

ECOREA

Environmental Review 2015, Korea

Volume 1

Chapter 1 Climate Change

Chapter 2 Air



Volume 2

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Chapter 4 Waterworks, Sewage, and Drinking Water

Chapter 5 Soil and Groundwater

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Nature and Land

E C O R E A

is a compound of the prefix "ECO", which suggests an ecologically sound and comfortable environment, and the name the of the nation, "KOREA"

Main Policy Framework

- (1) Ecosystem Conservation and Restoration
- (2) Wildlife Protection and Management
- (3) Natural Environment Surveys and Research
- (4) Land Development in Harmony with the Environment

Current Policy Focus

- (1) Protected Area Designation and Management
- (2) Sustainable Use of Natural Resources
- (3) Biodiversity Conservation and Use

Key Facts and Trends

- (1) Ecosystem
- (2) Biodiversity



Main Policy Framework

(1) Ecosystem Conservation and Restoration

Conservation of the Core Ecological Axes of the Korean Peninsula

“Ecological axis” refers to an ecological habitat connecting areas that are ecologically important or areas whose ecological functions must be maintained in order to enhance biodiversity and ensure the continuity of ecosystem functions. Korea is building an ecological network on the Korean Peninsula to conserve and closely connect core ecological regions that have outstanding natural environments based on this concept of ecological axis. The Ministry of Environment has specified Baekdudaegan, the Demilitarized Zone (DMZ), and the coastal regions with islands as the three core ecological axes of Korea.

Fig. 8-1 Three Core Ecological Axes





The concept of ecological axes was first included in the Natural Environmental Conservation Act amended in 2004, and details on the establishment of an ecological network are being added to the Comprehensive Plan on National Environment and the Basic Plan on Conservation of Natural Environment formulated thereafter. In 2010, the government collectively formulated the “Korean Peninsula Ecological Axes Establishment Plan” to implement location restrictions, damaged area restoration projects, and other mid- and long-term conservation measures, as well as the restoration of connection points between core ecological axes. In August 2013, the “Korean Peninsula Ecological Axis Connection and Restoration Implementation Plan” was formulated, and a project is being carried out accordingly to select and restore 50 disconnected or damaged sections of the core ecological axes.

► Baekdudaegan Natural Ecological Axis

Equivalent to the spine of the Korean Peninsula, Baekdudaegan is a mountain range connecting the main mountains of the peninsula, including Baekdusan, Geumgangsan, Seoraksan, Taebaeksan, and Jirisan Mountains. It has important ecological significance for the following reasons. First, Baekdudaegan mostly consists of natural forests acting as a core habitat for wild fauna and flora and a passageway for the ecosystem. Second, it is an important source of biodiversity, as it is home to most of wild animals that live in Korea. Third, it has excellent conservational value due to high biodiversity in a small area, with intersecting northern and southern vegetation zones, for example, owing to its geographical characteristics.

Various development projects since the 1960s, however, have resulted in serious damage to the ecological axis of Baekdudaegan, and the “Baekdudaegan Protection Act” was established in December 2003 to prepare an institutional foundation for preventing reckless damage to Baekdudaegan.

▶ Demilitarized Zone Natural Ecological Axis

After the Korean War, the Military Demarcation Line and Civilian Control Line were created between South and North Korea to form the Demilitarized Zone (DMZ). The DMZ provides a unique environment that wildlife can inhabit without the influence of various development projects and other human activity, as public access to the DMZ is restricted. Accordingly, the DMZ is known to be inhabited by 5,097 species, including about 106 protected species. The habitats of the globally rare red-crowned crane and black-faced spoonbill are scattered throughout the DMZ. There has been increasing demand for development in this area as new opportunities arose for interaction and cooperation between the South and North after the 2000s, raising concern over development-related damage to the natural environment of the DMZ, which has been conserved until today.

The Ministry of Environment intends to manage the DMZ in a systematic manner by separating conservation and development areas based on ecological surveys. It plans to designate protected areas regarding regions that require conservation and to use development-suited areas for eco-tourism and other purposes with a minimum environmental burden. Accordingly, the DMZ ecological peace park is being planned to be built in the Cheorwon region, which has an excellent ecosystem and major historical and peace-related significance. An application was sent to UNESCO in 2011 for the zone to be designated a biosphere reserve, but designation has been postponed, as some areas require supplementation.

▶ Islands and Coastal Regions

Islands and coastal regions with high conservational value based on ecosystem surveys have also been designated as protected areas. For example, 1,161 among the 2,679 uninhabited islands nationwide, were examined in terms of their vegetation, flora, geomorphological landscape, etc. from 1998 to 2013, and of these, 206 with particularly outstanding natural environments and ecosystems were designated as the specified islands.



Restoring Damaged Natural Ecosystems

The ecosystem conservation cooperation charge is a system in which, in the event of a development project that has a considerable impact on the ecosystem or biodiversity, a charge corresponding to the area of damage is imposed on the project operator according to the “polluter pays” principle. The charges collected are used for natural environment conservation projects, including ecosystem restoration. Moreover, in the event that an operator who has paid a cooperation charge carries out a natural environment conservation project such as nature replacement or ecosystem restoration, the project cost is refunded by up to 50% of the charge paid in order to encourage projects to restore damage to nature.

Since 2007, the charge can also be refunded if a third party with professional skills and experience in natural environment conservation and restoration carries out a natural environment conservation project instead of the operator who paid the charge. Consequently, major restoration projects can be implemented in a professional, systematic manner if a qualified natural environment conservation project agency is entrusted by several developers to carry out projects on their behalf.

(2) Wildlife Protection and Management

Endangered Wildlife

Endangered wildlife protection is a core policy for the conservation of biodiversity in Korea. The country’s endangered wildlife is classified as Class I or Class II depending on the degree of endangerment, with 51 species and 195 species designated, respectively. Illegal capture or collection is punishable by up to five years imprisonment or a fine of up to 30 million won (if repeated, up to seven years imprisonment and a fine of up to 50 million won). National distribution surveys are being conducted to identify any population changes in and threats to endangered wildlife. Projects

to increase and restore endangered wildlife populations are also being carried out in addition to habitat protection. For example, 38 Asiatic black bears have been released into Jirisan Mountain since 2004, and as at August 2014, a total of 31 Asiatic black bears are living in the wild. Projects to increase and restore long-tailed goral and fox populations are taking place at Woraksan Mountain and Sobaeksan Mountain, respectively. Moreover, 24 ex-situ conservation institutions have been designated and are being supported to increase and conserve endangered wildlife populations outside of habitats. The National Endangered Species Restoration Center will be built by 2017 as an institution to oversee national species restoration projects.

Management of Alien Species

Alien species refers to a species that is introduced by artificial or natural means and has come to exist outside of its place of origin or habitat. In accordance with the Act on the Conservation and Use of Biodiversity, the Ministry of Environment is continuing its efforts to formulate the Alien Species Management Plan (2014-2018) and protect the ecosystem from threats posed by incoming alien species. Alien species that have been introduced are evaluated in terms of ecological risks, and those that are found to be of high risk are designated as invasive alien species (first designated in 1998). A total of 18 invasive alien species have been designated, including nutria (*Myocastor coypus*) and bur cucumber (*Sicyos angulatus*). The River Basin (Regional) Environmental Offices, local governments, and private organizations are working on projects to eliminate invasive alien species from each region. For preemptive management of alien species introduction, 24 potential risk species have been designated and were announced in November 2013, and there is a system to carry out a risk assessment on any person who attempts to import or introduce these species.



Wildlife Rescue, Treatment, Disease Control, and Poaching Prevention

The Ministry of Environment also makes efforts to rescue and treat injured wild animals. It has been working since 2004 on a project to establish wildlife rescue centers in provinces nationwide. A total of 11 wildlife rescue centers and two facilities of the Korea National Park Service have been designated professional wild animal rescue and treatment institutions, with more than 6,000 wild animals rescued and treated each year. Recovered individuals are released into nature after rehabilitation training. Since the second half of 2000, the state has been offering partial assistance to private organizations that participate in wild animal rescue and treatment activities.

Fig. 8-2 Key Duties of Wildlife Rescue Centers



Treatment



Release



Education and promotion

In addition, the Mid- to Long-Term Plan for Wild Animal Disease Control (2012-2020) was formulated in May 2012 for the systematic management of wild animal diseases, and construction of the National Wildlife Health Research Center is under preparation.

The Ministry of Environment is also striving to eradicate poaching. It has established the Poaching Prevention Headquarters and organized private poaching watchdogs while also forming poaching surveillance teams in the Regional Environmental Offices and local governments to ensure intensive poaching control. In 2012, it exposed and took measures against 480 cases of illegal poaching activities. It also worked together with private organizations to remove approximately 19,000 snares, traps, and other illegal poaching equipment set up throughout the country.

(3) Natural Environment Surveys and Research

Various surveys and studies on the natural environment are being carried out in order to formulate scientific and effective natural environment conservation policies. A national ecosystem survey, detailed investigations of outstanding ecosystems, and national distribution studies on endangered wildlife are currently in progress.

The national ecosystem survey is a comprehensive study on natural environments throughout the country consisting of investigations in the nine fields of topography, vegetation, flora, benthic macro-invertebrates, insects, fish, amphibians and reptiles, birds, and mammals. The first survey was conducted in 1986 and the fourth survey is taking place from 2014 to 2018.

Detailed investigations of outstanding ecosystems involve close examinations by ecosystem characteristics and regions. The National Institute of Ecology is working on detailed investigations of coastal dunes and estuary ecosystems, a natural environment survey on uninhabited islands, detailed investigations of regions with outstanding ecosystems and landscapes, and an ecosystem investigation in the DMZ.

National distribution studies on endangered wildlife are carried out by the National Institute of Biological Resources with the aim of preparing suitable conservation and restoration measures by identifying ecological information on 246 species that have been designated as endangered wildlife.

