on the Red List of threatened species compiled by the International Union for Conservation of Nature (IUCN). It represents extinction risk on a scale from 0 (all species extinct) to 1 (all species of least concern)—with lower values indicating a higher risk of extinction for endemic and threatened species and lower biodiversity. In 2024, Korea's Red List Index remains at 0.68, unchanged from the previous year but continuing its decline from 0.79 in 2000. The OECD average for 2024 stands at 0.89, with 21 out of 38 OECD countries scoring 0.90 or higher, highlighting Korea's significant gap. Among the 38 OECD member countries, Poland (+0.03) is the only country where the RLI improved between 2000 and

Red List Index of Korea, 2000~2024
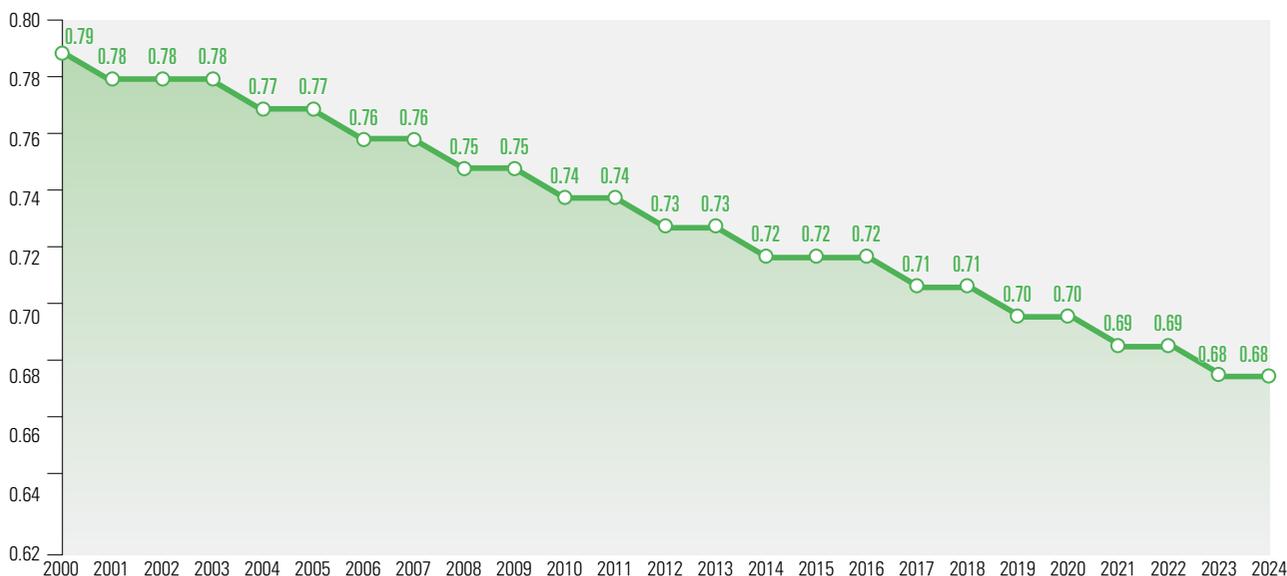
Source: UN, Sustainable Development Goals (https://kosis.kr, retrieved on February 4, 2025)
Note : Index ranges from 0 to 1, with values closer to 0 indicating a higher risk of extinction for threatened and endemic species and lower biodiversity

Red List Index by OECD Country and Change Since 2000, 2024

Legend: 2024

Top chart (Red List Index 2024):
- Estonia: 0.99
- Finland: 0.99
- Latvia: 0.99
- Lithuania: 0.99
- Sweden: 0.99
- Belgium: 0.98
- Denmark: 0.98
- Luxembourg: 0.98
- Poland: 0.98
- Canada: 0.97
- Czech Republic: 0.97
- Germany: 0.97
- Slovakia: 0.97
- UK: 0.97
- Switzerland: 0.96
- Norway: 0.95
- Hungary: 0.91
- Netherlands: 0.91
- Slovenia: 0.91
- Türkiye: 0.90
- Portugal: 0.90
- Iceland: 0.88
- Ireland: 0.88
- Austria: 0.87
- Greece: 0.87
- Italy: 0.87
- Spain: 0.86
- Costa Rica: 0.84
- US: 0.83
- France: 0.83
- Australia: 0.81
- Chile: 0.76
- Japan: 0.75
- Colombia: 0.74
- Israel: 0.72
- Korea: 0.68
- Mexico: 0.68
- New Zealand: 0.64
- OECD: 0.89

Legend: 2024 compared to 2000

Bottom chart (2024 compared to 2000):
- Poland: 0.03
- Canada: -0.01
- Czech Republic: -0.01
- Germany: -0.01
- UK: -0.01
- Switzerland: -0.01
- Hungary: -0.04
- Netherlands: -0.01
- Slovenia: -0.01
- Portugal: -0.01
- Austria: -0.03
- Italy: -0.04
- Spain: -0.02
- Costa Rica: -0.03
- US: -0.02
- France: -0.12
- Australia: -0.07
- Chile: -0.07
- Japan: -0.07
- Israel: -0.02
- Korea: -0.11
- Mexico: -0.05
- New Zealand: -0.06
- OECD: -0.02

Source: UN, Sustainable Development Goals (https://kosis.kr, retrieved on October 3, 2024)
Note : Index ranges from 0 to 1, with values closer to 0 indicating a higher risk of extinction for threatened and endemic species and lower biodiversity

2024. While 15 countries maintained their 2000 levels, 22 countries—including Korea—experienced a decline. Over this period, the OECD average dropped by 0.02, whereas Korea's index declined by 0.11, marking the second-largest drop among OECD countries after France (-0.12).

The Red List of Ecosystems (RLE) assesses the relative risk of collapse for specific ecosystem types. It measures the average collapse risk of ecosystem groups, tracks changes in risk categories over time, and reflects actual shifts in ecosystem conditions. In Korea, the 5th National Biodiversity Strategy designates the Red List of Ecosystems Index as a key evaluation metric. Since 2024, efforts have been underway to develop relevant datasets and establish methodologies for calculating the index.

용어해설
• **Kunming-Montreal Global Biodiversity Framework (GBF)** : An agreement adopted at the 15th Conference of the Parties to the Convention on Biological Diversity (CBD), held in Montreal, Canada, in 2022. It outlines four global goals and 23 action targets that the international community has committed to achieving by 2030 to enhance biodiversity.

16 PEACE AND JUSTICE

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 eradicate violence and crimes, promote fairness and inclusiveness, and establish transparent and accountable institutions, to ensure efficient and equitable operation of public policies and private economy. Globally, the ongoing bloody clashes in Israel-Palestinian region have continued to threaten peace. There is still more work to be done to improve the safety of journalists and human right activists, uphold the human rights of prisoners, eradicate corruption in the public sector and ensure the stability of government budgets. South Korea showed positive progress in crime prevention and the quality of public services, although there is still room for improvement in ensuring political representation of young people.

> ≫ Looking at the representation of the disabled in public offices, the ratio of public servants with disabilities increased to 3.54% in the national government and 3.70% in local governments in 2023, on the back of the statutory obligation to hire persons with disabilities.
> - However, there is still significant room for improvement, given the mandatory employment quota (3.6%) and the ratio of persons with disabilities to the total population (5.1%).
>
> ≫ In terms of youth political representation, the proportion of elected parliamentarians under the age of 40 was only 4.7%. Even when the age threshold is increased to 45, the ratio rose only slightly to 7.4%, placing South Korea at the bottom among OECD countries.
>
> ≫ There are various levels of satisfaction with public services provided by the government, including health services (82.3%), police services (55.2%) and public hearing (42.9%, 2022).
> - Although the satisfaction with license/permit services, public hearings and resident participatory budgeting is not currently considered high, there was a clear upward trend, indicating some improvements in the quality of administrative services and policy participation.
>
> ≫ The rate of the population feeling unsafe due to crime dropped from 42.4% in 1996 to 18.2% in 2023, indicating a long-term decline.
>
> ≫ The homicide rate has been on a steady decrease since the 2010s, but the such a downward trend slowed down after reaching 0.53 per 100,000 population in 2021.
>
> ≫ Ensuring universal birth registration to provide legal identity for all is a key target under the SDGs.
> - In 2024, the Birth Notification System and Protected Childbirth System were introduced to prevent children from falling into blind spots without legal protection due to the omission of birth registrations.

The employment of persons with disabilities increased in public offices, but the proportion of young parliamentarians ranked at the bottom among OECD countries (⊙ SDG 16.7.1)

To ensure sustainable development in the government and institutions, public decision-making should be inclusive and representative citizens' opinions. This SDG measures whether public officials in the legislative, executive and judicial branches of national and local governments fairly represent various population groups, including gender, age and disabilities. This section also focuses on the proportion of public servants with disabilities in governmental agencies and the ratio of young parliamentarians elected to parliament.

Under the Act on Employment Promotion and Vocational Rehabilitation for Disabled Persons, the national and local governments are obligated to comply with the mandatory employment quota for individuals with disabilities, as stipulated in the Act. Although the Act does not apply to other institutions, such as educational offices and constitutional organizations, they are still required to submit their annual employment plans and implementation status for hiring persons with disabilities to the Ministry

Employment Rate of Public Servants with Disabilities, 2011~2023

(Unit: %)

Legend: Central Administrative Agency, Local Government, Constitutional Organization, Educational Office, Mandatory Employment Quota (national/local)

2011: Central 3.2, Local 3.8, Constitutional 2.3, Educational 1.4, Quota 3.0
2012: Quota 3.0
2013: Quota 3.0
2014: Quota 3.0
2015: Quota 3.0
2016: Quota 3.0
2017: Quota 3.2
2018: Quota 3.2
2019: Quota 3.4
2020: Quota 3.4
2021: Quota 3.4
2022: 3.6
2023: 3.5, 3.7, 2.9, 1.9, Quota 3.6
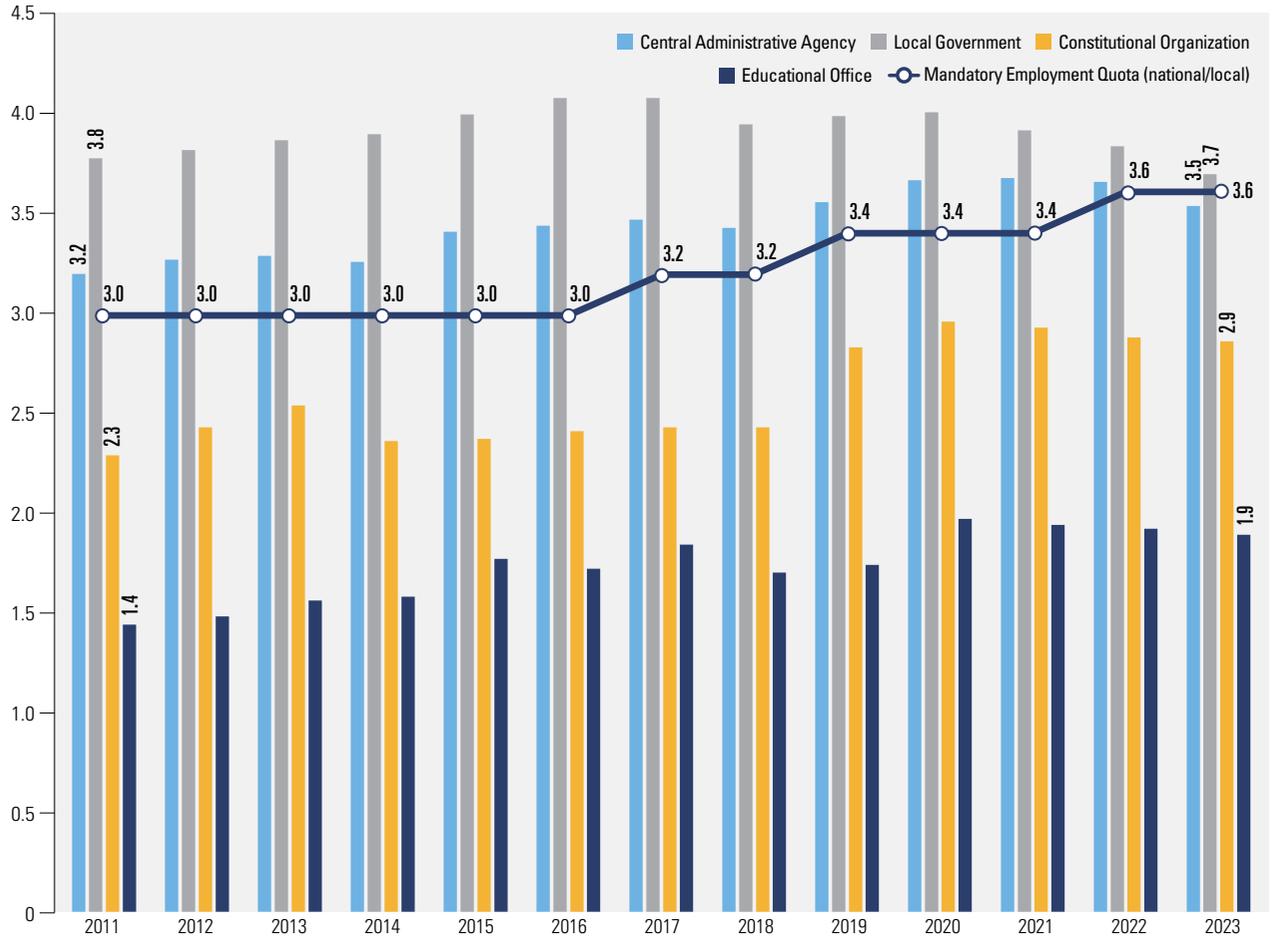
Source: Ministry of Employment and Labor, Mandatory Employment Status of Persons with Disabilities (https://kosis.kr, retrieved on Oct 2, 2024)
Note : Since 2010, persons with severe disabilities have been counted as twice under the criteria of the mandatory employment quota for persons with disabilities.

Proportion of Young Members in Parliament (Under 40), 2004~2024

(Unit: %)

Legend: Proportion of Young Members (total), Constituency, Proportional Representation, Proportion of Youth Population

2004: Young Members 7.7, Constituency 9.5, Proportional 0.0, Youth Population 39.2
2008: Young Members 2.3, Constituency 1.6, Proportional 5.6, Youth Population 35.8
2012: Young Members 3.0, Constituency 1.2, Proportional 11.1, Youth Population 30.9
2016: Young Members 1.0, Constituency 0.4, Proportional 4.3, Youth Population 27.2
2020: Young Members 4.3, Constituency 2.4, Proportional 14.9, Youth Population 24.9
2024: Young Members 4.7, Constituency 3.9, Proportional 8.7, Youth Population 24.5

Source: National Election Commission, Electee Statistics of Election Statistics System (http://info.nec.go.kr, retrieved on Oct 2, 2024)
Note 1 : Young members are based on those under 40.
Note 2 : The proportion of the youth population refers to the ratio of the registered population aged 25 to 39 with the rights to run for elections.

