The Republic of Korea's Fifth National Biodiversity Strategy (2024~2028)

December 2023

The Government of the Republic of Korea

Acronyms

APQA	Animal and Plant Quarantine Agency
BOK	Bank of Korea
CHA	Cultural Heritage Administration
KCS	Korea Customs Service
KDCA	Korea Disease Control and Prevention Agency
KFS	Korea Forest Service
KMA	Korea Meteorological Administration
KOSTAT	Statistics Korea
MAFRA	Ministry of Agriculture, Food and Rural Affairs
MCST	Ministry of Culture, Sports and Tourism
ME	Ministry of Environment
MFDS	Ministry of Food and Drug Safety
MND	Ministry of National Defense
MOE	Ministry of Education
MOEF	Ministry of Economy and Finance
MOF	Ministry of Oceans and Fisheries
MOFA	Ministry of Foreign Affairs
MOHW	Ministry of Health and Welfare
MOLIT	Ministry of Land, Infrastructure and Transport
MOTIE	Ministry of Trade, Industry and Energy
MSIT	Ministry of Science and ICT
NIE	National Institute of Ecology
RDA	Rural Development Administration

CONTENTS

I. Overview of National Biodiversity Strategy and Action Plan

1. Background

- The Convention on Biological Diversity (CBD) requires each Party to develop a national strategy for the conservation and sustainable use of biodiversity. The Republic of Korea (ROK), which became a Party to the CBD in 1995, established its first national biodiversity strategy and action plan (NBSAP) in 1998 to meet this obligation.
- There was a need to streamline policies on the comprehensive and systematic conservation of biodiversity and the sustainable use of biological resources, which had been dispersed among several acts of legislations. In response, overarching legislation called the Act on the Conservation and Use of Biological Diversity (Biodiversity Act) was introduced in 2012.

2. Significance

- The Biodiversity Act stipulates that central and local governments are responsible for ensuring the conservation of biodiversity and the sustainable use of biological resources and lists a number of measures to help them fulfill this responsibility. One of the most critical measures on the list is the development and implementation of an NBSAP.
- Article 7 of the Biodiversity Act provides that the central government shall develop an NBSAP every five years, and that each central administrative agency shall submit an implementation strategy in its respective field. The Minister of Environment is expected to compile these strategies to prepare an NBSAP for consideration and approval by the Cabinet.
- In other words, an NBSAP is the highest-level, cross-ministerial strategy in biodiversity that sets out a five-year policy direction to ensure the conservation and sustainable use of biodiversity in the country.

3. Progress toward the development of the fifth NBSAP

3.1 Participation in negotiations for the Kunming-Montreal Global Biodiversity Framework

- As a Party to the CBD, the ROK actively participated in discussions on the Kunming-Montreal Global Biodiversity Framework (GBF) from 2019 until its adoption at the fifteenth meeting of the Conference of the Parties (CBD COP 15) in December 2022. The GBF features 23 targets to be achieved by 2030 to halt and reverse biodiversity loss. The Parties agreed to develop new NBSAPs or update existing ones to align with the new framework for consideration by COP 16.

3.2 Cross-ministerial discussions

- The ROK undertook the development of its fifth NBSAP in 2023, the final year of the implementation of the fourth NBSAP. First, a Working Group was formed to discuss the key elements of the fifth NBSAP, with participation from working-level officials from relevant ministries, experts and civil society organizations. The group met in March, April and June for three-day meetings where it reviewed the national goals and targets, indicators and ministry-level tasks in alignment with the GBF targets.
- In accordance with Article 3, Paragraph 5 of the Enforcement Decree of the Biodiversity Act, an NBSAP Development Committee was created with senior-level officials from relevant ministries and experts from their respective fields. The committee convened in March, June and November to determine the specific elements of the NBSAP based on the earlier review by the Working Group.

3.3 Public consultation

- Meanwhile, six rounds of discussions were held from July to November to solicit views from local governments, civil society, industries, youth and women on the key discussions and findings from the Working Group and the NBSAP Development Committee. From August to September, a policy idea contest was organized to invite the general public to submit proposals or ideas for biodiversity enhancement.
- This public engagement process informed the draft of the fifth NBSAP, which was shared at a public hearing on November 23 to gather comments and suggestions.

3.4 Fifth NBSAP finalized

- The final draft was prepared based on inputs provided by the National Biodiversity Committee, which was held from November 27 to 30 under Article 2, Paragraph 1 of the Enforcement Decree of the Biodiversity Act.
- The fifth NBSAP (2024 – 2028) was finalized upon approval by the Cabinet on December 12, 2023, as stipulated in Article 7, Paragraph 4 of the Biodiversity Act.

II. Biodiversity Status and Policy Trends

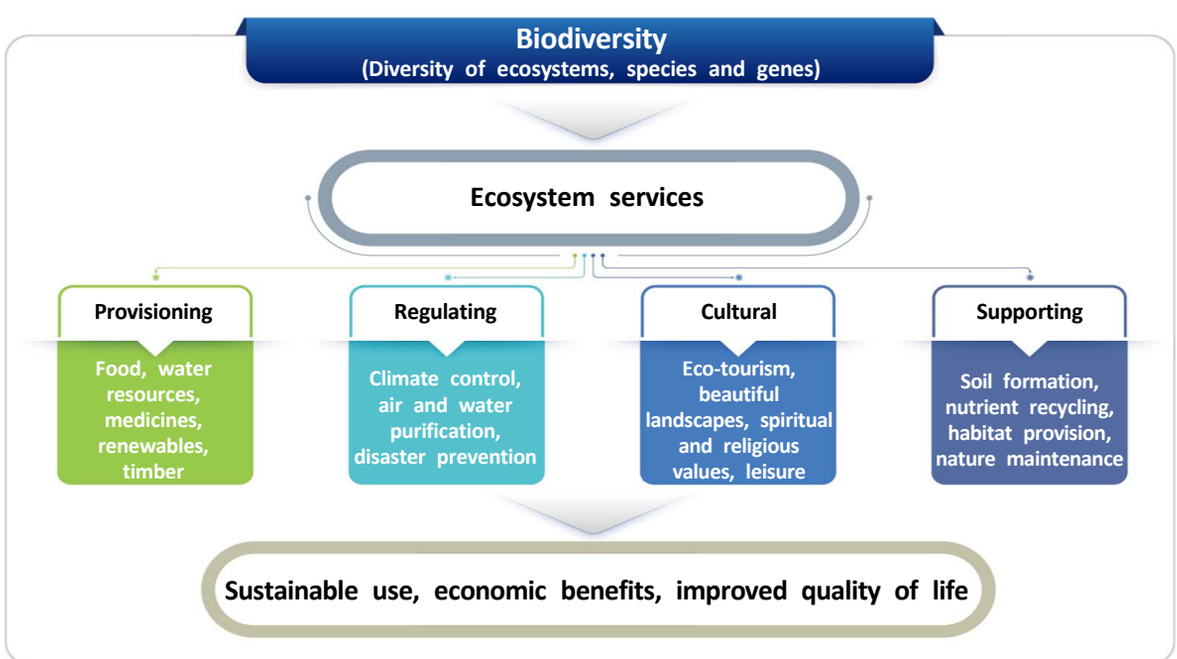
1. Importance of biodiversity

1.1 Definition of biodiversity

- Article 2 of the CBD defines biological diversity as diversity of species on the planet, of their genes and of the ecosystems of which they are part.
- In light of the CBD definition and national circumstances, the ROK's Biodiversity Act defines biodiversity as "the diversity among living organisms arising from all sources, including terrestrial and marine ecosystems and the integrated ecosystems thereof, and diversity within species, between species and of ecosystems" in Article 2, Paragraph 1.

1.2 Importance

- Humans, like other living organisms, take most of what they need for survival from the ecosystems they inhabit. This includes resources, such as food and water, beautiful landscapes to enjoy, as well as benefits for human well-being, such as climate control and air and water purification. Functioning ecosystems have a number of mechanisms to maintain themselves. The contributions ecosystems provide are called ecosystem services, and biodiversity is essential for maintaining them.



2. Biodiversity status

2.1 National biodiversity status

- The ROK has seen a clear downward trend in biodiversity, as indicated by a continued decline in forest and farmland areas (see Table below) that provide important habitat for flora and fauna and by an increase in the number of endangered species under statutory protection from 246 in 2012 to 282 in 2022.

Type of ecosystem	Late 1980s		2018		2023		Rate of increase/ decrease (compared to 2018 levels)
	Area (km^2)	Ratio (%)	Area (km^2)	Ratio (%)	Area (km^2)	Ratio (%)	
Forest	67,085	66.3	60,158	59.3	59,333	58.5	▼1.37
Farmland	23,843	23.6	18,284	18.0	17,903	17.6	▼2.09
Grassland	3,793	3.8	9,330	9.2	9,926	9.8	▲6.39
Settlement	2,133	2.1	6,672	6.6	7,163	7.1	▲7.36
Inland water	2,076	2.1	2,474	2.15	2,569	2.15	▲3.84
Freshwater (wetland)	1,298	1.3	3,132	3.1	3,274	3.2	▲4.55
Bare land	874.5	0.9	1,413	1.4	1,370	1.4	▼3.01
Total (Terrestrial)	101,103	100	101,463	100	101,538	100	▲0.07

Table. Change in area by ecosystem type in ROK

- In a survey on awareness of biodiversity, 87% of respondents were aware of the terms “biodiversity” and “biological resources” and about 90% acknowledged the importance of the conservation of biodiversity and sustainable use of biological resources. However, only 10% knew the exact meaning of biodiversity.

- The level of public awareness of conservation policies was high, including the recovery of endangered species and designation of protected areas. However, awareness of biodiversity use policies, such as education programs, exhibitions and discovery of biological resources, was relatively low. When asked about the main actor in biodiversity conservation efforts, about 52% of respondents answered “central or local government,” while only 7.4% and 4% pointed to “general public” and “businesses,” respectively. There was a lower level of awareness regarding the CBD (46.7%) than the UN Framework Convention on Climate Change (UNFCCC) (75.2%).

2.2 Global biodiversity status

- According to the Global Assessment Report on Biodiversity and Ecosystem Services published by the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES) in 2019, nature across most of the globe was significantly altered by multiple drivers, including overexploitation of resources and climate change. The report noted there was only 68% global forest area and 13% global wetland area compared to pre-industrial levels. Over 75% of land was impacted by human activities, and more than 66% of ocean area was experiencing cumulative impacts. The report warned of a subsequent decline in nature's contributions to humankind, including a reduction in productivity in 23% of the global terrestrial area.
- The International Union for Conservation of Nature (IUCN) pointed to a worrying trend of biodiversity loss where 28% of 150,000 assessed species on its Red List were at risk of extinction as of 2023. The 2022 Living Planet Report by the World Wide Fund for Nature (WWF) revealed an average 69% decrease in monitored wildlife populations since 1970. The IPBES's 2023 Assessment Report on Invasive Alien Species and Their Control noted concerns over the introduction of invasive alien species by human activities, estimating the global annual costs of such biological invasions at over US$ 423 billion.
- The risk of biodiversity loss associated with climate change is growing. There have been reports around the world of tree mortalities and mass die-offs of livestock and wildlife caused by extreme weather events. An average global warming of 1.5°C is predicted to wipe out 70% to 90% of warm-water corals that are sensitive to temperature rise, and a 2°C rise to eliminate up to 99% of them.

3. Global policy trends

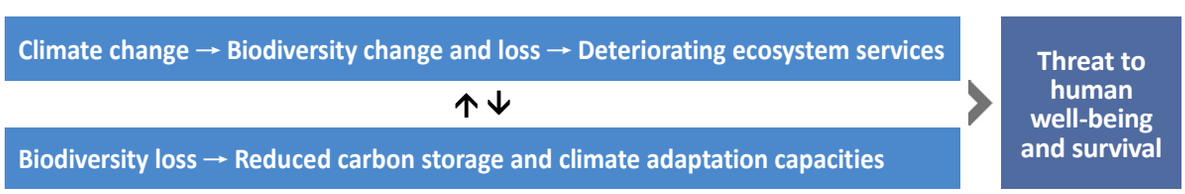
3.1 A call for global action to halt biodiversity loss

- In March 2019, the UN General Assembly proclaimed 2021 to 2030 as the UN Decade on Ecosystem Restoration. The strategy aims to build a powerful, broad-based global movement to ramp up ecosystem restoration for a sustainable future, based on thousands of initiatives on the ground.

- At the Leaders Forum held on Jeju Island in October 2022, the IUCN called for global action to put the world on a nature-positive track. Nature-positive is a global goal to halt and reverse the loss of nature and restore biodiversity and ecosystems. To achieve this goal, the IUCN urged the international community to mainstream biodiversity into economic and social policy development, including a fundamental change in production and consumption patterns and financial flows in the public and private sectors.
- In December 2022, the CBD adopted the GBF, which includes 23 global targets to be achieved by 2030. During the negotiations leading up to the adoption, many Parties highlighted the need to incorporate into the goals the funding required to halt biodiversity loss. This led to the inclusion into the GFB a short- and long-term strategy for resource mobilization as an implementation mechanism and a decision to establish a biodiversity fund under the Global Environment Facility (GEF) to mobilize additional financial resources. The GBF also features a global monitoring framework to ensure its implementation, which entails the submission deadline for NBSAPs and national reports and the use of common indicators.
- In its Global Risks Report released in January 2023, the World Economic Forum (WEF) ranked "biodiversity loss and ecosystem collapse" as the fourth most pressing risk in the next decade.

3.2 Nature-based solutions to address climate and biodiversity crises

- The international community has stressed the need for an intergraded solution for both climate change and biodiversity loss, given their mutually-reinforcing nature. In the Sharm el-Sheikh Implementation Plan adopted in 2022, the UNFCCC noted that these two global crises were interlinked, highlighting the importance of protecting, conserving and restoring nature and ecosystems.



- Against this backdrop, nature-based solutions (NbS) have gained momentum as an approach to promoting climate resilience and biodiversity by strengthening the climate adaptation and carbon absorption capacities of nature. The IUCN defines NbS as an effective and sustainable way to address the issues of climate change, environmental pollution, natural disasters, water resources, diseases and biodiversity through the protection, restoration and management of ecosystems.

- The EU, UK and Japan are among a handful of countries and regions that have incorporated into their recent national strategies an integrated approach to climate change mitigation and adaptation through the conservation and restoration of nature, in line with the global trends.

3.3 Biodiversity as a new economic issue

- The WEF and the World Bank have recently warned that biodiversity loss presents a risk for business, which could have significant ramifications for the global economy.
- There have been several developments to address this risk. In September 2023, the Taskforce on Nature-related Financial Disclosures (TNFD) released a set of disclosure recommendations that encourage businesses to report on their biodiversity-related dependencies and impacts. In August 2022, U.S. President Joe Biden signed an executive order to incorporate natural capital accounting into federal decision-making, in a move to reflect the quantified value of natural capital in policy and investment decisions. Meanwhile, over 5,000 financial institutions worldwide have signed the UN Principles for Responsible Investment (UN PRI) to call for global solutions to tackle the loss of nature and to pressure businesses to integrate environmental, social and governance (ESG) considerations.

III. Progress and Limitations

1. Progress

1.1 Improved total coverage of protected areas and institutionalization of ecosystem restoration

- Coverage of terrestrial protected areas saw a steady rise, from 6.2% in 2010 and 15.6% in 2018 to 17.3% in 2022, meeting the internationally-recommended target (CBD) of 17% by 2020.
- A revision to the Natural Environment Conservation Act in December 2020 laid the groundwork for nature restoration based on a nationwide survey and assessment of degraded areas. Fragmented and damaged ecological axes were restored at the national, city and forest level.

1.2 Stronger control of threats to biodiversity and improved management of protected species

- In October 2018, a list of high-risk species for introduction was developed under a revised Biodiversity Act in October 2018 to tackle invasive alien species. Following an extensive survey, the listings increased from 155 species in 2018 and 300 species in 2020 to 706 species in 2023. In addition, a preventive framework was put in place to control the introduction of alien species, including two Alien Species Collaborative Inspection Centers, which have been in operation since 2019.
- The ROK updates its list of endangered wildlife every five years to safeguard wildlife species from extinction. The 2022 update showed 282 species listings, an increase from 267 listings in the 2017 update. In an effort to facilitate the restoration of endangered wildlife and spread a culture of living in harmony with nature, government agencies worked with local residents to release recovered endangered wildlife at 35 locations from 2018 to 2022, and formed a consultative body to promote coexistence with wild Asiatic black bears (*Ursus thibetanus ussuricus*). A revision to the Wildlife Protection and Management Act in November 2022 required governments to construct buildings in a way that minimizes damage to wild animals that collide with them.

1.3 Groundwork laid to evaluate and improve access to ecosystem services

- The 2019 revision to the Biodiversity Act stipulated the concept and assessment of ecosystem services and payment for ecosystem services (PES) schemes. A trial run of the evaluation was conducted to assess the value of ecosystem services available in the Seoul Metropolitan Area.
- Ecological activity and learning platforms were built at six national parks to increase access to ecosystem services.

2. Limitations

2.1 Less progress in local-level benefit-sharing compared to protected area coverage

- Policies that focus on benefit-sharing, such as enhanced public access to nature's benefits and services and considerations for local economic growth, are relatively limited in number, as the top priority was placed on expanding protected area coverage.
- For this reason, it is believed that the momentum for the expansion of protected areas has slowed. The coverage of coastal and marine protected areas stood at 1.8% as of 2022, failing to meet the global target of reaching 10% by 2020. The previous NBSAP aimed to increase forest land area by 20㎢ on an annual basis, but in fact, it decreased by 87㎢ per year.
- The area of forests and farmlands that provide key habitats for wildlife decreased from five years ago, by 1.37% and 2.09% respectively, despite the multiple policies in place to connect and restore ecosystems.

2.2 Limited efforts to enhance public access to the benefits of biological resources

- The first four NBSAPs lacked targets for measuring benefits associated with improved diversity that can be felt at the public level, such as increased urban green spaces and rewards for biodiversity conservation efforts.
- The number of native species rose to 58,050 in 2022 from 28,462 in 1996, laying the groundwork for their conservation and use. However, there has been little progress in the commercialization of the discovered species.

2.3 Limited mainstreaming of biodiversity considerations across the social and economic sectors

- Since 2014, only 12 out of 17 metropolitan local governments have established a local biodiversity strategy and action plan (LBSAP). The resultant lack of groundwork for supporting local-level efforts is hindering the development of a biodiversity conservation framework that could cover the entire nation.
- In a recent survey by the National Institute of Biological Resources (NIBR), nearly one third of businesses reported difficulties in using biological resources. The level of biotechnology in the ROK remained at 77.9% of that of the global leader. These findings signal the need to build a virtuous cycle of biodiversity conservation and use.

3. Political implications

3.1 Need for a paradigm shift in protected area management from regulation to participation and use

- In order to meet the 30 by 30 goal, a worldwide initiative to designate 30% of the Earth's terrestrial and coastal and marine area as protected areas by 2030, it is crucial to expand nationally protected areas, which in turn requires support or acceptance by local residents.
- The concept of "other effective area-based conservation measures (OECM)" has gained momentum in the international community. OECMs refer to areas managed by local communities to ensure the sustainable use of nature in the cultural, spiritual and socioeconomic contexts.
- It is important to take a balanced approach to nature-positive goals that consider the socioeconomic and cultural values of a given area. One of the examples that took these values into consideration is the 2023 Suncheon Bay International Garden Expo, which created 20,000 new jobs and brought KRW 1.5 trillion of economic value to related industries.

3.2 Leveraging biological resources to strengthen the ROK's industrial competitiveness

- The bio and seed industries have witnessed exponential growth in recent years. In 2021, the global biopharmaceutical market was estimated at US$ 433.9 billion with an annual average growth of 12.6%. Amid this upward trend, regulations that govern foreign access to genetic resources, including benefit-sharing, are expected to expand across the globe. As a result, governments face an increasing need to discover and conserve their national biological resources.

- In a public awareness survey of ecosystem services conducted in 2023, 63.2% of respondents said they knew what ecosystem services were, which is an improvement from 53.9% in 2019. However, there is still a need to diversify ecosystem services to improve the public's awareness of the benefits that nature can bring.

3.3 Timely response to economic and environmental threats related to biodiversity

- With the rise of biodiversity regulations, such as ESG and nature-related disclosures, corporations need tailored support and public-private partnerships to stay competitive in the global market.
- Amid the rise in private wildlife ownership, the number of alien species introduced to the ROK rose from 894 in 2009 to 2,653 in 2021. Other key policy considerations include a drop in the populations of climate change vulnerable species.