An investigation on long-term ecological changes has been in progress since 2003. This project has been making mid- and long-term observations on changes in natural ecosystems according to climate change and environmental pollution.

The comprehensive natural environment GIS-DB project is being carried out to build a database of current vegetation maps, topographic maps, and fauna and flora distribution maps obtained from the national ecosystem survey and information on key species identified in the detailed ecosystem investigations. The GIS-DB has been used to produce an ecological map that classifies the entire national territory according to ecological value, and this map has been made available through the Environmental and Geospatial Information Service (<http://egis.me.go.kr>). The map is also referred to during environmental impact assessments.



(4) Land Development in Harmony with the Environment

Environmental Impact Assessment

The environmental impact assessment (EIA) is a method used to ensure that environmental conservation measures are prepared by predicting and evaluating in advance the harmful impacts of a development project during the planning stage. It was first implemented in 1981, and the strategic environmental assessment (SEA) was introduced in 2006 so that factors such as environmental appropriateness and site suitability can be reviewed during administrative planning, a higher-order process than the development project itself.



Fig. 8-3 Historical Transformation of the Environmental Impact Assessment System

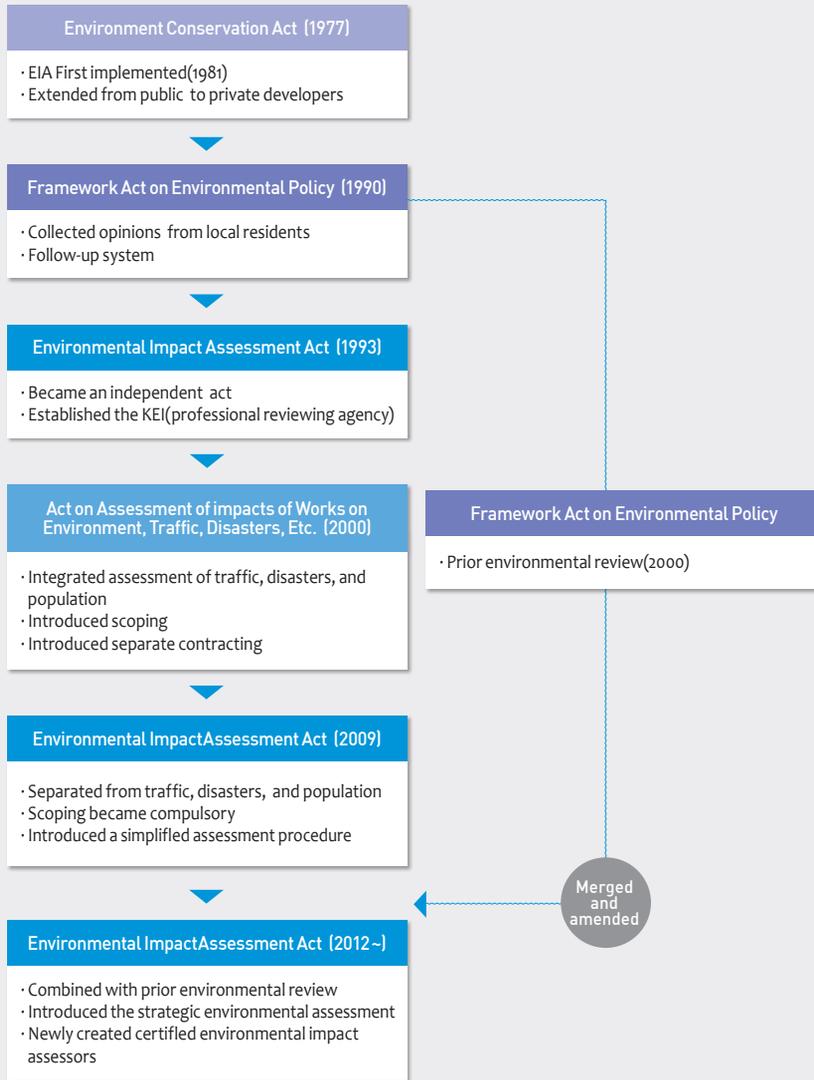
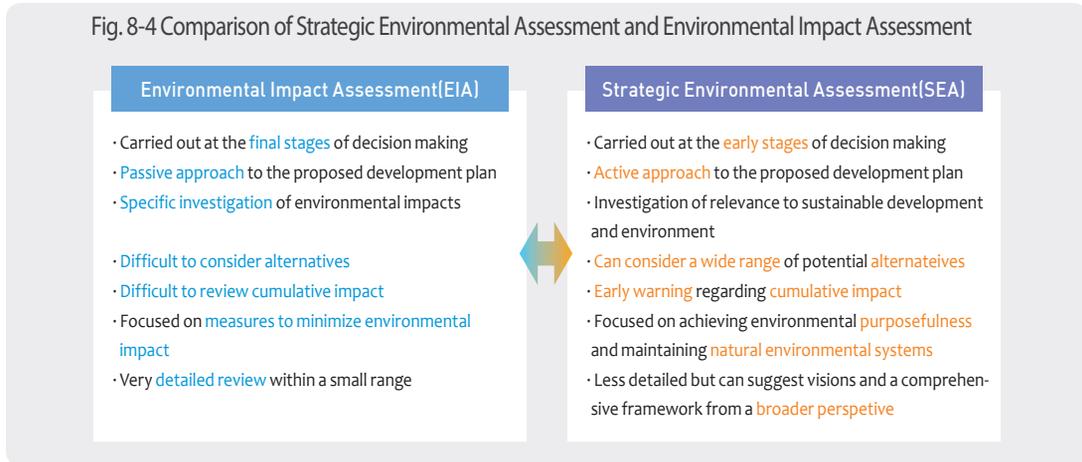


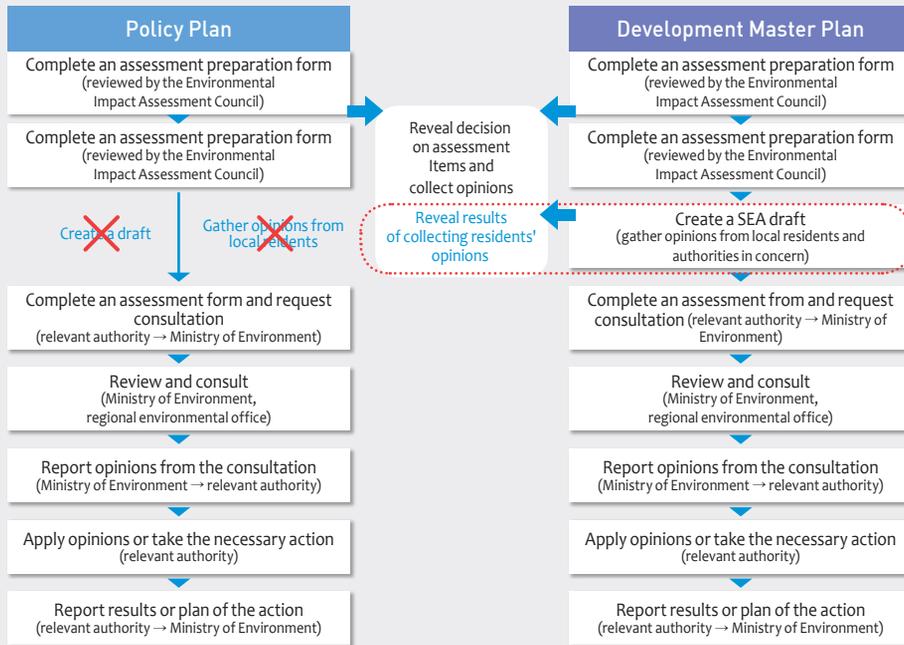


Fig. 8-4 Comparison of Strategic Environmental Assessment and Environmental Impact Assessment



First, the SEA system aims to facilitate sustainable development of the national land by checking compatibility with environmental conservation plans when formulating higher-order plans that impact the environment and creating and analyzing alternatives, and thereby considering the appropriateness of the plan concerned and site feasibility from an environmental perspective. It was introduced to address the fact that EIA is performed when a development plan is being finalized and therefore cannot account for the cumulative environmental impact of several projects. It targets 15 policy plans, which are assessed in terms of their compatibility with environmental conservation plans, relevance to and consistency with higher-order plans and associated plans, and sustainability of environmental capacity, and 86 development master plans, which are assessed in terms of the appropriateness of the plan (relevance to higher-order and associated plans, alternatives, etc.) and site feasibility (natural environment conservation, safety of living environments, and balance with the socioeconomic environment).

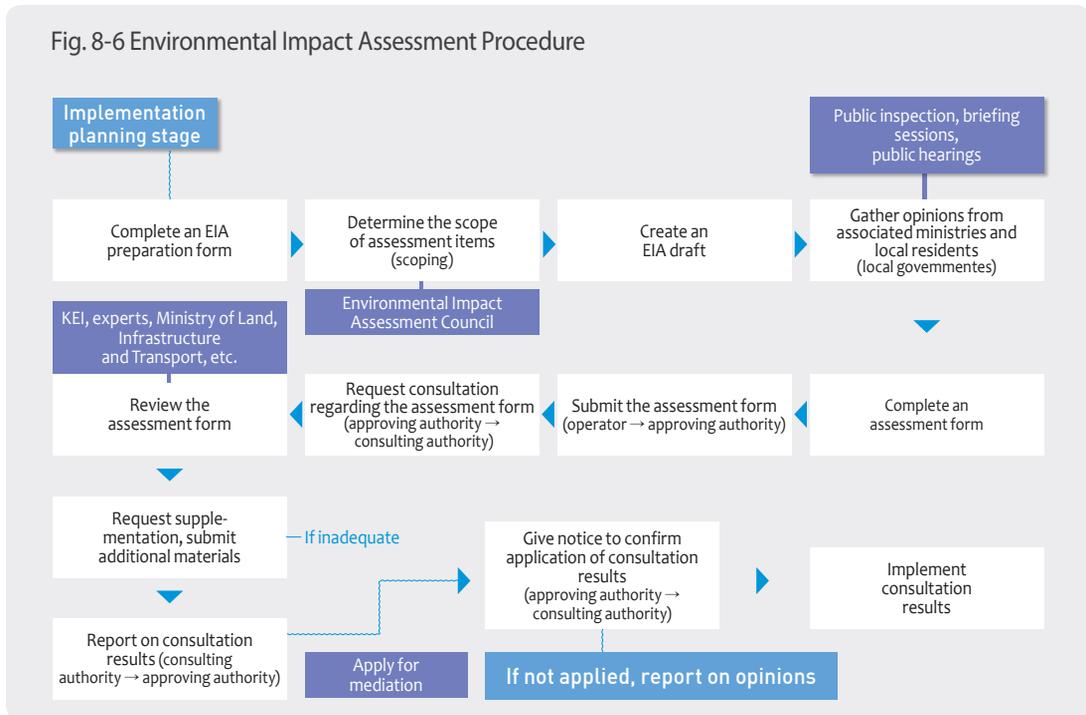
Fig.8-5 Strategic Environmental Assessment Procedure



Second, the EIA aims to formulate environmental conservation measures and alternatives by investigating, predicting, and assessing environmental impacts in advance when issuing a permit, certificate, approval or license, or making a decision on the execution plan or implementation plan of a development project that may affect the environment. It assesses 78 specific projects in 17 fields, including urban development and industrial complex construction, based on 21 items belonging to six environmental factors, including natural ecology, atmosphere, and water quality.