Proportion of Young Members in Parliament by OECD Country (aged 45 or below), 2022　　　　(Unit: %)
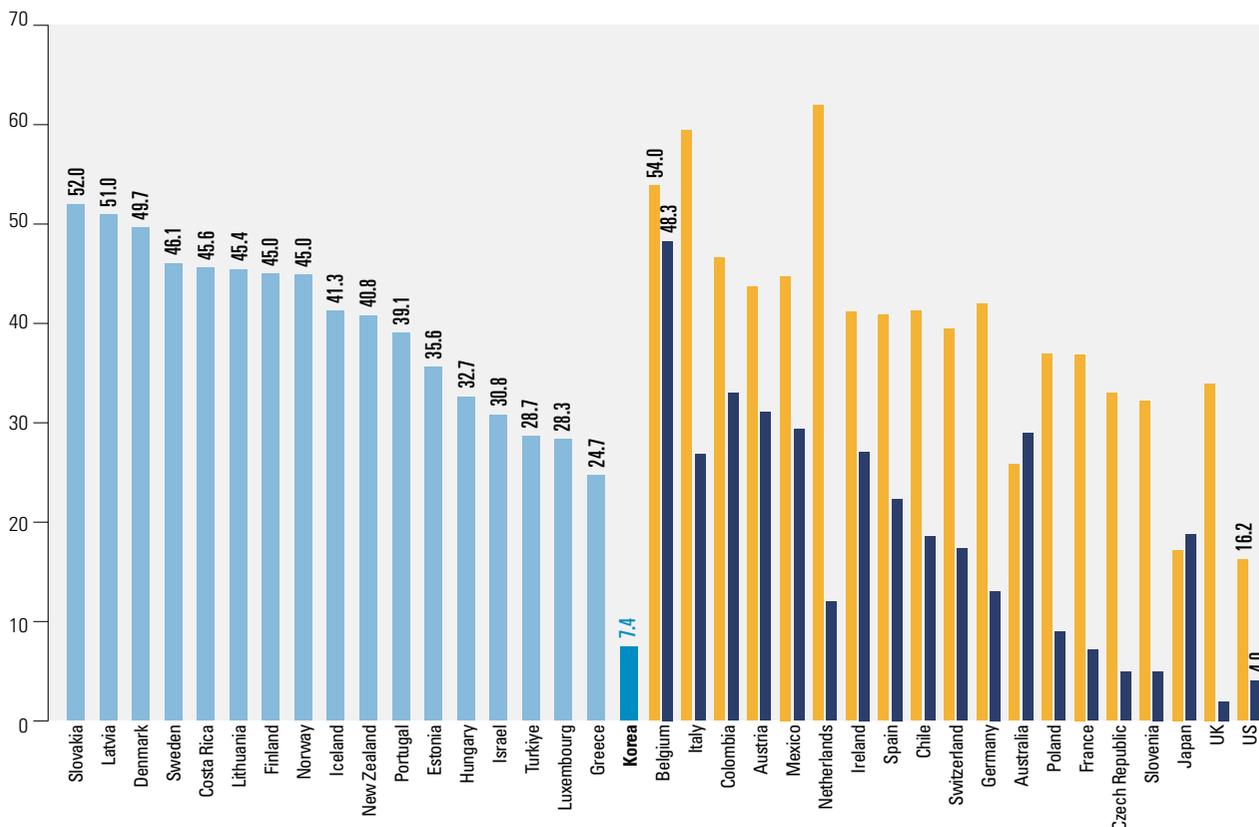
Source: UN SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Oct 2, 2024)
Note 1 : Young members are based on those under 40.
Note 2 : The data for the upper chamber in Chile is based on the figures in 2021. There is no data available for Canada among the 38 OECD countries.

of Employment and Labor. When the Act came into effect in 1991, the employment of those with disabilities in the national and local governments started with a 2% recommendation, which was later changed into a 2% mandatory employment quota. Afterward, the mandatory employment quota for individuals with disabilities kept increasing from 3% in 2008 to 2016, 3.2% in 2017 and 2018, 3.4% in 2019 to 2021, 3.6% in 2022 and 2023 and to 3.8% in 2024. This resulted in a steady increase in the number of public servants with disabilities in the national and local governments, reaching 3.54% in the national government and 3.70% in local governments in 2023. However, this faced a setback from the all-time high of 3.68% in the national government in 2021 and 4.08% in local governments in 2016 and 2017. In 2023, the employment rate (3.54%) of public servants with disabilities in the national government fell short of the mandatory quota (3.6%), indicating the need for further improvement. Meanwhile, in 2023, the number of individuals with

disabilities registered in South Korea stood at 2,642,000 or 5.1% of the total population.

Given the purpose of sustainable development to preserve the share of future generations, it is important to ensure the representation of young people in parliament, the legislative branch of the government. In 2024, the proportion of the elected individuals under 40 was a mere 4.7% during the 22nd national elections. This figure had been recorded at 7.7% during the 17th elections in 2004, but it has failed to exceed 5% since then. Except for those elected in proportional representation, the proportion of the elected parliamentarians under 40 in constituencies was even lower, at 3.9% in 2024. Although the percentage of the younger population has been decreasing due to an aging population, the proportion of youth aged 25 to 39 eligible to run for an election stood at 24.9% in 2023, yet the percentage of parliamentarians in this age group was only a fifth of the figure.

In the UN SDG Database, the ratio of young members in parliament is calculated based on those aged 45 or below.

Out of 38 OECD countries, the proportion of youth in parliament was reported at 38.3% in 18 countries with unicameral legislatures. Among them, South Korea had the lowest at 7.4%. In countries with bicameral legislatures, the ratio of young members in lower chambers (average 39.4%) was much higher than that in upper chambers (average 18.9%). The United States had the lowest ratio (16.2%) of young members in the lower chamber, which is still more than double the proportion of young members in Korea. Upper chambers usually have fewer young members. Even by this standard, only five countries, like the United Kingdom, the United States, the Czech Republic, Slovenia and France, had a lower percentage of young members than Korea.

Highest satisfaction with health services and resident community centers, along with rising satisfaction with license/permit services (○ SDG 16.6.2)

To ensure effective and accountable institutions, SDG 16 includes measuring how satisfied the people are with the government's public services. In this context, the Korea Institute of Public Administration conducts studies on users' satisfaction with various public services provided by the

government through the「Korea Social Integration Survey」.

In 2023, health services were the most satisfied public services (82.3%), followed by resident community centers (81.3%) and Internet document issuance services (78.9%). However, the levels of satisfaction were relatively low for public hearings (42.9% in 2022), police services (55.2%), taxation services (61.6%) and resident participatory budgeting (63.5% in 2022). While the satisfaction with the license/permit services stood at 66.1%, which is not that high, it has steadily increased from 49.3% in 2016. In addition, although public hearings and resident participatory budgeting were excluded from the 2023 survey due to the low user experience at 5% or less, there was a noticeable increase in satisfaction with these services until 2022.

Overall decline in the proportion of population feeling unsafe due to crime (○ SDG 16.1.4)

SDG 16.1 aims to reduce violence in all its forms and resulting deaths across all regions. One of its indicators is the proportion of the population feeling safe walking alone around the area they live. The Korean Institute of Criminology and Justice conducts the「National Life Safety

Public Service Satisfaction, 2016~2023 (Unit: %)
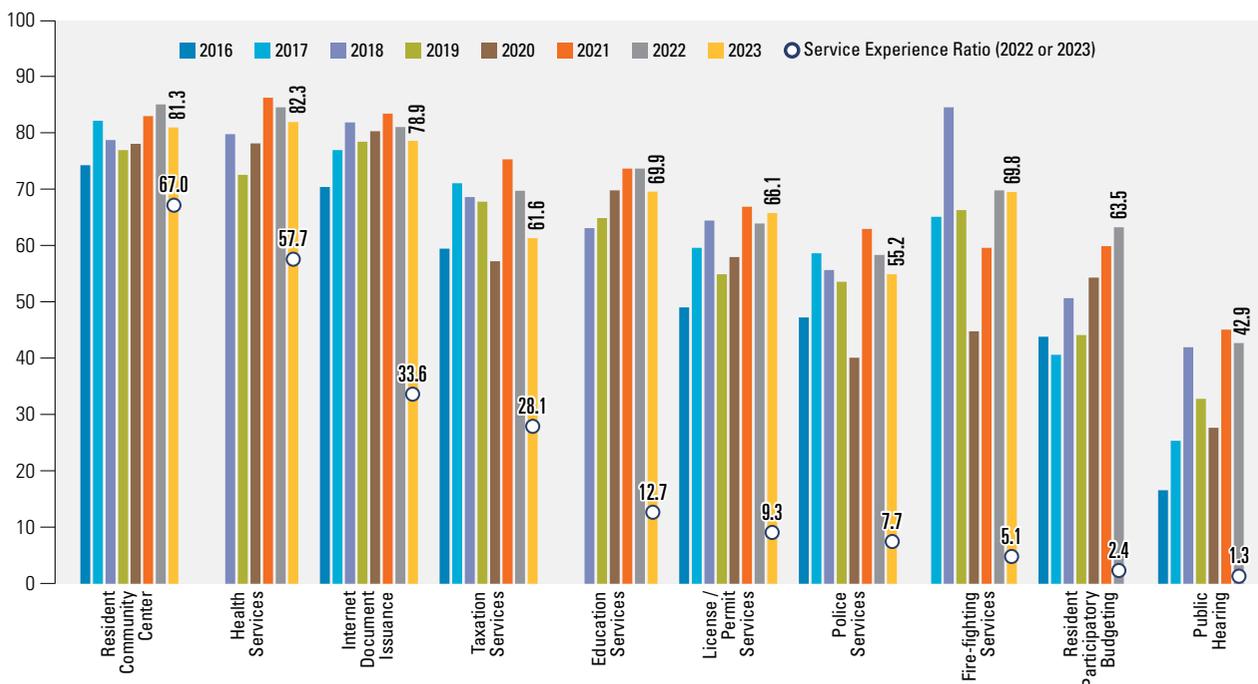
Source: Korea Institute of Public Administration, Korea Social Integration Survey (https://kosis.kr, retrieved on Sep 29, 2024)
Note 1: This graph is based on the proportion of respondents who answered "satisfied" or "very satisfied" with the services that they used over the past 1 year.
Note 2: The survey was not conducted for fire-fighting services in 2016, education and health services in 2016 and 2017 and public hearings and resident participatory budgeting in 2023.
Note 3: The survey targeted the population aged 19 to 69 until 2019, and those aged 19 or above starting from 2020.

General Fear of Crimes, 1996~2023

(Unit: %)

Year	Value
1996	42.4
1998	35.1
2003	39.7
2006	25.2
2009	37.8
2011	31.6
2013	30.3
2015	22.1
2017	20.7
2019	19.8
2021	14.3
2023	18.2
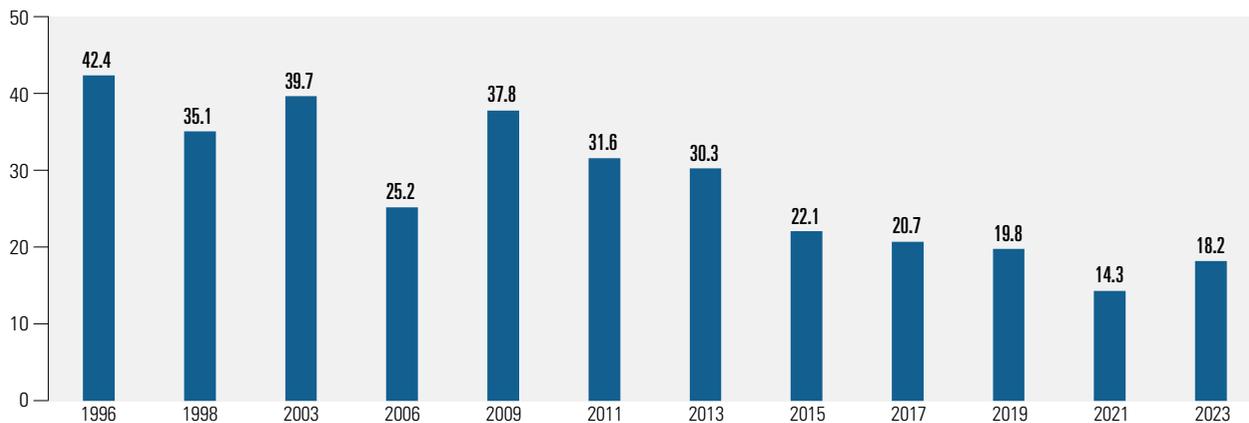
Source: Korean Institute of Criminology and Justice, National Life Safety Survey (Retrieved from KOSIS on Sep 25, 2024 for the years from 2013 to 2021/ The data for other years are cited from the National Crime Victimization Survey.)
Note 1 : This graph refers to the ratio of respondents who answered they felt "afraid" or "very afraid" when walking alone in their neighborhood at night.
Note 2 : As a weighted value has been applied since 2013, caution is needed when comparing it with previous figures.

Fear of Crimes by Type, 2015~2023

(Unit: points)
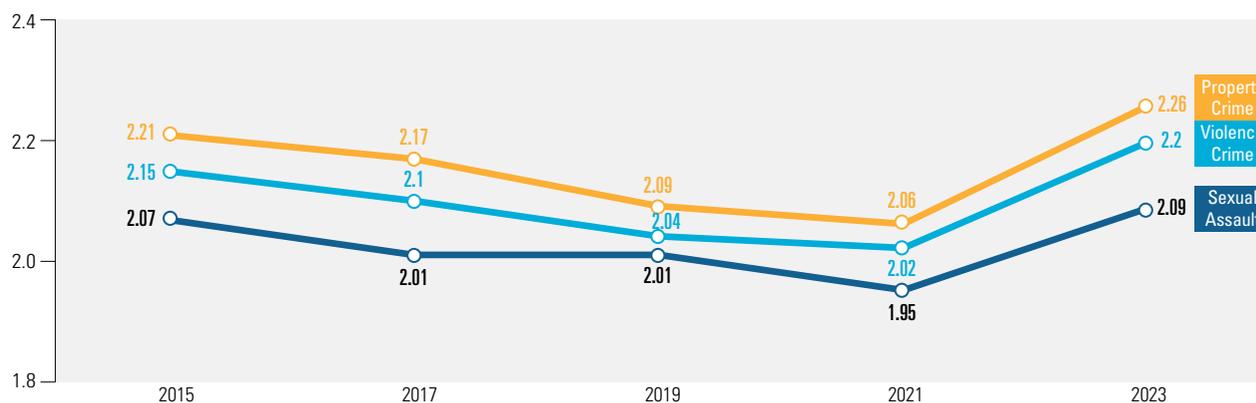
Type	2015	2017	2019	2021	2023
Property Crime	2.21	2.17	2.09	2.06	2.26
Violence Crime	2.15	2.1	2.04	2.02	2.2
Sexual Assault	2.07	2.01	2.01	1.95	2.09

Source: Korean Institute of Criminology and Justice, National Crime Victimization Survey 2022
Note 1 : This is based on the average scores on a scale of five points (1=not afraid at all, 5=very afraid)
Note 2 : For sexual assault, the question regarding fear of illegal filming newly added in the 2023 survey was excluded.