IV. National Targets

1. Vision and goals (in alignment with the GBF)

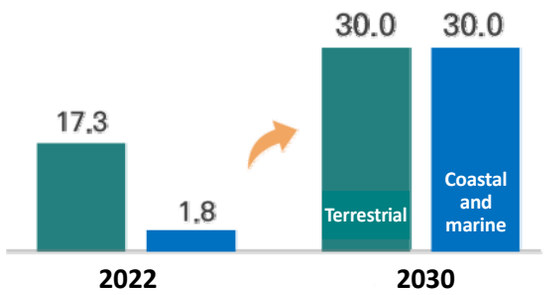
2050 Vision	**To build a sustainable society where people live in harmony with nature and share its benefits equitably**

2050 Goals	**❶ To maintain natural ecosystem area, species diversity and genetic diversity**	**❷ To evaluate, maintain and strengthen public access to nature's benefits**
	❸ To contribute to biodiversity conservation through the use of genetic resources and benefit-sharing	**❹ Mobilize all means to ensure the full implementation of the strategy**

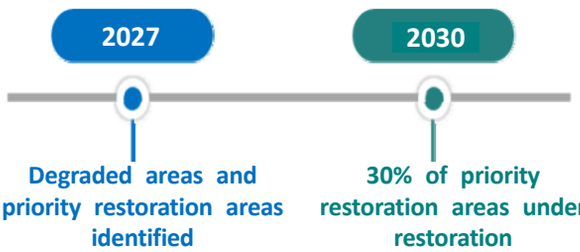
2030 National targets

Reducing threats to biodiversity	1. Strengthen biodiversity management through spatial planning	**GBF Target 1**
	2. Increase the value of natural capital through ecosystem restoration	**GBF Target 2**
	3. Expand protected areas and OECMs and improve benefits to local communities	**GBF Target 3**
	4. Strengthen the management of nationally protected species and genetic diversity	**GBF Target 4**
	5. Enhance safety throughout the wildlife quarantine and control processes	**GBF Target 5**
	6. Strengthen the prevention and control of invasive alien species	**GBF Target 6**
	7. Reduce pollution harmful to biodiversity	**GBF Target 7**
	8. Respond to climate change with nature-based solutions (NbS)	**GBF Target 8**
Increasing sustainable use and benefit-sharing	9. Promote sustainability in agriculture, forestry, fisheries and aquaculture	**GBF Targets 9, 10**
	10. Maintain and enhance ecosystem services	**GBF Target 11**
	11. Enhance urban biodiversity	**GBF Target 12**
	12. Expand the sharing of benefits derived from genetic resources	**GBF Target 13**
Strengthening implementation and mainstreaming tools	13. Embed the values of biodiversity in all aspects of society	**GBF Target 14**
	14. Promote biodiversity and ESG management	**GBF Target 15**
	15. Promote sustainable consumption	**GBF Target 16**
	16. Ensure the safe management of living modified organisms (LMOs) and emerging biotechnology	**GBF Target 17**
	17. Phase out harmful subsidies and expand eco-friendly incentives	**GBF Target 18**
	18. Mobilize financial resources for biodiversity	**GBF Target 19 (b) - (g)**
	19. Expand international contributions	**GBF Targets 19 (a), 20**
	20. Raise biodiversity awareness, promote research and strengthen implementation management	**GBF Target 21**
	21. Ensure the participation of various stakeholders	**GBF Targets 22, 23**

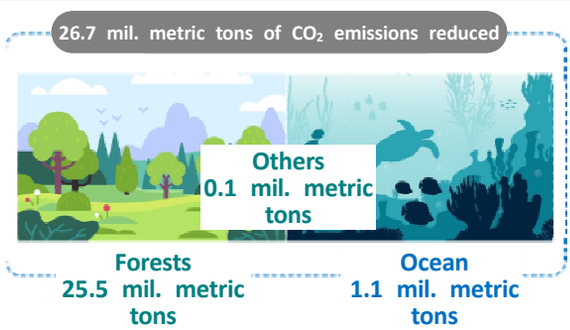
2. Key national targets and tasks



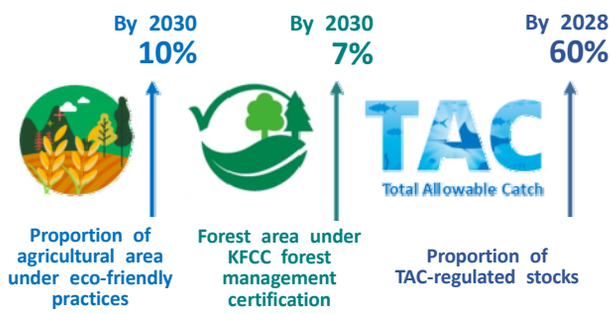
30% of terrestrial, coastal and marine areas covered by protected areas and OECMs ecologically outstanding areas



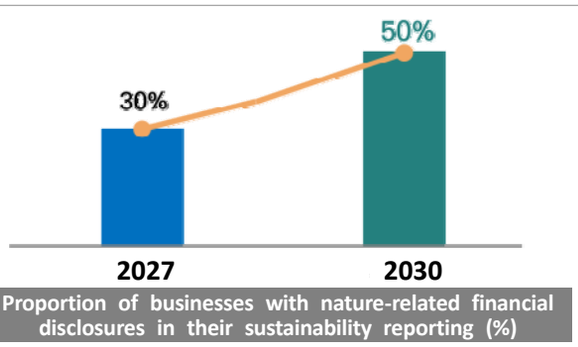
30% of priority restoration areas under restoration



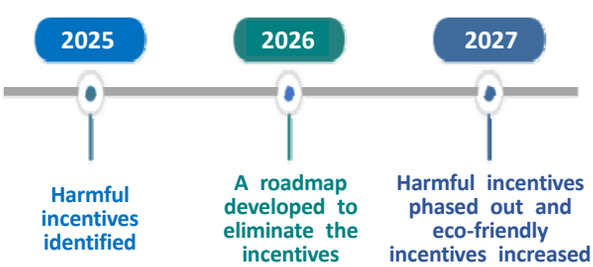
26.7 million metric tons of CO_2 emissions reduced through NbS



Eco-friendly and sustainable practices strengthened in agriculture, forestry and fisheries

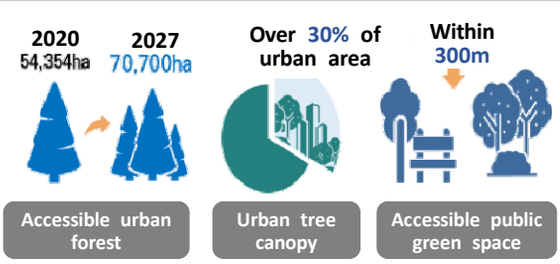


More businesses encouraged to make nature-related financial disclosures



Subsidies harmful for biodiversity phased out and eco-friendly incentives increased

International public funding (ODA) increased in line with the ROK's global standing



Urban green space increased to improve public health and public access to benefits

3. Selected indicators for the fifth NBSAP

* ○ Developed, △ In development, X To be developed

Target	Indicators	Description	CBD method-ology*	ROK method-ology*	Target year		
					2025	2027	2029
1	Headline	Red List of Ecosystems	O	X			
		Extent of natural ecosystems	O	X			
		Percentage of land and seas covered by biodiversity-inclusive spatial plans (In development by the CBD)	X	X			
2	Headline	Area under restoration	O	X			
3	Headline	Coverage of protected areas and OECMs	O	△			
	Complementary	Percentage of protected areas and OECMs with Protected Area Management Effectiveness (PAME) data	-	O			
4	Headline	Red List Index	O	O	Developed		
	Headline	Proportion of populations within species with an effective population size > 500	O	X			
	Complementary	Number of species under propagation and restoration	-	O	Developed		
5	Headline	Proportion of fish stocks within biologically sustainable levels	O	X			
6	Headline	Rate of invasive alien species establishment (In development by the CBD)	X	X			
	Complementary	Number of alien species under management	-	O	Developed		
7	Headline	Index of coastal eutrophication potential	O	X			
	Headline	Pesticide environment concentration	O	X			
8	Complementary	Amount of carbon absorbed and stored through nature-based solutions (NbS)	-	O	Developed		
9	Headline	Proportion of agricultural area under productive and sustainable agriculture	O	X			
	Headline	Progress towards sustainable forest management	O	O			
	Headline	Benefits from the sustainable use of wild species	X	X			
	Headline	Percentage of the population in traditional occupations (In development by the CBD)	X	X			
	Complementary	Proportion of agricultural area under eco-friendly practices	-	O	Developed		
10	Headline	Services provided by ecosystems	O	△			
11	Headline	Average share of the built-up area of cities that is green/blue space for public use for all	O	X			
12	Headline	Indicator on monetary benefits received (In development by the CBD)	X	X			
	Headline	Indicator on non-monetary benefits (In development by the CBD)	X	X			
14	Headline	Number of companies reporting on disclosures of risks, dependencies and impacts on biodiversity (In development by the CBD)	X	X			
15	Complementary	Indicator on food waste reduction	-	O	Developed		
	Complementary	Amount of household waste generated	-	O	Developed		
17	Headline	Positive incentives in place to promote biodiversity conservation and sustainable use	O	X			
	Headline	Value of subsidies and other incentives harmful to biodiversity that have been eliminated, phased out or reformed (In development by the CBD)	X	X			
18	Headline	Domestic public funding on biodiversity (In development by the CBD)	X	X			
	Headline	Private funding (domestic and international) on biodiversity (In development by the CBD)	X	X			
19	Headline	International public funding, including official development assistance (ODA) for biodiversity	O	X			
20	Headline	Indicator on biodiversity information for GBF monitoring (In development by the CBD)	X	X			

V. Action Plans

Target 1 Strengthen biodiversity management through spatial planning

Target 1

Develop an effective management system for the conservation and sustainable use of biodiversity based on land and sea spatial planning to halt the loss of areas of biological and ecological importance. (In alignment with GBF Target 1)

Indicators

Headline Red List of Ecosystems

An ecosystem risk index based on changes in the area and integrity of a given ecosystem (e.g. species abundance and pollutant emissions) (numerical value)

Headline Extent of natural ecosystems

Changes in the area of different natural ecosystem types over time (㎢, %)

Headline Percentage of land and seas covered by biodiversity-inclusive spatial plans

(In development by the CBD)

Current status and needs

- There is a growing need for an institutional framework that takes biodiversity into account in the initial planning stage of development, such as linking national territorial planning with environmental planning, to ensure the sustainable management of the national territory. This requires the development of indicators, such as the extent of natural ecosystems and the Red List of Ecosystems. Additionally, the accuracy and use of environmental thematic maps related to land and seas need to be improved.

1-1. Ensure integrated, biodiversity-inclusive spatial planning

1 Promoting the integrated management of national territorial and environmental planning that includes environmental considerations (MOLIT, ME)

- Align national territorial plans with environmental conservation plans at different administrative levels by revising relevant regulations to clearly indicate biodiversity considerations and by building the institutional base for environmental planning at the local government level.
- Incorporate spatial environmental data into plans and projects to restore key spatial ecological axes from 2024, in order to ensure connectivity between areas of high ecological value.

2 Improving the quality of environmental thematic maps and increasing their use in spatial planning (ME, MOF)

- Lay the institutional groundwork from 2025 to enable the use of biotope maps in the planning of development activities.
- Develop a guideline on the use of the National Environmental Zoning Map to be used as a reference for development plans or environmental impact assessments from 2024, and update the map's ecological data on a yearly basis to improve its accuracy by 2027.
- Introduce advanced survey tools for the Ecosystem and Nature Map, including electronic maps and drones and ensure the maps' quality by employing new survey methods, such as engaging citizen scientists.
- Expand the current three-level classification system of the Marine Ecology Map to incorporate additional levels, in order to encourage its use in policy development.

3 Establishing a support system for space-based decision-making (ME, MOLIT)

- Ensure that biodiversity considerations are reflected in policy decision-making processes, such as urban planning reviews, by making spatial environmental data available on national environment information platforms.
- Establish a dedicated help desk named "Support Center for Integrated Management of National Territorial and Environmental Planning" aimed at providing consulting services and training on spatial data, covering the entire spectrum from data collection to planning.

1-2. Enhance assessment systems for areas of biological and ecological importance

1 Developing the Korean version of the Red List of Ecosystems and encouraging its use (ME)

- By 2026, introduce the Korean version of the Red List of Ecosystems (RLE)*, a global standard for assessing the health of and risks to ecosystems.

  * Each ecosystem is assigned one of the standard categories based on observations of its health conditions and threat levels. The results are used to inform the development of effective tools to mitigate biodiversity loss.

- By 2026, develop guidelines on TNFD assessment* based on the RLE criteria to evaluate the impact of corporate activities on ecosystems.

  * The guidelines will include biodiversity-positive approaches, such as creating alternative habitats for vulnerable species and restoring forests.

- From 2026, trial the implementation of a conservation approach that considers RLE assessment results in public development projects to maintain the total amount of biodiversity, and encourage the voluntary adoption of the approach by the private sector.

2 Improving the assessment framework of the National Environmental Zoning Map and its linkage to RLE (ME)

- Incorporate the geographical and functional features of ecosystems into the environmental and ecological evaluation criteria* of the National Environmental Zoning Map.

  * The existing 8 criteria are diversity, naturality, abundance, rarity, stability of community structure, connectedness, potential and vulnerability.

- By 2027, develop 10 new indicators* for assessing the value of habitats, taking RLE into account.

  * The existing 10 indicators include wetland assessment classification, Regional Ecological Axes, vegetation conservation classification, forest type map (diameter class and age class), while the 10 new ones include habitats of endangered species, health of aquatic ecosystems, and RLE criteria.

3 Laying the groundwork to evaluate the connectivity of terrestrial and marine ecosystems (ME, MOF)

- By 2025, develop a connectedness index for key terrestrial ecological axes and areas of biological and ecological importance and use it to designate protected areas and identify target areas for ecosystem restoration.
- By 2025, integrate all data related to marine ecosystems and environments and build a connectedness assessment system to manage the Marine Ecological Axes.

Target 2 Increase the value of natural capital through ecosystem restoration

Target 2

Identify degraded ecosystems by 2027, and ensure that 30% of priority restoration areas are under ecosystem restoration with a restoration management system in place by 2030.
(In alignment with GBF Target 2)

Indicators

Headline **Area under restoration**

Area of degraded ecosystems where restoration work is underway (㎢)

Complementary **Ecosystem connectedness index**

A PARC-Connectedness Index* that measures the ecological connectivity in protected areas and OECMs (numerical value)

* Measure of the extent to which the natural structure and function of protected areas and OECMsecologically outstanding areas are maintained in the surrounding areas

Current status and needs

- The IPBES 2019 Global Assessment Report found that 75% of the Earth's land areas had been degraded and 85% of the world's wetlands had been lost over the past 300 years, highlighting the urgent need for ecological restoration to ensure the connectivity and integrity of natural ecosystems. In response, countries have been making efforts to link nature and ecological restoration with carbon absorption to strengthen climate resilience and create a new green growth engine.
- The ROK set forth the legal basis for restoration projects by amending the Natural Environment Conservation Act in January 2022, but it still lacks specific plans for their implementation and direction for mid- to long-term restoration. In particular, there is a strong need to link ecological restoration with economic benefits and to develop a plan that can facilitate the data-based management of the entire restoration process.

2-1. Undertake a systematic survey and assessment of degraded land across the country

1 Developing criteria for survey and assessment of degraded natural environments (ME)

Baseline (2022)	Interim stage (2023-2027)	Final stage (2028)
○ The institutional base was built for the implementation of the Natural Environment Restoration Project.	○ Phase 1 nationwide survey of degraded land* (20% each year) ○ Pilot projects	○ Phase 1 degraded land survey complete ○ Updating and use of a list of target sites
Institutional base	Database development and project implementation	Degraded land restoration system in place

- From 2023 to 2027, divide the country into 5 regions and survey 20% of each region every year, develop a list of priority areas for restoration based on the size and ecological value of degraded areas identified in the survey, and update the list on an annual basis.
  - This process involves the identification of degraded areas based on data and local demand, followed by a site survey and assessment, and the listing of target sites by type and grade. The sites will be classified into Urgent, Caution and Monitoring groups, depending on the extent of degradation of the structure and function of their environment.
- Based on the findings from the survey, begin work in 2024 to develop priority area listing criteria that include quantitative factors serving to identify the extent of degradation and qualitative factors in order to consider the need and enabling conditions for restoration.

2 Integrating restoration plans into mid- to long-term planning (MOF, KFS)

- Develop the Master Plan for the Management and Ecological Restoration of Tidal Flats and Adjacent Areas* to set out a direction for identifying degraded areas and selecting priority tidal flat areas for restoration.

  * The legal basis for this plan is Article 7 of the Act on the Sustainable Use and Restoration of Mud Flats.

- Establish, on a yearly basis, an annual implementation plan for the first edition of the Master Plan for Forest Restoration (2020-2029), a policy document identifying goals, such as restoring 2,750 ha of forests and the Baekdudaegan (mountains) Ecological Axis at 22 locations, and conduct a survey to examine the status of degraded forest areas.

2-2. Strengthen restoration efforts across various ecosystems

1 Ensuring diversified and systematic restoration across the national territory (ME, MOLIT)

- Continue to ecologically restore urban areas to increase accessible ecological space. Ensure the conservation and restoration of Restricted Development Zones close to the Core Ecological Axes by launching a pilot project in a single location in 2024 and then considering its expansion to other locations later.
- Diversify the target sites for restoration to include former military bases and abandoned mines. Launch the Janghang National Wetland Restoration Project from 2024 to develop a good practice model for state-led restoration, and encourage similar projects in the private sector.
- From 2024 onward, develop and implement a three-phase plan to expand the scope of the Baekdudaegan Ecological Axis restoration project to include the mountains' major range branches, and fragmented and damaged areas near the Regional Ecological Axes.
- Develop implementation guidelines for the Natural Environment Restoration Project to identify directions for restoration and management measures for different project types.

2 Improving the health of forest ecosystems through restoration (KFS)

- Restore, on a yearly basis, 295 ha of naturally or artificially damaged or fragmented forests near Baekdudaegan, the Demilitarized Zone, islands and coastal areas to maintain or improve the biodiversity and health of forest ecosystems.

3 Increasing the connectivity of the Marine Ecological Axes through tidal flat restoration (MOF)

- By 2028, assess the status of tidal flats and identify 20 target sites for restoration.
- By 2030, restore 10 ㎢ of tidal flats and 105㎢ of vegetation areas by launching a restoration project for 2 tidal flats and 4 vegetation areas among priority restoration areas every year.
  - Improve ecosystem connectivity by planting and restoring halophytes and seagrasses; identify, by 2030, a total of 50 indicator species for the Marine Ecological Axes and raise public awareness about them.

2-3. Build an ecosystem for green restoration projects

1 Generating carbon credit through ecological restoration (ME)

- By 2024, develop guidelines for the carbon absorption analysis and assessment of ecological restoration projects, apply them to projects by the ME and local governments, and consider expanding their application.
- Provide consulting support from specialized agencies to have ecological restoration projects recognized as carbon offsets (Korean Credit Unit, KCU), initially targeting local governments and public organizations in 2025 and expanding coverage to include private-sector projects in 2026.

2 Laying the groundwork for specialized green restoration projects (ME)

- By 2030, increase the number of Specialized Graduate Schools for Green Restoration to more than 5 and the number of green restoration specialists to more than 400, up from 100 in 2022.
- From 2024, streamline the Natural Environment Conservation Act to engage companies with expertise in restoration projects and identify well-restored areas based on compliance with the Guidelines for the Natural Environment Restoration Project (tentative title) and satisfaction levels of local residents.
- Designate areas that can add value to the local economy through ecological restoration, such as improving ecosystem services and green infrastructure, as Ecosystem Service Promotion Zones. Launch the Janghang National Wetland Restoration Project as a pilot in 2025 and gradually expand to other regions.

3 Building a science-based management system for green restoration projects (ME)

- Develop a technological framework to oversee the entire process of green restoration projects, from planning to follow-up, based on the latest technologies, such as satellites, artificial intelligence (AI) and information and communications technology (ICT).
- By 2027, develop a single channel called the “Integrated Information System for Natural Environment Restoration” for the integrated management of projects that are scattered across multiple ministries and agencies.

Target 3 Expand protected areas and OECMs and improve benefits to local communities

Target 3

Ensure that 30% of terrestrial and marine and coastal areas are covered by protected areas or other effective area-based conservation measures (OECM) by 2030 and establish an effective framework for *in-situ* conservation through systematic management.
(In alignment with GBF Target 3)

Indicators

Headline **Coverage of protected areas and OECMs**

Coverage of domestic terrestrial and marine and coastal protected areas and OECMs (㎢)

Complementary **Percentage of protected areas and OECMs with Protected Area Management Effectiveness (PAME) data**

Percentage of protected areas and OECMs that have completed PAME assessments (%)

Current status and needs

- *In-situ* conservation of species is critical to preventing the loss of biodiversity, while identification and management of protected areas are a key tool to ensure *in-situ* conservation. The international community recommends that OECMs* should be designated and supported, as appropriate, in addition to protected areas, to contribute to biodiversity conservation.

  * Sites outside of protected areas that are managed in ways that contribute to the conservation of biodiversity. The term was tentatively translated as “Nature Coexistence Area” in the ROK but is subject to change.