Fig. 8-6 Environmental Impact Assessment Procedure

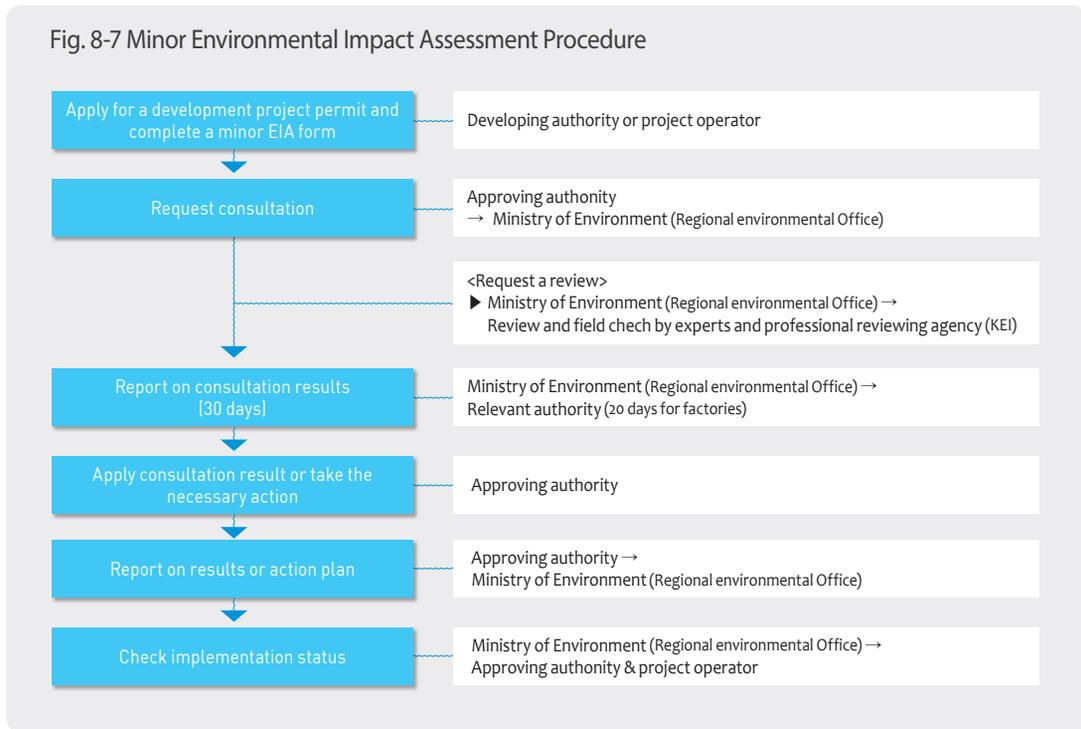


In addition, a project that is not legally subject to this assessment may undergo an environmental assessment performed by the head of the local government (metropolitan cities, provinces (“do”), and cities with a population of at least 500,000) based on a local ordinance if the project raises concern over environmental impacts when regional characteristics are accounted for. Any project with a scale of at least 50% and less than 100% of the EIA target and any project that is not a target project but has been consulted in advance with the Minister of Environment may be subject to an environmental assessment in accordance with the ordinance. As of 2014, the ordinance has been established and is effective in the eight local governments of Seoul, Busan, Incheon, Gwangju, Daejeon, Gyeongsangnam-do, Gangwon-do, and Jeju.

Third, the minor EIA applies when a development project is implemented in a region that requires environmental conservation or in a region that requires planned development due to concerns over reckless development. It assesses development projects (a project area of at least 5,000 m², etc.) in 19 fields and eight regions, including conservation and control areas prescribed by

the National Land Planning and Utilization Act, in terms of the eight topics of natural ecological environment, atmosphere, water quality, odors, noise and vibration, landscape, radio interference, and marine environment.

Fig. 8-7 Minor Environmental Impact Assessment Procedure





Current Policy Focus

(1) Protected Area Designation and Management

Protected Area Designation

Regions that are particularly worth protecting due to their outstanding natural ecology and rich biodiversity are designated as protected areas. New construction and expansion of buildings and alteration of land shape are strictly restricted in protected areas, and when necessary, access is prohibited or restricted. Violators of these restrictions are ordered to restore the area and are punishable by penalties. The state may also purchase private land within protected areas via discussion with the land owner. In addition, a conservation master plan is formulated for each of the ecological and scenery conservation areas, the wetland protection areas, and the specified islands to ensure systematic management of protected areas.

There are several areas that have been designated internationally protected areas. Under the Ramsar Convention, 18 areas, including Upo Wetland and Suncheonman Bay, have been designated Wetlands of International Importance, and Seoraksan Mountain, Hallasan Mountain, Sinan Dadohae, Gwangneung Forest, and Gochang Prefecture have been designated UNESCO Biosphere Reserves.

► Ecological and Scenery Conservation Areas

Ecological and scenery conservation areas are designated by the Minister of Environment in accordance with the Natural Environment Conservation Act from among: (1) Areas where the state of nature maintains primitiveness, or which greatly merit academic research because of their abundant biodiversity; (2) Areas that need conservation for peculiar topographic or geological features for academic research or maintenance of their natural scenery; (3) Areas that can represent

diverse ecosystems or areas that are specimens of an ecosystem; and (4) Areas that need particular conservation because of their beautiful natural scenery. Accordingly, the Ministry of Environment investigates ecologically outstanding regions and coastal dunes throughout the country each year and designates ecological and scenery conservation areas according to the results. Local governments (cities (“*si*”) and provinces (“*do*”)) can also designate equivalent areas that are deemed to require conservation as “*si/do* ecological and scenery conservation areas.” As of the end of 2013, the Ministry of Environment has designated nine ecological and scenery conservation areas (241.615 km²) and there are 23 *si/do* ecological and scenery conservation areas (42.53 km²).

► Wetland Protection Areas

Wetland protection areas are designated by the Minister of Environment, the Minister of Land, Transport and Maritime Affairs, or a *si/do* governor in accordance with the Wetlands Conservation Act from among: (1) Areas that have native continuity or rich biodiversity; (2) Areas that are inhabited and visited by rare or endangered wildlife; and (3) Areas which have extraordinary scenic, topographic, or geological value. As of the end of 2013, there are 32 wetland protection areas (336.713 km²) in total.

► Specified Islands

Specified islands are defined by the Special Act on the Preservation of the Ecosystem in Island Areas Including Dokdo as islands with no human inhabitants or with human inhabitants only residing in an extremely limited area. They are designated by the Minister of Environment from among: (1) Islands with an outstanding natural landscape, such as volcanoes, valleys, rivers, lakes, waterfalls, shores, and lava tubes; (2) Islands necessary for the preservation of water resources, fossils, rare or endangered fauna and flora, or other Korean endemic species; (3) Islands recognized as worthy of conservation as habitats or migratory stopover sites of wild animals; (4) Ecologically important islands with a natural forest; and (5) Islands with unique geographical or geological



features, for which scientific research or conservation is needed. The Ministry of Environment has designated 206 specified islands (11,705 km²) during 12 natural environmental impact studies on uninhabited islands throughout the country from 1998 to 2013.

► Nature Parks

Nature parks protect natural ecosystems, beautiful natural landscapes, and cultural heritage sites to ensure sustainable use by the public. There are four types of nature parks: national parks, provincial parks, county parks, and geoparks. As of the end of 2013, Korea has a total of 81 nature parks (total area of 8,144 km², 8.1% of the national land), including 21 national parks, 30 provincial parks, 27 county parks, and three geoparks.

National geoparks are areas of geoscientific importance that have an outstanding landscape. They are certified by the Minister of Environment for conservation and use in education and tourism projects. Jeju-do and Ulleungdo/Dokdo Islands became the first certified national geoparks in December 2012, and as of the end of 2013, three locations (total area of 112 km²) have been certified.

Korea's national parks are smaller compared to those of other countries, have a high proportion of privately owned land at 33.5%, and mainly consist of mountain type terrain. Trails and surrounding areas are being significantly damaged due to an increased number of visitors since the entry fee to national parks was abolished in 2007. Accordingly, restoration projects are being implemented by investigating the damaged areas, and areas of serious damage have been designated "special protection zones" to facilitate the recovery of nature. Special protection zones aim to encourage the recovery of damaged nature by restricting access and other acts regarding wild animal habitats, wild plant habitats, wetlands, valleys, and other key areas of resources within a national park that are highly worth protecting or that require protection from artificial or natural damage. As of the end of 2013, 139 special protection zones (274 km²) have been designated inside national parks.