Proportion of the Population Feeling Safe when Walking Alone at Night by OECD Country

(Unit: %)

Country	Value
Iceland	90.9
Canada	87.6
Finland	85.8
Japan	83.4
France	82.0
Israel	80.4
Luxembourg	79.2
Spain	78.3
Estonia	75.0
Ireland	75.0
Latvia	75.0
Slovakia	74.0
Sweden	73.0
Germany	72.1
Switzerland	71.6
OECD	67.6
Korea	64.1
Lithuania	63.9
US	63.0
Belgium	61.8
Türkiye	61.4
Italy	60.6
Colombia	50.8
Mexico	38.5
Chile	32.3
Poland	11.1
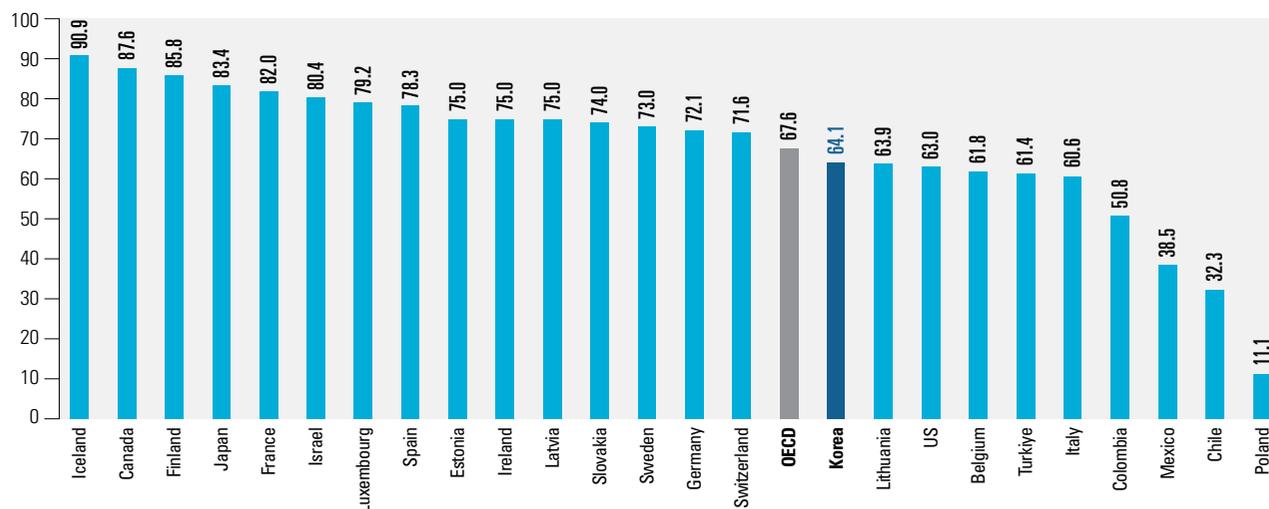
Source: UN SDG Indicators Database(https://unstats.un.org/sdgs/dataportal, retrieved on Sep 25, 2024)
Note 1 : This refers to the proportion of the population feeling safe when walking alone in their neighborhood at night.
Note 2 : This is based on the most recent years (2013 to 2022) with available data.

Survey」 every two years. This survey asks respondents whether they feel afraid when 'walking alone in their neighborhood at night' to measure the level of general fear of crime. In 2023, 18.2% of respondents reported feeling unsafe. When the survey first began in 1996, the rate was a lot higher at 42.4%. Since then, it has fluctuated but continued a downward trend after recording 37.8% in 2009. The rate even hit a record low of 14.3% in 2021 when the incidence of crimes was cut in half due to the COVID-19 pandemic. Looking at crime types, the survey showed that respondents were most fearful of property crimes, violent crimes and sexual assault, in that order. Since women are likely to fall victim to sexual assault, women tended to feel more fear of it than men.

Statistics complied by the UN show the relative level of fear of crimes. The UN SDG database provides the ratios of the population who feel safe when walking in their neighborhood, by country. Although there may be some cultural differences in subjective perception, 64.1% of respondents answered that they felt safe, placing South Korea

Homicide Rate by Gender & Victims' Age, 2011~2023

(Unit: Homicide rate per 100,000 population, %)
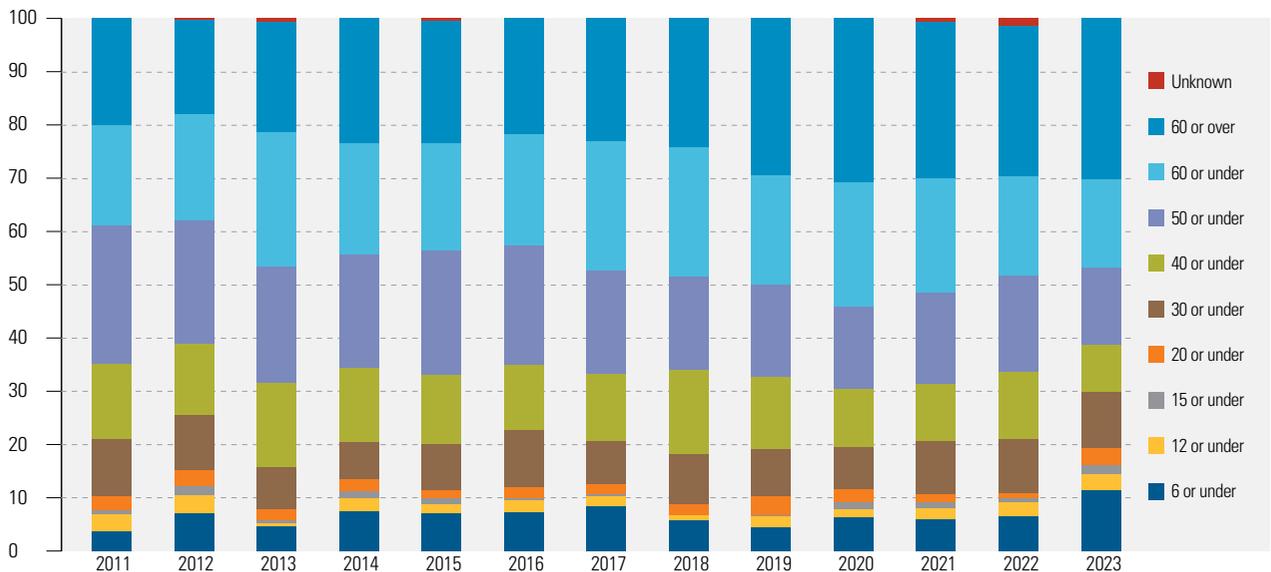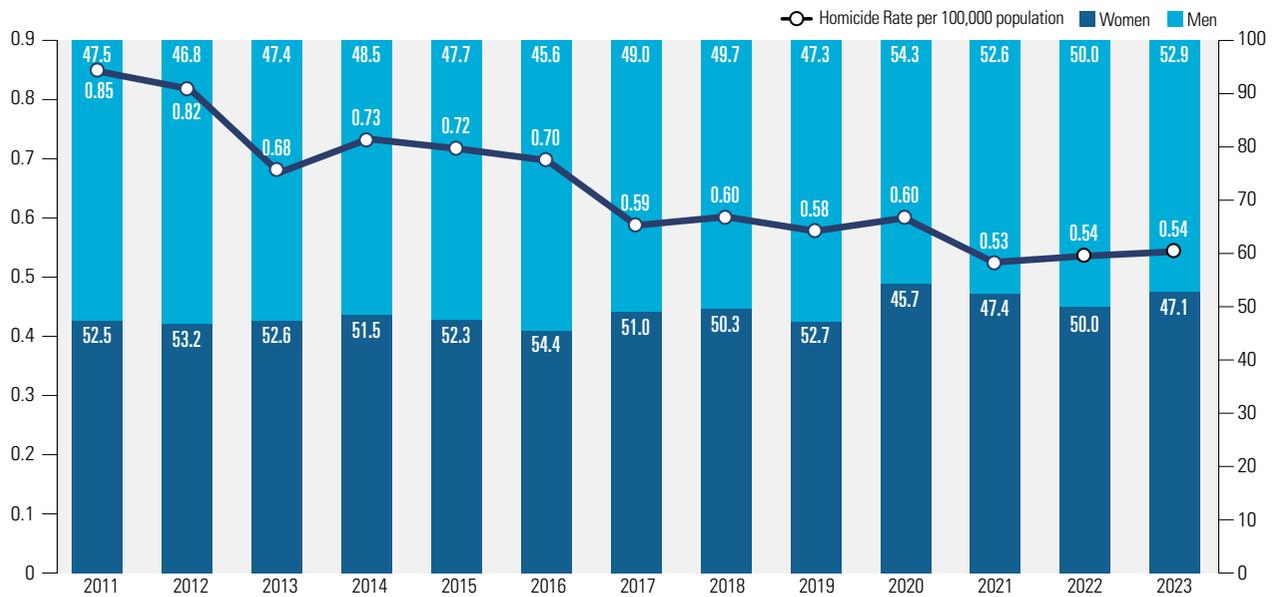
Source: National Police Agency, Crime Statistics (https://kosis.kr, retrieved on Sep 25, 2024)
Note 1 : The homicide rate was calculated based on the number of victims to homicide (crimes) per 100,000 population, and mid-year registered population was used.
Note 2 : Cases with sex of the victim unidentified were excluded.

Types of Homicide Victims, 2023
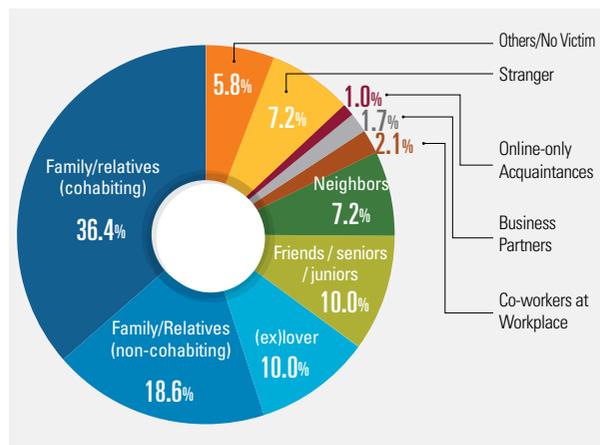
Source: National Police Agency, Crime Statistics (https://kosis.kr, retrieved on Sep 25, 2024)
Note : Based on homicide crimes

16th out of 25 OECD countries in 2021. Iceland topped the list at 90.9%, and over 80% of respondents in Canada, Finland, Japan, France and Israel answered that they felt safe.

Slower decline in homicide cases (⊙ SDG 16.1.1)

In South Korea, homicides have steadily dwindled since the 2010s, with the homicide rate dropping to 0.53 per 100,000 population in 2021. Then, it slightly increased to 0.54 in both 2022 and 2023, slowing the downward trend to some extent. By gender, 47.1% of homicide victims were women in 2023. Although homicide itself is diminishing, 30.2% of victims were over 60 and 11.5% were 6 years or younger, highlighting the need to pay more attention to vulnerable victims, such as the elderly and young children. Looking at the relationship between murderers and victims, the majority of homicide cases were committed by family members or relatives living together (36.4%), followed by non-cohabiting family members or relatives (18.6%), (ex-)lovers (10.0%), friends/seniors/juniors (10.0%), neighbors (7.2%), coworkers at workplace (2.1%) and business partners (1.7%). Online-only acquaintances accounted for 1.0% of homicide cases. About 7.2% of victims were killed by total strangers.

Birth Notification System and Protected Childbirth System introduced to prevent birth registration from being omitted (⊙ SDG 16.9.1)

The legal identity granted through birth registration is pre-requisite for being protected by the nation and its laws. SDG 16.9 aims to provide legal identification to all through birth registrations. In July 2024, the Korean government began implementing the Birth Notification System and the Protected Childbirth System to prevent children from living in a legal blind spot due to missing birth registration. The Birth Notification System refers to a measure that immediately notifies the local government of a baby's birth information once he or she is born at a medical institute. Previously, birth registration was only possible when the individuals obligated to report the birth, typically the parents, did so. If a baby was born out of wedlock, some parents would avoid the birth notification, resulting in birth registration omitted and leaving children unprotected under the law. Along with the Birth Notification System, the Protected Childbirth System was also introduced to address concerns that, under the Birth Notification System, more pregnant women hiding their pregnancies and deliveries due to out-of-wedlock pregnancies may give birth outside a medical institute and abandon the baby. The System is to protect mothers and babies by allowing pregnant women to undergo pre-natal checkups and give birth under an assumed name if they face challenges raising a baby due to reasons, such as financial difficulties and social stigma. With the introduction of the Birth Notification System and the Protected Childbirth System, it is expected that the number of unregistered births will decline and more and more children will be legally protected.

17 PARTNERSHIPS FOR THE GOALS

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

SDG Goal 17 aims to strengthen global partnerships for achieving the SDGs while enhancing implementation capacity in areas such as information and communication technology (ICT) and statistical systems. Globally, the funding gap between required and actual investments for developing countries has widened due to ongoing global crises, reaching $4 trillion. As a result, international cooperation has become even more critical for overcoming these challenges. In Korea, ODA (Official Development Assistance) contributions continue to increase, and internet accessibility remains high. However, greater policy attention is needed to support vulnerable groups, such as the elderly, to ensure inclusive digital access.

>> **In 2023, Korea's Official Development Assistance (ODA) (grant equivalent, preliminary estimate) reached $3.13 billion, a 11.4% increase from the previous year.**
  - ODA as a percentage of GNI rose by 0.01 percentage points to 0.18%, but remains low by international standards.
  - The 2024 ODA budget is set to expand by a record 31.1%, and the ODA-to-GNI ratio is expected to rise significantly in 2025, following a 3.8% year-on-year increase.

>> **In 2022, Korea's bilateral ODA totaled $2.5 billion, reflecting a 12.3% increase from the previous year.**
  - ODA to Least Developed Countries (LDCs) amounted to $843.41 million, accounting for 34.1% of total bilateral ODA, exceeding the OECD Development Assistance Committee (DAC) average.
  - Of this, 21.8% was allocated to landlocked developing countries, and 4.1% to small island developing states.