- As of 2022, 17.3% of terrestrial areas and 1.8% of marine and coastal areas in the ROK were managed as protected areas, which calls for additional efforts to meet the GBF target.

	Terrestrial	Costal and marine
Total area	100,284㎢	438,000㎢
Protected area coverage	17,351.26㎢	7,967.62㎢

3-1. Increase the coverage of protected areas and OECMs

1 Expanding the coverage of terrestrial protected areas and OECMs (ME, MND, MOLIT, MOF, CHA, KFS)

- Increase efforts to identify candidate protected areas among national parks, ecosystem and landscape conservation areas, inland wetland protected areas and designated islands, and make new designations.
- Work to increase the number of types and designations of natural heritage, forest protected areas and Baekdudaegan protected areas.
- Identify types of OECM candidate sites, build a geographic information system (GIS) database based on the findings, and list the data in phases in the Korea Database on Protected Areas (KDPA).

2 Expanding the coverage of marine and coastal protected areas and OECMs (MOF)

- Identify marine and coastal areas of high ecological value to make more than two new designations of marine and coastal protected areas every year.
- Identify well-conserved marine and coastal areas, such as environment and ecosystem management areas, research and education conservation areas, safety management areas and self-management fishery areas, as OECMs.

3-2. Improve the management of protected areas and OECMs

1 Improving the quality of protected area management (ME, MOF, KFS)

- Enhance the quality of nationally protected area management by establishing an assessment and feedback system from 2024, including through a refined manual, based on the findings of the trial assessments of inland wetland protected areas and ecosystem and landscape conservation areas conducted between 2022 and 2023; by expanding the coverage of PAME assessments to include all protected areas, and by providing the legal basis for regular and stable assessments.
- Refine the designation and management manual for special protection zones in national parks by identifying management goals and methods and by establishing criteria to assess progress against the goals.
- Ensure that the PAME assessment framework takes into account the characteristics of forest genetic resources protection zones, develop a management framework to oversee these zones, and strengthen the training of personnel in charge.

2 Laying the groundwork for OECM management (ME, MND, MOLIT, MOF, CHA, KFS)

- From 2024, institutionalize the identification and management of OECMs by making revisions to relevant legislation to define them and their types, specify the process to identify, list, manage them and assess the effectiveness of their management.
- Host a forum to expand nationally protected areas on a continued basis with participation from government officials, private-sector experts and other stakeholders, in order to facilitate dialogue and build a consensus on OECMs.
- Continue from 2023 to develop a certification scheme for OECMs and raise awareness of OECMs among local governments and residents.

3-3. Deliver nature-related benefits to local communities

1 Promoting eco-tourism that links protected areas with local communities (ME, KFS)

- Expand tourism infrastructure to ensure better access to areas adjacent to natural parks and stimulate demand for local tourism by developing tours to experience local communities and offering mutually-beneficial tourism programs that link natural parks with surrounding areas.
- Continue to identify eco-tourism sites that are connected to local tourist attractions, and from 2024, develop and offer tailored tours that cater to international travelers.

2 Expanding payments for ecosystem services (PES) schemes within protected areas (ME)

- By 2025, modify existing PES schemes to increase benefits to residents of protected areas, including by assigning a weight to protected areas when determining the unit cost of support for sites under PES schemes.
- From 2025, assess and manage PES performance in protected areas on a yearly basis and reward high-performing residents and local governments to encourage their participation.

3 Providing extra support for residents of protected areas (ME, MOF, KFS)

- Increase protected areas by working with local communities and offering support to private land owners through private land purchases, PES schemes and protection and management agreements.
- Launch the Tidal Flat Eco-Village Project on a pilot basis in sites where tidal flat ecosystems are, or have the potential to be, well-preserved by local efforts.

Target 4 Strengthen the management of nationally protected species and genetic diversity

Target 4

Promote the conservation and recovery of nationally protected terrestrial and marine species, maintain the genetic diversity of species at 95% and take proactive measures to reduce human-wildlife conflict. (In alignment with GBF Target 4)

Indicators

Headline **Red List Index**
Overall extinction risk for species in the ROK based on the IUCN's Red List of Threatened Species (numerical value)

Headline **Proportion of populations within species with an effective population size > 500**
Measure of genetic diversity of populations within species that indicates the percentage of populations that have an effective population size over 500 (%)

Complementary **Number of species under propagation and restoration**
Number of endangered species that are being propagated and restored (numerical value)

Current status and needs

- Many species on Earth are at risk of extinction*, and the number of endangered species in the ROK has also shown an upward trend**. This calls for urgent actions to reinforce protection and recovery efforts to halt further loss.

  * The IPBES 2019 Global Assessment Report found that of an estimated 8 million animal and plant species, over 1 million are threatened with extinction. A 2022 Biological Reviews report estimated that 7.5 to 13% of all species have become extinct.

  ** According to the ME's estimates, the number of endangered species in the ROK was 92 in 1989, 198 in 1998, 246 in 2012, 267 in 2017 and 282 in 2022. The MOF estimates the number of protected marine species at 91, the KFS estimates the number of rare and endemic plant species at 931, and the CHA estimates the number of natural monument species at 461.

- Genetic diversity is essential for the adaptation and survival of species to changing environment conditions, such as diseases and climate change. The IPBES suggests that global genetic diversity has been declining by 1% per decade since the mid-19th century. However, there has been a lack of actions to address this issue, including tools to measure the loss and approaches to maintain the level of genetic diversity.

- Increased human-wildlife interactions have resulted in conflicts, inconveniences and damages such as insect outbreaks, leading to a rise in the social demand for safe and harmonious coexistence.

4-1. Strengthen the *in-situ* and *ex-situ* management of nationally protected species

1 Ensuring the *in-situ* conservation of nationally protected species (ME, MOF, KFS)

- From 2024, establish a framework to assess the habitat status of each endangered species and develop the intuitional base to enable climate change vulnerability assessment and expansion of (special) wildlife protected areas. Identify, eliminate and monitor potential threats to the habitat of protected marine species, such as abandoned fishing nets and marine plastics.

2 Laying the groundwork for *ex-situ* conservation and management (ME, MOF, CHA, KFS)

- Conduct on-site surveys, instead of referring to indirect data, to identify the distribution of endangered wildlife, and build a database of preliminary data for conservation based on the ongoing, intensive survey of watchlisted species.
- By 2027, strengthen propagation and recovery infrastructure for nationally protected species by increasing the number of ecological learning centers to accommodate and prevent fatal accidents associated with propagated and recovered species that are ready for release into nature and maladaptive species, creating the National Marine Species Recovery Center to oversee the recovery of protected marine species, and funding research on the propagation and recovery of natural monument animals and the establishment of the Otter Conservation Center.
- Continue to develop technologies for the propagation and recovery of forest genetic resources and protected marine species in order to increase the number of technologies for the latter from 11 to 30.

3 Increasing nationally protected species designations and recovery efforts (ME, MOF, CHA, KFS)

- By 2030, increase the number of target species for recovery to 70, develop respective recovery plans and disseminate a taxon-specific propagation manual to *ex-situ* conservation organizations.
- Take tailored management approaches to 571 rare plant species, based on their threat categories (Critically Endangered, Endangered, Vulnerable).

4-2. Lay the groundwork for the management of genetic diversity of nationally protected species

1 Developing and monitoring a national index for genetic diversity (ME, MOF, KFS)

- Identify target species by taking into account the conservation and sustainable use of biological resources, and develop an index based on genetic analysis and the size of an effective population* to ensure the maintenance and management of national genetic diversity.

  * The minimum number of individuals in a population required to maintain its gene frequencies across generations that is used as an indirect estimate of the genetic diversity of the target species for conservation.

- From 2026, monitor the identified target species and ensure that the National Biodiversity Center compiles and assesses monitoring data submitted from ministries.

2 Investing in research and projects to maintain genetic diversity (ME, KFS)

- From 2024, build a network of partners to secure a steady supply of biological samples, and strengthen the management of biological samples of endangered wildlife

- By 2030, develop a plan to ensure the genetic conservation of endangered species experiencing genetic diversity loss, based on the management of individual species (lineage tracing) and genetic research.

- By 2030, develop a habitat conservation and restoration plan for species indicating an apparent loss of genetic diversity, with the goal of maintaining their genetic diversity level above 95%. To this end, add genetic diversity to the conservation and restoration criteria that primarily focused on the number of individuals in a species.

4-3. Provide a stronger basis for human-wildlife coexistence

1 Promoting peaceful coexistence with wildlife (ME)

- From 2024, strengthen monitoring and regional response efforts to ensure the removal of bear traps and to prevent potential damages and accidents involving the wild Asiatic black bear (*Ursus thibetanus ussuricus*), a large restored species whose habitat has expanded.
- From 2024, survey the status of wild bird strikes and the accidental fall of wild animals into waterways to identify and improve artificial structures in need of repair, in order to minimize associated damage.
- Strengthen the capacity to respond to insect outbreaks by building a database of local and international cases that includes information on insect species involved and their genetic data, and develop, by 2025, a guideline on eco-friendly biological pest control.

2 Preventing everyday damage and accidents involving wildlife (ME)

- From 2024, make revisions to the Wildlife Protection and Management Act (Wildlife Act) to ban the feeding of harmful wildlife and allow for preventive activities for species prohibited from poaching.
- Develop and use a human-wildlife conflict (HWC) index* to quantify the damage inflicted on humans, wildlife and society and economy due to HWC.

* A composite index designed to measure the magnitude of HWC incidents across three dimensions including human, wildlife and economic.

3 Strengthening safety measures for wildlife in captivity (ME)

- Build a sanctuary to harbor formerly captive bears in preparation for the ban on bear farming, which will take effect in 2026, and establish a facility to protect stray and abandoned wildlife in response to the rise in private wildlife ownership.

Target 5 Enhance safety throughout the wildlife quarantine and control processes

Target 5

Reduce the illegal trade and harvesting of wild species and strengthen measures to prevent the outbreak and spread of zoonotic diseases originating from wildlife.
(In alignment with GBF Target 5)

Indicators

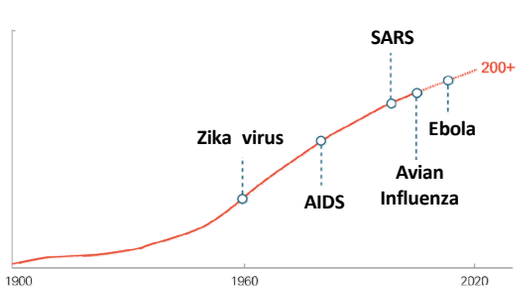
Headline **Proportion of fish stocks within biologically sustainable levels**
Ratio of the number of fish stocks classified as within biologically sustainable levels and the total number of stocks (%) (based on Food and Agriculture Organization of the United Nations (FAO) catch data)

Complementary **Number of illegal fishing incidents reported**
Number of illegal fishing incidents reported in Fisheries and Marine Environment Statistics (numerical value)

Complementary **Percentage of illegal poaching and trade**
Proportion of the value of illegal trade compared to the overall value of wildlife trade (%)

Current status and needs

- Zoonotic diseases originating from wildlife, such as SARS, MERS and COVID-19, continue to emerge. In 2022, the WEF estimated that zoonoses were responsible for 2.5 billion cases of human illness and 2.7 million human deaths worldwide each year.
- Revisions to the ROK's Wildlife Act in the early 2020s allowed for the introduction of a wildlife quarantine system and laid the institutional basis for stronger control over wildlife importation and distribution. Additional efforts are required to ensure their implementation, including through the development of detailed regulations and awareness raising.

○ MERS Bats, camels ○ Ebola Fruit bats, chimpanzees ○ SARS Bats, civets ○ AIDS Spot-nosed monkey, red-capped mangabeys ○ Avian Influenza Birds ○ Scrub typhus and hemorrhagic fever with renal syndrome Striped field mice and brown rats ○ Leptospirosis Field mice, brown rats, weasels, dogs ○ Brucellosis Goats, sheep, cattle	
Zoonotic diseases and their animal vectors	Rise in the incidence of zoonotic disease outbreaks (frequency)

5-1. Strengthen response to diseases originating from wildlife

1 Implementing and strengthening quarantine on wildlife (ME, MAFRA, MOF)

- Lay the groundwork for the implementation of a wildlife quarantine system, which is set to commence in May 2024 covering reptiles and other animals, including by identifying the responsible quarantine agency and the target animals and diseases and designating and creating quarantine facilities.
- From 2024, tighten disease control and quarantine procedures for marine species, including amphibians.
- Strengthen partnerships among relevant ministries to prevent the introduction of zoonotic diseases.

2 Promoting a national monitoring framework for wildlife diseases (ME)

- From 2024, build a cooperation network of partners at the central and local levels to monitor wildlife diseases. The ME and the National Institute of Wildlife Disease Control and Prevention (NIWDC) will oversee the monitoring of high-risk diseases. For other diseases, a local network comprising local disease diagnosis institutions and clinics affiliated with veterinary schools will be responsible for reporting confirmed cases to the NIWDC.
- Develop a local-level wildlife disease prevention plan with a specific focus on diseases with high incidence rates in the area, based on the third edition of the Master Plan for the Management of Wildlife Diseases (2026-2030).
- By 2025, develop the Korea Zoological Information Management System (K-ZIMS) to facilitate the disease management of animals in entertainment and exchange of veterinary data.

3 Facilitating the diagnosis and quarantine of wildlife diseases (ME)

- By 2025, develop a standardized diagnostic technique for 40 wildlife diseases designated as requiring management.
- By 2025, formulate an emergency response manual for 10 high-risk wildlife diseases, and conduct active surveillance, including track-and-tracing and a list of contacts when a case is reported.

5-2. Tighten control over wildlife supply chains

1 Ensuring systematic management of entire wildlife supply chains (ME, MOF)

- Include wild animals placed outside statutory protection as of 2023 in the list of wild animals designated for management, and develop in phases, by 2025, a whitelist of animal species allowed for import to tighten import control.
- Develop regulations, such as permit criteria and obligations, to introduce wildlife trade licenses and a declaration system for the transfer, receipt, storage and death of species that are under statutory protection.
- Use the Wildlife Integrated Management System from December 2023 to track and trace the supply chain of wildlife trade from import to distribution.

2 Escalating crackdown on illegal wildlife harvest and trade (ME, MOF, KCS, KFS)

- Increase crackdown on major online businesses engaged in the sale of CITES species to prevent the spread of illegal trade online.
- Introduce a proactive system to respond to repeated or planned poaching and trafficking, including guard posts in poaching-prone sites, monitoring by private watchers and training on poaching information, and raise the awareness and engagement of the public to prevent poaching and trafficking.
- Encourage local residents to monitor illegal harvesting of forest products, and conduct continued and focused crackdowns on national park areas.
- Ensure that the Korea Coast Guard, the National Federation of Fisheries Cooperatives and other related bodies work together to crack down on illegal fishing, and strengthen the management of inland fisheries for ports and markets nationwide where illegally caught fish products are distributed.

3 Expanding the scope of the timber legality assurance system (KFS)

- From May 2025, expand the scope of timber products subject to the timber legality assurance system*, provide businesses with country specific guidelines (CSG)** on timber legality standards and increase the scientific accuracy of the assurance system based on tree species identification technology.

* Currently, raw materials, such as logs and sawn timber, are subject to the system. From May 2023, the scope will be expanded to include wood pulp and boards.

** These guidelines will include information on timber legality legislation, supply chains and proof of compliance of each trade partner.

Target 6 Strengthen the prevention and control of invasive alien species

Target 6

Reduce the rate of establishment of invasive alien species by 50% by managing introduction pathways and control and eradicate invasive alien species in priority sites to mitigate threats to biodiversity. (In alignment with GBF Target 6)

Indicators

Headline **Rate of invasive alien species establishment** (In development by the CBD)

Complementary **Number of alien species under management**

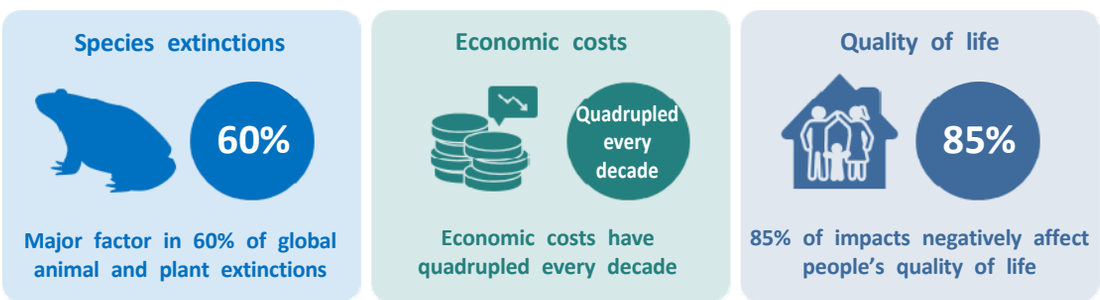
Number of alien species listed in the Information of Korean Alien Species (numerical value)

Complementary **Index associated with the control and eradication of alien species**

Amount of budget spent on the population control and removal of invasive species (KRW)

Current status and needs

- According to the IPBES Invasive Alien Species Assessment released in 2023, the global economic cost of invasive alien species reached KRW 530 trillion, with costs having quadrupled every decade.



- With the rise in people-to-people and material exchanges between countries and exotic pet ownership, the number of alien species in the ROK showed an average annual increase of 16%, from 894 in 2009 to 2,653 in 2021.
- Alien species that could potentially damage domestic ecosystems are managed under relevant laws, such as the Biodiversity Act and the Conservation and Management of Marine Ecosystems Act. However, more efforts are required to prevent their introduction and strengthen their management in order to safeguard native ecosystems.

6-1. Prevent the introduction of invasive alien species

1 Expanding the scope of yet-to-be-introduced alien species subject to statutory management (ME, MOF, KFS)

- Increase the number of alert alien species* from 700 in 2023 to 1,000 in 2025, develop a list of marine alien species that require preventive management, and undertake the development of an index to measure changes in the distribution of alien plant species starting in 2024.

  * Species that may damage domestic ecosystems when introduced.

- Strengthen an ecosystem risk assessment of alert alien species by combining expert assessments with data-based assessments, and improve the management system for marine alien species through monitoring key introduction pathways from 2024.

2 Undertaking the analysis of monitoring of introduction pathways (ME, MOF, KFS)

- From 2025, operate an integrated platform for alien species that relies on ecosystem risk assessment technology to model the potential spread of alien species at the taxon level.
- From 2021 to 2025, conduct population genetic analysis* to identify major pathways of the introduction of invasive alien plant species.

  * Molecular markers are used to analyze the genetic variation and distance in populations and assess genetic diversity within and between distribution sites.

- Conduct research to investigate and prevent the transfer of harmful marine species through ballast water, and continue to monitor the management of ballast water in ships entering the ROK.

3 Strengthening the prevention and control of the introduction of alien species (ME, KCS)

- From 2024, expand the network of Alien Species Collaborative Inspection Centers to the Busan and Pyeongtaek Customs Offices that have a high volume of custom clearances, and strengthen safety (risk) inspections during the customs clearance procedures to crack down on sources of illegal import and distribution.
- Regularly monitor customs-bonded areas in key ports, and conduct joint inspections (ME, APQA, port authorities and NIE) of empty import containers that are exempt from quarantine to prevent the unintentional introduction of alien species.
- Establish a hotline for reporting high-risk alien species and create a first response team to handle reports. Conduct joint investigations (NIE, ME, APQA and local governments) and implement coordinated controls upon detection of such species.

6-2. Prevent the spread of invasive alien species

1 Bolstering the habitat survey of alien species (ME, MOF)

- Expand the scope of a survey of invasive species from inland areas to include islands, starting with Jeju Island and Ulleungdo Island, and undertake an intensive survey of invasive alien species, such as insects, including ants, that are suspected to have become established and spread.
- From 2024, monitor major ports for the introduction of species of international concern for marine ecosystem disruption, and build a rapid response system.

2 Expanding the eradication of alien species (ME, MOF, CHA, KFS)

- Ensure the focused management of ecosystem-disturbing species in the early stages of establishment and spread through joint control and monitoring.
- Ensure that the removal and monitoring of ecosystem-disturbing species are tailored to local circumstances.
  - Introduce the concept of priority sites for management, such as ports, islands and protected areas, and ensure that relevant organizations, including the NIE, River Basin Environmental Offices and local governments, jointly conduct intensive monitoring at these sites to remove ecosystem disturbing species.
  - From 2025, monitor the density and distribution of invasive alien species in natural heritage sites (natural monuments) and protected island areas, and carry out regular eradication activities.
  - Identify areas where jellyfish polyps thrive in order to facilitate their removal and improve the existing prediction system for jellyfish outbreaks.
- From 2024, conduct a fact-finding survey and engage local and international case studies to identify ways to utilize ecosystem-disturbing species following their removal.