(2) Sustainable Use of Natural Resources

Stimulating Eco-tourism

There has been a recent growth in demand for leisure activities from the people of Korea, and the level of interest in and demand for eco-tourism were further increased by the Ramsar Convention general meeting held in Changwon in October 2008. Accordingly, the Ministry of Environment is making political efforts to stimulate eco-tourism for people to enjoy tourism while minimizing damage to natural resources.

In order to achieve this, the Ministry of Environment and Ministry of Culture, Sports and Tourism jointly prepared the “Eco-tourism Stimulation Plan” in December 2008 and named the DMZ, Upo Wetland, Suncheonman Bay, and other main eco-tourism destinations in Korea as the top 10 Korean eco-tourism models in 2010. A project to develop core models for urban, mountainous, and coastal eco-tourism destinations took place from 2011 to 2012, and a pilot project to designate eco-tourism zones took place in 2013. The year 2013 saw the enactment of the “Eco-tourism Zone Designation System,” in which regions that are of environmental and conservational value and are suitable for experiential and educational purposes are designated as “eco-tourism zones”. The Ministry of Environment designates “eco-tourism zones” among the candidate sites recommended by local governments, after an expert panel judgment and a consultation with the Ministry of Culture, Sports and Tourism. Eco-tourism zones will be nurtured in regional units by providing financial and other forms of assistance to the designated zones.

Suncheonman Bay is one of the most successful models of eco-tourism in Korea. Its expansive tidelands, salt marshes, reed beds, and migratory birds create beautiful scenery. The local government at Suncheon chose conservation over development opportunities in the mid-1990s. It attracted further attention when it was designated a Wetland of International Importance by the Ramsar Secretariat in 2006 based on the results of an ecological survey carried out in order to verify its conservational value. It has become an eco-tourism zone by building trails and eco parks and organizing events such as reed festivals, and it is visited by millions of tourists each year.



National Eco-trails

The Ministry of Environment is working on a project to create eco-trails throughout the country. This project aims to build a network of excellent eco-hiking resources based on the five major rivers, old walkways (roads), and coastal walkways, and create a diverse range of eco-trails in each region. Eco-trails will mainly consist of roads that are easy to walk along, and will take on various forms, including river and stream walkways, old walkways, forest walkways, village roads, field roads, coastal walkways (sea routes), and bicycle roads with outstanding ecological backgrounds. Existing roads will be utilized as much as possible, and minimal facilities will be constructed to ensure eco-friendliness. Moreover, Baekdudaegan, core ecological and scenery conservation areas, habitats of endangered species, and other areas of high conservational value will be excluded from eco-trail routes in order to protect the natural ecosystem.

In 2008, the National Treasury subsidized a pilot project to build the “Toegye¹⁾ Path,” which has beautiful natural scenery and formed the backdrop of traveller’s journals written in the Joseon period. The National Treasury has since subsidized the construction of national eco-trails on an annual basis. It will provide 5 billion won each year until 2017 to build a total of 2,500 km of trails.

1) Toegye is the pen name of Yi Hwang, a prominent academic and writer from the Joseon period.

Fig. 8-8 National Eco-trail Route Plan



(3) Biodiversity Conservation and Use

Biological resources were previously perceived as being collectively owned by humankind, but with national ownership of biological resources acknowledged by the Convention on Biological Diversity, which took effect in 1992, there has been intense international competition to secure sovereign rights over native biological resources. This competition is expected to intensify following the adoption of the “Nagoya Protocol on Access to Genetic Resources and the Fair



and Equitable Sharing of Benefits Arising from their Utilization,” an international standard that recognizes national sovereign rights regarding biological resources, at the 10th Conference of Parties to the Convention on Biological Diversity in October 2010. The Nagoya Protocol took effect in October 2014, and Korea is preparing for the new international system on “access to genetic resources and benefit-sharing” (ABS) that will be introduced as a result.

To conserve biological resources, the government formulated the Comprehensive Plan on Biological Resource Conservation and the Wildlife Protection Master Plan in 2005, and the Comprehensive Plan on Propagation and Restoration of Endangered Wildlife in 2006. It formulated the Master Plan on the Conservation, Management, and Utilization of Biological Resources (2011-2020) in 2010. The “Act on the Conservation and Use of Biodiversity” was enacted by the Ministry of Environment in 2012 in order to integrate and systematically implement biodiversity policies that had been dispersed throughout government departments.

In March 2014, the 3rd National Biodiversity Strategy and Action Plan (NBSAP) (2014-2018) was formulated. The key provisions are: (1) Mainstreaming biodiversity in key policies, public awareness, and throughout society; (2) Reinforcing biodiversity conservation by protecting wild animals and their habitats; (3) Reducing threats to biodiversity by managing alien species and reducing the impact of climate change; (4) Increasing biodiversity in agriculture and fisheries, stimulation of eco-tourism, and other sustainable use of ecosystem services; (5) Expanding the National List of Species of Korea and otherwise creating a biodiversity research and management system; and (6) Strengthening international cooperation for biodiversity.

In addition, the National Institute of Biological Resources and National Institute of Ecology were established as professional institutions to secure and manage biological resources, and a comprehensive system for biological resource management is under construction.

Establishment of the National Institute of Biological Resources and National Institute of Ecology

The Ministry of Environment founded the National Institute of Biological Resources in 2007 as a national organization to systematically collect, manage, and study biological specimens of Korean endemic species and native organisms. It is preparing to establish regional biological resource institutions to provide a wide range of opportunities to learn about, hold exhibitions, and otherwise encounter native organisms.

The National Institute of Ecology, which opened in December 2013, is a comprehensive ecological research institution established to predict and study changes to the ecosystem of the Korean Peninsula following climate change, secure and conserve biological species, and educate the public about the environment. Display areas include an ecology experience center (Ecorium) offering an experience of the five major climate zones of the world, and the Korean Peninsula Forest, Marsh Eco Park, and Alpine Eco Park, where visitors can encounter the unique ecosystem of the Korean Peninsula. Research on topics such as long-term changes to the national ecosystem following climate and environmental changes will take place in the research area.

Fig. 8-9 Aerial View of the National Institute of Ecology





Biodiversity Investigation and Management

The Ministry of Environment is building a system to secure and manage endemic biological resources in an organized manner. It has created a database of species information and type specimen information on Korean endemic species and published the Endemic Species of Korea in 2010. Since 2008 it has been working on a project to build the “National List of Species in Korea,” in which native organisms are investigated and recorded in a list; 41,483 species of native organisms have been investigated as of 2013. It is also continuously investigating biological specimens from the Korean Peninsula that are owned by overseas institutions.

The “National Biological Resources Integrated Management System” was established in December 2012 by creating a database of original information on biological resources identified in this manner. The system is being linked to and integrated with other biological resource databases established for agricultural organisms, marine organisms, and other areas. It aims to create a consistent, systematic database of already-discovered native organisms and biological resources that are managed by each government department. It will be linked to genomes and other derived information to boost industrial utilization.

In order to prevent reckless exporting of endemic organisms, including endangered species, it is required to obtain an approval or permit when importing or exporting a total of 3,618 species, including 2,798 species of organisms subject to export approval, 246 species of endangered wildlife, and 574 species of animals subject to import and export permits.

Key Facts and Trends

(1) Ecosystem

Korea has unique geographical and climatic conditions. Its mountains continue from Baekdusan Mountain in the northern part of the Korean Peninsula to Jirisan Mountain in the south, and the resulting variety of geographical features, together with water bordering the country on three sides, lead to ecosystem diversity. Mountain areas making up approximately 64% of the national land and 3,200 islands form beautiful scenery and provide a variety of habitat environments.

Looking at the forest ecosystem, Korea's forests make up 64% of the national land, with diverse vegetation from warm-temperate to polar zones distributed throughout. In terms of forest physiognomy, coniferous forests are the most dominant at 41% of the total while broadleaf forests and conifer-broadleaf forests make up 27% and 29%, respectively. The coniferous pine tree is the most extensively distributed single species, making up 23% of the forest area. Broadleaf evergreen trees grow in the South Coast and island regions, while polar coniferous trees grow in the alpine and northern regions.

The farmland ecosystem makes up 17.9% of the national land, of which 60% consists of rice paddies and 40% consists of fields. The farmland area is continuously decreasing due to urbanization; there has been a particularly noticeable reduction in the area of rice paddies, which are inhabited by aquatic organisms.

The freshwater ecosystem is formed along long and gently sloping streams that flow towards the Yellow Sea and South Sea. Streams that flow towards the East Sea are short and often have strong currents. The flow rate is usually low but intensifies during the rainy season due to high seasonal variations in precipitation. The stream ecosystem is being majorly disturbed by physical factors such as dam construction, channel straightening, aggregate collection, and embankment construction. There are a relatively small number of wetlands near lakes, as there are few natural lakes, but several artificial lakes with severe water level fluctuations. Wetlands situated by a major



river, such as Upo of the Nakdonggang River, are relatively well preserved.

The coastal ecosystem features tidelands widely distributed throughout the West and South Coasts. It measures 2,489 km², of which 83.6% is concentrated in the West Coast. The coastal and marine regions of Korea are used as eco-tourism resources, as they have highly valuable scenery in their bays, lagoons, sea cliffs, and tidelands.

(2) Biodiversity

Korea has a variety of ecosystems situated around a forest ecosystem with the axial Baekdudaegan. It has a wide range of habitat environments formed by diverse vegetation, from warm-temperate to polar zones, developed coastlines, four distinct seasons resulting from the influence of seasonal winds, thousands of islands, and floods and typhoons. As a result, Korea is inhabited by a high diversity of organisms relative to the land area compared to other temperate countries.

Among the native organisms of Korea, a total of 41,483 species, including 5,308 plant species, 1,899 vertebrate species, 22,612 invertebrate species, and 11,664 microorganisms, have been recorded until 2013. Among these, 2,177 species (as of 2011) are endemic species.