>> **In 2023, Korea's FDI in developing countries reached $22.4 billion (34.4% of total), while investment in LDCs was just $870 million (1.3%).**
  - Trade with developing countries amounted to $697.9 billion, making up 54.7% of Korea's total trade, while trade with LDCs stood at only $14.19 billion (1.1%).
  - Expanding private investment in LDCs and promoting free and fair trade remain urgent priorities.

>> **As of 2023, Korea had 46.6 fixed broadband subscriptions per 100 people, and the overall internet usage rate stood at 97.4%, ranking high among major economies. However, digital access gaps persist among vulnerable populations.**
  - While 97.4% of people aged 16–74 use the internet, only 50.8% of those aged 75 and older do.
  - The internet usage rate for the lowest income group (84.8%) and those with lower education levels (86.2%) lags more than 10 percentage points behind the national average.

Sustained increase in ODA volume (SDG 17.2.1)

Korea's ODA to support developing countries has increased by approximately $800 million over the past five years, from $2.36 billion in 2018 to $3.13 billion in 2023, based on grant equivalent value. When Korea joined the OECD Development Assistance Committee (DAC) in 2010, its ODA was only $1.17 billion (based on net disbursements). However, it has increased steadily each year, and the recently confirmed ODA budget for 2025 stands at 6.501 trillion KRW, reaching 6.4 trillion KRW target five years ahead of the 2030 goal. According to preliminary statistics, ODA volume increased by $320 million (11.4%) in 2023 compared to 2022. Among them, bilateral aid amounted to $2.3 billion, up 3.4% from the previous year, including grant aid ($1.57 billion) and concessional loans ($730 million). Multilateral aid amounted to $840 million, reflecting a $190 million increase in investments and contributions to major international financial institutions such as the International Development Association (IDA) and the International Monetary Fund (IMF). This increase was aimed at supporting COVID-19 responses in low-income and vulnerable countries and promoting economic recovery in developing nations, marking a 41.9% rise from the previous year.

The United States remains the largest ODA donor globally. As of 2023 (grant equivalent, preliminary estimate), U.S. ODA amounted to $66 billion, followed by Germany ($36.7 billion),

Korea's ODA Volume, 2010~2023   (Unit: million USD)
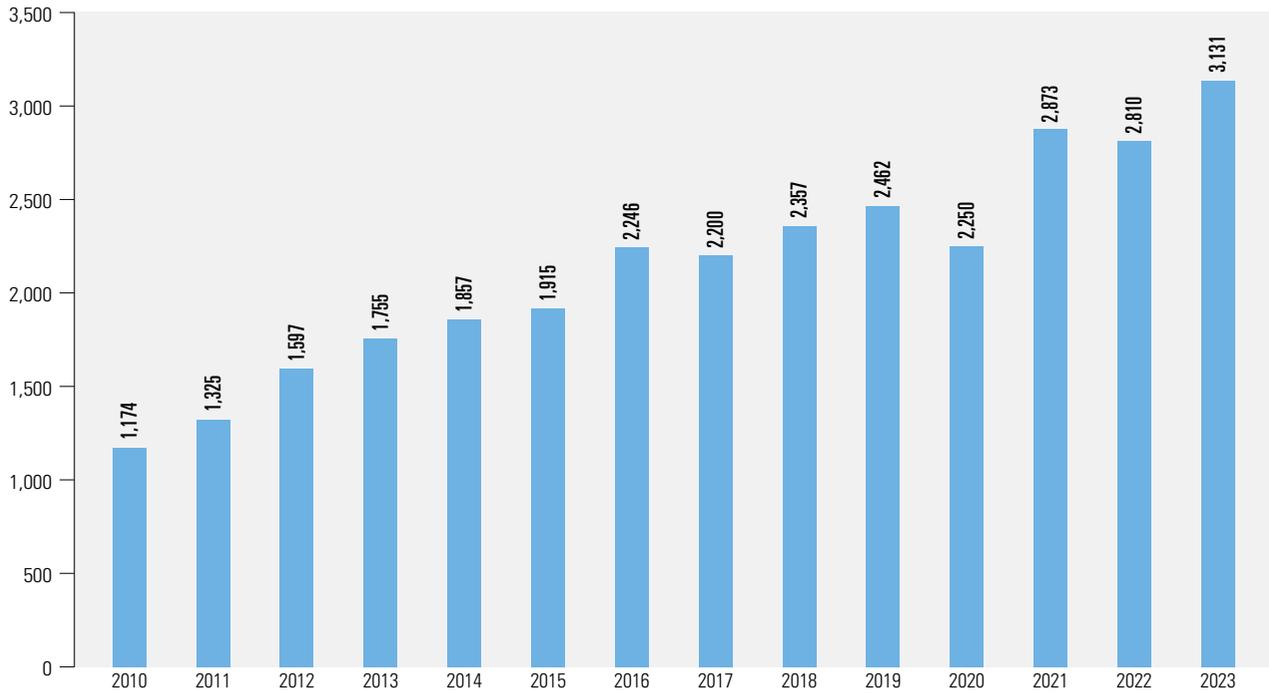
Year	Value
2010	1,174
2011	1,325
2012	1,597
2013	1,755
2014	1,857
2015	1,915
2016	2,246
2017	2,200
2018	2,357
2019	2,462
2020	2,250
2021	2,873
2022	2,810
2023	3,131

Source: OECD, 2024, Development Co-operation Profiles: Korea (https://doi.org/10.1787/2dcf1367-en, retrieved on January 29, 2025)
Note 1 : In constant 2022 prices
Note 2 : 2023 figures are preliminary.

ODA Volume by OECD DAC Member Countries, 2023   (Unit: million USD)
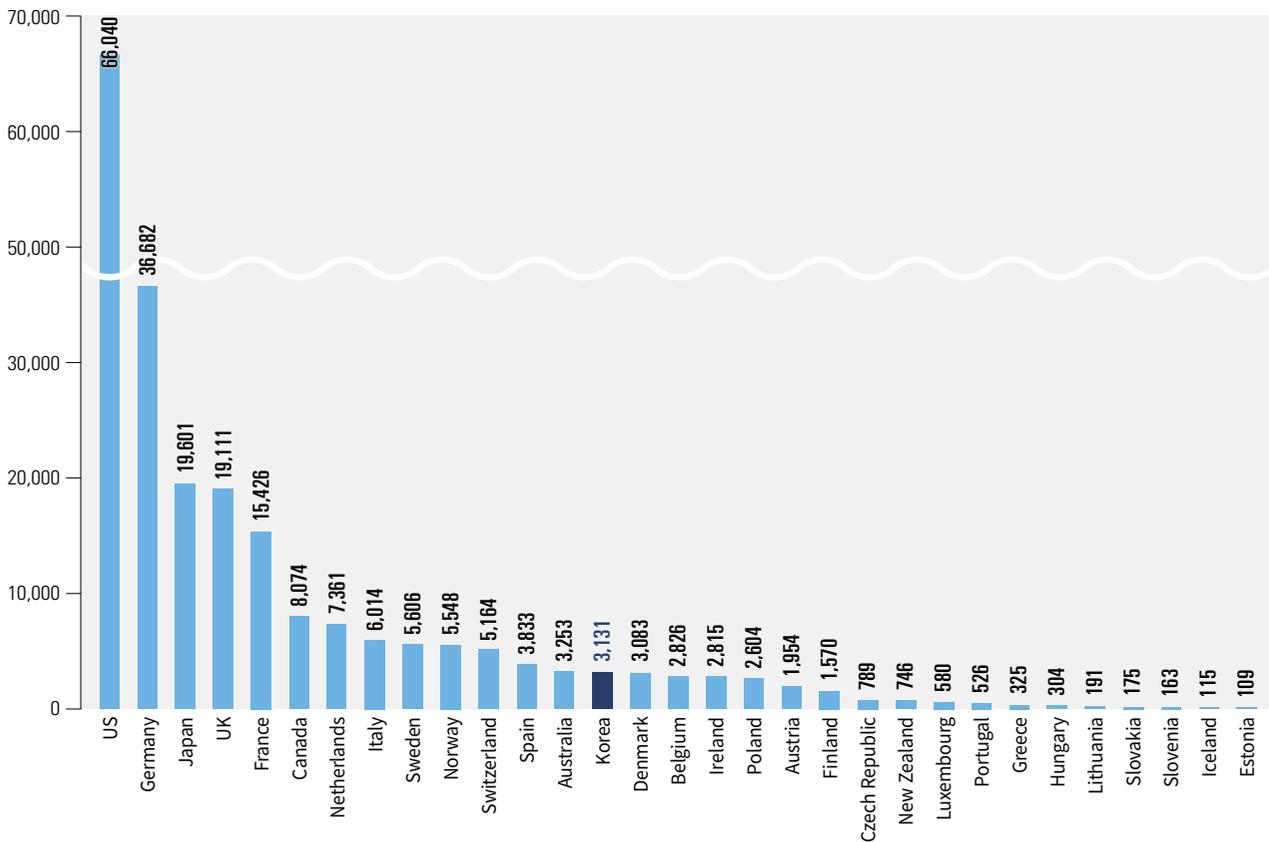
Country	Value
US	66,040
Germany	36,682
Japan	19,601
UK	19,111
France	15,426
Canada	8,074
Netherlands	7,361
Italy	6,014
Sweden	5,606
Norway	5,548
Switzerland	5,164
Spain	3,833
Australia	3,253
Korea	3,131
Denmark	3,083
Belgium	2,826
Ireland	2,815
Poland	2,604
Austria	1,954
Finland	1,570
Czech Republic	789
New Zealand	746
Luxembourg	580
Portugal	526
Greece	325
Hungary	304
Lithuania	191
Slovakia	175
Slovenia	163
Iceland	115
Estonia	109

Source: OECD, 2024, ODA Levels in 2023-preliminary data: Detailed summary note (https://one.oecd.org/document/DCD(2024)31/en/pdf)
Note 1 : Based on the grant equivalent method
Note 2 : 2023 figures are preliminary.

ODA-to-GNI Ratio by OECD DAC Member Countries, 2023 (Unit: %)
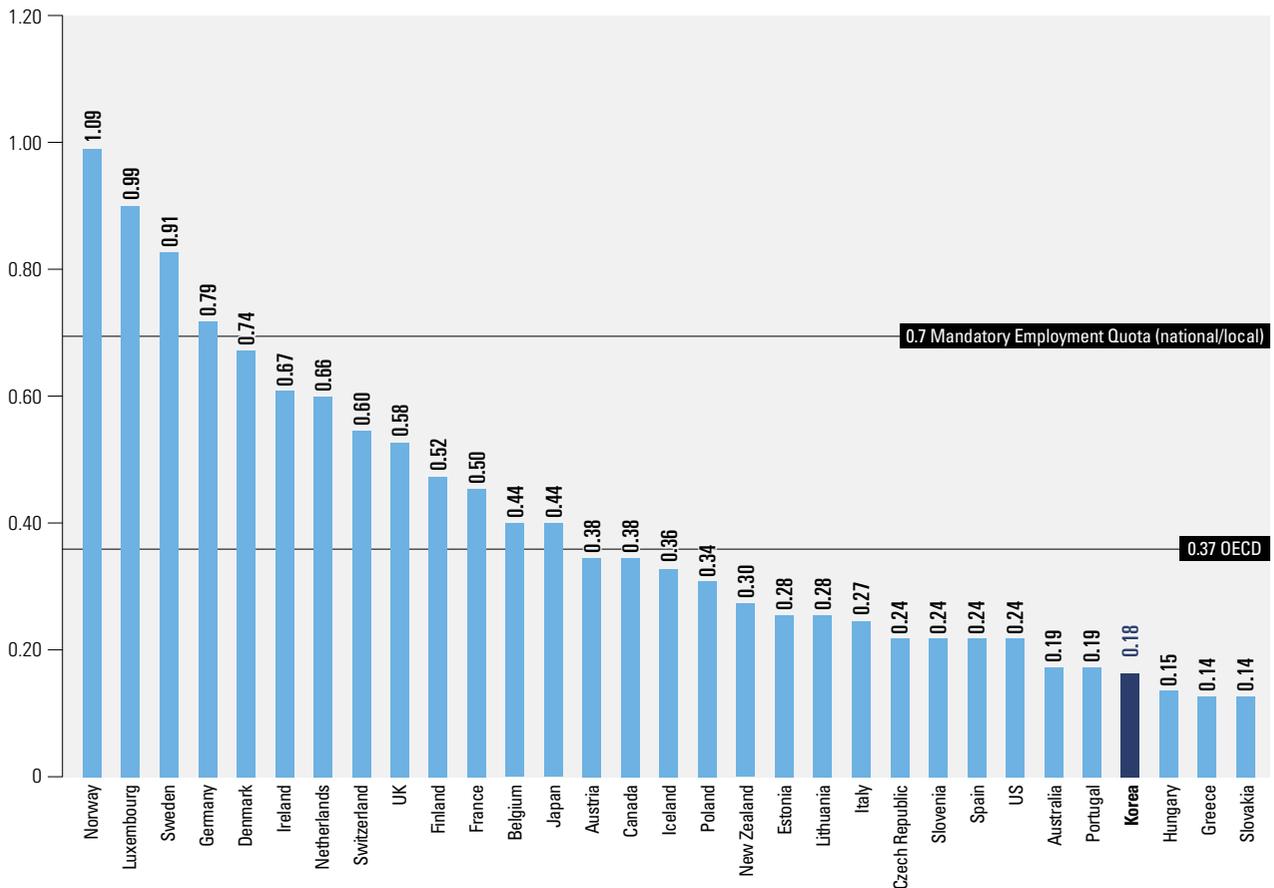
Source: OECD, 2024, ODA Levels in 2023-preliminary data: Detailed summary note (https://one.oecd.org/document/DCD(2024)31/en/pdf)
Note 1 : Based on the grant equivalent method
Note 2 : 2023 figures are preliminary.

Japan ($19.6 billion), the United Kingdom ($19.1 billion), and France ($15.4 billion). Korea ranked 14th among OECD DAC member countries in terms of total ODA volume. When measured as a proportion of Gross National Income (GNI), Korea's ODA-to-GNI ratio stood at 0.18% in 2023, up 0.01 percentage points from the previous year. However, it remained low among DAC members, ranking 28th. The 2024 ODA budget is set to increase by a record 31.1%, which is expected to significantly raise Korea's ODA-to-GNI ratio. In 2023, the average ODA-to-GNI ratio for DAC members was 0.37%. Only five countries–Norway (1.09%), Luxembourg (0.99%), Sweden (0.91%), Germany (0.79%), and Denmark (0.74%)–exceeded the UN's recommended target of 0.7%.