3 Laying the groundwork for the protection and management of alien animals (ME)

- By 2025, establish 2 shelters for managing stray and abandoned alien animals to protect native ecosystems, and gradually expand this initiative at the metropolitan local government level.

Target 7 Reduce pollution harmful to biodiversity

Target 7

Encourage moderate use of chemical fertilizers and pesticides, reduce household plastic waste by 28% and mitigate the negative impact of pollution on biodiversity by strengthening water quality control in rivers, lakes and marshes, and coastal waters.

(In alignment with GBF Target 7)

Indicators

Headline **Index of coastal eutrophication potential**

Indicator based on loads of nitrogen, phosphorous and dissolved silica delivered by rivers to coastal waters (kg/㎢/day)

Headline **Pesticide environment concentration**

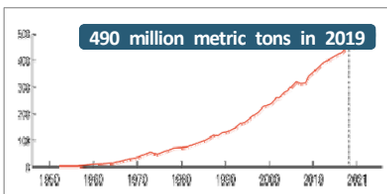
Pesticide use per area of cropland (t/㎢)

Complementary **Marine plastic waste generated**

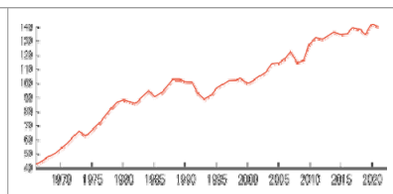
Quantity of plastic waste among marine debris (metric tons)

Current status and needs

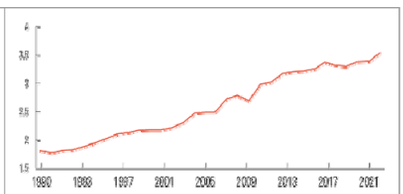
- Pollution is one of the main causes of biodiversity loss, and among others, pesticides, plastics and nutrients need to be managed. In the ROK, agriculture depends heavily on chemical fertilizers and pesticides to increase productivity in limited farmland area. There is a need to encourage farmers to use a moderate amount of these chemicals.
- The ROK is a major consumer of plastics, experiencing a steady increase in both demand and waste. Cases of marine pollution and damage to fisheries and tourism continue to be reported.
  - The ROK is the twelfth largest plastic waste generator in the world, producing 4.5 million metric tons. In a 2021 World Bank report, it ranked 26th in fertilizer use per area of cropland, using 281kg per ha. In a 2022 FAO report, it ranked 10th in pesticide use, using 10kg per ha.



Amount of plastic accumulated



Fertilizer use



Pesticide use

7-1. Encourage moderate use of chemical fertilizers and pesticides

1 Expanding support for organic farming supplies to replace chemical fertilizers and pesticides (MAFRA)

- Provide financial support for purchases of organic farming supplies and green manure seeds and for soil testing and consulting services to reduce the use of pesticides and chemical fertilizers that harm the environment. In particular, offer soil testing and consulting services including fertilizer prescriptions to conventional farms, as the beneficiaries of this initiative were expanded to include not only eco-friendly farms but also conventional farms starting in 2022. Further expand the initiative from 2024, by incorporating feedback from farmers and the findings from an analysis of applications for organic farming supply subsidies (Agrix).

2 Providing fertilizer prescriptions and developing organic farming supplies (RDA)

- Reduce the use of chemical fertilizers by developing technology that allows the moderate use of fertilizers and by offering fertilizer prescriptions. To this end, increase the number of crops subject to soil testing-based fertilizer prescriptions from 235 in 2024 to 246 in 2025. Also, operate 162 testing centers and offer relevant training* to improve the fertilizer prescription system**.

  * Training on fertilizer prescriptions is offered to over 65,000 individuals every year.
  ** The number of soil tests is expected to increase from 580,000 in 2023 to 600,000 in 2024, and the number of fertilizer prescriptions from 750,000 in 2023 to 780,000 in 2024.

- Develop eco-friendly, organic farming supplies to reduce the use of pesticides and trial them on site by 2026. These include organic farming materials to manage hard-to-kill pests such as stinkbugs, new supplies based on biological control agent plants such as insect flowers, and organic farming inputs made of biochar (capable of separating carbon in soil) to prevent clubroot in cabbage.

7-2. Reduce plastic waste

1 Reducing household plastic waste generation (ME)

- Drive change in consumer behavior by developing guidelines on the production and use of reusable containers designed to cut down on disposable plastics, by introducing certification for rental and cleaning services for reusable containers, and by using nudges (e.g. giving the option to choose reusable containers on delivery apps and awarding cash points to tumbler users).
- Increase the recycling rate of separately collected plastics. Reduce primary plastic production by improving the evaluation criteria for materials and packaging structure, and by reforming the recycling subsidy scheme to encourage the recycling of high-quality materials and chemical recycling.
- Expand the Korea Eco-Label certification program for products made from recyclates to include detergent containers and electronics packaging, and strengthen the recyclate ratio criteria for existing products, with the goal of fostering the industry and market for recyclates and plastic substitutes.

2 Reducing marine plastic waste generation (MOF)

- Reduce waste generation by encouraging the uptake of certified buoys and biodegradable fishing gear, by introducing a deposit-refund scheme for the purchase of fishing gear in 2024 aimed at improving the management of ghost gear, and by collecting ghost gear on river banks prior to the flood season.
- Focus waste collection efforts on vulnerable coastal areas, uninhabited islands, tetrapods and other overlooked sites and establish a public collection system for recyclable marine waste.
- Encourage citizen-driven initiatives to reduce and manage marine waste, such as a beach clean-up campaign open to anyone.

	Baseline (2021)	Target by year	
		2025	2030
Reducing household plastic waste generation	4.8 mil. metric tons/year	3.9 mil. metric tons/year	3.5 mil. metric tons/year
Reducing marine plastic waste generation	67,000 metric tons /year	44,000 metric tons/year	27,000 metric tons/year

7-3. Control pollutants in rivers and coastal areas

1 Ensuring the management of organic matter in rivers (ME)

- Ensure the systematic management of non-point source pollution from rainfall to control river water quality by developing the fourth Comprehensive Plan on Non-Point Pollutants Management (2026 – 2030) in 2025, and revise the Master Plan on the Monitoring Network for Non-Point Pollutants in 2024.
- Establish water quality monitoring centers in the water system of all four major rivers in the ROK to detect unregulated pollutants and enable preemptive response, and control industrial water discharge by building and maintaining new public wastewater facilities to ensure the proper treatment of wastewater discharged from industrial complexes and agro-industrial complexes.
- Continue with ongoing research to study the contribution of discharged water from sewage treatment facilities to algae blooms that began in 2023, and consider introducing more stringent total nitrogen (T-N) discharge limits in 2026.

2 Improving the total pollution load management (TPLM) of specially-managed sea areas (MOF)

- Develop master and implementation plans for the TPLM of specially-managed sea areas* for each sea area; execute these plans and assess their performance.

  * Sea areas that are unable to maintain the marine environmental standards or have obstacles that significantly hinder conservation of the marine environment and ecosystems

  - Adjust the allowed pollution loads for development projects in coastal areas, prepare pollutant reduction plans, raise public awareness about the TPLM system, and create and convene a consultative body comprising of representative from the private and public sectors, industry and academia.
  - Merge the technical guidelines for TPLM across different sea areas into a single set of guidelines in 2024 to improve the institutional framework for the effective management of land-based sources of pollution in specially-managed sea areas.

Target 8 Respond to climate change with nature-based solutions (NbS)

Target 8

Improve carbon absorption and storage capacity and cut CO_2 emissions by 26.7 million metric tons, reduce the impacts of climate change and ocean acidification on biodiversity through nature-based solutions (NbS), while minimizing negative impacts of climate action on biodiversity.
(In alignment with GBF Target 8)

Indicators

Headline To be developed by the CBD

Complementary **Amount of carbon absorbed and stored through nature-based solutions (NbS)**
Data on the amount of carbon absorbed by different types of carbon sinks (forests, farmlands, grasslands, wetlands and settlements) made available at the Greenhouse Gas Inventory and Research Center (CO_2 eq)

Current status and needs

- In 2022, the Intergovernmental Panel on Climate Change (IPCC) warned that if the planet warms by 1.5℃, between 3 to 14% of all plants and animals on land are likely to face extinction. If global warming reaches 3℃, this figure could rise to 29%. Climate change and ocean acidification pose a significant threat to biodiversity and are predicted to become the leading cause of biodiversity loss.
- Climate action is crucial to slow down biodiversity loss, and NbS is expected to contribute to climate change mitigation and adaptation. The ROK has incorporated biodiversity management into its national climate change plan to ensure the monitoring of the changing state and loss of biodiversity at the central and local government levels.

8-1. Increase carbon absorption through NbS

1 Enhancing carbon absorption based on ecosystem-specific NbS (ME, MOF, KFS)

- Improve carbon absorption and storage though forest circulation management (afforestation and forest tending) and expanded use of timber; increase urban forest carbon sinks, such as Climate-Resilient Urban Forests from 2023 to 2027, and facilitate the restoration of forest ecosystems in the Core Ecological Axes.

	Baseline	Annual target (Unit: 1,000 ha)						
		2024	2025	2026	2027	2028	2029	2030
Afforestation	19	20	20	20	20	20	20	20
Forest tending	217	217	290	290	290	290	290	320

- By 2027, assess the value of wetlands as a carbon sink and incorporate the findings into the classification system for wetland conservation. Create a Riverine Ecobelt that serves multiple functions, including carbon absorption, water purification and disaster prevention, by expanding ecological carbon sinks, such as riparian zones, from 29.66㎢ in 2020 to 83.75㎢ in 2030.
- Protect and restore blue carbon ecosystems to enhance the ocean's carbon sink capacity by creating salt marshes and marine forests, restoring tidal flats and increasing the coverage of protected areas. This approach will enable the ROK to meet its nationally determined contributions target of maintaining ocean carbon absorption at 1.06 million metric tons by 2030.

2 Developing technology to improve the carbon sink capacity of ecosystems (ME, MAFRA, MOLIT, MOF, KFS)

- Improve the assessment of carbon absorption for different types of ecosystems, such as forests, farmlands, grasslands, wetlands and settlements from 2023 to 2027 and develop technologies to enhance their absorption potential based on NbS from 2025 to 2027.
- Develop and distribute technology to enhance soil carbon storage in farmlands, and ensure the conservation of grasslands to increase greenhouse gas storage.
- Develop technologies for Blue Carbon-Based Climate-Adaptive Coastal Infrastructure from 2022 to 2026, and build a database to assess the distribution and the sink capacity of blue carbon ecosystems across the country.

8-2. Assess and respond to the impacts of climate change on ecosystems

1 Establishing an integrated ecosystem management framework for climate response (ME, MOLIT, MOF, KFS)

- From 2023 to 2026, develop a cross-ministerial, integrated information management system to consolidate climate and ecological data from various ministries and agencies to facilitate enhanced analysis and more effective control of climate risks in ecosystems. Its development will be completed in three phrases, with Phase 1 linking and consolidating data, Phase 2 involving prediction and analysis based on big data and AI, and Phase 3 focusing on data use and impact assessment.
- From 2027, ensure that the NIE operates a system that links an ecological observation network with long-term ecological research.

2 Overseeing the assessment and response to climate impacts on terrestrial ecosystems (ME, CHA, KFS)

- From 2024 to 2028, establish a national standard ecosystem observation network* for automated analysis and prediction of ecosystem response to climate change.

  * The network comprises two integrated observation stations for temperate and tropical forest climate zones, three ordinary observation sites for forest, urban and wetland ecosystems, and two mobile observation platforms.

- From 2024, survey vulnerable forests to assess the impacts of climate change, and develop an index to evaluate how these impacts affect the distribution of forest species. Prepare climate adaptation guidelines for vulnerable forests and pilot them in areas of concern for biodiversity loss.
- From 2023 to 2027, conduct research on the conservation of natural heritage under climate change, and from May 2024, set forth the legal basis for climate action in the Framework Act on National Heritage.

3 Analyzing climate impacts on marine ecosystems (MOF)

- Incorporate indicator species for climate change into the Comprehensive National Survey on Marine Ecosystems and develop a strategy to enable monitoring at the local unit level.

- Continue the ongoing observation and analysis of ocean acidification in nearshore water off the Korean Peninsula*, which began in 2015, as well as the ongoing research examining the physiological and ecological impacts of ocean acidification on marine species**, including shellfish, scheduled from 2022 to 2026.

  * Analysis of long-term and seasonal variations in ocean acidification through site-specific and water layer-specific surveys (four times per year)
  ** Analysis of the impacts of extreme ocean acidification on shellfish survival rates through controlled indoor experiments

Target 9 Promote sustainability in agriculture, forestry, fisheries and aquaculture

Target 9

Ensure sustainable management of ecosystems in agriculture, forestry, fisheries, and aquaculture by increasing the use of biodiversity-friendly production practices and developing and distributing relevant technologies.

(In alignment with GBF Targets 9 and 10)

Indicators

Headline **Proportion of agricultural area under productive and sustainable agriculture**

Proportion of area under productive and sustainable agriculture against total agricultural land area (%)

Headline **Progress towards sustainable forest management**

Proportion of forest area under a long-term forest management plan (%)
Forest area under an independently verified forest management certification scheme (ha)

Headline **Benefits from the sustainable use of wild species**

Combined value of biomass yields from unfarmed fisheries and terrestrial sources, along with the yield of wild pollinated crops, and the biomass of nursery farms and habitats (metric tons)

Headline **Percentage of the population in traditional occupations** (In development by the CBD)

Complementary **Proportion of agricultural area under eco-friendly practices**

Proportion of area under organic agriculture (%)

Complementary **Proportion of total allowable catch (TAC)-regulated stocks**

Proportion of TAC-regulated stocks against total nearshore catch (%)

Complementary **IUU fishing index**

Measure of the level of illegal, unreported and unregulated fishing activities in a given area (numerical value)

Current status and needs

- Agriculture, forestry, fisheries and aquaculture practices that fail to take into account sustainability have an adverse impact on biodiversity.
- The number of eco-friendly farms in the ROK decreased from 59,249 to 50,722, and the area under eco-friendly agricultural practices also declined from 81,827 ha to 70,127 ha.
- There is a need to encourage the uptake of a forest certification scheme launched by the Korea Forest Certification Council (KFCC) to promote sustainable forest management.

- The total nearshore catch decreased from 1.09 million metric tons in 2021 to 887,000 metric tons in 2022, indicating the need to address the limitations of the traditional approach to fisheries regulation that focuses on input controls, such as vessel and gear restrictions, closed seasons, and minimum landing size restrictions.

9-1. Strengthen the basis for eco-friendly agriculture

1 Supporting eco-friendly farms and creating production hubs (MAFRA)

- Encourage a shift to eco-friendly agriculture through a direct payment program aimed at offsetting potential losses from eco-friendly agricultural practices and promoting their wider adoption.
- Designate regions with a high concentration of eco-friendly farms as eco-friendly agricultural districts, and provide financial support for facilities, equipment and sales consulting services. Increase the number of these districts from 19 in 2022 to 120 in 2027.

2 Supporting the distribution of eco-friendly agricultural products (MAFRA)

- Offer loans to distributors and retailers to help them buy eco-friendly agricultural products and train dietitians to encourage the use of eco-friendly agricultural products in public food services.
- From 2025, build an online platform that provides distributors with production and shipment information on eco-friendly agricultural products to help them increase sales and diversify distribution channels.

3 Raising awareness and promoting the consumption of eco-friendly agricultural products (MAFRA)

- Promote the consumption of eco-friendly agricultural products by studying their effects on environmental conservation, enhancing consumer education and marketing, and offering incentives such as cash points.
- By 2027, establish 8 multi-functional spaces where families can learn about eco-friendly agricultural products through activity programs and also purchase them.

9-2. Create a virtuous cycle of forest management

1 Encouraging greater uptake of the KFCC forest certification scheme (KFS)

- By 2030, increase the area of sustainably managed forests certified under the KFCC's forest management (FM) certification scheme by up to 7%, and expand its coverage from state-owned forests to include public and private forests and Leading Forest Management Complexes*.

  * Economic forest complexes that are selected for their excellence in management with the aim of developing and spreading a successful forest management model

	2023	2024	2025	2026	2027	2028
Forest area under the KFCC-FM scheme (Unit: 1,000 ha)	725	732	740	747	754	762

- Ensure transparency in the distribution of forest products from FM-certified forests by incentivizing* the use of CoC-certified** products.

  * Incentives include incorporating CoC-certified products into the assessment of ESG performance of private companies and public organizations.

  ** CoC (Chain of Custody) certification is a mechanism for tracking certified material from the FM-certified forest to the final forest product.

2 Expanding sustainable forest management through public-private partnerships (KFS)

- From 2023, invite businesses to integrate the forestry sector into their ESG strategies, and encourage local governments to join the network of "Cities with Sustainably Managed Forests" by achieving KFCC-FM certification and publicly declaring the sustainable management of their forests.

  - Based on an MOU, ensure that the KFS provides businesses with support to create FM-certified forests and encourages the use of products produced or processed from these forests. From 2024, revise the Forest Resources Creation and Management Act to promote public-private partnerships in the forestry sector.

  - Assist local governments interested in FM certification by supporting their efforts to develop a forest management model and expand the area of sustainably managed forests.

- Raise public awareness of the KFCC forest certification scheme by promoting it at events and campaigns organized by public organizations and private companies and encouraging the widespread use of certified products.

9-3. Ensure sustainable fisheries management

1 Expanding and improving the TAC system (MOF)

- Gradually increase the number of species and sectors subject to the TAC to ensure that the proportion of TAC-regulated stocks against total nearshore catch* reaches 60% by 2028.

* Proportion of TAC-regulated stocks against total nearshore catch

	2021	2023	2025	2027
Proportion of TAC-regulated stocks against total nearshore catch	27%	40%	50%	60%

  - Lay the foundation for the establishment of an IT-based monitoring system* to improve the system in terms of speed and accuracy to better monitor a growing number of TAC-regulated stocks.

* The IT-based TAC monitoring system refers to a system designed to enable the integrated management of the TAC limit and the actual catch against the TAC, which is linked to the Fisheries Information Portal that provides information to fishermen.

- Hold on-site policy information sessions and distribute promotional materials to enhance fishermen's understanding of the TAC system and to facilitate policy promotion, and build a cooperative system with relevant organizations to inspect TAC operations, exchange opinions, conduct joint enforcement and improve statistics.

  - The enhanced TAC management scheme, which also specifies how to manage bycatch species along with the TAC-regulated species, was put in place in July 2023 based on feedback from stakeholders according to revised guidelines.

2 Improving eco-friendly fishery product certification system (MOF)

- Improve the eco-friendly fishery product certification system* by changing the current four-category (organic fishery products, antibiotic-free fishery products, organically processed food, fishery products without use of active treatment agents) system into a three-category (organic fishery products, antibiotic-free fishery products, organically processed food) system, integrating the “fishery products without use of active treatment agents” category into the “organic fishery products” category through the amendments to the Act on the Promotion of Environment-Friendly Agriculture and Fisheries and the Management of and Support for Organic Foods in the first half of 2024 based on a review of the effectiveness of keeping “fishery products without the use of active treatment agents” as a separate category and feedback from fishermen.

* The eco-friendly fishery product certification system refers to an eco-friendly certification system designed to certify fisheries that comply with the Hazard Analysis and Critical Control Points (HACCP) rules to facilitate the production of safe fishery products in an eco-friendly manner.

Target 10 Maintain and enhance ecosystem services

Target 10

Establish a national ecosystem service assessment and management system, maintain or enhance nature's benefits to people, and promote the application of NbS in reducing the impacts of natural disasters and in disaster prevention and restoration efforts.
(In alignment with GBF Target 11)

Indicators

Headline **Services provided by ecosystems**

Value of six key ecosystem services (i.e. air purification, water circulation regulation, climate regulation, soil erosion control and sediment retention, pollination, and landslide and flood mitigation) (% or ha)

Current status and needs

- Biodiversity and ecosystem services have been on a steady decline due to climate change, urbanization and indiscriminate use of natural resources. Recognizing the urgency of this issue, countries around the world are accelerating the establishment of the NBSAPs and performing ecosystem service assessments to respond to climate change and facilitate biodiversity conservation and ecosystem services.

  * From 1989 to 2009, the size of urbanized and arid areas had approximately doubled, while that of farmlands, grasslands, wetlands and bare lands had decreased by 10.5%, 24%, 61% and 28%, respectively. Meanwhile, the number of endangered wildlife species had increased from 92 in 1989 to 282 in 2022.

- The first assessment of ecosystem services* is currently underway in the ROK. Going forward, efforts are needed to utilize the results of the assessment to develop the next NBSAP, reflecting them in environmental policies and raising public awareness.

  * Progress of the ecosystem service assessment in the ROK

Year	Progress of the ecosystem service assessment in the ROK
2015	Conducted basic research on the ecosystem service assessment
2017	Performed the pilot assessment and developed guidelines
2020	Established a legal basis for the assessment
2021	Developed assessment items and methods
2022	Started the first assessment

- Considering the growing frequency and intensity of natural disasters caused by climate change, the application of NbS should be expanded to better prevent and reduce disasters.