Habitat reduction has been specified as the biggest threat to biodiversity. Habitats have been progressively decreasing as land used exclusively for forests and other such purposes is increasingly occupied for other uses. The forest area is decreasing by 12,000 ha each year despite forestation, colony restoration, and natural recovery of forests.

Climate change and invasion of alien fauna and flora are also threats to biodiversity. The growth and development of the Korean fir, an endemic species, is decreasing due to increased summer temperatures, and tropical organisms are travelling up to Korea due to increased sea water temperatures. As of 2014, as many as 2,167 alien species (334 plant species and 1,833 animal species) have been naturally or artificially introduced to Korea. The inflow of alien organisms into Korea is expected to continue in the future, and legal and institutional controls are being tightened for preliminary management and follow-up regarding these species.

Wildlife species that are endangered due to natural or artificial threats are protected by law according to the degree of endangerment. The “Wildlife Protection and Management Act” specifies 246 species (51 species in Class I, 195 species in Class II) of “endangered wildlife” as shown in <Table 8-1>.

<Table 8-1> Endangered Species of Wild Flora and Fauna (246 species)

Classification	Total	Class I	Class II
Mammals	20	11	9
Birds	61	12	49
Amphibians/Reptiles	7	2	5
Fish	25	9	16
Insects	22	4	18
Invertebrates	31	4	27
Plants	77	9	68
Seaweeds	2	-	2
Higher fungi	1	-	1
Total	246	51	195

*Class I : A species facing imminent extinction because of a decrease in the population caused by a variety of human and natural factors.

*Class II : A species likely to become endangered because its population is decreasing due to a variety of human and natural factors.





Environmental Review 2015, Korea

09

International Environmental Cooperation

E C O R E A

is a compound of the prefix "ECO", which suggests an ecologically sound and comfortable environment, and the name the of the nation, "KOREA"

Current Policy Focus

- (1) Bilateral and Multilateral Environmental Cooperation
- (2) Response to International Environmental Conventions
- (3) International Cooperation Projects and Education of Affiliated Organizations
- (4) Hosting the COP 12 to the Convention on Biological Diversity



Current Policy Focus

(1) Bilateral and Multilateral Environmental Cooperation

Environment Cooperation in Northeast Asia Region

▶ Tripartite Environment Ministers Meeting among Korea, China and Japan

Since 1999, the Tripartite Environment Ministers Meeting (TEMM) among Korea, China and Japan has been held annually to come up with cooperative measures to tackle environmental issues of the Northeast Asia region, including yellow dust, acid rain, air pollution and hazardous wastes management. As the only minister-level conference in the region, it has served as the highest-level coordination mechanism on environmental cooperation among the three nations. A total of 16 meetings have been held until April 2014.

At the 11th meeting(TEMM-11) held in Beijing in June 2009, ministers of the three countries agreed on Ten Priority Cooperation Areas²⁾ for Future Tripartite Environment Cooperation between 2010 and 2014, and have been implementing cooperation projects. At the 16th meeting held in Daegu, Korea, in April 2014, ministers of the three countries adopted nine future priority areas³⁾ and agreed to make a concerted effort to prevent and reduce air pollution including fine dust in order to resolve cross-border air pollution in Northeast Asia. They also agreed to annually hold the Tripartite Policy Dialogue on Air Pollution, which was held for the first time in China, in March 2014.

-
- 2) Climate change; environmental education, environmental awareness and public participation; conservation of biodiversity; dust and sandstorms; pollution control; environment-friendly society/3Rs (Reduce, Reuse, Recycle)/ sound resource recycle society; transboundary movement of e-wastes; sound management of chemicals; environmental governance in the Northeast Asia; and environmental industries and technology.
 - 3) Air quality improvement; biodiversity; chemical management and environmental emergency response; circulative management of resources/3R/transboundary movement of e-waste; climate change response; conservation of water and marine environment; environmental education, public awareness and corporate social responsibility; rural environmental management; and transition to green economy.



► International Cooperation in Northeast Asia in Response to Yellow Dust

Korea demanded that summit talks, the Tripartite Environment Ministers Meeting (TEMM) among Korea, China and Japan, the Environmental Cooperation Channel in Northeast Asia, etc. should address yellow dust(Dust and Sandstorms) as one of the important environmental cooperation tasks at a regional level in Northeast Asia and take joint actions. At the Tripartite Director General Meeting on Dust and Sandstorms, held twice in 2007, the three countries agreed to form a Tripartite Joint Research Team on Dust and Sandstorms and launched joint research. Since 2008, the Joint Research Team Working-level Meeting has been held annually. The three countries have conducted joint research in Hulunbeier in Inner Mongolia, China between 2013 and 2014 and plan to use this area as a forward base for ecosystem restoration of desertification areas.

► Cooperation with China

Korea and China began to have full-fledged environmental cooperation as the Korea-China Environmental Cooperation Agreement was concluded in October 1993. Based on the agreement, the Joint Committee of Korea-China Environmental Cooperation was launched in 1994, and the relevant meeting has been held 18 times in turn until the recent meeting held in Qingdao, China, in October 2013.

With the accelerated environmental industrial exchanges between the two countries since 2001, the Korea-China Environmental Industry Investment Forum was held in China in July 2002. Bilateral environmental technology circuit meetings have been held since 2008 to serve as a bridge between the two countries to stimulate private investment in the environmental industry sector.

On the occasion of the visit of Chinese President Xi Jinping in July 2014 in Korea, the two countries agreed to conduct a Korea-China Cooperative Project⁴⁾ in the area of air pollution by

4) Sharing of observation data on air pollutions, joint research on an air pollution forecast model and air pollution source identification, and human resources exchanges, etc. (the Korea National Institute of Environmental Research, Chinese Research Academy of Environmental Science and Chinese National Environmental Monitoring Center

revising the Korea-China Environmental Cooperation MOU which was concluded in 2003, in order to reduce trans-boundary air pollution and improve forecast accuracy.

▶ Cooperation with Japan

With the conclusion of the Korea-Japan Environmental Cooperation Agreement in June 1993, environmental cooperation with Japan was kicked into high gear. Since 1994, the Joint Committee of Korea-Japan Environmental Cooperation has been held in turn annually. At the 16th joint committee meeting held in Seoul in December 2013, the two countries discussed cooperation through the Green Climate Fund (GCF), bilateral policy exchanges on fine dust, radioactive contamination response and the Northeast Asian Peace and Cooperation Initiative.

▶ Cooperation with Mongolia

At the Environment Ministers Meeting between Korea-Mongolia, which was held twice in Seoul and Ulaanbaatar, Mongolia, in 2007, the ministers of both nations agreed to join efforts to cope with the dust and sandstorm issue in Northeast Asia and signed the “Arrangement on cooperation in management, research and protection of natural protected areas.” In March 2012, the two countries held a bilateral meeting to reach an agreement on cooperative projects on water supply and sewerage and collaboration on international environmental education.

were put in charge).



Environmental Cooperation in Southeast Asia Region

▶ ASEAN+3 Environment Ministers Meeting

Since its inception in 2002, the ASEAN+3 Environment Ministers Meeting has been regularly held. At the 12th meeting held in Indonesia in September 2013, our delegation introduced the “Project for Restoring Destroyed Tropical Forests in Southeast Asia” as one of the major cooperation projects between Korea and ASEAN which has been continued for the past 13 years, and explained the current status of cooperation projects in progress, including the “CLMV⁵⁾ Resource-recycling Low-Carbon Green City Master Plan Project.” In addition, Korea requested ASEAN countries to cooperate for the “Project for Building Korea-ASEAN Biodiversity Survey Capability” and “Korea-ASEAN School Education Cooperative Project for Sustainable Development” as its new projects. The 13th meeting is expected to be held in Laos in October 31, 2014.

▶ East Asia Summit Environment Ministers Meeting

After adopting the “Singapore Declaration Concerning Climate Change, Energy and Environment” at the East Asia Summit held in 2007, the 1st East Asia Summit (EAS) Environment Ministers Meeting was held for follow-up action and implementation in Vietnam in November 2008. At the third meeting held in Bangkok, Thailand, in September 2012, Korea introduced various activities, including the “Korea-ASEAN Climate Change Adaptation Partnership” project that Korea is conducting to bridge between developing and advanced countries. A high-level environmental meeting to prepare the fourth meeting was held in Laos on August 29, 2014, and the Environment Ministers Meeting will be held in Laos, on October 31, 2014.

5) Cambodia, Laos, Myanmar, and Vietnam.

► Environmental Cooperation with Vietnam

Korea has been actively engaging in Official Development Assistance (ODA) and investment in Vietnam, and the two countries have maintained a close cooperative relationship based on their complementary industrial structure. The bilateral relationship between Korea and Vietnam was upgraded to a Strategic Partnership in 2009.

Korea signed an MOU on environmental cooperation in 2000 for the first time among the countries in Southeast Asia, and an Environment Ministers Meeting between Korea and Vietnam has been held regularly since 2000. At the 10th Environment Ministers Meeting held in Seoul in June 2013, the two countries discussed mutual cooperation measures, including the “Project for Supporting the Revision of the Law on Environment Protection of Vietnam” which has been in progress to share Korea’s experiences and know-how concerning environmental laws and policies with Vietnam, and the “Vietnam Green Growth Master Plan Establishment Project” and “Expansion of Meteorologists Exchange and Cooperation.” The 11th meeting will be held in Ho Chi Minh, Vietnam in late October 2014.

► Environmental Cooperation with Cambodia

Korea signed an MOU on environmental cooperation with Cambodia in 2009, and the environment ministries of the two countries jointly conducted the “Cambodia Environment Improvement Master Plan Establishment Project” in 2009. At a bilateral meeting held in 2010, the two countries reviewed progress of the follow-up projects such as the construction of a sanitary landfill in Siem Reap and a wastewater treatment system in Phnom Penh, and agreed to maintain their contacts over water quality improvement in the Great Lake and three cities in Cambodia. As the number of mutual cooperative projects has increased, Korea has dispatched environmental consultants to the country in 2013 and invited 10 Cambodian public officials to offer an “Environment Law Training Program” consisting of lectures on the environmental law system and individual regulations and site visits, etc.