To enhance Korea's international standing and leadership in response to the rapidly evolving global economic landscape, it is essential to continuously expand ODA and strengthen partnerships with developing countries. Beyond increasing ODA volume, Korea must also support developing countries' SDG implementation capacity and establish a coherent policy framework that aligns aid and non-aid policies across key cooperation areas such as trade, investment, and technology transfer.

In particular, mobilizing both ODA and private sector resources is crucial for climate change response and the green transition. Since concessional loans impose a long-term fiscal burden, Korea should actively expand Private Sector Instruments (PSI) to support developing countries more effectively.

Increase in bilateral ODA to least developed countries (⟳ SDG 17.2.1)

Korea's bilateral ODA totaled $2.5 billion in 2022 (gross disbursements), marking a 12.3% increase from the previous year. The UN recommends that support for least developed countries (LDCs) be expanded to 0.15~0.20% of GNI to meet SDG financing needs. However, Korea's ODA to LDCs as a percentage of GNI remained at just 0.06% in both 2021

and 2022. Despite this, Korea's absolute support to LDCs is relatively high compared to other DAC members, and its share of LDCs within bilateral ODA is also significant.

In 2022, Korea's ODA to Least Developed Countries(LDCs) totaled $843.41 million (gross disbursements), accounting for 34.1% of total bilateral ODA. While this is higher than the OECD DAC member average, it remains slightly lower than the share allocated to lower middle-income countries (LMICs), which stood at 36.3%. Korea's ODA to LMICs reached $896.77 million (36.3%), while upper middle-income countries (UMICs) received $297.93 million (12.1%). Among LDCs, Korea provided 21.8% of its bilateral ODA to landlocked developing countries (LLDCs), which face significant economic development constraints due to their geographic location. A total of $537.6 million was allocated to LLDCs such as Ethiopia and Laos. Additionally, 4.1% of Korea's bilateral ODA was directed to small island developing states (SIDS), which are a priority in the international development agenda, with $101.1 million in support.

In May 2023, Korea hosted the "2023 Korea-Pacific Islands Summit" to strengthen support for Pacific island nations. Building on this initiative, the "2024 Korea-Africa Summit"

was held in June 2024, featuring a range of events, including the Youth Startup Forum, Global ICT Leadership Forum, Tourism Forum, and Agriculture Conference. Africa, home to many least developed countries (LDCs), has a high growth potential, with 60% of its population under the age of 25 and the fastest-growing population in the world. The African Continental Free Trade Area (AfCFTA), launched in 2019, is emerging as a massive market with 1.4 billion people and a combined GDP of $3.4 trillion. The Korean government has signed cooperation agreements with multiple African nations, focusing on establishing legal and institutional frameworks to facilitate trade and investment. In addition to sharing free trade policies and advanced customs administration systems, Korea is supporting the implementation of the AfCFTA. To further promote infrastructure cooperation, Korea plans to expand the list of countries eligible for Economic Development Cooperation Fund (EDCF) support and increase financial commitments for certain nations.

Recently, support for fragile states has expanded beyond humanitarian aid to include development, conflict prevention, and peacebuilding efforts. This shift comes in response to intensifying humanitarian crises worldwide, driven by interstate conflicts, climate-related

Korea's ODA Share and Volume by Income Group, 2010~2022　(Unit: Million USD)
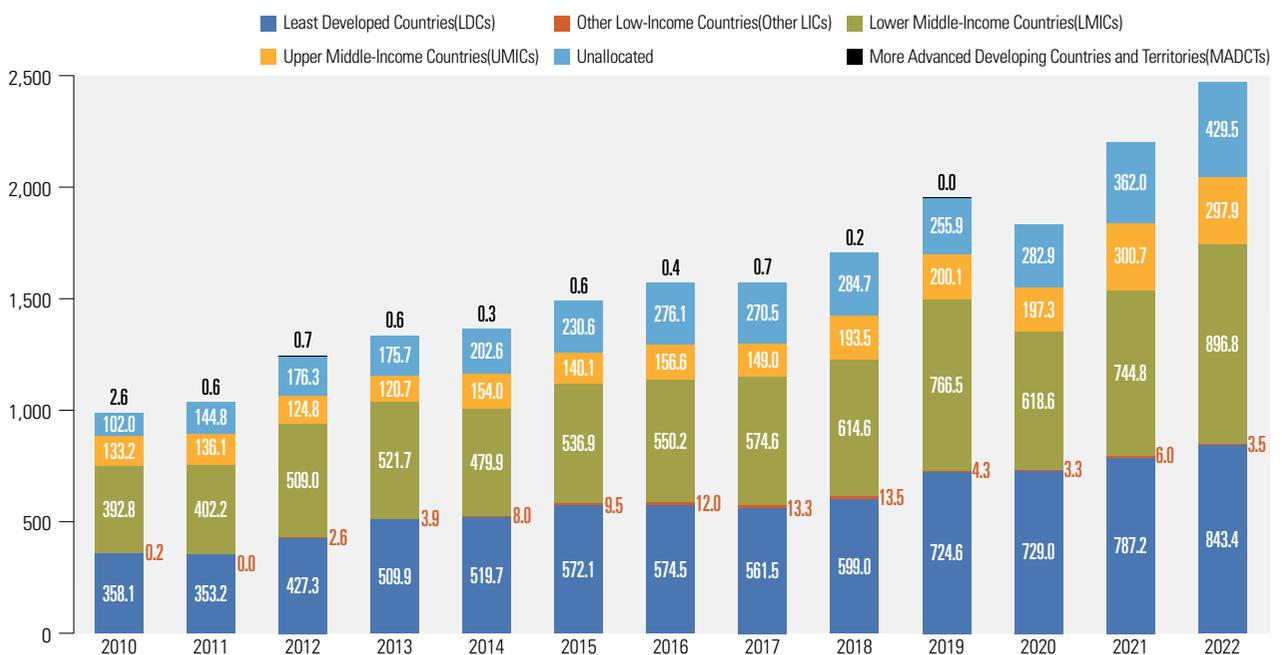
Source: OECD, 2024, Development Co-operation Profiles: Korea (https://doi.org/10.1787/2dcf1367-en, retrieved on January 29, 2025)
Note : Based on gross disbursement

Korea's Support for Fragile States and the HDP Nexus, 2010~2022

(Unit: million USD)

Legend: Humanitarian | Development | Peace Lower Middle-Income Countries(LMICs)

Year	Humanitarian	Development	Peace
2010	7.80	370.65	11.79
2011	8.28	346.14	19.16
2012	11.86	354.69	67.05
2013	16.40	458.47	77.90
2014	44.86	476.71	42.66
2015	33.77	532.23	44.26
2016	55.03	512.46	44.58
2017	76.07	527.41	50.20
2018	101.97	529.49	51.81
2019	96.29	768.09	58.10
2020	91.96	672.89	42.20
2021	106.78	762.99	44.45
2022	59.61	869.21	58.65

Source: OECD, 2024, Development Co-operation Profiles: Korea (https://doi.org/10.1787/2dcf1367-en, retrieved on January 29, 2025)
Note 1 : Based on gross disbursement
Note 2 : In constant 2022 prices

disasters, and global challenges such as food and energy crises, which have led to a sharp increase in the number of fragile states and vulnerable populations. In line with the UN's "Humanitarian-Development-Peace Nexus," Korea formulated its fragile state assistance strategy in 2017. In 2022, Korea's ODA to fragile states increased by 8.0% from the previous year, reaching $987.47 million and accounting for 40.0% of total bilateral ODA. Globally, aid to fragile states is often heavily focused on humanitarian assistance, primarily for emergency relief and post-crisis recovery. However, in Korea's case, development aid made up 88.0% of total assistance to fragile states in 2022, while 6.0% was allocated to humanitarian aid. Although spending on peace-related initiatives remained relatively low at 5.9%, it marked a 1.0 percentage point increase from the previous year.

Expanding investment and trade with Least Developed Countries (LDCs) (⟳ SDG 17.3.1 / 17.11.1)
Korea's Overseas Direct Investment (ODI) has steadily increased over the years, reaching $81.7 billion in 2022. However, in 2023, it declined by 20.2% year-on-year to $65.2 billion, impacted by the global trend of rising interest

rates, China's economic slowdown, and geopolitical risks in Europe. Investment in developing countries also showed an overall increase, totaling $34.6 billion in 2022, accounting for 42.4% of total ODI. However, with the sharp decline in total overseas investment in 2023 and a shift toward advanced economies such as the United States, the share of investment in developing countries dropped significantly to 34.4% ($22.4 billion).

Korea's Overseas Direct Investment (ODI) in Least Developed Countries (LDCs) was limited to $560 million in 2010, accounting for only 2.2% of total investment. While investment in LDCs peaked at $2.01 billion in 2020, it declined sharply in the following years, falling to $1.29 billion in 2021 and further to $870 million in 2022. In 2023, investment remained at a similar level of $870 million. The share of LDC investment in total ODI also reached 3.5% in 2020 but dropped to 1.1% in 2022 before recovering slightly to 1.3% in 2023. Despite this modest recovery, urgent policy efforts are needed to revitalize private investment in LDCs. Currently, private sector financing for SDG implementation is largely directed toward middle-income countries, underscoring the importance of promoting

Overseas Direct Investment Volume and Share of Investment in Least Developed Countries, 2000~2023

(Unit: million USD, %)

Legend: ■ Total Overseas Direct Investment ■ Direct Investment in Least Developed Countries ─○─ Share of Investment in Least Developed Countries

Share of Investment in Least Developed Countries values by year: 2000: 1.0, 2001: 0.9, 2002: 0.6, 2003: 0.4, 2004: 0.4, 2005: 1.0, 2006: 1.5, 2007: 3.5, 2008: 3.1, 2009: 4.5, 2010: 2.2, 2011: 2.9, 2012: 2.7, 2013: 2.8, 2014: 2.0, 2015: 1.4, 2016: 1.8, 2017: 1.4, 2018: 1.6, 2019: 1.8, 2020: 3.5, 2021: 1.7, 2022: 1.1, 2023: 1.3

Selected data labels: 2000: 5,415 / 52; 2023: 65,185 / 873

Source: Export-Import Bank of Korea, Overseas Direct Investment Statistics (https://stats.koreaexim.go.kr/sub/interstateStatistics.do, retrieved on February 12, 2025)

Korea's Trade Volume and Share with Least Developed Countries, 2000~2023

(Unit: Million USD, %)

Legend: ■ Trade Volume with Least Developed Countries(LDCs) ─○─ Share of Total Trade(%)

Trade Volume with LDCs by year: 2000: 4,325, 2001: 4,086, 2002: 3,624, 2003: 3,781, 2004: 5,926, 2005: 6,136, 2006: 7,884, 2007: 6,972, 2008: 7,905, 2009: 9,314, 2010: 11,010, 2011: 14,842, 2012: 12,156, 2013: 13,448, 2014: 15,023, 2015: 10,164, 2016: 11,162, 2017: 9,413, 2018: 9,545, 2019: 9,992, 2020: 9,158, 2021: 12,464, 2022: 15,760, 2023: 14,192

Share of Total Trade(%) by year: 2000: 1.30, 2001: 1.40, 2002: 1.15, 2003: 1.01, 2004: 1.24, 2005: 1.12, 2006: 1.24, 2007: 0.96, 2008: 0.92, 2009: 1.36, 2010: 1.23, 2011: 1.37, 2012: 1.14, 2013: 1.25, 2014: 1.37, 2015: 1.06, 2016: 1.24, 2017: 0.89, 2018: 0.84, 2019: 0.96, 2020: 0.93, 2021: 0.99, 2022: 1.11, 2023: 1.11

Source: Korea International Trade Association (KITA), K-stat (https://stat.kita.net/stat/kts/sum/SumImpExpTotalList.screen, retrieved on February 1, 2025)

investment in LDCs. Private sector investment and innovation in low-income countries are recognized as key drivers of SDG achievement, contributing to productivity growth, inclusive economic development, and job creation.

The international community has long supported a non-discriminatory and fair multilateral trading system to promote global free trade under the WTO framework, including the outcomes of the Doha Development Agenda negotiations. Efforts have focused on strengthening the export base of developing countries, including least developed countries (LDCs). Free and fair trade expands market access for developing nations, enhances technological productivity, creates employment opportunities, and ultimately lays the foundation for sustainable growth. Accordingly, trade is highlighted in SDG Goal 17 as a key means to strengthen global partnerships for SDG implementation. Specifically, Target 17.11 seeks to double the share of LDCs in global exports while significantly increasing the overall participation of developing countries in international trade.

In 2023, Korea's trade with developing countries totaled $697.9 billion (54.7% of total trade), while trade with least developed countries (LDCs) remained at $14.19 billion (1.1%). Since 2000, Korea has granted preferential tariffs

to LDCs. Initially, the scope of eligible products and tariff benefits was limited, but it has gradually expanded. While preferential tariffs applied to only 1.8% of all traded goods at the beginning of the program, the coverage increased significantly to 95% by 2012. Trade with LDCs reached an all-time high of $15.76 billion in 2022. However, in 2023, it declined by 9.9% year-on-year to $14.19 billion.

Internet usage reaches 97.4%, but digital inclusion remains low among vulnerable groups
(⟳ SDG 17.6.1 / 17.8.1)

As of 2023, Korea's fixed ultra-high-speed internet subscribers totaled approximately 24.098 million, equivalent to 46.6 per 100 people. Since the service launched in 1998, subscription rates have grown rapidly, surpassing 20% by 2002 and exceeding 40% since 2017. In January 2020, Korea designated ultra-high-speed internet as a universal service to bridge digital gaps. As of 2023, Korea's broadband subscription rate ranks second among 38 OECD countries, following France (47.0%), and is significantly higher than the OECD average (35.8%).