10-1. Assess, manage and promote ecosystem services

1 Expanding the foundation for ecosystem service assessment and utilization (ME, KFS)

- Establish and publish detailed guidelines on procedures, items, methods and utilization of ecosystem service assessment in 2025 to secure reliability and legitimacy. In addition, publish the national ecosystem service assessment report every five years, starting with the first report in 2025. Moreover, support policy decision-making for sustainable management of natural resources in the country through the creation of ecosystem service assessment maps and integrated management of information.
- Analyze time series changes and factors of threats to ecosystem services from 2025, and prepare strategies to conserve and enhance national ecosystem values by 2029 by expanding the reflection of ecosystem service assessment results and measures to enhance ecosystem services according to the changes in ecological values in the mid- to long-term plans for the natural sector and according to the environmental plans for each local government.
- By 2025, prepare guidelines and maps for the assessment of forest ecosystem services to develop decision-making tools to identify the changes in ecosystem services caused by forest management and to enhance forest ecosystem services.

2 Promoting consideration of ecosystem services by local governments (ME)

- Designate protected areas and OECMs or areas where ecological restoration can improve the value of the local ecosystem and revitalize the local economy as an Ecosystem Service Promotion Zone, and increase the number of designated zones to 20 by 2030. In addition, provide support and link these zones to infrastructure for ecotourism, recreation and healing.
- Evaluate the status of maintenance and enhancement of ecosystem services by local governments in 2025, and establish a compensation system for active conservation of ecosystem services to recognize and support outstanding local governments.

3 Raising awareness and public participation in ecosystem service assessment (ME)

- From 2025, expand public participatory programs such as creating urban vegetable gardens and planting trees in damaged areas to provide people with opportunities to discover outstanding ecological assets in their everyday lives and participate in the valuation of ecosystem services.
- Conduct regular surveys on public satisfaction and awareness of ecosystem benefits to determine the effectiveness of policies.

10-2. Prevent and recover from disasters with NbS

1 Strengthening the management of disaster-prone areas (MOLIT)

- Designate and manage areas that require disaster prevention efforts by placing construction restrictions within disaster-prone areas such as coastal areas, riversides and steep slopes where land is almost not at all used as natural disaster prevention areas.
- Discourage the construction of buildings that may hinder the prevention of disasters such as wind and water disasters, landslides, ground collapse and earthquakes.

2 Expanding green infrastructure to prevent disasters in city centers (ME)

- From 2024, increase the types of development project areas subject to environmental impact assessments to which an ecological area ratio is applied by recognizing various rooftop greening methods such as vegetated retaining walls, and prepare follow-up measures for management.
- Expand water absorption sources, convert impermeable pavements to permeable ones, and continue to facilitate rooftop greening in order to reduce damage from floods and heat-waves.
- Apply and promote low-impact development (LID) techniques such as bioretention, green roofs, tree box filters, planter boxes, bioswales, bioslopes and permeable paving to reduce urban flooding.

3 Applying NbS to river restoration (ME)

- Identify the ecological structure and functions of the areas to be restored and prepare guidelines for the NbS restoration to be applied in those areas in 2025.
- Purchase riverside lands to protect the quality of river waters and launch pilot projects to restore streamside reservoirs, flood plains and creeks.

Target 11 Enhance urban biodiversity

Target 11

Increase the proportion of urban people with access to nature by expanding parks and green and blue spaces in urban areas and strengthening connectivity and accessibility to nature, and evaluate and manage the health of an urban ecosystem.

(In alignment with GBF Target 12)

Indicators

Headline **Average share of the built-up area of cities that is green/blue space for public use for all**

Percentage of the population with access to open spaces within a 400m walking distance among the total population in urban/downtown areas (%)

Complementary **Percentage of healthy urban ecosystems** (To be developed)

Percentage of healthy urban ecosystems out of the total area (or total green spaces) of the city (%)

Complementary **Index of urban ecosystem connectivity** (To be developed)

Index of urban ecosystem connectivity calculated using an ecological landscape index (numerical value)

Complementary **Total urban forest area, accessible urban forest area per capita**

Total urban forest area according to the National Urban Forest Statistics by the KFS (km^2)
Accessible urban forest area per capita according to the National Urban Forest Statistics by the KFS (km^2)

Complementary **Average percentage of open spaces for public use in urban areas**

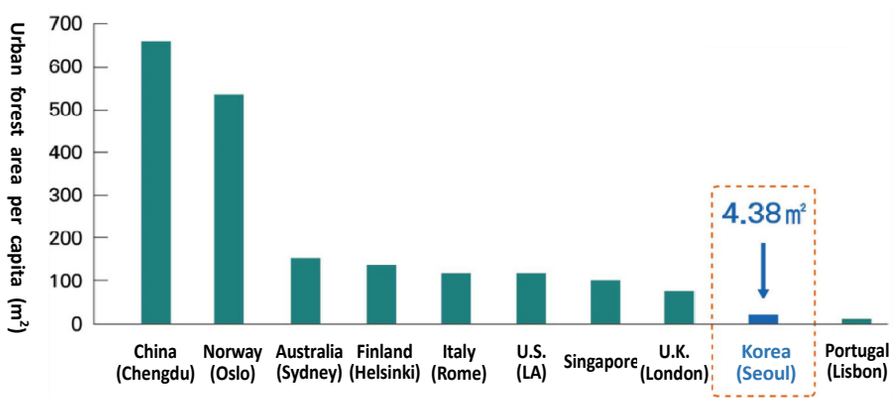
Average percentage of plazas, parks, green spaces, recreation areas and public open spaces out of the total administrative area of the city/province (km^2)

Current status and needs

- Green and blue spaces in urban areas are known to have a positive impact on human physical and mental health, help regulate climate and provide habitats for numerous species and enhance habitat connectivity.
- The urban forest area per capita in the ROK is 11.48㎡ as of the end of 2021, which is less than that of major cities in the world, and that of the Seoul Metropolitan Area is even

below WHO's recommended guideline of 9㎡. In addition, the ecological fragmentation between blue spaces and urban forests and the lack of waterfront forests are intensifying.

- Against this backdrop, there is a need to expand green and blue spaces in urban areas as a means to address health and climate issues and increase urban biodiversity.



<Urban forest area per capita in major cities>

11-1. Strengthen connectivity and accessibility by expanding urban nature

1 Expanding the coverage of urban green areas (ME, MOLIT, KFS)

- Expand the area of accessible urban forests in neighborhoods from 54,354 hectares in 2020 to 70,700 hectares in 2027 and create forests and forest trails on idle and abandoned lands such as unused railroad and train station areas and former military bases.
  - The number of urban forests established in response to climate change is expected to increase from 207 in 2021 to 1,200 in 2027, while the number of "wind path forests" designed to circulate clean air in urban areas will jump from 17 in 2021 to 25 in 2027.
- Increase the number of urban ecological axis restoration projects to 50 in order to expand ecological spaces in everyday life and gradually restore, by 2050, all disconnected and damaged urban areas.
- To facilitate the greening of rooftops and walls in urban areas, conduct a pilot project for public buildings from 2027 to 2029 after analyzing the effectiveness of greening, and expand it to private buildings by 2030. Moreover, restore ecosystems by tapping into the Ecosystem Conservation Fund and continue to expand micro ecosystems such as ecological playgrounds.
- Continue to increase street trees and waterfront forests to strengthen the urban blue-green networks.

2 Increasing the coverage of urban blue spaces (ME, KFS)

- Launch a project to build eco-friendly, water-friendly cities by utilizing natural ecosystems and waterfront spaces around national rivers.
- Review, by 2024, the effectiveness of the project to create ecological reservoirs for flood prevention such as vegetated wetlands in ecological parks and green restoration sites, and implement the project in 2026 after conducting consultations with local governments in 2025.

3 Setting standards for the management of urban green spaces (ME)

- Apply the 3-30-300 rule* to each local government in managing urban green spaces, boosting connectivity and accessibility.

  * The 3-30-300 rule requires that at least **3** well-maintained **trees** are visible from houses; urban tree canopy covers **at least 30% of the city's land area**, and the nearest **public green space is within 300 meters**.

- Amend the Biodiversity Act to address regional disparities by setting quantitative targets for green and blue spaces when developing the LBSAP.

11-2. Assess the health of urban ecosystems and enhance their qualitative value

1 Assessing the health of urban ecosystems (ME)

- Unify the methods of evaluation and develop relevant indicators to measure the area of green cover, the percentage of impermeable layers, the status of biodiversity and other related factors by 2026 with a view to assessing the health of urban ecosystems in each city.
- Evaluate the ecological functions and health of urban areas by linking regional urban ecological maps, land use maps, land cover maps and vegetation maps to indicators from 2027.
- Introduce a procedure for reviewing and supplementing urban ecological maps by specialized organizations to improve the accuracy of the maps, and build capacity to create and utilize the maps through regular training for each region.

2 Enhancing the qualitative value of urban ecosystems based on health assessments (ME, KFS)

- Establish conservation and enhancement measures for healthy areas by taking into account a variety of factors such as urban forests, rivers and neighboring ecosystems after classifying urban ecosystems into healthy, conserved and degraded areas based on health assessments. Manage the degraded areas in a customized manner by proposing restoration plans in consideration of local industrial, agricultural and residential characteristics.
- Prepare urban forest management indicators to ensure the systematic management of urban forests, and have the head of the local government assess the health of urban forests under his/her jurisdiction using the urban forest management indicators every five years. For local governments with poor assessment results, reflect improvement measures in the 10-Year Urban Forest Creation and Management Plan for continued monitoring of management quality.

3 Analyzing urban ecosystem connectivity and accessibility (ME, KFS)

- Develop indicators of connectivity and accessibility for green and blue spaces and start monitoring them in 2025.
- Analyze the distribution characteristics and interconnectivity of urban forests and forest landscapes as well as the diversity and spatial characteristics of vegetation landscapes within urban forests.

Target 12 Expand the sharing of benefits derived from genetic resources

Target 12

Increase monetary and non-monetary benefit-sharing through improved institutions, awareness-raising and capacity-building in access to and benefit-sharing of genetic resources, and establish a system to address benefit-sharing from the utilization of digital sequence information (DSI).
(In alignment with GBF Target 13)

Indicators

Headline **Indicator on monetary benefits received** (In development by the CBD)

Headline **Indicator on non-monetary benefits** (In development by the CBD)

Complementary **Awareness of the Nagoya Protocol**

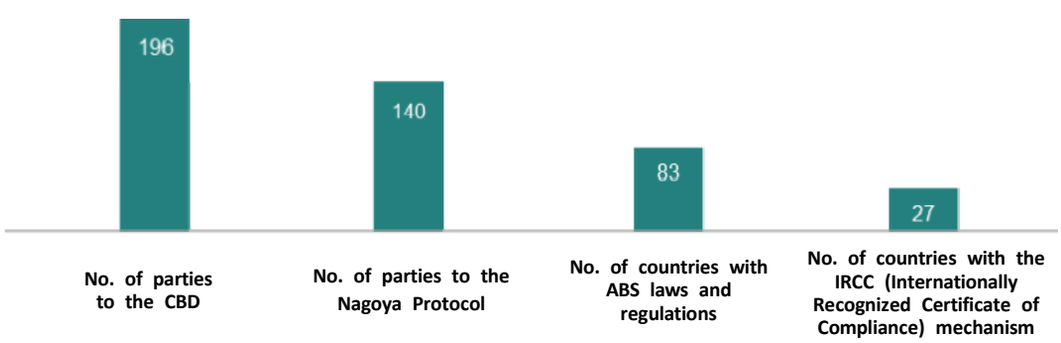
Percentage of awareness of the Nagoya Protocol among industry, academia and research institutes (%)

Complementary **Number of cases of information-sharing via the CBD ABSCH**

The number of cases of information-sharing on ABS laws and regulations and their implementation status in the ROK registered in the Access and Benefit-Sharing Clearing-House of the Convention on Biological Diversity (CBD ABSCH) (numerical value)

Current status and needs

- Equitable sharing of benefits arising from the utilization of genetic resources is one of the three objectives of the CBD. Since the Nagoya Protocol entered into force in October 2014, the total number of Parties has climbed to 140, of which 83 have put in place relevant domestic laws. Unfortunately, there are not many cases where actual benefits were shared, including monetary ones, due to different laws and procedures in each country and delays in reporting.
- The ROK needs to enhance its framework for expanding benefit-sharing by improving reporting requirements and its standards, reflecting the results of the domestic system for benefit-sharing of genetic resources, and respond to international discussions on benefit-sharing of DSI.



12-1. Improve the access and benefit-sharing mechanism for genetic resources

1 Improving the access and benefit-sharing mechanism for genetic resources (MSIT, MOTIE, MAFRA, ME, MOF, KFS, KDCA)

- Improve the laws and regulations of relevant ministries related to the reporting of access to genetic resources in the ROK, streamline the process of reporting and clarify the reporting targets for non-commercial research activities. Revamp related systems such as the system for grading marine and fisheries bio-resources based on their economic, ecological and scientific value and the system for granting permits for out-of-country transportation, while implementing the Act on the Promotion of Collection, Management, and Utilization of Pathogen Resources and the Comprehensive Plan for the Management of Pathogen Resources (2021-2025).
- Upgrade, by 2028, the benefit-sharing mechanism by developing criteria for monetary and non-monetary benefit-sharing for benefits arising from the utilization of genetic resources.
- Prepare a Handbook on the Access and Benefit-Sharing of Genetic Resources by 2024, and a Guideline on Access and Compliance Reporting for working-level practitioners at relevant ministries by 2025.

2 Responding to discussions on the sharing of benefits arising from DSI (ME, MSIT, MOTIE, MAFRA, MOF, KFS, KDCA)

- Prepare for the domestic implementation of the multilateral benefit-sharing mechanism for DSI by jointly analyzing the impact of the multilateral mechanism on the country and collecting opinions on DSI benefit-sharing from industry and academia from 2024. Add more explanations and guiding information on DSI to the Integrated Reporting Service for Genetic Resources and provide relevant administrative services to researchers and industries that publish and use DSI to help them adopt the mechanism in a smooth manner.
- Jointly respond and collaborate on aligning the DSI benefit-sharing agenda with other treaties such as the Biodiversity of Areas Beyond National Jurisdiction (BBNJ) Treaty, the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the WHO Pandemic Influenza Preparedness Framework (PIPF) and WIPO treaties.

12-2. Raise awareness of and build capacity in benefit-sharing of genetic resources

1 Enhancing ABS awareness-raising and capacity-building activities (MSIT, MOTIE, ME, MOF)

- Regularly publish and distribute fact sheets or newsletters on the Nagoya Protocol along with the latest trends at home and abroad by each ministry.
- Enhance real-time ABS consultations and training for researchers and experts available at each ministry.

2 Strengthening support for relevant industries in response to ABS (ME, MOTIE, KFS)

- To strengthen cooperation, hold two meetings per year of the Council of Bio Industry Associations, which comprises the Korea Biotechnology Industry Organization (KoreaBio), the Korean Cosmetic Association (KCA), the Korea Pharmaceutical and Bio-Pharma Manufacturers Association (KPBMA), the Korea Health Functional Food Association (KHFF), the Korea Pharmaceutical Traders Association (KPTA) and the Korean Seed Association (KOSA).
- Provide customized consulting services to the bio industry 45 times a year, conduct capacity-building training for ABS-related legal support groups twice a year, and operate a legal support network in 10 countries outside the ROK.
  - Hold information and training sessions on ABS regulatory trends in major countries (e.g. China, Brazil) and discuss measures to respond to such trends.
- Set up a promotion and consulting booth at bio industry-related fairs twice a year.

3 Facilitating the utilization of the Access and Benefit-Sharing Clearing-House (ABSCH) (ME)

- Provide relevant public services such as information on domestic species that may be used in place of imported species, materials for localization and institutions that own such species or materials by connecting to the National Biodiversity Clearing-House (CBD-CHM Korea) from 2026.
- By 2026, improve the system to provide electronic reporting services and issue e-certificates, making it more accessible to users and reducing the processing time.

Target 13 Embed the values of biodiversity in all aspects of society

Target 13

Standardize and put into practice the national natural capital accounting framework that reflect biodiversity and its values on all sectors of society.
(In alignment with GBF Target 14)

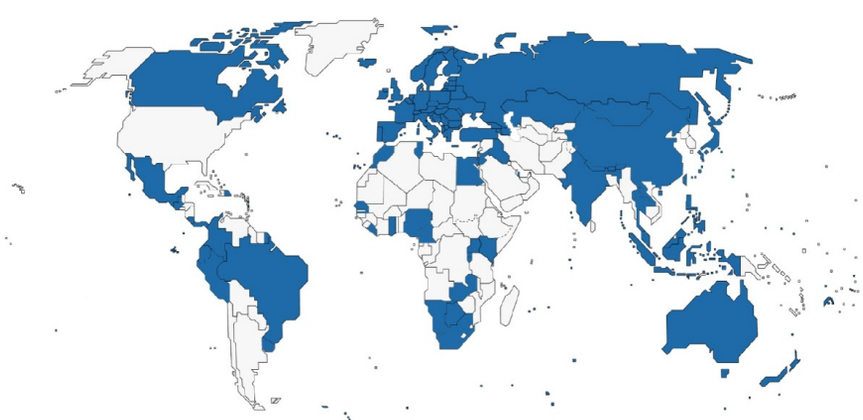
Indicators

Headline (To be developed by the CBD)

Current status and needs

- The CBD and GBF recommend that the values of biodiversity be reflected in key national policies and national accounts. In the ROK, several ministries have developed and are implementing statutory plans that affect biodiversity, but these plans lack alignment and consistency with the NBSAP.
- With a growing awareness of the economic value of environmental factors in the international community, a paradigm shift is underway by which existing economic statistics such as gross domestic product (GDP) are supplemented with natural capital accounting*. In the ROK, research on the System of Environmental-Economic Accounting (SEEA) has been initiated primarily by the Bank of Korea (BOK) and Statistics Korea (KOSTAT). Further research and cross-ministerial cooperation are needed to institutionalize the system.

* Natural capital accounting is a tool to measure the stock and flow in natural capital, integrating the flows and values of ecosystem services into accounting and reporting systems in a standardized way.



<Countries that have adopted the UN SEEA>

13-1. Incorporate biodiversity into national policies and accounting

1 Reflecting biodiversity values in statutory plans (All)

- Develop a standardized tool to identify and evaluate statutory plans that affect biodiversity by 2025, and assess and monitor whether the NBSAP is incorporated in these plans from 2026.
  - Conduct a comprehensive review and evaluation of the rationale, goals and tasks of the statutory plans, and make recommendations to ensure that the goals and tasks of the 5th NBSAP are integrated into the statutory plans when developing and revising the plans.

2 Developing a national natural capital accounting framework (ME, KOSTAT, BOK)

- Establish and operate a taskforce consisting of relevant ministries and experts to develop a national natural capital accounting framework* from 2025, and develop, by 2030, measures to enable the systematic management of natural capital by designating natural capital-related statistics such as land cover maps, the values of ecosystem services, and the Red List of ecosystems as nationally approved statistics.

* Stages of the development of the national capital accounting framework

Stage 1	Scale of ecosystem
Stage 2	Health of ecosystem
Stage 3	Values of ecosystem services (types)
Stage 4	Values of ecosystem services (costs)
Stage 5	Monetization

3 Establishing and conducting pilot evaluation of the ecosystem accounting framework (ME)

- Start a pilot implementation of Ecosystem Accounting* within the SEEA using the EU Ecosystem Accounting system as a reference in 2028.

  * The Ecosystem Accounting is a satellite accounting system of the SEEA and a standardized accounting framework that integrates ecological assets with ecosystem services.

- Establish and improve an integrated assessment system and database for monitoring the status and changes in ecosystem accounts for the valuation (monetization) of ecological assets and ecosystem services and expand the assessment system in 2030.

  * Monitoring is conducted by evaluating the status and changes in the scale (size) and condition of ecosystem and the values and monetization of ecosystem services on an annual basis.