► Environmental Cooperation with Indonesia

Korea is strengthening environmental cooperation with Indonesia, as it signed an Environmental Cooperation MOU with the country in 2007 and established an environment department in the Korea-Indonesia Economic Cooperation Committee held in 2011. Korea hosted the 1st Environment Ministers Meeting between Korea and Indonesia in Seoul, in November 2013, and agreed to regularly hold the environment ministerial meetings. During the first meeting, the two countries agreed to expand cooperation for water environment improvement, biodiversity conservation and training of environmental experts. As a follow-up action, Korea invited 15 Indonesian public officials and environmental experts in March 2014 to offer an education program concerning improving river water quality management and establishing a monitoring system in Incheon. The government plans to hold a workshop on Korea-Indonesia water environment improvement and waste policy sharing, and conclude an MOU on biodiversity conservation in the second half of 2014. The 2nd Korea-Indonesia Environment Ministers Meeting will be held in Indonesia around January to February, 2015.

● Environmental Cooperation with Middle East and Central Asia countries

The Ministry of Environment signed an Environmental Cooperation MOU with Iran in March 2005 for the first time among Middle East and Central Asia countries, followed by MOUs with Azerbaijan, Kuwait, Israel, the United Arab Emirates and Kazakhstan. With Kazakhstan, in particular, Korea held the “Cooperation Seminar between Seoul Initiative on Green Growth and Astana Green Bridge Initiative” in December 2011 to discuss cooperation between the local initiatives that were in progress in Korea and Kazakhstan. Also, the two countries held an environment ministers meeting in December 2013 and discussed bilateral cooperation measures, including green economy strategy.

On the occasion of a state visit in June 2014 by President Park Geun-hye to the three Central Asian countries of Uzbekistan, Kazakhstan, and Turkmenistan, Korea agreed to strengthen cooperation on environmental industry and technology development in the region.

Environmental Cooperation with Africa Region

The Ministry of Environment has held the “Korea-Africa Environmental Cooperation Forum” each year since November 2010. At the fourth forum held in November 2013, 10 African countries participated to discuss waste management and resource circulation improvement, etc.

Korea is gradually expanding bilateral cooperation with individual countries in the African region. As of April, 2014, Korea has signed Environmental Cooperation MOUs with 10 African countries. Based on the agreements, Korea has held bilateral environment ministers meetings with those countries and is conducting environment improvement assistance programs in the waste, water supply and sewage fields.

In particular, the government hosted the Korea-Tunisia Joint Workshop and Korea-Africa Forum, attended by experts in the field of environmental technology, in Tunisia in May 2014, to explain the environmental technology of Korea and share environmental policy experiences.

Environmental Cooperation with Countries in Europe and America

The Ministry of Environment has signed Environmental Cooperation MOUs with countries in North America and Europe including the United States, Canada, the United Kingdom, France, Denmark, Netherlands, Germany and Norway, and is carrying on joint seminars, expert exchanges, and joint cooperation projects.

Since Korea signed an Environmental Cooperation MOU with the United States in 1987, the ministry has conducted nine environmental technology cooperation tasks, including the research on causes of poor visibility in large cities in association with the United States-Asia Environmental Partnership(US-AEP). At the 1st Korea-US Environmental Cooperation Commission, held in February 2013, the two countries agreed on environmental cooperation in eight fields, including the implementation of multilateral environmental agreements and initiatives, wildlife protection, sustainable management of ecosystem and natural resources, environmentally sustainable cities, environment-friendly energy sources and climate change, and are regularly discussing detailed



directions for their implementation.

Also, the Ministry has signed Environmental Cooperation MOUs with Latin American countries, including Ecuador, Peru, Chile, Costa Rica, Columbia and Mexico, and is promoting various environmental cooperation measures focusing on biodiversity, water quality and waste.

The Korea-EU Framework Agreement went effect in 2001, and Korea has consistently dispatched environmental public officials to the Korean Delegation to the EU since then. Also, the Korea-EU Joint Committee has been held in turn in Seoul and Brussels annually to discuss environmental cooperation measures.

Bilateral cooperation with individual European countries has also been active. In September 2012, the Korea-Denmark Environment Ministers Meeting was held to revise and sign an Environmental Cooperation MOU that was concluded in 1998 between the two countries. Korea is also making efforts to expand environmental cooperation with European countries, as it signed an Environmental Cooperation MOU with Hungary for the first time among Eastern European nations in March 2012, and it signed an Environmental Cooperation MOU with the Czech Republic on the occasion of the Conference of the Parties to the Convention on Biological Diversity (CBD COP12), held in Pyeongchang, Korea, in October 2014.

With regard to Russia, Korea has been maintaining cooperative relationships with the country since it hosted the Korea-Russia Joint Committee on Environment Cooperation in January 1995 after signing a bilateral environmental cooperation agreement in June 1994. The director of the Federal Supervisory Natural Resources of Russia visited Korea in June 2009 to attend a Korea-Russia bilateral meeting, and Korea's Minister of Environment visited Russia in May 2010 to hold a meeting with his Russian counterpart and agreed to reinforce efforts for material and human resource cooperation in the environmental field. At the 8th Joint Committee meeting held in Seoul 2013, the two countries discussed wildlife conservation, waste management and environmental industrial cooperation. The ninth meeting is expected to be held in Russia in December 2014.

(2) Response to International Environmental Conventions

Convention on Climate Change

Korea is making an active and preemptive response to the United Nations Framework Convention on Climate Change (UNFCCC). It is striving to accomplish a 30% reduction goal compared to BAU (business as usual) by 2020 announced in 2009, and is trying to implement a proactive and effective policy. To that end, the country is pushing ahead with plans to begin its carbon emissions trading scheme from the start of 2015 and is making systematic reduction efforts, including establishing greenhouse gases statistics that collect emission information from businesses through the Greenhouse Gas Inventory and Research Center of Korea established in 2010.

Korea is also making efforts to take a leading role in international negotiations on climate change. It proposed the Nationally Appropriate Mitigation Action (NAMA) Registry, an online registry for reporting developing countries' voluntary mitigation actions, at the COP15 Copenhagen Congress in 2009. As a consequence, this proposal was reflected in the agreement of the 16th Conference of the Parties in Cancun, and currently the NAMA Registry is in operation. Given that voluntary efforts for greenhouse gas reduction by developing countries without support from the international community can be recognized through the online registry, the NAMA Registry is expected to facilitate the voluntary mitigation actions of developing countries.

In addition, Korea successfully hosted the Ministerial Meeting of the Pre-COP18 in October 2012. This Pre-COP18 Ministerial Meeting is meaningful since it suggests political directions for negotiations at the COP18. At the meeting, environment ministers from around 40 countries participated to draw detailed action plans in each agenda of the UNFCCC and discuss in particular the differentiation of greenhouse gas reduction level and the compliance systems of developed and developing countries.

Korea will maintain the effort to take the leading role in climate change negotiations as a bridge between developed and developing countries by suggesting directions and settling differences



in the negotiations. To do that, it will expand relevant policy and technology exchanges with China, which is a leader among developing countries. With this, it is expected more of developing countries will actively participate in climate change negotiations in the future. In addition, Korea, as an advanced developing country, is working hard to contribute to ushering in the Post-2020 New Climate Regime. Also, as a hosting country of the Green Climate Fund, it is trying to play a significant role to ensure resources and implementation measures for coping with climate change are effectively delivered to recipient developing countries.

► Launch of Green Climate Fund (GCF) and Role of Korea

The Green Climate Fund (GCF), based in the Songdo district of Incheon, Korea, is an international financial organization within the framework of the UNFCCC founded as a mechanism to transfer money from the developed to the developing world to assist developing countries for greenhouse gas reduction and climate change adaptation. It is expected to play a key role in assisting developing countries in climate change in the future.

The idea of the establishment of GCF was first suggested by the United States during the 15th Conference of the Parties held in Copenhagen in 2009, and During COP-16 in Cancun in 2010, members agreed the developed countries would found GCF to support the developing world in coping with climate change. At the 17th Conference of the Parties held in Durban, South Africa in 2011, Korea expressed its willingness to host the GCF, and it was officially selected as the host country of the GCF in the next year. The Secretariat officially launched in Songdo, Incheon, in December 2013.

Korea plans to help GCF secure the financial resources to assist the developing countries, by acting as a bridge between resource donor countries and recipient countries and by providing needed support to the GCF headquarters.

International Environmental Conventions on Biodiversity

► Convention on Biological Diversity and the Protocols

The Convention on Biological Diversity was adopted at the United Nations Conference on Environment and Development (the Rio “Earth Summit”) in 1992, with the objectives of conservation and sustainable use of biological diversity, and the fair and equitable sharing of benefits arising from the use of genetic resources. As of the end of 2013, a total of 193 countries are listed as member countries. Korea also joined the convention in October 1994. As Korea’s Pyeongchang was selected as the host city of the 12th CBD Conference of the Parties to be held in 2014, the Korean government is making a full-fledged effort for the success of the international event.⁶⁾

The 10th CBD Conference of the Parties held in Nagoya, Japan, in October, 2010, adopted the protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity. The Nagoya Protocol is with regard to “access to genetic resources and benefit sharing (ABS)” and is expected to enter into force in October 2014 as the ratification of 50 countries is complete. For domestic implementation of the protocol, Korea is preparing to establish the relevant law.

Meanwhile, at the Extraordinary Meeting of the Conference of the Parties held in Montreal, Canada in February 1999, member countries began a discussion on the safe transfer, handling and use of living modified organisms (LMOs) that may have an adverse effect on biodiversity. In January 2000, the Cartagena Protocol on Biosafety was adopted. Korea laid the domestic legal groundwork by establishing the Transnational Movement, etc. of Living Modified Organisms Act in March 2001 and deposited an instrument of ratification of the protocol to the Secretariat of the UN in October 2007. The protocol and LMOs Act took effect in Korea starting on January 1, 2008.