The OECD defines internet usage rates based on the proportion of individuals aged 16 to 74 who have used the

High-Speed Internet Subscription Rate, 1999~2023 (Unit: %)

Source: Ministry of Science and ICT, Telecommunications Operator Reports (https://www.index.go.kr/unity/potal/main/EachDtlPageDetail.do?idx_cd=1348, retrieved on January 28, 2025); OECD, Broadband statistics (https://www.oecd.org/en/topics/sub-issues/broadband-statistics.html, retrieved on January 28, 2025)
Note : Number of fixed broadband subscribers per 100 inhabitants

Internet Usage Rate, 2005~2023

(Unit: %)
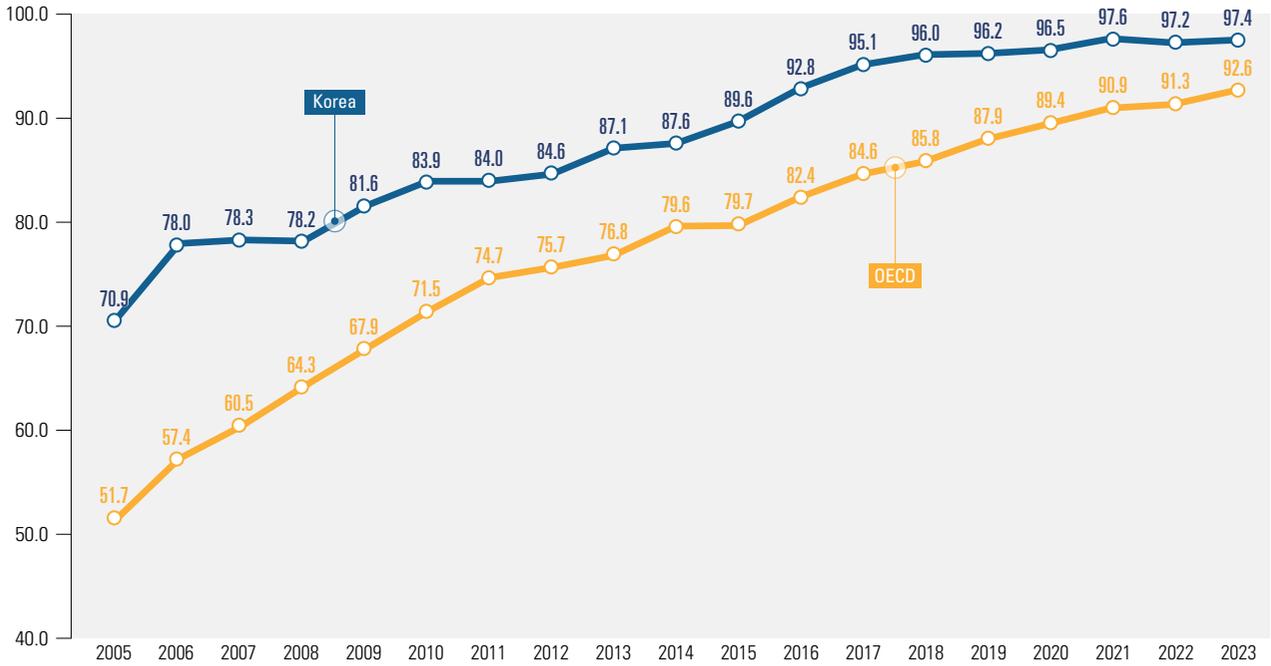
Source: OECD, OECD Data Explorer (https://data-explorer.oecd.org, retrieved on January 28, 2025)
Note 1: Percentage of individuals aged 16–74 who have used the internet in the past three months
Note 2: OECD average is based on data available for 28 to 33 countries each year

High-Speed Internet Subscription and Internet Usage Rates by OECD Country, 2023
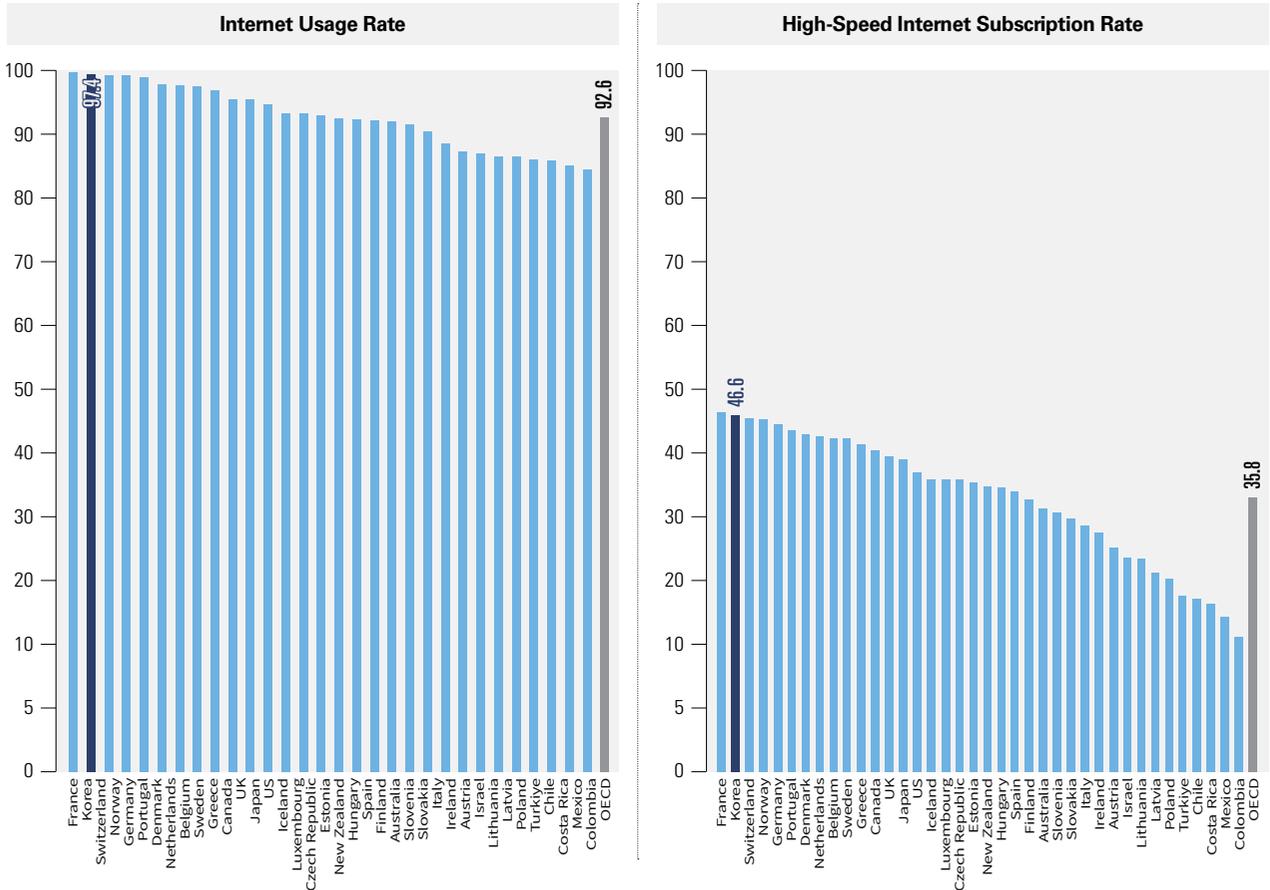
(Unit: %)

Source: OECD, Broadband statistics (https://www.oecd.org/en/topics/sub-issues/broadband-statistics.html, retrieved on January 28, 2025); OECD, OECD Data Explorer (https://data-explorer.oecd.org, retrieved on January 28, 2025)

Internet Usage Rate by Vulnerable Group, 2023

(Unit: %)
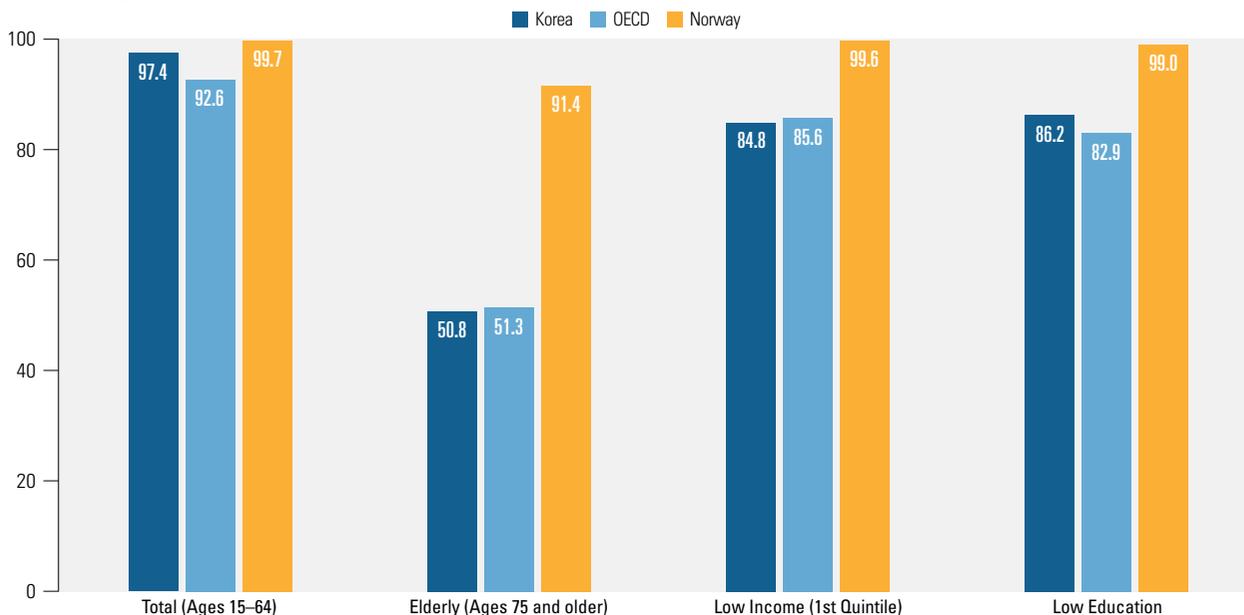
Source: OECD, OECD Data Explorer (https://data-explorer.oecd.org, retrieved on January 28, 2025)
Note : Internet usage rates for the elderly, low-income, and low-education groups are based on the average of 10, 27, and 30 OECD countries, respectively, with available data.

internet in the past three months. By this standard, Korea's internet usage rate reached 97.4% in 2023, making the internet a nearly universal tool for Koreans. However, since 2021 (97.6%), growth has plateaued in the 97% range, highlighting the need for greater attention to those lagging behind in digital access. Among the 30 OECD countries with available 2023 data, the average internet usage rate was 92.6%, with Korea surpassing it by 4.8 percentage points. Only seven countries recorded higher rates than Korea: Norway (99.7%), Luxembourg (99.3%), Switzerland (99.3%), the Netherlands (99.2%), Denmark (98.8%), Finland (97.7%), and Sweden (97.6%).

Despite Korea's strong internet infrastructure, internet usage remains relatively low among vulnerable groups, particularly the elderly. In 2023, while 97.4% of individuals aged 16–74 used the internet, the rate for those aged 75 and older was significantly lower at 50.8%, nearly half the overall rate. Similarly, among the 10 OECD countries with available data on internet usage for those aged 75 and older, the average rate was just 51.3%, similar to Korea. However, in Norway, which has the highest overall internet usage rate in the OECD, 91.4% of individuals aged 75 and older used the internet. Internet usage also varies by income and education level. Among the lowest-income group (first quintile) and low-education group, usage rates were 84.8% and 86.2%, respectively—more than 10 percentage points lower than the overall population. Despite Korea's high broadband subscription and internet usage rates, digital accessibility among vulnerable groups remains limited, highlighting the need for policy attention to bridge this gap.

Purpose and Use

Consisting of 17 goals and 169 targets, SDGs were agreed by countries all around the world at the UN General Assembly in September 2015 to be universally achieved by 2030. Encompassing all sectors including economy, society and the environment in a cross-sectional manner, SDGs reflect the key principle 'Leave No One Behind (LNOB)'. To attain the goals by 2030, nations have monitored their progress at the High Level Political Forum (HLPF) each year and held a summit meeting in every four years.

Voluntary achievement should come first from various groups, including national and local actors, to achieve the SDGs on a global scale. To this end, the 2030 Agenda recommends each and every nation to devise their sustainable development goals and monitor their progress on a regular basis. In 2022, Korea upgraded the Act on Sustainable Development under the jurisdiction of the Ministry of Environment to the Framework Act on Sustainable Development under the Office for the Government Policy Coordination, to reinforce the nation's implementation of sustainable development. At the same time, it also refurbished monitoring functions by including the Statistics Korea as an agency that also serves as the Sustainable Development Committee.

As an authorized national focal point of SDG data in Korea, the Statistics Research Institute under Statistics Korea has been collecting domestic SDG data, providing them to international organizations and publishing the Sustainable Development Goal in the Republic of Korea: Progress Report. Following the publication of the preliminary version 『Korea's SDG Data and Progress through the Global Lenses』 in 2019, it has issued the SDG in the Republic of Korea: Progress Report annually, both in Korean and English, at the end of March since 2021. It includes time-series analysis regarding in a possible scope and analysis by disaggregated group according to domestic demographic groups or regions for meaningful and sufficient analysis. In addition, it diagnoses Korea's current state by comparing with major countries. It focuses on enhancing data usability and visibility in analysis results by making the most of visual aids, such as graphs. Efforts have been made to elaborate on technical terms so that it can be easily understood by the civil society, the general public and students.

This report serves as policy data for policy practitioners and researchers in each area, and can be also used as supporting data for coming up with policies for sustainable development. Furthermore, it is not only utilized as data for policy publicity, education and communications for the general public, press/media and civic society, but it is also provided to relevant overseas agencies and researchers as it is published in English version in parallel. The report is posted on the websites of the Statistics Research Institute and Statistics Korea for easy access for all.

Data Source

Statistical data from the Statistics Korea's Indicator Integration Service(https://index.go.kr/sdg) were used first for analysis of indicators, and then reliable data were collected from relevant approved statistics and policy data depending on the need for additional analysis. To collect global data, the UN SDG Database was utilized, together with data from international organizations responsible for each indicator to ensure latest and disaggregated data analysis.

History

2025

SDG in the Republic of Korea:
Progress Report 2025
(Korean/English)

2024

SDG in the Republic of Korea:
Progress Report 2024
(Korean/English)

2023

SDG in the Republic of Korea:
Progress Report 2023
(Korean/English)

2022

SDG in the Republic of Korea:
Progress Report 2022
(Korean/English)

2021

SDG in the Republic of Korea:
Progress Report 2021
(Korean/English)

2020

Korea's SDG Data and Progress
through the Global Lenses 2020
(English)

2019

Korea's SDG Data and Progress
through the Global Lenses 2019
(Korean)

Website on which the report is posted: https://www.index.go.kr/sdg

Statistical data play an important role in providing data that lays the crucial foundations for accelerating the progress of SDG and taking firm policies and actions. This is because we are able to make a more accurate and detailed diagnosis regarding the current situation through assessments based on reliable, timely and disaggregated data. In response, the UN has supported activities in various aspects to strengthen statistical capacities concerning SDG indicators. As a results, there have been significant strides.

By the time the global SDG indicator framework was drafted in 2016, a concerning 39% of the SDG indicators lacked internationally established methodology or standards (Tier 3). In just 4 fours in 2020, all indicators had a well-established methodology or standards. The proportion of indicators that are conceptually clear and have good country coverage increased significantly from 36% in 2016 to 72% in 2024 (Tier 1), ensuring data accuracy, comparability and reliability of the global indicator framework. However, about 28% of indicators have still insufficient country coverage, requiring continuous capacity-building of nations lacking statistical capacities.