<List of statutory plans affecting biodiversity (provisional)>

Responsible department	Relevant statutory plans	Responsible department	Relevant statutory plans
Relevant departments (joint preparation)	National Climate Change Adaptation Plan	KDCA	Comprehensive Plan for the Management of Pathogen Resources
	National Master Plan for Water Management	ME	Comprehensive Plan for the Conservation of Endangered Wildlife
	National Master Plan for the Management and Utilization of Biological Research Resources		Master Plan for the Management of Water Environment
	National Biodiversity Strategy and Action Plan (NBSAP)		Master Plan for Wetland Conservation
	Comprehensive National Environmental Plan		Master Plan for the Management of Wildlife Diseases
	Comprehensive Master Plan for International Development Cooperation		Master Plan for Wildlife Protection
	Master Plan for Climate Change Responses		Master Plan for Natural Parks
	Safety Management Plan for Living Modified Organisms (LMOs)		Master Plan for the Conservation of Natural Environment
	Master Plan for Resource Circulation		Master Plan for Soil Conservation
	Master Plan for Sustainable Development		Master Plan for Debris Management in Rivers and Estuaries
	Master Plan for Carbon Neutrality and Green Growth (Draft)	MOF	Master Plan for the Management and Ecological Restoration of Tidal Flats and Adjacent Areas
	Master Plan for the Management of Marine Debris and Contaminated Marine Sediments		Master Plan for the Development of the Fishing Industry and Fishing Communities
MAFRA	5-Year Plan to Foster Eco-Friendly Agriculture		Master Plan for the Management of Fishery Resources
KFS	Master Plan for Urban Forests		Comprehensive Plan for Fishway Management
	Master Plan for Baekdudaegan Protection		
	Master Forest Plan		Master Marine Spatial Plan
	Master Plan for Forest Biodiversity		Master Plan for the Conservation and Management of Marine Ecosystem
	Master Plan for the Management of Forest Genetic Resources Protection Zones		Master Plan for Marine and Fisheries Development
	Master Plan for Forest Management		Master Plan for the Management of Marine and Fisheries Bio-Resources
	Master Plan for Garden Promotion		Comprehensive Master Plan for Marine Environment
	Comprehensive Plan for the Promotion of Carbon Sinks		Master Plan for Environmental Management Sea Areas

Target 14 Promote biodiversity and ESG management

Target 14

Take measures to facilitate the assessment and disclosure of corporate risks, impacts and dependence on nature, and strengthen technical support and resource recycling schemes for sustainable production. (In alignment with GBF Target 15)

Indicators

Headline **Number of companies reporting on disclosures of risks, dependencies and impacts on biodiversity** (In development by the CBD)

Complementary **Extended Producer Responsibility (EPR)-related indicator**

Number of items subject to mandatory recycling specified in the Enforcement Decree of the Act on the Promotion of Saving and Recycling of Resources (numerical value)

Complementary **Number of products certified for eco-labelling**

Number of products certified according to the Products Eligible for Eco-Labelling and Certification Criteria notified by the ME (numerical value)

Current status and needs

- Corporate nature-related disclosures are increasingly recommended on the global stage, leading to major companies voluntarily including biodiversity targets in their ESG management. The Taskforce on Nature-related Financial Disclosures (TNFD), which was launched in June 2021 with the aim of providing a framework for companies to assess and disclose risks and opportunities related to nature, released recommendations on information disclosure in September 2023.
- The ROK is still very slow in responding to biodiversity compared to climate change in terms of corporate ESG management. The country needs to thoroughly prepare for the future since biodiversity issues may emerge as a new trade barrier as in the case of climate change, which led the EU to require due diligence in supply chains. Today, global investors are demanding that companies make efforts to conserve nature. Against this backdrop, it is necessary for the country to establish a support system to help companies expand their ESG management to include nature-related issues.

14-1. Encourage the disclosure and publication of biodiversity-related information

1 Helping companies disclose biodiversity-related information (ME)

- By 2025, prepare guidelines for developing the TNFD standard guidelines for each industry classification based on TNFD recommendations*, mutatis mutandis, and apply them in the ROK. Furthermore, establish a standardized system for the disclosure of natural capital in the country by making improvements to the guidelines on a continual basis, reflecting the ESG and TNFD changes and the needs of companies and financial institutions.

  * The TNFD recommendations identified 10 sectors (9 non-financial and 1 financial) and proposed 34 industry classifications.

- Establish and operate the Taskforce on the Promotion of Natural Capital Disclosures in collaboration with the IUCN and the Korea Chamber of Commerce and Industry (KOCHAM) from 2024, share information on pilot natural capital disclosure reports* and examples of natural capital disclosures by companies and financial institutions, and provide consulting and professional capacity-building training programs to strengthen the capabilities of companies and financial institutions. Moreover, encourage companies to disclose information on natural capital to increase the share of companies disclosing such information from 30% in 2027 to 50% in 2030 by identifying and promoting the best TNFD-related practices and raising awareness among investors and the public.

  * A pilot project will be conducted on the preparation of disclosure reports after signing MOUs with companies participating in the Biz N Biodiversity Platform (BNBP) and TNFD members.

- Develop and align the Integrated Information Management System for Ecosystems and Climate Responses from 2023 to 2027 to provide customized ecological information in a step-by-step manner with a view to supporting the assessment of nature dependence and impacts of corporate activities.

2 Improving support for companies to increase their biodiversity considerations (ME)

- Analyze economic activities related to the six environmental objectives of the EU's Green Taxonomy and derive, by 2024, a revised version applicable to the ROK including economic activities related to the protection of biodiversity.

- By 2024, establish and operate an expert taskforce for each environmental objective to prepare detailed criteria for biodiversity-related environmental objectives in the Green Taxonomy of the ROK.

- By 2026, include the awarding of extra points for the enhancement of biodiversity, such as protecting habitats of endangered species near business sites and creating ecological forests,

in the existing criteria for designating green companies, including reducing pollutants and saving resources and energy.

- By 2025, develop ESG guidelines for small and medium-sized enterprises (SMEs) and middle market enterprises (MMEs).

14-2. Help build eco-friendly supply chains and increase recycling

1 Increasing the number of eco-labelled products and developing baseline information on Environmental Product Declarations (EPDs) (ME)

- Identify at least five new high-demand, everyday products* eligible for eco-labelling each year that are extremely effective in improving the environment, such as minimizing ecological impacts and reducing greenhouse gas emissions, by conducting marketability reviews and consumer and distributor surveys and gathering expert opinions. In addition, develop, by 2027, new certification criteria for reducing environmental burdens, such as decreasing the use of harmful substances and reducing the emission of pollutants that contaminate air, water and soil, to support companies in producing eco-friendly products.

  * The candidate products for eco-labelling include electronic whiteboards, cooking appliances, air fryers, hair dryers, cleaning services and shared offices.

- Develop 150 baseline data on main industrial production goods each year until the number of data reaches approximately 1,000 by 2030 to help calculate greenhouse gas emissions and ecological data related to the production of a company's products, thus laying the foundation for the management of eco-friendly product supply chains.

2 Facilitating sustainable production among companies by promoting waste recycling (ME, MOF)

- Add new criteria such as weight to the existing packaging recyclability assessment scheme, whose criteria currently include material, structure and ease of use, and strengthen the effectiveness of the assessment. In addition, encourage the transition from incineration recycling (e.g. heat recovery and solid fuel) into high-quality material and chemical recycling (e.g. pyrolysis) by revamping the recycling subsidy system. Furthermore, select and support product lines that utilize biodegradable plastics in consideration of their environmental benefits, and continue to increase the criteria for biomass plastic content for eco-labelling certification from 40% in 2022 to 100% in 2050.

- Help a marine debris sorting system take root and create 12 smart collection sites to enable the stable supply of raw materials and invigorate the high-value recycling market.

Target 15 Promote sustainable consumption

Target 15

Reduce food waste and waste generation and increase the consumption of green products in the public and private sectors by improving the system to encourage sustainable consumption and by strengthening the provision of information and training.
(In alignment with GBF Target 16)

Indicators

Headline (To be developed by the CBD)

Complementary **Domestic resource consumption per capita**

Domestic consumption of minerals and other resources per capita in the ROK according to the Yearbook of Minerals Statistics (metric tons/person)

Complementary **Domestic material consumption per capita**

Domestic consumption of materials and goods per capita in the ROK based on the UNEP model (metric tons/person)

Complementary **Indicator on food waste reduction**

Amount of food waste generated according to the National Waste Generation and Treatment Status statistics (metric tons/day)

Complementary **Amount of household waste generated**

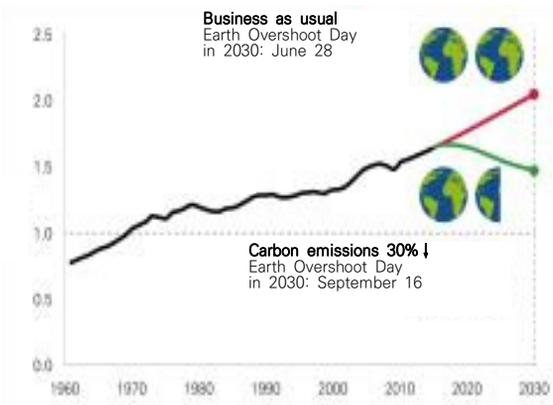
Annual household waste generated according to National Waste Generation and Treatment Status statistics (metric tons)

Complementary **Percentage and amount of green purchasing in the public sector**

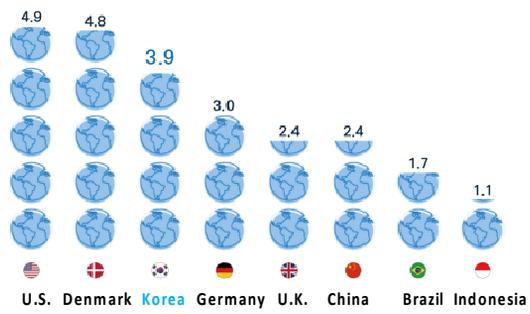
Percentage and amount of green purchasing in the public sector (local governments) (KRW)

Current status and needs

- Across the globe, humanity's resource consumption is far exceeding the biocapacity of the planet, making it urgent to take steps to reduce demand for resources across the board.
  - The global ecological footprint is 1.75 times the biocapacity of the Earth while that of the ROK is 3.9 times (Global Footprint Network, 2022).



Global ecological footprint trends



Ecological footprints of major countries

- The ROK has put in place a system to encourage green consumption by promoting green products such as eco-labelled, low-carbon and "good recycled" products as well as eco-friendly agricultural products. Still, there is room for improvement, for example, in boosting demand and increasing the number of purchasers of green products. In line with the trend, the country developed the Korean Circular Economy Action Plan in 2021 and is currently implementing waste reduction policies. Thanks to such efforts, the amount of food waste generated has slightly decreased since 2018.

<Amount of food waste generated over time (Unit: 10,000 metric tons/year)>

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Amount of food waste generated	476	456	483	519	525	526	528	522	516	488

15-1. Promote green consumption

1 Encouraging green purchasing in the public sector (ME, MAFRA)

- Increase the total amount of mandatory purchasing of green products by public organizations from KRW 4.45 trillion in 2020 to KRW 6.44 trillion in 2025.
- Raise the number of designated “green stores” in the country from 620 in 2020 to 825 in 2025 to facilitate the dissemination of eco-friendly products and promote the spread of the culture of green consumption.
- Conduct research on how to incorporate eco-friendly agricultural products (organic and pesticide-free certified agricultural products) into green products from 2024 based on quantitative data on the effect of greenhouse gas reduction of eco-friendly agricultural products. In addition, promote the spread of eco-friendly agriculture and expand purchases of eco-friendly agricultural products by public organizations, including local governments and public corporations.

2 Raising public awareness and promoting the practice of green consumption (ME)

- Expand local Green Purchase Support Centers (GPSCs) nationwide from 10 centers in 2023 to 17 in 2030 covering all metropolitan cities and provinces with the aim of strengthening the foundation for eco-friendly consumption practices in the private sector and promoting green purchasing.
- Expand green consumer training designed to help achieve carbon neutrality, provided to 55,000 people in 2020, to 85,000 people in 2025, targeting everyone including children, teenagers and adults in order to promote the practice of eco-friendly consumption culture. In addition, expand the public promotion and campaign activities on carbon neutrality, including the Bye Bye Plastic campaign launched on June 5, 2023, to reduce the consumption of unnecessary plastic products and encourage the practice of “good consumption” as well as a series of inspirational environmental campaigns such as the Zero Disposables Challenge and the 100 Points for Reducing Disposables Challenge, which invite participants to take part in the challenges and post pictures or videos of them reducing the use of disposables in their daily life, with the aim of increasing the number of participants from 345,000 in 2021 to 550,000 in 2025.

15-2. Reduce the generation of waste including food waste

1 Strengthening the foundation for the reduction of food waste (ME)

- Strengthen annual evaluations of the reduction of food waste, plans to restrain the generation of food waste and relevant achievements at all levels of local governments including metropolitan local governments (17 metropolitan cities and provinces) and basic local governments (229 cities, counties and districts), and provide incentives to outstanding local governments.
- Increase the proportion of local governments that introduced the RFID-based food waste management system for apartment buildings from 45% in 2022 to 60% in 2027, and facilitate the reduction of food waste-generating sites through stable operation and management.
  - Promote the dissemination of the RFID-based pay-as-you-throw (PAYT) system by providing technical and service support such as the introduction, installation and operation of relevant equipment.
- Encourage the reduction of food waste with the introduction of a management system for businesses that produce large amounts of food waste by establishing an online information management system for the generation, transportation and treatment of food waste in 2024, piloting it to test the system in 2025 and starting its operation by establishing a legal basis in 2026.

2 Providing customized promotion and education to each source of food waste (ME, MAFRA)

- Facilitate the reduction of food waste generation by encouraging people in local communities, restaurants, businesses that produce large amounts of food waste and schools to participate in improving the existing food culture and raising public awareness through enhanced consulting, campaigns and promotional activities, utilizing local networks of universities, private organizations and local governments.

3 Supporting the reduction of waste among businesses participating in the resource circulation performance management program (ME)

- Provide consulting and support for the installation of waste reduction facilities to help businesses participating in the resource circulation performance management program* achieve resource circulation targets.

  * Establish and manage resource circulation targets for large waste generators (businesses that generate more than 1,000 metric tons of waste (or 100 metric tons of designated waste) per year from 18 industries), increase the resource circulation usage rate and curb final disposal of waste.

- Provide support to SMEs and MMEs for the installation of facilities to reduce waste and improve processes, and offer industry-specific technical diagnosis and guidance.

Target 16 Ensure the safe management of living modified organisms (LMOs) and emerging biotechnology

Target 16

Minimize negative impacts of LMOs, review potential environmental risks of organisms derived from new biotechnologies and their products, and enhance biosafety-related communication.
(In alignment with GBF Target 17)

Indicators

Headline (To be developed by the CBD)

Complementary **Number of environmental risk assessments of products derived from LMOs and new biotechnologies (assessment management)**

Number of LMO risk assessments and environmental risk assessments (assessment management) (numerical value)

Complementary **Number of legal and institutional improvements introduced**

Number of legal and institutional improvements introduced by LMO-related ministries including MOTIE, MSIT, MAFRA, ME, MOF and MFDS (numerical value)

Complementary **Number of risk assessments and safety management guidelines developed**

Number of LMO risk assessment and safety management guidelines developed by LMO-related ministries including MOTIE, MSIT, MAFRA, ME, MOF and MFDS (numerical value)

Current status and needs

- With the increasing development of LMOs across the globe, the world is faced with issues related to their risks, liability for damages and possible remedies.
- Under the circumstances, the number of LMO-related natural environment monitoring sites in the ROK has increased from 800 in 2008 to 900 in 2020 and 1,000 in 2022. Still, there is room for improvement in terms of the country's responses to LMOs considering that it has not yet joined the Nagoya–Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, which specifies liability for damages caused by LMOs and remedies.
- The country needs to develop inspection technologies and conduct research on safety management measures to prevent adverse effects from LMO spills, and come up with measures such as disclosing information and expanding participation to raise awareness of the importance of biosafety among researchers and the general public.
- Moreover, it is necessary to link this NBSAP with the Fourth Plan for Safety Management of Living Modified Organisms (2018-2022) for the efficient operation of the NBSAP.

16-1. Enhance the effectiveness of LMO safety management and improve the relevant system

1 Strengthening LMO safety management (MOTIE, MSIT, MAFRA, MOHW, ME, MOF)

Responsible ministries for LMOs: MOTIE (for industrial use), MSIT (for testing and research), MAFRA (for agricultural, forestry and livestock use), MOHW (for healthcare), MOF (for marine and fisheries), ME (for environmental cleanup), and MFDS (for food and medical devices)

- Strengthen LMO safety management and monitoring. For starters, develop LMO risk assessment and safety management guidelines* for each ministry. In addition, conduct regular safety inspections of LMO research facilities once a year and promote the operation of the Institutional Biosafety Committees (IBCs) while performing inspections on all LMO testing and research facilities and providing customized on-site safety management consulting to 20 institutions every year. Moreover, increase the number of LMO natural environment monitoring sites to 1,200 by 2026, expanding the scope of investigation of the impacts of LMOs on natural ecosystems. Finally, establish a safety management and monitoring system for each stage of handling LMOs (i.e. importation, production and use of LMOs) when granting approval.

* Number of guidelines developed or to be developed by each ministry

Year	MOTIE	MSIT	MAFRA	ME
2023	1	2	1	-
2024	1	2	1	2
2025	1	1	1	2
2026	1	1	1	2
2027	1	1	1	2

- Recognize the internationally accredited new KOLAS (Korea Laboratory Accreditation Scheme) test reports* and renew the report every three years to increase reliability. In addition, enable the ME to facilitate the localization of relevant technologies by ensuring that the ministry maintains LMO detection technologies as 100% internal.

* Cumulative number of KOLAS test reports recognized

Year	MAFRA	ME
2023	1	1
2024	4	1
2025	4	1
2026	4	1
2027	5	1

2 Improving the LMO management system (MOTIE, MSIT, MAFRA, MOHW, ME, MOF)

- Improve and revise the Transboundary Movement of Living Modified Organisms Act and related joint notifications at least once a year to clarify the purposes of LMO use and the roles of competent ministries and local governments.
- Proceed with necessary work, step by step, to discuss ratification of the Nagoya–Kuala Lumpur Supplementary Protocol on Liability and Redress in 2026.

16-2. Respond to risks associated with emerging biotechnologies

1 Responding to international negotiations on emerging biotechnologies and making institutional improvements (MOTIE, MAFRA, MOHW, ME, MOF)

- Involve domestic experts in online forums, multidisciplinary Ad Hoc Technical Expert Groups (MTEGs), the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and other forums operated by the CBD and the Cartagena Protocol related to synthetic biology from 2024, and monitor their trends.
- Identify global R&D and commercialization trends for organisms developed with emerging biotechnologies and their products and promote research and systems related to domestic safety management measures from 2024.

2 Building the safety management foundation to respond to emerging biotechnologies (MOTIE, MAFRA, MOHW, ME, MOF)

- Develop technologies to respond to the safety management of emerging biotechnologies such as risk assessment technologies and detection techniques* for LMOs containing products derived from biotechnology, agricultural product risk assessment technologies using genomic big data and equivalence test technologies based on crop content analyses.

* Number of risk assessment evaluation technologies and detection techniques developed for LMOs containing products derived from biotechnology

Year	MAFRA	ME	MOF
2023	-	4	-
2024	-	4	-
2025	-	4	1
2026	1	4	-
2027	-	4	-

- Prepare risk assessment standards such as risk assessment and evaluation guidelines for each item, taking into account users of LMOs for healthcare purposes and safety management standards for each environment and product for LMOs for healthcare purposes, and enable internationally-recognized assessment, evaluation and management from 2023.
- Develop LMOs such as plants and microalgae for environmental purification with emerging biotechnologies such as genetic scissors, and establish an evaluation system.

16-3. Raise biosafety awareness

1 Increasing biosafety-related information-sharing and communication (MOTIE, MSIT, MAFRA, MOHW, ME, MOF)

- Facilitate the operation of biosafety portals operated by relevant ministries to provide customized information on LMOs to users and support two-way communication including citizen engagement.

Responsible ministry	Relevant portals
MOTIE	Korea Biosafety Clearing House (www.biosafety.or.kr) - Upload 50 pieces of information to the GMO portal every year, increasing the number of registered information from 900 in 2023 to 1,150 in 2028.
MSIT	LMO Information System (www.lmosafety.or.kr/tool)
MAFRA	LMOs for agriculture and forestry (www.naas.go.kr)
ME	LMO-related information system (lesc.nie.re.kr)
MOF	LMO clearing house to be established in 2026

- Strengthen the public's right to know by publicizing biosafety-related risk assessment information and the results of meetings between ministries responsible for safety management via various communication channels such as the biennial public awareness surveys, social networking sites and YouTube, while bolstering biosafety awareness training* for a wide range of stakeholders.

* Number of trainings designed to raise awareness of biosafety

Year	No. of biosafety trainings
2023	87
2024	133
2025	133
2026	149
2027	150

2 Strengthening public engagement on biosafety (MSIT, MAFRA, MOHW, ME, MOF)

- Conduct joint investigations* involving civil society organizations in environmental monitoring activities targeting companies that handle LMOs, unauthorized LMO sites and natural ecosystems.

* Number of joint investigations involving civil society organizations

Year	MAFRA	ME
2023-2026	3	3
2027-	3	5

- Expand participatory safety management programs such as public competitions and cyber watchdogs for illegal distribution*. Review the criteria and methods for public input on the LMO approval process and amend the Transboundary Movement of Living Modified Organisms Act where necessary.