6) For more information, see (4) Hosting the COP12 to the Convention on Biological Diversity



► CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a multilateral treaty aimed at ensuring that international trade in wild animals and plants does not threaten their survival. It is designed to prohibit the rampant collection and poaching of wildlife species from their habitats by regulating the international trade among importing and exporting countries of wildlife. There are now over 179 member countries of CITES as of the end of 2013. Korea became a member in July 1993.

CITES is considered to be one of the most effective environmental conventions, while closely related to trade regulations. The species covered by CITES are listed in three appendices according to the degree of protection they need. All international trade of species listed in the appendices require a prior permit from their domestic authorities. Any trade without the prior permit is subject to forfeit or confiscation, and such occasions are reported to the general meeting of the parties. Based on the Wildlife Protection and Management Act and the masterplan on wildlife protection, Korea is endeavoring to effectively implement CITES with a joint effort from relevant ministries and organizations, including Regional Environmental Offices, the Ministry of Maritime Affairs and Fisheries, the Korea Customs Service, the Prosecution, etc.

► Ramsar Convention

The Ramsar Convention, adopted in Ramsar, Iran, in 1971, was established to invoke multinational cooperation to protect wetlands that serve as habitats for a variety of plants and animals, including water birds. As of the end of 2013, there are 168 member countries to the Convention, with 2,178 wetland sites, totaling about 200 million hectares, designated as Ramsar Wetlands of International Importance.

Korea registered Yongneup of Mt. Daeamsan, which is designated and managed as a natural ecosystem conservation area, as the first Ramsar Wetland in Korea after it joined the convention on March 28, 1997. Currently, there are 18 registered wetlands, including Upo Wetland in Changnyeong (Gyeongsangnam-do Province) and Jang-do Wetland in Sinan-gun (Jeollanam-do

Province). Korea is promoting the systematic management of wetlands, as it established a master plan for wetland survey and conservation for inland and coastal wetlands in accordance with the Wetland Conservation Act, established in 1999, and designated well-managed wetlands as protected areas.

The 10th COP to Ramsar Convention was held in Changwon in Gyeongsangnam-do Province in October 2008. As the host country, Korea contributed to international discussion on conservation and wise use of wetlands and to the adoption of the Changwon Declaration on Human Wellbeing and Wetlands.

In addition, Korea attracted the Ramsar Regional Center - East Asia in Changwon, Gyeongsangnam-do Province in 2009, which has a key role in protecting wetlands in the East Asian region. Korea is making consistent efforts to implement and further develop the Ramsar Convention through the center by sharing information and offering training programs for wetland managers in developing countries and holding meetings of the network for implementation of the Changwon Declaration to raise public awareness and come up with action plans.

► IPBES

The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) is an independent intergovernmental body serving as a scientific advisory body to strengthen the science-policy interface for biodiversity and ecosystem services. It was established in April 2012, and currently 118 countries, including Korea, have joined the program as of the end of 2013.

At the third intergovernmental and multi-stakeholder meeting held in Busan in 2010, delegates reached an agreement on the establishment of IPBES, and adopted the Busan Outcome which identified the platform's main functions and operating principles, etc.

At the 2nd Session of the Plenary of IPBES held in Turkey in December 2013, Korea proposed to host the Technical Support Unit and won the bid to host the unit for the Task Force on Knowledge and Data at the third full Multidisciplinary Expert Panel (MEP) and Bureau Meeting held in Germany in March 2014. The Unit will be launched in the National Institute of Ecology (NIE).



As IPBES is expected to meet the demands of the related Multilateral Environmental Agreements (MEAs), including CBD, CITES, and the Ramsar Convention, there is a rising interest in IPBES in discussions of such international agreements. As the conceptual system on the relationships and evaluation among the biodiversity and ecosystem services of the earth and human wellbeing is established at the IPBES level, relevant research at the global, regional and national level is expected to become even more active.

The Antarctic Treaty System

The main provisions of the Antarctic Treaty are to ensure the peaceful use of the area south of 60°S latitude, freedom of scientific investigation and suspension of existing claims to territorial sovereignty in Antarctica. The Treaty was first signed in December 1959 by 12 countries. As of August 2014, the total number of parties, including the original signatories, to the Treaty is 50, and among them, 29 countries have a consultative party status. Korea joined the Treaty in 1986 and achieved consultative party status after being recognized for its practical activities, including the establishment of a scientific research station called King Sejong in 1988.

To make up for the limitations of the Antarctic Treaty, which lacks specific standards to protect the Antarctic environment, the Madrid Protocol on Environmental Protection to the Antarctic Treaty was adopted in Madrid, Spain, in 1991. Korea deposited the instrument of ratification in January 1996, and the Protocol came into effect on January 14, 1998. Korea established the Act on Antarctic Activities and Environmental Protection in 2004 with a concerted effort by the Ministry of Environment, the Ministry of Foreign Affairs, and the Ministry Maritime Affairs and Fisheries to effectively implement the Madrid Protocol.

Recently, as the need to conserve the Antarctic environment as a barometer of the environmental changes of the earth is emerging as a hot issue in the international community, the member countries of the Treaty are accelerating their efforts to protect the Antarctic environment following the effectuation of the Madrid Protocol. In particular, 75 sites are currently designated and managed as Antarctic Specially Protected Areas (ASPA) by 14 out of 20 countries with base stations in Antarctica.

The Environment Ministry conducted procedures for ASPA designation and performed an investigation in the Narebski Point area, close to the King Sejong Scientific Research Station, with the help of the Korea Polar Research Institute, and based on the results, the site was designated as an ASPA in 2009.

Narebski Point is a coastal hill with a size of about 1 km², adjacent to the King Sejong Scientific Research Station. The site has high ecological, scientific and aesthetic values. When designated as a site of ASPA, access to the site was limited to cases that received a prior permit only for scientific research purposes, and there are behavioral restrictions such as a ban on bringing in animals or plants and the transfer of wastes. The Ministry of Environment has been conducting the Antarctic Specially Protected Area Management and Monitoring Project each year since July 2010. The ministry monitors changes in the number of species and population within the protected areas, including penguins, and conducts a basic ecosystem survey on the surrounding areas.

(3) International Cooperation Projects and Education of Affiliated Organizations

Korea Environment Corporation (KECO)

The Korea Environment Corporation (KECO), as the official host organization of the Seoul Initiative, acts as the Secretariat. The Seoul Initiative on Green Growth is a regional initiative to conduct green technology transfer and environmental cooperation projects with the objective to promote the environmentally sustainable development of developing countries in the Asia-Pacific region. It was initiated at the fifth Ministerial Conference on Environment and Development in Asia and the Pacific in 2005 (MCED-5), which was jointly organized by the Ministry of Environment and UNESCAP in 2005. Korea is seeking to share its experiences and know-how on rapid economic growth and improvement of environment quality with developing countries in the Asia-Pacific region through the Seoul Initiative.



KECO has held the Seoul Initiative Policy Forum annually since 2006, with the participation of public servants from the environmental field from member countries, to discuss measures with a theme of environmentally sustainable growth, and conducts pilot projects each year for three to four countries. A total of 22 pilot programs for 14 countries have been completed by 2013.

To foster specialists to respond to the demand for international environmental cooperation, KECO has offered a program to foster international environmental experts since 2009. By providing education customized for international environmental regulations and policy areas and dispatching some outstanding trainees to international organizations, it has served as a stepping stone for talented people equipped with theory and practical field capacity to advance to international bodies. A total of 328 people completed the training program, and 95 people were sent to international organizations from 2009 to 2014.

National Institute of Environment Research (NIER)

The environment science research institutes of Korea, China and Japan, including the National Institute of Environment Research (NIER) in Korea have held Tripartite Presidents Meetings among CRAES, NIES, and NIER annually since 2004 as part of the Tripartite Environment Ministers Meeting among Korea, China and Japan. The three organizations recognize the importance of information sharing and research personnel exchange for research of environmental change in Northeast Asia, and conduct joint research in nine priority cooperation areas (fine dust, dust and sandstorms, solid wastes, water pollution of lakes and marshes, eco-friendly society, chemical management, biodiversity, climate change and environmental emergencies) The NIER is scheduled to hold a joint workshop in 2015.

The NIER engages in tasks related to various international organizations and conventions, including its active participation in the establishment and operation of the Acid Deposition Monitoring Network in East Asia (EANET). It also operates an environmental data center in the Northeast Asian Programme of Environmental Cooperation (NEASPEC). NEASPEC was launched in 1993, and was initiated by Korea through UNEP, and operates programs related

to capacity building, information and technology exchange for environmental cooperation in Northeast Asia. NIER was designated as a WHO Collaborating Center for Vulnerable Population and Environmental Health in 2014. In addition, NIER is in charge of designation, registration and management of the verification organizations for domestic carbon trading scheme. Since joining as a regular member in the field of greenhouse gases verification of the Pacific Accreditation Cooperation (PAC) in 2014, it will actively contribute to the establishment of a greenhouse gas-related mutual recognition system among countries in the future.

The NIER conducts joint research and cooperation projects with foreign research organizations. It is actively participating in air pollutants monitoring and modeling projects in collaboration with relevant researchers in China and Japan, via a project concerning Long-range Transboundary Air Pollutants in Northeast Asia, which was started in 1996. The NIER has made exchanges on technical advice, manpower and research data for environmental health research cooperation with the National Institute for Minamata Disease in Japan since 2006, and has held the Korea- China environmental health forum annually since 2012 in collaboration with the Chinese Research Academy of Environmental Science.