Korea's availability of data corresponding to global SDG indicators stood at 82% in 2024. Statistics Korea has provided relevant data and metadata services on its platform by collecting domestic and overseas statistics in line with the concept of global SDG indicators. Considering the goal-specific data availability, there are still eight goals with less data availability compared to the average. Among them, gender equality (Goal 5), climate change (Goal 13) and peace and justice (Goal 16) showed weak data availability.

Tier Status of Global SDG Indicator (Unit: %)

■ Conceptually clear and have good country coverage (Tier 1)
■ Conceptually clear but insufficient country coverage (Tier 2)
■ No internationally established methods (Tier 3)
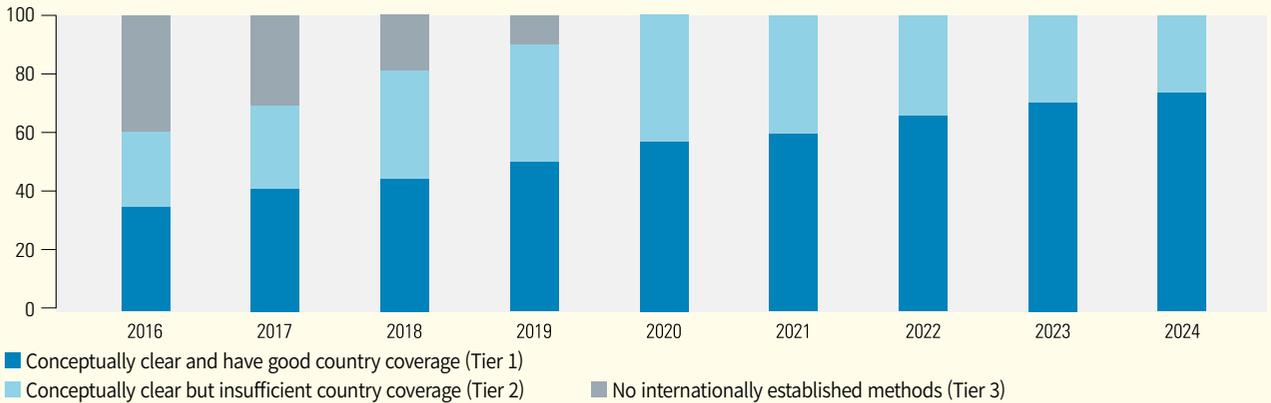
Korea's of SDG Data Availability by Goal(as of Dec. 2024) (Unit: %)
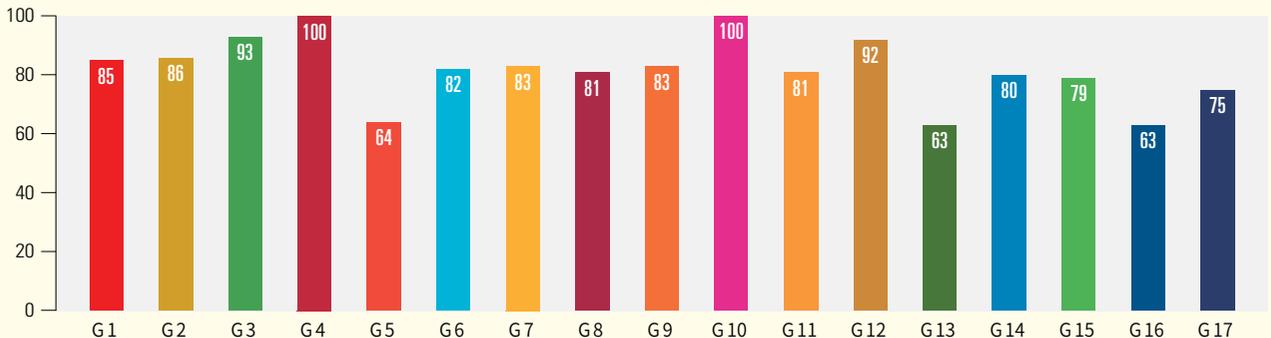
Global Indicator Framework for the SDG

From 2023, core indicators and rotation indicators for each goal have been selected for systematic and comprehensive monitoring. Core indicators will be used annually, and rotation indicators will be used for monitoring every 3-5 years.

* Indicators utilized for monitoring since 2019 was shown

Goal 1 — End poverty in all its forms everywhere

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
1.1	By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	1.1.1	Proportion of the population living below the international poverty line, by sex, age, employment status and geographical location (urban/rural)	○					
1.2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	1.2.1	Proportion of population living below the national poverty line, by sex and age	○		○	○	○	●
		1.2.2	Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions						
1.3	Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	1.3.1	Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons with disabilities, pregnant women, newborns work-injury victims and the poor and the vulnerable	○	○	○	○	○	●
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 by 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

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
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	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						
		2.2.2	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	○	○	○	○		●

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Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
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						
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

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
3.1	By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3.1.1	Maternal mortality ratio1	○				○	
		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	By 2020, halve the number of global deaths and injuries from road traffic accidents	○					
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	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		○				
		3.8.2	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					○	

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
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, by type of occupation	○	○	○	○	○	●
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 organisms						

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

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
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)						
4.2	By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education	4.2.1	Proportion of children aged 24-59 months of age who are developmentally on track in health, learning and psychosocial well-being, by sex						
		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 level					○	

Goal 5 — Achieve gender equality and empower all women and girls

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
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	(a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure						
5.b	Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women	5.b.1	Proportion of individuals who own a mobile telephone, by sex						
5.c	Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	5.c.1	Proportion of countries with systems to track and make public allocations for gender equality and women's empowerment						

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

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
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

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
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

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 percent gross domestic product growth per annum in the least developed countries	8.1.1	Annual growth rate of real GDP per capita	○	○	○	○	○	●
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						
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 of 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

Target	Indicator	2019	2021	2022	2023	2024	2025
9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	**9.1.1** Proportion of the rural population who live within 2 km of an all-season road						
	9.1.2 Passenger and freight volumes, by mode of transport		○	○		○	
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 capabilities	**9.4.1** CO_2 emission per unit of value added						
9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	**9.5.1** Research and development expenditure as a proportion of GDP	○	○	○	○	○	●
	9.5.2 Researchers (in full-time equivalent) per million inhabitant	○	○	○	○	○	●
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

Target	Indicator	2019	2021	2022	2023	2024	2025
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 policy	○	○	○	○	○	●
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				○		
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 destination						
	10.7.4 Proportion of the polulation 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 percent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 percent	**10.c.1** Remittance costs as a proportion of the amount remitted						

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

Target	Indicator	2019	2021	2022	2023	2024	2025
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 situation, women, children, persons with disabilities and order persons	**11.2.1** Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities	○		○	○		
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	**11.3.1** Ratio of land consumption rate to population growth rate						●
	11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically				○		
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	**11.4.1** Total per capita expenditure on the preservation protection and conservation of all cultural and natural heritage, by source of funding(public and private), type of heritage (cultural, natural), level of government (national, regional and local/municipal)					○	
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	**11.5.1** Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population						
	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						
	11.5.3 (a) Damage to critical infrastructure and (b) 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. PM2.5 and PM10) 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, (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						
11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials							

Goal 12 — Ensure sustainable consumption and production patterns

Target	Indicator	2019	2021	2022	2023	2024	2025
12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	**12.1.1** Number of countries developing, adopting or inplementing policy instruments aimed at supporting the shift to sustainable consumption and production						*
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		○			○	

Target	Indicator	Monitoring Indicator by Year					
		2019	2021	2022	2023	2024	2025
12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities	12.7.1 Degree of sustainable public procurement policies and action plans implementation					○	
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)					●	

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

Target	Indicator	Monitoring Indicator by Year					
		2019	2021	2022	2023	2024	2025
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 Amount provided and mobilized in United States dollars per year in relation to the continued existing collective mobilization goal of the $100 billion commitment through to 2025						
13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	13.b.1 Number of least developed countries and small island developing States with nationally determined contributions, long-term strategies, national adaptation plans, strategies as reported in adaptation communications and national communications						

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

Target	Indicator	Monitoring Indicator by Year					
		2019	2021	2022	2023	2024	2025
14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	14.1.1 (a) Index of coastal eutrophication; and (b) floating plastic debris density	○	○	○	○	○	●
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		○	○	○	○	●

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
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 negotiation	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 frame work which recognizes and protects access rights for small-scale fisheries						
14.c	Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"	14.c.1	Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nations Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources				○		

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

Target		Indicator		Monitoring Indicator by Year					
				2019	2021	2022	2023	2024	2025
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						
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 (b) revenue generated and finance mobilised 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 (b) revenue generated and finance mobilised from biodiversity-relevant economic instruments						

Target	Indicator	2019	2021	2022	2023	2024	2025
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

Target	Indicator	2019	2021	2022	2023	2024	2025
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			○		○	

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

Target	Indicator	2019	2021	2022	2023	2024	2025
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, 1) total and 2) to least developed countries, as a proportion of the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee donors' gross national income (GNI)	○	○	○	○	○	●
17.3 Mobilize additional financial resources for developing countries from multiple sources	**17.3.1** Foreign direct investments (FDI), official development assistance and South-South Cooperation as a proportion of gross national income (GNI)				○	○	●
	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 LDCs				○	○	
17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	**17.6.1** Fixed Internet broadband subscriptions per 100 inhabitants, by speed						●
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 Average tariffs faced by developing countries, least developed countries and small island developing States	**17.12.1** Weighted average tariffs faced by developing countries, least developed countries and small island developing States						
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						

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Target	Indicator	Monitoring Indicator by Year					
		2019	2021	2022	2023	2024	2025
17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts	17.18.1 Statistical capacity indicator for SDG monitoring					○	
	17.18.2 Number of countries that have national statistical legislation that complies with the Fundamental Principles of Official Statistics					○	
	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						

Data figures for each year are available on the site below

Statistics Korea's Online Indicators Portal

(https://www.index.go.kr/sdg)

References

Bank of Korea, Economic Statistics System(https://ecos.bok.or.kr)

CBD, 2020, Global Biodiversity Outlook 5

European Commission, Biodiversity strategy for 2030(https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en)

European Commission, Nature Restoration Law(https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law_en)

Export-Import Bank of Korea, Overseas Direct Investment Statistics(https://stats.koreaexim.go.kr/sub/interstateStatistics.do)

FAO, 2024, The State of Food Security and Nutrition in the World 2024

FAO, AQUASTAT(https://www.fao.org/aquastat/en)

FAO, FAODATA explorer(https://de-public-statsuite.fao.org)

FAO, FAOSTAT(https://www.fao.org/faostat)

FAO, UN Report: Global hunger numbers rose to as many as 828 million in 2021(https://www.fao.org/newsroom/detail/un-report-global-hunger-SOFI-2022-FAO/en)

Global Water Partnership, 2000, Integrated Water Resources Management and Global Water Partnership

Hyejin Han et al., 2020, Study on Implementation of Sustainable Water Circulation Management System and Policy Foundations in Consideration of Integrated Water Resources Management, Korea Environment Institute

Hyojeong Kim et al., 2023, Concept of Violence in Intimate Relationships as Gender-based Violence and Ways to Move Forward, Korean Women's Development Institute

IEA, Fossil Fuel Subsidies(https://www.iea.org/topics/fossil-fuel-subsidies)

IEA, The global energy crisis pushed fossil fuel consumption subsidies to an all-time high(https://www.iea.org/commentaries/the-global-energy-crisis-pushed-fossil-fuel-consumption-subsidies-to-an-all-time-high)

IEA, World Energy Balances(https://www.iea.org/data-and-statistics/data-product/world-energy-balances#indicators)

ILO, ILOSTAT(https://ilostat.ilo.org/topics/sdg)

IPBES, Global Assessment Report on Biodiversity and Ecosystem Services(https://ipbes.net/global-assessment)

IPBES, IPBES-IPCC Co-Sponsored Workshop on Biodiversity and Climate Change(https://ipbes.net/events/ipbes-ipcc-co-sponsored-workshop-biodiversity-and-climate-change)

IPU, ParlineData(https://data.ipu.org)

ITU, DataHub (https://datahub.itu.int)

IUCN, Nature-based Solutions(https://www.iucn.org/our-work/nature-based-solutions)

IUCN, Raw Data to Red List(https://www.iucnredlist.org/assessment/process)

IWRM Action Hub(https://iwrmactionhub.org/about/iwrm-explained)

IWRM Data Portal(https://iwrmdataportal.unepdhi.org)

Joint Government Ministries, 2023, 2030 National Protected Area Expansion Roadmap(Agenda for the Ministerial Meeting on Social Affairs).

Joint Government Ministries, 2023, 5th National Biodiversity Strategy (2024–2028).

Joint Ministries, 2024, Roadmap for Dynamic Economy

Key Biodiversity Areas, World Database of Key Biodiversity Areas(http://keybiodiversityareas.org/kba-data/request)

Korea Environment Corporation, AirKorea, Air Quality Standards(https://www.airkorea.or.kr/web/airMatter?pMENU_NO=130)

Korea Fisheries Resources Agency, Introduction of TAC (https://www.fira.or.kr/fira/fira_030601.jsp)

Korea Institute for Industrial Economics and Trade, 2024, Key Indicators of Major Industries, June 2024 Vo.45

Korea Institute of Public Administration, Korea Social Integration Survey

Korea International Trade Association, K-stat(https://stat.kita.net)

Korea Land and Geospatial Informatix Corporation, 2024, 2023 Urban Planning Status

Korean Educational Development Institute, 「Korean Adult Lifelong Learning Survey」

Korean Educational Development Institute, Basic Educational Statistics

Korean Institute of Criminology and Justice, National Crime Victimization Survey

Korean Institute of Criminology and Justice, NationalLifeSafetySurvey

Korean Women's Development Institute, Gender Statistics Information System (https://gsis.kwdi.re.kr)

Kyungah Koo et al., 2021, Study for the Establishment of the 5th National Biodiversity Strategy, Ministry of Environment / Korea Environment Institute.

Kyungah Koo et al., 2021, Study on the Establishment of an Integrated System for National Biodiversity Strategy, Management Indicators, Implementation Evaluation, and Effectiveness Assessment, Korea Environment Institute.

Kyungah Koo et al., 2022, Strategies for Expanding Carbon Sinks through Biodiversity Conservation (I), Korea Environment Institute.

Kyungah Koo et al., 2023, Study on the Development of Management Indicators for the 5th National Biodiversity Strategy, Ministry of Environment / Korea Environment Institute.