* Number of participatory safety management programs

Year	MSIT	MOF
2023	3	-
2024	3	1

Target 17 Phase out harmful subsidies and expand eco-friendly incentives

Target 17

Identify subsidies that are harmful to biodiversity by 2025 and continue to reduce them until 2030, and scale up positive incentives for the conservation and sustainable use of biodiversity.
(In alignment with GBF Target 18)

Indicators

Headline **Positive incentives in place to promote biodiversity conservation and sustainable use**
Number of positive incentives reported to the OECD-PINE database (numerical value)

1) biodiversity-related taxes, 2) fees and charges, 3) trade permit schemes, and 4) positive subsidies

Headline **Value of subsidies and other incentives harmful to biodiversity that have been eliminated, phased out or reformed** (In development by the CBD)

Current status and needs

- In 2019, the CBD concluded that no fruitful efforts had been made to identify and reduce subsidies harmful to biodiversity in the preceding 10 years. In recent years, however, the World Trade Organization (WTO), the Organization for Economic Co-operation and Development (OECD), the World Bank and other international organizations have been stepping up efforts to address this issue. In 2020, the Paulson Institute reported that the amount of subsidies harmful to biodiversity, excluding fossil fuel subsidies, ranges from US$ 273.9 to US$ 542.0 billion per year based on analyses of global financing for biodiversity.

- Against this backdrop, Korea needs to join the international community's efforts to achieve the GBF target of reducing the amount of harmful subsidies by US$ 500 billion per year and other relevant initiatives. To this end, it is urgent to identify harmful subsidies and develop criteria for assessment, and have public discussions on this matter, taking into account both the environment and stakeholders.

17-1. Identify subsidies harmful to biodiversity

1 Developing criteria to identify and analyze harmful subsidies (ME, MOTIE, MAFRA, MOF, KFS)

- Conduct a study on criteria adopted by international organizations such as the FAO, the WTO, the OECD and major developed countries such as the EU member states to identify subsidies harmful to biodiversity for each sector, including agriculture, fisheries, transportation and energy in terms of overproduction, overconsumption, use of fossil fuels and pollution generated.

International organization	Identification criteria	Types of subsidies
CBD	Underpricing, causing overproduction	e.g. direct funding for coal mining, direct or indirect transfer of potential funds, goods and services linked to specific infrastructure such as mines, factory access roads
World Bank	Causing overproduction, promoting fossil fuels	
OECD	Causing production without considering the environment	
FAO	Limited to certain products, based on cultivation areas	
WTO	Causing overproduction	

- In 2024, develop the definition of harmful subsidies, classification schemes for different sectors (e.g. whether environmental considerations are taken into account when granting subsidies, whether there are alternatives to subsidies, whether they cause overproduction), and domestic assessment criteria.

- In 2025, identify harmful subsidies among those provided by the central government based on assessments of harmful subsidies and expert surveys.

<Example of harmful subsidy assessment criteria>

Assessment criteria	Level of harm (strong to weak)			
Direct and indirect price adjustments	Direct	Indirect	Compensation	-
Excessive land use	o	△	x	-
Size of infrastructure	Large	Medium	Small	-
Ecosystem loss	High relevance	Medium relevance	Low relevance	x

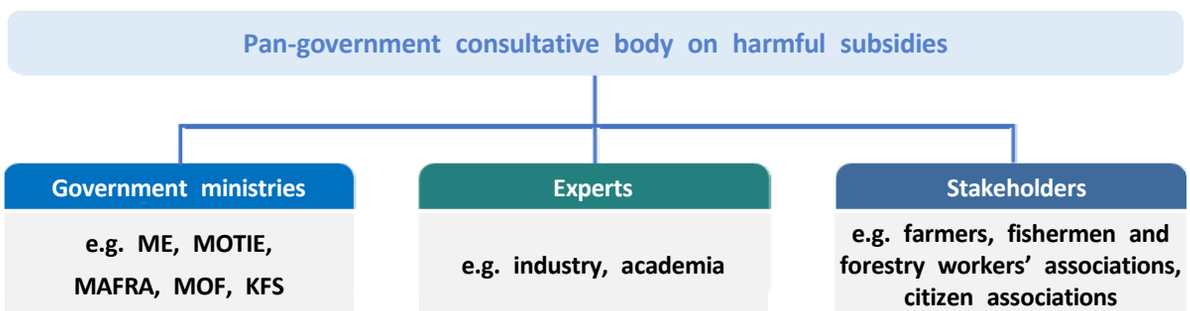
2 Conducting research to convert harmful subsidies into eco-friendly ones (ME, MOTIE, MAFRA, MOF, KFS)

- Conduct research by each ministry to convert subsidies identified as harmful to biodiversity into eco-friendly ones or come up with alternatives from 2025.

17-2. Phase out harmful subsidies and expand positive incentives

1 Operating a pan-governmental consultative body on harmful subsidies (ME, MOTIE, MAFRA, MOF, KFS)

- Set up a pan-governmental consultative body involving relevant ministries and experts from industry, academia and research institutes to discuss the reduction and conversion of subsidies in sectors such as agriculture, fisheries, transportation and energy from 2025.



- In 2026, establish a roadmap that includes the phasing out of harmful subsidies, targets for conversion into eco-friendly subsidies and implementation measures.

2 Promoting phase-out and conversion of harmful subsidies and scaling up positive incentives (ME, MOTIE, MAFRA, MOF, KFS)

- Gradually reduce subsidies harmful to biodiversity and convert or replace them with eco-friendly ones from 2026.

- Expand existing eco-friendly incentives that contribute to biodiversity. For example, increase the unit price of payment under the PES schemes for protected areas, identify new types of eco-friendly incentives and continue to expand support through public-private partnerships from 2024. In addition, lay out plans to select targets for the PES schemes and consult with stakeholders in order to implement the PES schemes in areas near national parks from 2024. Moreover, expand direct payment of support for eco-friendly agriculture to further spread eco-friendly agricultural practices from 2025, and also expand an eco-friendly fishery product certification program and direct payment of support for eco-friendly fishery product certifications to ensure sustainable income for eco-friendly fishermen. Furthermore, continue to cooperate with local communities on private forests with high conservation value such as temple forests by increasing the number of targeted forests under the protection and management agreements from 3 in 2022 to 6 in 2027.

Target 18 Mobilize financial resources for biodiversity

Target 18

Increase the level of financial resources for the implementation of the NBSAP, and raise the amount of financial resources mobilized through biodiversity-positive economic instruments such as the PES schemes and green bonds.

(In alignment with GBF Target 19 (b)-(g))

Indicators

Headline **Domestic public funding for biodiversity** (In development by the CBD)

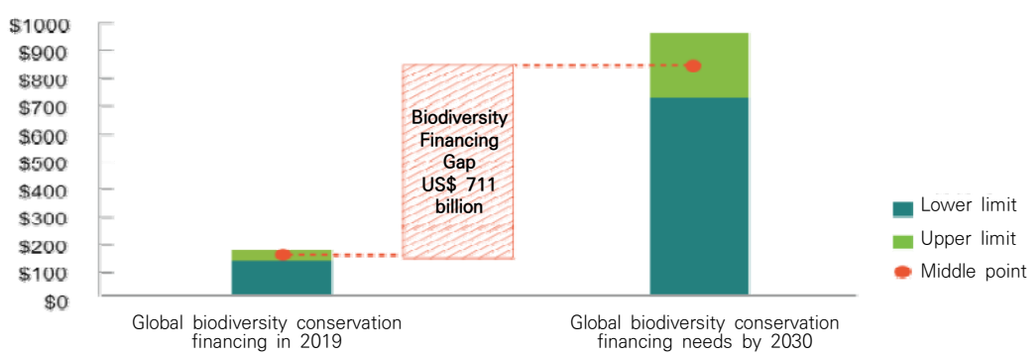
Headline **Private funding (domestic and international) on biodiversity** (In development by the CBD)

Complementary **Amount of budget for biodiversity-related spending**

Amount of budget for each task specified in the Action Plan for the National Biodiversity Strategy (KRW)

Current status and needs

- A 2020 study by the Paulson Institute estimated that global biodiversity financing needs ranged from US$ 722 to US$ 967 billion annually, resulting in a shortfall of US$ 700 billion per year compared to current annual financing of US$ 124 billion to US$ 143 billion. The GBF aims to mobilize at least US$ 200 billion per year to address this funding gap, requiring both public and private sectors to make greater efforts to achieve this goal.



<Global biodiversity conservation financing compared to global biodiversity conservation needs>

- According to the 2020 Environmental Protection Expenditure Account (EPEA), biodiversity expenditure by the ROK was estimated at KRW 1.85 trillion per year, but there is no national finance plan related to biodiversity in place yet. Considering that the CBD has recommended

that all Parties develop a national biodiversity finance plan for the effective implementation of the GBF, it is necessary to develop a system to track the flow of funds in the ROK and a plan to raise funds to close the gap, and to mobilize financial resources from a variety of sources, including private funds.

18-1. Lay the foundation to scale up biodiversity financing

1 Undertaking a study on financial mobilization measures for the NBSAP (ME)

- Conduct a study on measures to mobilize financial resources for the NBSAP from 2025 by analyzing biodiversity expenditures and financing needs, including a review of the flow of financing related to biodiversity at the national level, biodiversity financing needs and plans to raise the needed funds, and financial contributions to developing countries.

2 Stimulating innovative schemes for financial mobilization (ME, MOF)

- Continue to support the issuance of green bonds to galvanize green financing in the private sector by conducting research on preparing a loan plan for the Green Taxonomy of the ROK in 2024 and carrying out a pilot loan project in collaboration with the financial industry.
- Facilitate the expansion of infrastructure investment by companies related to nature such as water quality and water basin management, taking into consideration that the estimated flow to natural infrastructure in 2019 was US$ 26.9 billion per year, which has a potential to more than quadruple to US$ 104.7−138.6 billion per year by 2030, according to the 2020 Paulson Institute report.

Measures to address the shortage of biodiversity financing

Reforming harmful flows	Expanding biodiversity financing	
○ Harmful agricultural subsidies	○ Biodiversity offsets	○ Green products
○ Harmful fisheries subsidies	○ National budgets and taxes	○ NbS & carbon market
○ Harmful forestry subsidies	○ Nature-related infrastructure	○ Official development assistance (ODA)
	○ Sustainable supply chains	○ NGOs and other non-government financial sources

3 Performing research on biodiversity-related financing schemes (ME)

- Study trends in international discussions on methods, assessment and feedback systems for analyzing the impacts of government and private policies and projects on biodiversity (e.g., France's green budgeting system, including its six environmental goals).

Target 19 Expand international contributions

Target 19

Scale up international contributions to address the global biodiversity crisis by increasing green ODA, including ODA for biodiversity, and expanding science and technology cooperation projects with international organizations and developing countries.

(In alignment with GBF Targets 19(a) and 20)

Indicators

Headline **International public funding, including official development assistance (ODA) for biodiversity**

Total official development assistance (ODA) disbursements made by both the public and private sectors (KRW)

Complementary **Share of green ODA**

Percentage of green ODA projects including those for biodiversity conservation and enhancement out of total ODA projects in the ROK (%)

Complementary **Budget for science and technology cooperation on biodiversity**

Amount of budget for international science and technology cooperation projects on biodiversity (KRW)

Current status and needs

- In recent years, the ROK has gained a stronger foothold on the global stage as demonstrated by the fact that the country has been invited to the G7 Summit three times so far and was classified as a developed country by the United Nations Conference on Trade and Development (UNCTAD) in 2021. Against this backdrop, there is a growing demand for the ROK to make greater global contributions, including ODA disbursements, and to join biodiversity-related conventions to which the country is not yet a party.
- The ROK's ODA volume has continued to increase, but its share of ODA in the green sector, including biodiversity, stands at 19.6%, which is below the OECD average of 28.1%. In particular, its share of bilateral ODA projects in the field of biodiversity recorded a mere 4.7%, according to the 2021 OECD data.

<Size of the ROK's green ODA based on Rio Markers (2020-2021)>

Field	Size (mil. US$)	Share of bilateral ODA (%)
Biodiversity	138.4	4.7
Prevention of desertification	111.5	3.8
Climate change mitigation	58.8	1.8
Climate change adaptation	578.7	18
Climate change mitigation and adaptation	188.9	5.9

- Considering these factors, the ROK needs to expand green ODA by identifying biodiversity-related projects in countries that are rich in biological resources or are expected to launch green industry projects. In the process, it will be possible to link green ODA projects with the climate change mitigation sector, which is expected to see an increasing demand for NbS.

19-1. Expand green ODA and science and technology cooperation

1 Expanding green ODA to strengthen the role of the "green ladder" (MOFA, MOEF, MSIT, MOTIE, ME, MOF, KFS)

- Continue to explore opportunities for green ODA projects tailored to the needs of recipient countries to bolster green ODA investments to match the average OECD level by considering two types of models as follows: i) a package-type model for developing countries with strong demand for the green industry where ROK companies can enter their markets by participating in ODA projects, creating a synergistic effect; and ii) a strategic-type model to support the implementation of the GBF in developing countries rich in biodiversity, reinforcing the domestic utilization of species and genetic resources held by these countries.

<Examples of potential biodiversity ODA projects by type>

Type	Possible areas of ODA projects	Possible recipient countries
Package-type	○ Restoration of desertified areas based on NbS	Mongolia, Oman
	○ Restoration and conservation of vulnerable forest ecosystems with high biodiversity (e.g. Stability of Altered Forest Ecosystem (SAFE) Project)	Cambodia, Vietnam
	○ Development of databases for ecosystem management (e.g. 3D maps)	Thailand, Vietnam
	○ Establishment of the ASEAN mangrove forest ecological information-sharing system	Thailand, Malaysia
Strategic-type	○ Establishment of wetland conservation and management systems in East Asia	Bhutan, Myanmar
	○ Identification of species lists and habitat status	Ecuador
	○ Establishment of biodiversity exhibitions and education centers	Mekong River Basin countries
	○ Dissemination of endangered species conservation capabilities and training experts	Kyrgyzstan
	○ Strengthening GBF implementation planning, management, and monitoring capabilities	Indonesia

- Expand ODA in the field of biodiversity by promoting collaboration with private companies, including regularly tapping into the Green Industry Alliance to seek opportunities for biodiversity-related ODA projects in line with the needs of recipient countries such as the protection of endangered species, the management of protected areas and the restoration of degraded areas, and also by cooperating with international organizations such as the IUCN and the AFoCO to identify new biodiversity-related programs linked to the needs of local people in recipient countries.

2 Boosting science and technology cooperation with international organizations (ME, MOF, MSIT, MOTIE, KFS)

- Reinforce information-sharing and cooperation on biodiversity. For example, continue to link the ROK's biodiversity information to the Global Biodiversity Information Facility (GBIF) and accumulate, by 2030, information on the distribution of plants in East Asia. In addition, cooperate, by 2024, with the IUCN to facilitate the assessment and listing of the Red List, participate in the Green List, identify OECMs and develop a platform to share knowledge and information and facilitate learning on biodiversity conservation. Moreover, strengthen collaboration with East Asian cooperation networks for flora, fauna and protected areas through efforts such as joint research, education and promotional activities.
- Contribute to biodiversity conservation and capacity building in developing countries by continuing to support science and technology cooperation initiatives under the MOU with the CBD Secretariat.
- Build a collaborative system and support an information-sharing platform centered on the Biosafety Clearing-House (BCH) to enhance the safety management of LMOs in Asia.

3 Facilitating mutually beneficial joint research on the utilization of biological resources with biodiversity-rich countries (ME, MSIT)

- Expand joint projects to identify unutilized useful biological resources with biodiversity-rich developing countries by increasing the number of collaborating countries from 11 in 2023 to 15 in 2030.
- Support domestic bio companies by providing them with scientifically verified overseas materials that are under joint patent rights to facilitate joint commercialization to develop cosmetics, functional health foods and/or medicines including products related to hair loss inhibition, anti-obesity, anti-arthritis, wrinkle improvement or eco-friendly pesticides with an aim to acquire 20 patents by 2030.

19-2. Enhance responses and implementation of international agreements

1 Responding to discussions on international agreements (All)

- Expand cross-ministerial and expert consultations and improve relevant domestic regulations for implementation to respond to key CBD issues with significant impacts on industries such as DSI benefit-sharing and synthetic biology.
- Respond to ongoing discussions on benefit-sharing of agricultural genetic resources and genetic information by the ITPGRFA.
- Analyze the impact of joining the Convention on the Conservation of Migratory Species of Wild Fauna and Flora (CMS) on the utilization of domestic marine species by 2025, and proceed with accession in 2026.

2 Reinforcing domestic implementation of international agreements (ME)

- Expedite domestic implementation of the decisions of the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), including the listing of new internationally endangered species, species permitted for artificial propagation and revisions to breeding regulations.
- Continue to expand support for Ramsar-listed wetlands and Ramsar Wetland Cities as a leading country in wetland management.
- Actively utilize existing cooperation systems such as the Tripartite Policy Dialogue on Biodiversity between Korea, China and Japan and the East Asian-Australasian Flyway Partnership (EAAFP), and enhance sharing of ecological information.

3 Responding to international maritime agreements (MOF, MOFA)

- Improve, by 2024, domestic laws and systems and develop a roadmap for implementation in order to promptly ratify and respond to the BBNJ Treaty adopted in June 2023.

Target 20 Raise biodiversity awareness, promote research and strengthen implementation management

Target 20

Expand biodiversity education, awareness-raising and research activities, and strengthen support and monitoring systems for the effective implementation of the NBSAP.
(In alignment with GBF Target 21)

Indicators

Headline **Indicator on biodiversity information for GBF monitoring** (In development by the CBD)

Complementary **Biodiversity awareness**

Public awareness of biodiversity according to the National Survey of Public Awareness of Biodiversity statistics (%)

Complementary **Number of educational programs on biodiversity in schools**

Number of educational programs in schools covering biodiversity-related topics for primary and middle school students (numerical value)

Complementary **Research and development budget for science and technology related to biodiversity**

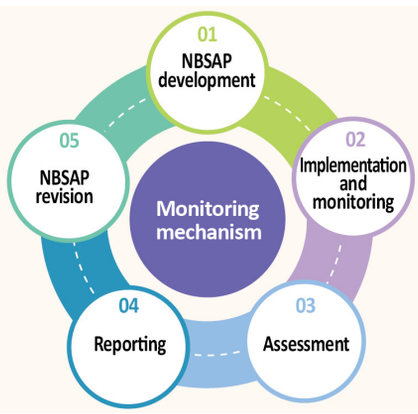
Total budgets of biodiversity-related R&D projects, research projects commissioned by central and local governments and other survey and research projects (KRW)

Current status and needs

- To ensure the successful implementation of the NBSAPs, it is necessary to strengthen the management of implementation by each country in accordance with the GBF process monitoring procedure. In addition, the ROK needs to expand the scope of research topics and secure advanced research technologies in line with the latest trends.

<Monitoring mechanism>

- NBSAP development → Implementation and monitoring→ Assessment → Reporting → NBSAP revision
- Overall improvement of the procedure for monitoring progress is needed, including comprehensive monitoring on implementation, indicator-based assessment, and the disclosure of implementation results rather than simple aggregation of implementation results collected from relevant ministries.



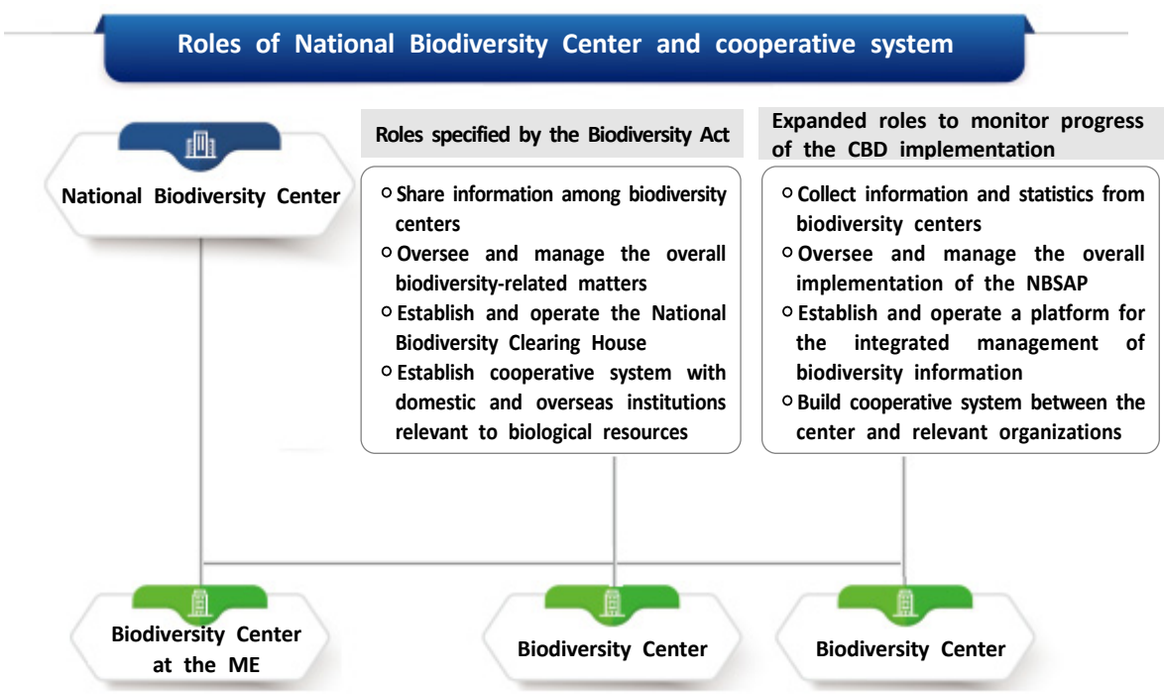
- A local survey finds that only 10% of Koreans have a clear understanding of the meaning of biodiversity, implying that it is necessary to reinforce relevant school education and programs to raise awareness.

20-1. Enhance NBSAP implementation monitoring and ensure transparent disclosure

1 Strengthening the management of NBSAP implementation (ME)

- Bolster the feedback system for the entire NBSAP process, ranging from development, implementation and mon` itoring, assessment, reporting to revision from 2024. To this end, conduct annual assessments of implementation by ministerial consultative bodies, experts and civil society, and lay out detailed biennial ministry-level action plans reflecting the results of the assessment.

- Strengthen the function of the National Biodiversity Center by amending the Biodiversity Act in 2024 to specify the roles of the center (i.e. collecting, verifying and disclosing biodiversity statistics) and the obligation to prepare national reports. In addition, establish a relevant taskforce and build a system for information integration and implementation monitoring.



- From 2024, disclose information on the country's progress of implementation of the NBSAP domestically and internationally through the CBD-CHM Korea, the ROK's national biodiversity clearing house (www.kbr.go.kr), and hold regular forums to review the implementation of each strategic goal.

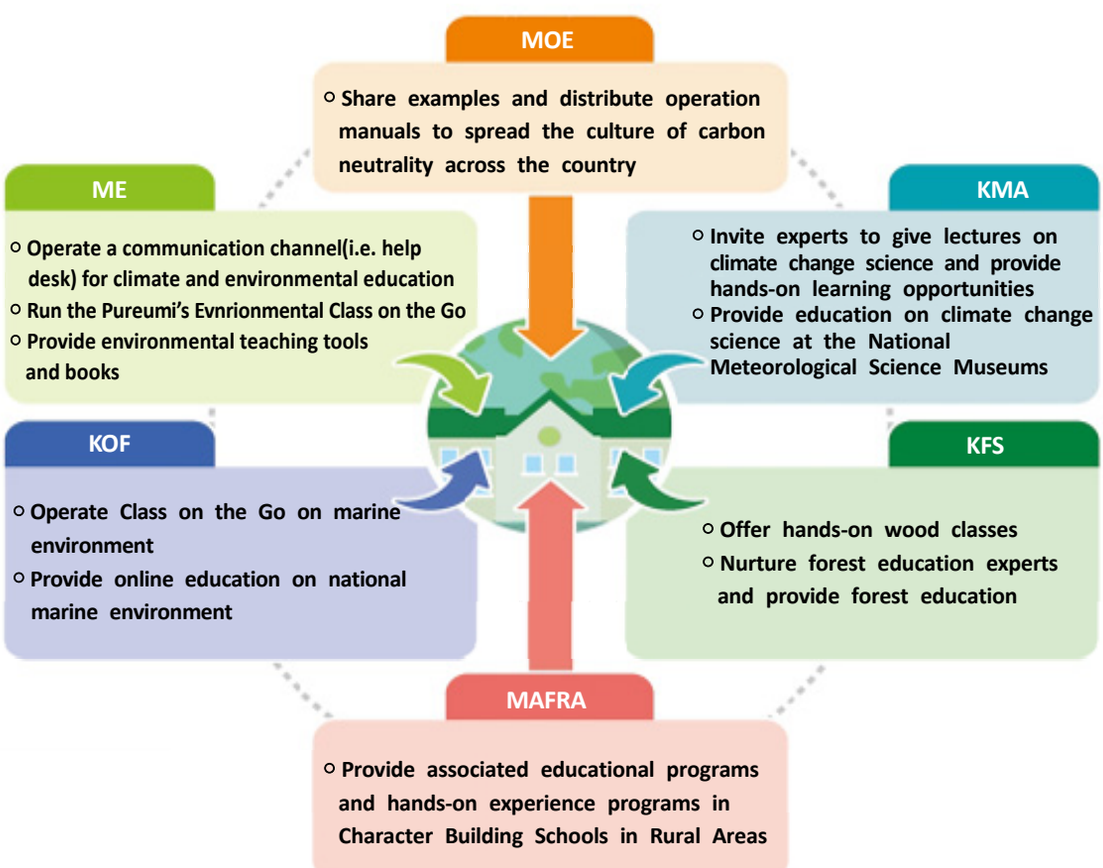
2 Conducting research for the scientific management of implementation (All)

- Develop the headline and complementary indicators in development by the CBD to meet national circumstances, as appropriate, to ensure the scientific management of implementation based on scientific statistics from 2024 to 2026.
- Expand policy research to apply measures regarding harmful subsidies, TNFD and NbS to the ROK from 2024 to 2026.

20-2. Raise biodiversity awareness and education

1 Enhancing environmental education programs in schools (ME, MOE, KFS)

- Adopt biodiversity-related topics more widely when developing new environmental education programs for elementary and middle school students from 2024. In addition, develop a Guide to Activities to Promote Biodiversity in Everyday Life to raise awareness of biodiversity among students from 2025.



2 Expanding biodiversity awareness among opinion leaders (All)

- Promote education and publicity to raise awareness of the importance of the conservation of the natural environment among the public and local residents in cooperation with religious organizations, media and civil society organizations.

3 Facilitating educational nature exploration programs for the public (MSIT, MOF, ME, KFS)

- Continue to operate nature and wildlife exploration programs for families, including the hands-on nature exploration program for adults run by the MSIT, as well as exploration programs such as the Nature Expedition and the Island Ecology Expedition and educational programs such as the Outreach Lecturers and the Class on the Go operated by the MOF. In addition, continue to introduce new educational programs on biodiversity and make them available via the online platform of the National Marine Environment Education Center.

20-3. Expand biodiversity research

1 Expanding research on biodiversity conservation and utilization (MSIT, ME, MOF, KFS)

- Strengthen research on the utilization of biodiversity such as technologies related to health, energy, biomaterials and food development to raise the level of biotechnology from 77.9% of that of developed countries in 2020 to 85% by 2030.
- By 2030, expand basic research on the conservation and restoration of core ecosystems, the management of nationally protected species and the analysis and evaluation of genetic diversity to strengthen ecological safety nets. In particular, focus on developing environmental restoration technology for each type of ecosystem, eco-friendly materials derived from biological resources, and wildlife resource exploration and utilization technologies.
- By 2030, increase investment in research in areas that require responses to future changes in the environment such as wildlife-borne disease management and insect outbreaks.

2 Strengthening research and development to ensure stable supplies of biomaterials (ME)

- Study ways to increase the supply of biomaterials and share information on the usefulness of biological resources.

  * Increase the cumulative number of species for which mass propagation technologies are developed and standardized from 13 species in 2023 to 174 species in 2030.

- Disseminate high-quality biomaterials by securing new biomaterials and developing raw materials for the bio industry, and establish an information system on the usefulness of indigenous biological resources such as anti-oxidation and anti- inflammation and provide such information*, starting from the first half of 2024.

  * Number of information resources gathered and materials secured

	2023 (cumulative)	2030 (cumulative)
No. of information resources gathered	9,236	15,000
No. of materials secured	15,000	400,000

- Conduct research on the mass propagation of biological materials, including native plants and microbial materials as well as endemic and site specialist species, and promote the development and dissemination of such technologies* from 2023.

  * Increase the cumulative number of species for which mass propagation technologies are developed and standardized from 13 species in 2023 to 174 species in 2030.

- By 2025, establish a mass production and supply system for forest bio-resources by building a hub for growth to facilitate the supply of natural forest bio-resource materials to meet the needs of relevant companies.

• Enhance cooperation to promote the localization of bio materials by operating an industry-academia-research taskforce on biological resources consisting of subcommittees for each industry such as biopharmaceuticals and biochemical and planning cross-ministerial projects to support the localization of food and drug materials that are highly dependent on imports. In addition, establish the tentatively named R&D Support Center for Essential Materials for the Bio Industry to help small bio companies develop materials derived from indigenous biological resources.

Target 21 Ensure the participation of various stakeholders

Target 21

Ensure the participation of all stakeholders in the entire process of developing, implementing and reporting of the NBSAP and enable local governments to formulate and implement the LBSAP reflecting the NBSAP.

(In alignment with GBF Targets 22 and 23)

Indicators

Headline (To be developed by the CBD)

Complementary **Percentage of local governments that established the LBSAP**

Number of metropolitan local governments in the ROK with the LBSAP (numerical value)

Complementary **Number of citizen science participants in biodiversity-related research**

Number of citizen science participants in biodiversity-related research (numerical value)

Complementary **Percentage of women, youth and persons with disabilities and other marginalized groups participating in NBSAP-related bodies**

Percentage of women, youth and persons with disabilities represented in meeting bodies during the development of the NBSAP (%)

Current status and needs

- It is crucial that different views, perspectives and experiences of all members of society are taken into account in decision-making processes to ensure the successful formulation and implementation of the NBSAP. The CBD calls for equitable contributions from indigenous peoples and local communities (IPLCs), women, youth, and persons with disabilities and respect for their rights.
- Developed countries around the world are introducing a system to promote citizen science and expand civic participation, recognizing the economic benefits, enhanced learning capacity of the public and positive policy impacts from public participation.
- Local governments are key players in the implementation of national strategies. In the ROK, 12 out of 17 metropolitan local governments have established the LBSAP, but their implementation is limited due to lack of personnel and funding. To address this issue, local governments need to further strengthen the alignment of their LBSAP with the NBSAP when setting goals and indicators for the LBSAP and integrate the management of implementation of both.

21-1. Increase the participation of women, youth and persons with disabilities and promote citizen science

1 Engaging marginalized groups in the formulation and implementation of the NBSAP (ME)

- Develop guidelines to ensure the participation of women, youth and persons with disabilities in the formulation and implementation process of the NBSAP in 2024, and recommend more than a certain percentage of their participation in relevant meeting bodies.
- Collect stakeholders' opinions through various communication channels such as meetings and discussions, and evaluate and supplement the implementation of the NBSAP to especially ensure the effective participation of women, youth and persons with disabilities from 2027.
- Expand and regularize awareness-raising activities such as trainings and meetings related to climate change and biodiversity targeting women and youth groups from 2024.

2 Expanding biodiversity monitoring involving citizens (ME, MOF, KFS)

- Establish a natural environment survey system involving citizens and semi-professionals by developing 500 natural environment survey points in 2025 and increasing the number of sites where the surveys are conducted with the participation of citizens to 200 sites.
- Continue to monitor bioindicator species for climate change and predict future species distribution changes through the Korea Biodiversity Observation Network (K-BON), a program that brings together professional research institutions, citizen scientists and biodiversity-related clubs to observe the changes in biodiversity in the Korean Peninsula and make conservation efforts to protect biodiversity.
- Continue the operation of training programs to nurture marine citizen scientists such as coral schools and tidal flat ecology guide programs, and expand the participation of fishermen and civil society organizations in monitoring protected migratory marine and coastal species. In addition, enable diving centers and members of dive clubs to participate in citizen monitoring of indicator species for climate change.
- Carry out projects to manage national forest trails and build a street tree map information platform based on citizen science surveys from 2023.

3 Strengthening the consideration of vulnerable populations in international cooperation projects (ME, MOFA)

- Enhance the participation and decision-making rights of women, girls and IPLCs in recipient countries when planning and implementing biodiversity-related green ODA projects from 2024.

21-2. Formulate and expand implementation of the LBSAP of local governments

1 Laying the groundwork for the development of the LBSAP (ME)

- Amend the Biodiversity Act in 2024 to establish a legal basis for obligating metropolitan local governments to develop the LBSAP and monitor the progress of implementation.
- Establish the Guidelines for Developing the LBSAP to provide standardized methods in terms of setting goals, establishing indicators for assessment and the management of implementation of the LBSAP, support the development of the LBSAP reflecting regional characteristics, and ensure better alignment with the NBSAP.
- Support the establishment of the LBSAP through the National Biodiversity Center. Set up a taskforce consisting of experts and officials from local governments to share knowledge and information and provide advice and consultations on the development of the LBSAP, and hold two meetings a year. Expand the number of local governments to be consulted from 2 in 2024 to all local governments updating their LBSAP after 2025. In addition, hold a workshop once a year from 2024 to select and evaluate common indicators to strengthen monitoring of the implementation progress of the LBSAP.

2 Implementing and monitoring the progress of the LBSAP (ME)

- Monitor the implementation of the common indicators of the LBSAP and upload and publicize the results via the CBD-CHM KOREA from 2025.
- Organize local government cooperation networks such as forums involving local governments, research institutes and private organizations from 2024 and hold meetings at least twice a year to enhance collaboration and facilitate the implementation of the LBSAP.

VI. Implementation Measures

1. A whole-of-government and whole-of-society approach

- Taking into account that the NBSAP is a strategic framework for the entire government and society as a whole, it is crucial that all ministries and all members of society collaborate and participate together for the successful implementation of the NBSAP. In addition, the NBSAP and the LBSAP need to be aligned in the process of implementation, and more opportunities should be provided for the public to participate in the implementation, evaluation and publication process.

2. Balanced implementation of the CBD and its Protocols

- While making efforts to achieve the three objectives of the CBD, due consideration will be given to the implementation of the Cartagena Protocol and the Nagoya Protocol. To this end, more emphasis will be placed on the implementation of the tasks related to the Protocols. In addition, the ROK plans to report to the international community on the progress of implementation of the NBSAP in a manner that strengthens the linkage between national reporting under the Convention and under the Protocols.

3. Implementation of the principles of the Rio Earth Charter and consideration of the alignment with the Sustainable Development Goals (SDGs)

- Reversing the trend of biodiversity loss for the benefit of all living organisms, including humans, is in the interest of humanity as a whole. As such, the purpose, implementation and assessment of the NBSAP are centered on halting the loss of biodiversity and reversing the trend to a net gain.
- Enhancing the alignment between the NBSAP and the SDGs will be considered one of the priorities while implementing tasks and conducting assessments based on national indicators, ensuring that the implementation of the NBSAP contributes to the achievement of the SDGs.

4. Contribution to the assessment and achievement of the global goals

- The cycle of development, implementation and review of the NBSAP will be aligned with that of the global CBD framework, including the GBF. Accordingly, the cycle of formulation of the NBSAP will be changed to 10 years, and the decisions of the international community will be incorporated into the process of assessment of implementation, reporting and revision.
- Headline indicators for evaluating the implementation of the global goals will be used as performance indicators of the NBSAP. In addition, the contribution of each goal to the achievement of the global goals will be assessed and reported using scientific statistics.

5. Increasing biodiversity financing

- The ROK plans to study appropriate, predictable and accessible measures to mobilize financial resources to ensure the full implementation of the NBSAP.
- Continued efforts will be made to increase the scale of international financial contributions for global biodiversity conservation to match the country’s global standing.

6. Intergenerational and gender equality

- The principle of intergenerational equality will be observed by ensuring the meaningful participation of young people in biodiversity decision-making at all levels.
- Efforts will be made to strengthen women's rights and achieve gender equality when formulating and implementing the NBSAP.

VII. Responsible Ministries/Agencies for National Targets and Tasks

No.	National targets and tasks	Responsible ministries/agencies
1. Strengthen biodiversity management through spatial planning		
1-1	Ensure integrated, biodiversity-inclusive spatial planning	ME, MOLIT, MOF
1-2	Enhance assessment systems for areas of biological and ecological importance	ME, MOF
2. Increase the value of natural capital through ecosystem restoration		
2-1	Undertake a systematic survey and assessment of degraded land across the country	ME, MOF, KFS
2-2	Strengthen restoration efforts across various ecosystems	ME, MOLIT, MOF, KFS
2-3	Build an ecosystem for green restoration projects	ME
3. Expand protected areas and OECMs and improve benefits to local communities		
3-1	Increase the coverage of protected areas and OECMs	ME, MND, MOLIT, MOF, CHA, KFS
3-2	Improve the management of protected areas and OECMs	ME, MND, MOLIT, MOF, CHA, KFS
3-3	Deliver nature-related benefits to local communities	ME, MOF, KFS
4. Strengthen the management of nationally protected species and genetic diversity		
4-1	Strengthen the *in-situ* and *ex-situ* management of nationally protected species	ME, MOF, CHA, KFS
4-2	Lay the groundwork for the management of genetic diversity of nationally protected species	ME, MOF, KFS
4-3	Provide a stronger basis for human-wildlife coexistence	ME
5. Enhance safety throughout the wildlife quarantine and control processes		
5-1	Strengthen response to diseases originating from wildlife	ME, MAFRA, MOF
5-2	Tighten control over wildlife supply chains	ME, MOF, KCS, KFS
6. Strengthen the prevention and control of invasive alien species		
6-1	Prevent the introduction of invasive alien species	ME, MOF, KCS, KFS
6-2	Prevent the spread of invasive alien species	ME, MOF, CHA, KFS

No.	National targets and tasks	Responsible ministries/agencies
7. Reduce pollution harmful to biodiversity		
7-1	Encourage moderate use of chemical fertilizers and pesticides	MAFRA, RDA
7-2	Reduce plastic waste	ME, MOF
7-3	Control pollutants in rivers and coastal areas	ME, MOF
8. Respond to climate change with nature-based solutions (NbS)		
8-1	Increase carbon absorption through NbS	ME, MAFRA, MOLIT, MOF, KFS
8-2	Assess and respond to the impacts of climate change on ecosystems	ME, MOLIT, MOF, CHA, KFS
9. Promote sustainability in agriculture, forestry, fisheries and aquaculture		
9-1	Strengthen the basis for eco-friendly agriculture	MAFRA
9-2	Create a virtuous cycle of forest management	KFS
9-3	Ensure sustainable fisheries management	MOF
10. Maintain and enhance ecosystem services		
10-1	Assess, manage and promote ecosystem services	ME, KFS
10-2	Prevent and recover from disasters with NbS	ME, MOLIT
11. Enhance urban biodiversity		
11-1	Strengthen connectivity and accessibility by expanding urban nature	ME, MOLIT, KFS
11-2	Assess the health of urban ecosystems and enhance their qualitative value	ME, KFS
12. Expand the sharing of benefits derived from genetic resources		
12-1	Improve the access and benefit-sharing mechanism for genetic resources	MSIT, MOTIE, MAFRA, ME, MOF, KFS, KDCA
12-2	Raise awareness and build capacity on benefit-sharing of genetic resources	MSIT, MOTIE, ME, MOF, KFS
13. Embed the values of biodiversity in all aspects of society		
13-1	Incorporate biodiversity into national policies and accounting	All
14. Promote biodiversity and ESG management		
14-1	Encourage the disclosure and publication of biodiversity-related information	ME
14-2	Help build eco-friendly supply chains and increase recycling	ME, MOF

No.	National targets and tasks	Responsible ministries/agencies
15. Promote sustainable consumption		
15-1	Promote green consumption	ME, MAFRA
15-2	Reduce the generation of waste including food waste	ME, MAFRA
16. Ensure the safe management of living modified organisms (LMOs) and emerging biotechnology		
16-1	Enhance the effectiveness of LMO safety management and improve the relevant system	MSIT, MOTIE, MAFRA, MOHW, ME, MOF
16-2	Respond to risks associated with emerging biotechnologies	MOTIE, MAFRA, MOHW, ME, MOF
16-3	Raise biosafety awareness	MOTIE, MSIT, MAFRA, MOHW, ME, MOF
17. Phase out harmful subsidies and expand eco-friendly incentives		
17-1	Identify subsidies harmful to biodiversity	ME, MOTIE, MAFRA, MOF, KFS
17-2	Phase out harmful subsidies and expand positive incentives	ME, MOTIE, MAFRA, MOF, KFS
18. Mobilize financial resources for biodiversity		
18-1	Lay the foundation to scale up biodiversity financing	ME, MOF
19. Expand international contributions		
19-1	Expand green ODA and science and technology cooperation	MOFA, MOEF, MSIT, MOTIE, ME, MOF, KFS
19-2	Enhance responses and implementation of international agreements	All
20. Raise biodiversity awareness, promote research and strengthen implementation management		
20-1	Enhance NBSAP implementation monitoring and ensure transparent disclosure	All
20-2	Raise biodiversity awareness and education	All
20-3	Expand biodiversity research	MSIT, ME, MOF, KFS
21. Ensure the participation of various stakeholders		
21-1	Increase the participation of women, youth and persons with disabilities and promote citizen science	MOFA, ME, MOF, KFS
21-2	Formulate and expand implementation of the LBSAP of local governments	ME

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