Mina Kang et al., 2020, Study on Measures to Reinforce Policy Coordination for Vulnerable Groups, Korea Research Institute for Human Settlements

Minhee Yun etal.,2021,StudyonCreationofSDGIndicatorsusingGIS,StatisticsResearchInstitute

Ministry of Agriculture, Food and Rural Affairs, 2023, Agribusiness Statistics

Ministry of Culture, Sports and Tourism, Korea Policy Briefing(https://www.korea.kr/news/policyNewsView.do?newsId=148929822)

Ministry of Education, 2023, 10th Ministerial Meeting on Social Affairs Press Release(December 26, 2023).

Ministry of Education, Press Release (Dec 5, 2023), "Release of the 2022 OECD PISA Results"

Ministry of Education, Press Release (Sep 10, 2024), "Release of the Results of the OECD Indicators of Education Systems 2024"

Ministry of Employment and Labor, 2014~2023, AA Worker Analysis Report by Gender from 2014 to 2023 (https://aa-net.or.kr/user/board/workerReport)

Ministry of Environment, 2021, 1stBasicPlanonNationalWaterManagement(2021~2030)

Ministry of Environment, 2024, 2023 Waterworks Statistics(https://www.waternow.go.kr/web/board/STAT/36690/?pMENUID=9)

Ministry of Environment, 2025, 2022 Greenhouse Gas Emissions Recorded at 724.29 Million Tons, Down 2.3% from the Previous Year, Press Release (January 3, 2025)

Ministry of Environment, Greenhouse Gas Inventory and Research Center, 2025, 2024 National Greenhouse Gas Inventory (1990–2022)Announcement (2006,1996IPCCGuidelines)

Ministry of Environment, Greenhouse Gas Inventory and Research Center, 2025, Summary of the National Greenhouse Gas Inventory (1990–2022)

Ministry of Gender Equality and Family, 2024, Lives of Men and Women in 2024 Statistics(https://www.mogef.go.kr/nw/rpd/nw_rpd_s001d.do?mid=news405)

Ministry of Government Legislation, Korea Law Information Center(https://www.law.go.kr)

Ministry of Health and Welfare, 2024, National Immunization Program for Children, Maintaining High Immunization Rate compared to Other Major Countries, Press Release (Jul 29, 2024)

Ministry of Health and Welfare, 2024, Suicide Rate of 27.3 (per 100,000 population) in 2023, Press Release (Oct 4, 2024)

Ministry of Health and Welfare, Press Release (Apr 19, 2024), "2,642,000 individuals with disabilities registered in 2023, which is 5.1% out of the total population"(https://www.mohw.go.kr/board.es?mid=a10503000000&bid=0027&list_no=1481120&act=view)

Ministry of Health and Welfare, Press Release (Jul 18, 2024), "Birth Notification System and At-crisis Pregnancy Support System to protect pregnant women and children in difficult situations"

Ministry of Health and Welfare, Statistics of Pre-kindergartens and Users

Ministry of Land, Infrastructure and Transport, 2024, 2023 Housing Survey: (Ordinary households) Research Report

Ministry of Land, Infrastructure and Transport, V-WORLD Digital Twin Territory, Spatial Facilities(Status)(https://www.vworld.kr/dtmk/dtmk_ntads_s002.do?svcCde=MK&dsId=30068)

Ministry of Oceans and Fisheries, 2023, Advance Notification for Deep-sea Fishery Compliance to Prevent IUU Fishing, Press Release (Feb 15, 2023)

Ministry of Oceans and Fisheries, 2024, 4thComprehensivePlanforDeep-seaFisheryDevelopment(2024to2028)

Ministry of Oceans and Fisheries, Marine Environment Information System(https://www.meis.go.kr/portal/main.do)

Ministry of Personnel Management, 2024 Statistical Yearbook for Personnel Innovation(https://www.mpm.go.kr/mpm/lawStat/infoStatistics/hrStatistics/hrStatistics03)

Ministry of Personnel Management, 2024, 2024 Statistical Yearbook for Personnel Innovation

Ministry of Science and ICT, 2025, 2025 Comprehensive Implementation Plan on the R&D Programs of the Ministry of Science and ICT

Ministry of Science and ICT, National Information Society Agency, 2024, 2023 Internet Usage Survey

References

Ministry of the Interior and Safety, National Disaster Safety Portal(https://www.safekorea.go.kr)

Ministry of the Interior and Safety, Statistics of Female Public Servants in Local Governments (as of Dec 31, 2023)(https://www.mois.go.kr/frt/bbs/type001/commonSelectBoardArticle.do?bbsId=BBSMSTR_000000000051&nttId=110482, retrieved on Aug 28, 2024)

Ministry of Trade, Industry and Energy·Korea Energy Economics Institute2025,2024YearbookofEnergyStatistics

National Assembly Secretariat, Open Parliament Information(https://open.assembly.go.kr/)

National Election Commission, Election Statistics System(http://info.nec.go.kr)

National Institute for Lifelong Education,AdultLiteracySurvey

National Institute of Environmental Research, 2024, 2023 Air Quality Yearbook

National Institute of Fisheries Science, 2022, NIFS, Nation's First Release of Observation Results regarding Long-term Marine Acidification, Press Release(Nov 14, 2022)

National Institute of Fisheries Science, 2024, 2024 Study on Impacts of Climate Change on Marine Fisheries

NationalInstituteofFisheriesScience,FishStockRebuildingProject(https://www.nifs.go.kr/contents/actionContentsCons0121.do)

National Police Agency, 2024, 2023 Police Statistical Yearbook(https://www.police.go.kr/user/bbs/BD_selectBbsList.do?q_bbsCode=1117)

National Police Agency, Crime Statistics

ODA Korea, 2024, 2024 Comprehensive Implementation Plan for International Development Cooperation (Draft), 48th Committee for ODA Korea Resolution (No. 48-1).

OECD, 2020, Blended Finance in the Least Developed Countries 2020: Supporting a Resilient COVID-19 Recovery

OECD, 2021, Development Co-operation Report 2021: Shaping a Just Digital Transformation(https://www.oecd.org/dac/development-co-operation-report-20747721.htm)

OECD, 2021, OECD skills outlook 2021: Learning for life

OECD, 2021, Starting strong VI: Supporting meaningful interactions in early childhood education and care

OECD, 2023, Health at a glance 2023

OECD, 2023, Health at a Glance 2023: OECD Indicators

OECD, 2023, PISA 2022 results(Volume I): The state of learning and equity in education

OECD, 2024, Development Co-operation Profiles: Korea(https://doi.org/10.1787/2dcf1367-en)

OECD, 2024, ODA Levels in 2023-preliminary data: Detailed summary note(https://one.oecd.org/document/DCD(2024)31/en/pdf)

OECD, Broadband statistics(https://www.oecd.org/en/topics/sub-issues/broadband-statistics.html)

OECD, Fragility Framework(http://www3.compareyourcountry.org/states-of-fragility/countries/AFG)

OECD, OECD Data Explorer(https://data-explorer.oecd.org)

OECD, Programme for International Student Assessment

Office for Government Policy Coordination, Ministry of Economy and Finance, Ministry of Foreign Affairs, 2024, Korea's Official Development Assistance (ODA) of $3.13 Billion in 2023, Press Release(April 14, 2024)

Presidential Water Commission, Integrated Water Management(https://www.water.go.kr/464)

Sachs, J. D. et al., 2024, Sustainable Development Report 2024, Dublin University Press, doi:10.25546/108572

Sachs, J., Kroll, C., Lafortune, G., Fuller, G., F. Woelm, 2021, Sustainable Development Report 2021: The Decade of Action for the Sustainable Development Goals

SDSN, 2015, Indicators and a Monitoring Framework for the Sustainable Development Goals

Seoul Metropolitan Government, What is the Sunset Program for long-term undeveloped urban parks? (https://news.seoul.go.kr/env/city_park_time)

Statistics Korea, Economically Active Population Survey, Additional data analyzed for each employment type

Statistics Korea, e-national indicators(https://www.index.go.kr/unity/potal/eNara/main/EnaraMain.do)

Statistics Korea, Indicator Nuri (https://www.index.go.kr)

Statistics Korea, Indicator Portal (https://www.index.go.kr)

Statistics Korea, Korean Statistical Information Service (https://kosis.kr)

Statistics Korea, KOSIS (https://kosis.kr)

Statistics Korea, Pension Statistics

Statistics Korea, SDG Indicator Portal(https://www.index.go.kr/unity/potal/sdg/SDGMain.do)

Statistics Korea, Statistical Classification Portal, Korean Standard Industrial Classification(https://kssc.kostat.go.kr:8443/ksscNew_web/kssc/
common/ClassificationContent.do?gubun=1&strCategoryNameCode=001&categoryMenu=007&addGubun=no)

Statistics Korea·Bank of Korea·Financial Supervisory Service, Survey of Household Finances and Living Conditions

Statistics Research Institute, 2021, SDG in the Republic of Korea: Progress Report 2021.

Statistics Research Institute, 2023, SDG in the Republic of Korea: Progress Report 2023.

Statistics Research Institute, 2024, SDG in the Republic of Korea: Progress Report 2024

Taehun Kim·Jiyeon Kim, 2013, Study on Development of Food Security Indicators」, KoreaRuralEconomicInstitute

UN, 2024, SDG indicator metadata

UN, 2024, The Sustainable Development Goals Report

UN, SDG Indicators Database(https://unstats.un.org/sdgs/dataportal)

UNCTAD, 2020, World Investment Report 2020

UNDRR, SendaiFrameworkforDisasterRiskReduction(https://sendaimonitor.undrr.org)

UNEP, 2021, Food Waste Index Report 2021

UNEP, 2024, Food Waste Index Report 2024

UNEP, Kunming-Montreal Global Biodiversity Framework(https://www.unep.org/resources/kunming-montreal-global-biodiversity-
framework?gclid=CjwKCAjw9-6oBhBaEiwAHv1QvOMGJmHCHLCYRlKwejBCazRGScyS4vbbJiA2_3KtoZ1OUEWWOrwb9xoCvXUQAvD_BwE)

UNFCCC, GlasgowClimatePact(https://unfccc.int/sites/default/files/resource/cma2021_10_add1_adv.pdf)

UNISDR, 2015, Sendai Framework for Disaster Risk Reduction 2015-2030

UNISDR, 2017, Technical Guidance for Monitoring and Reporting on Progress in Achieving the Global Targets of the Sendai Framework for Disaster
Risk Reduction

United Nations Environment Programme, 2018, Progress on Integrated Water Resources Management: Global Indicator 6.5.1. Updates and
Acceleration Needs

United Nations Office for Disaster Risk Reduction (UNISDR), 2017, How to Make Cities More Resilient: A Handbook for Local Government Leaders
(https://www.uncclearn.org/wp-content/uploads/library/unisdr_-_handbook_for_local_government_leaders_2017_korean.pdf)

WHO, 2022, Suicide: facts and figures globally(https://iris.who.int/bitstream/handle/10665/360460/WHO-MSD-UCN-MHE-22.03-eng.pdf?sequence=1)

WHO, Healthworkforce(https://www.who.int/health-topics/health-workforce#tab=tab_1)

WHO, Vaccines and immunization(https://www.who.int/health-topics/vaccines-and-immunization#tab=tab_1)

WHO, WhataretheWHOAirqualityguidelines?(https://www.who.int/news-room/feature-stories/detail/what-are-the-who-air-quality-guidelines)

Wonju Seo, 2013, Case Analysis and Implications regarding Education Policies in the United Kingdom to Enhance Social Mobility, Global Education
Policy Information Vol. 12, Korean Educational Development Institute

WorldBankGroup,WorldBankOpenData(https://data.worldbank.org)

WorldBank,WorldDevelopmentIndicators(https://databank.worldbank.org/source/world-development-indicators/Series/NV.IND.MANF.ZS)

World Economic Forum, 2020, The Global Social Mobility Report 2020:Equality,OpportunityandaNewEconomicImperative

Yeona Hong, Misung Park, Yongseon Lee, and Chanmi Yoon. (2021). Strategies for Reducing Waste in Agricultural and Food Distribution and
Consumption Stages. Korea Rural Economic Institute.

Yul Kwon et al., 2012, Development Challenges of Least Developed Countries and Korea's ODA Policy Directions, KIEP Research Report 12-14, Korea
Institute for International Economic Policy

Yul Kwon et al., 2016, Cooperation Strategies and Response Challenges for Developing Countries after the Adoption of the SDGs, Korea Institute for
International Economic Policy

Yul Kwon et al., 2021, Korea's Regional Development Cooperation Strategy: ODA Support Measures for Asia, Korea Institute for International
Economic Policy

Yul Kwon, 2019, The UN Sustainable Development Goals (SDGs) and Korea's Implementation Agenda: Focusing on the K-SDGs Development Process

References

and Governance Reform, Global Politics Research, Hankuk University of Foreign Studies

Yul Kwon, 2022, Systematization of International Development Cooperation and Aid Policy, Future Policy Focus, Winter 2022, Vol. 35, National Research Council for Economics, Humanities, and Social Sciences

Yul Kwon, 2023, Key Prospects for International Development Cooperation in 2024: Changes in the Post-COVID Development Cooperation Paradigm and the Role of Development Finance, Knowledge Sharing Brief, Special Edition 2023, KDI International Development Cooperation Center

Yul Kwon, 2024, Current Status and Challenges of Korea's ODA Expansion Policy, Budget Review, Vol. 74, National Assembly Budget Office

CBD Convention on Biological Diversity

FDI Foreign Direct Investment

GDP Gross Domestic Product

GNI Gross National Income

IDA International Development Association

IEA International Association for the Evaluation of Educational Achievement

IHR International Health Regulation

IMF International Monetary Fund

ITU International Telecommunication Union

IUCN International Union for Conservation of Nature

IWRM Integrated Water Resources Management

KEEP30 Korea Energy Efficiency Partnership 30

LCR Land Consumption Rate

LDC Least Developed Country

NDC Nationally Determined Contribution

ODA Official Development Assistance

ODI Overseas Direct Investment

OECD Organisation for Economic Co-operation and Development

OECD DAC OECD Development Assistance Committee

OECM Other Effective area-based Conservation Measures

PGR Population Growth Rate

PIAAC Programme for the International Assessment of Adult Competencies

PISA Programme for International Student Assessment

RIR Rent to Income Ratio

RLE Red List of Ecosystems

RPS Renewable Energy Portfolio Standards

TIMSS Trends in International Mathematics and Science Study

UNEP United Nations Environment Programme

UNESCO United Nations Educational, Scientific and Cultural Organization

UNDRR UN Office for Disaster Risk Reduction

WHO World Health Organization

"We reaffirm our unwavering commitment to achiving this Agenda and utilizing it to the full to transform our world for the better by 2030."

- Transforming Our World: The 2030 Agenda for Sustainable Development (para.91) -

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