National Institute of Biological Resources (NIBR)

The National Institute of Biological Resources (NIBR) has conducted the Overseas Biodiversity Research Project since 2007. With the adoption of the Nagoya Protocol, the importance of international cooperation for the investigation and securement of biological resources of each country has been strengthened. Under such circumstances, the NIBR makes efforts to investigate biodiversity and secure specimens and samples of biological resources in collaboration with countries rich in biological resource and uses this data to trace the origin of life on the Korean Peninsula. Since 2007, research projects have been conducted in 10 countries from East Asia, South America and Africa, and usefulness assessments on 150 specimens based on traditional knowledge are underway for the utilization of secured overseas biological resources, starting in 2014.



Korea National Park Service (KNPS)

The Korea National Park Service (KNPS) engages in cooperative tasks related to various international organizations and conventions. The KNPS formed the Korea Protected Area Forum, a consultative body for the implementation of the Programme of Work on Protected Areas (PoWPA) according to the recommendation of the CBD, and operates the secretariat of the forum. It conducted a Management Effectiveness Evaluation (MEE) on the protected areas and published an MEE result report. With regard to the International Union for Conservation of Nature (IUCN), the KNPS carried out a project to change categories of IUCN protected areas and a Green List pilot project. The organization runs the office of UNESCO's Man and the Biosphere Programme (MAB), which manages the UNESCO-designated Biosphere Reserve.

The KNPS has formed cooperative relationships with national park management organizations overseas and engaged in a variety of exchange programs, including joint workshops, personnel exchanges, uniform assistance and advisory services for developing countries. Starting in 2014, it is offering the Korea National Parks Friendship Program to provide opportunities to experience various projects firsthand and gain the know-how of the KNPS with the national park staff members of developing countries.

National Institute of Environmental Human Resources Development (EHRD)

The National Institute of Environmental Human Resources Development (EHRD) has offered education programs on the international environment to build the capacity in relevant policy-making for the environmental government officials of developing countries since 2005. As of the end of 2013, a total of 1,183 participants from 71 countries received these training programs to share the environmental policies, technology and experiences of Korea and participating countries. In 2014, annual programs such as the International Training Program on Environment Policy, International Specialized Course on Environmental Technology, Seoul Initiative Leadership Program on Green Growth, International Workshop for Environmental Human Resources

Development, and short-term programs that are offered by reflecting the demand of participating countries, including Sustainable Development for Indonesia, Eco-friendly Resource Recycling Policy by Treatment Process (in cooperation with KOICA), and Environmental Statistics for China, will be operated. Moreover, the Korea/China/Japan Tripartite Joint Environment Training Program, which is operated by the three countries in turn, will be held in Korea in 2014.

Sudokwon Landfill Site Management Corporation (SLC)

The Sudokwon Landfill Site Management Corporation (SLC) has been conducting waste management-related cooperative projects with numerous countries, including countries from Southeast Asia, Africa, Latin America, and Australia and Russia. As of August 2014, 19 projects concerning master plan establishment and feasibility assessment are either complete or underway, and three projects related to waste management are in progress. Meanwhile, the number of foreign visitors seeking to benchmark the case of the Korean Seoul Metropolitan Landfill Site has soared from 124 in 2000 to 3,340 in 2013, which indicates that there is a rising demand for international cooperation in the fields of waste management and waste-to-energy. With this increasing demand, SLC plans to expand its official development assistances in the future.

(4) Hosting the COP 12 to the Convention on Biological Diversity

The twelfth meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 12) will be held in Pyeongchang, Korea, from October 6 to 17, 2014, and the Meeting of Parties to the Cartagena Protocol on Biosafety is held from September 29 to October 3, 2014. As the host country of the CBD COP 12, Korea is fully committed to the preparation for the international event and to contribution in progress in the discussion on the biodiversity convention.

Korea is striving to ensure enhanced implementation of the CBD by taking the lead in the



various discussions to be held in CBD COP 12. The meeting will launch the fourth edition of the Global Biodiversity Outlook and conduct a mid-term review on the Aichi Biodiversity Target set by the international community to achieve the goals of the CBD and announce the Pyeongchang Roadmap for action plans. As a cooperative measure in science technology based on the roadmap, Korea will launch the BioBridge Initiative. The initiative supports the attainment of Aichi target, by establishing the network among institutions specialized in biodiversity, and by linking the demand of developing countries and the specialized institutions after analyzing the technology demand of developing countries.

At the High-Level Segment, a speech by President Park Geun-hye will be delivered and the adoption of the Gangwon Declaration on Biodiversity for Sustainable Development will emphasize the messages as biodiversity for sustainable development and biodiversity and peace.

On the occasion of the hosting the meeting, Korea is committed to establishing a cooperative network on biodiversity at home and abroad and enhancing public awareness by holding various workshop programs in connection with NGOs, exhibitions and other side events.





Environmental Review 2015, Korea

10

Green Economy

E C O R E A

is a compound of the prefix "ECO", which suggests an ecologically sound and comfortable environment, and the name the of the nation, "KOREA"

Current Policy Focus

- (1) Introducing the Integrated Environmental Management System
- (2) Introducing the Environmental Pollution Damage Compensation System
- (3) Fostering Environmental Technology and Industry
- (4) Rationalization of Environmental Regulations



Current Policy Focus

(1) Introducing the Integrated Environmental Management System

An environmental permit system, in which facilities discharging pollutant should obtain the permits and comply with the permit conditions that regulate the pollutant discharges, is one of the most fundamental measures of pollution control policy.

As public awareness of environmental issues has increased, the need for strengthened management of pollutant discharges is rising, and types of substances regarded as pollutants are diversifying. Still, pollution control has focused on specialized treatment by medium or substance, thereby making it difficult to have an integrated response to rising problems.

To resolve the problems associated with traditional mode of pollution control, the European Union (EU) introduced the Integrated Pollution Prevention and Control (IPPC) Directive⁷⁾ in 1996, and mandated that its member countries establish an integrated environmental management system. In 2010, the EU adopted the Industrial Emission Directive (IED)⁸⁾ to supplement the existing measure. Korea plans to fundamentally change the paradigm of the existing pollution control system, by introducing components from EU's IPPC system.

The new permit system can reduce the administrative burden of businesses and regulatory authorities by integrating permits by medium in one process. It also offers an opportunity for reflecting technological progress and changed conditions and correcting errors by regularly reviewing the contents of permits.

The new system selects Best Available Techniques (BAT) for each industry in consideration of effectiveness of pollution reduction and economic feasibility. BAT refers to the most effective and advanced techniques that are technologically and economically applicable with regard to

7) Directive 96/61/EC

8) Directive 2010/75/EU

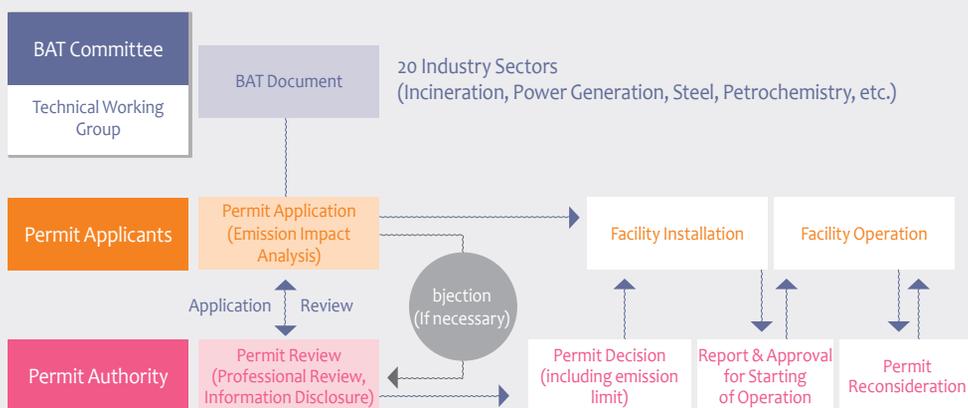


discharge of pollutants among the environmental management techniques concerning the design, installation, operation and management of pollutant-emitting facilities.

Since the emission limit value of each business is set in consideration of the BAT, the local level of pollution, goals of environmental quality and conditions of each business, the new system ensures emission regulations at the highest level of environmental protection for each business that have considered the cost.

A professional technical review organization, which will be established for the implementation of the new system, is expected to alleviate the technical burden of the permit authority by undertaking technical review of permit applications. In addition, a Technical Working Group, which is directly participated in by the industries, will support the task of selecting the BAT in consideration of process characteristics by industries, abatement technology status and emission characteristics, and preparing BAT reference documents (BREF). To provide the technical information needed for integrated permits and support permit procedures, an Online Integrated Environment Permitting System will be built.

Fig. 10-1 Permit Procedure for the Integrated Environmental Management System



The government has formed a forum consisting of major business operations, economic organizations, industrial associations, the academic community, and civilian experts to discuss the framework of the new system and collected opinions from stakeholders by forming a consultative body consisting of local governments and environmental industries.

The legislative procedures for the integrated environmental management are currently underway, and a pilot program of BREF preparation is operating for several industry sectors. The new system will be gradually applied to 20 industry sectors when the legislation is complete.

(2) Introducing the Environmental Pollution Damage Compensation System

When environmental pollution accidents occur, victims file lawsuits to receive compensation for the damage. However, victims of environmental pollution accidents are often unable to obtain proper compensation due to the burden of proving that their injury resulted from the pollution, or a prolonged litigation process, or the inflictor's inability to compensate for the damage, including bankruptcy. Meanwhile, companies that caused such accidents may go bankrupt because they cannot bear the financial burden of paying the compensation. In such circumstances, the government is pursuing the introduction of an environmental pollution damage compensation system to offer prompt relief for victims of environmental pollution damages and also secure the stable management of businesses with such accidents.

To design the new system, the government opened a "Policy Forum for Compensation and Relief of Environmental Pollution Damages" consisting of various stakeholder comprising the National Assembly, academia, industries, insurances, judicial organizations and civic groups in April 2013, and established a draft of the act. It collected opinions on the draft act by holding briefing sessions and public hearings, and legislation procedures are underway in the National Assembly.



The system intends to offer prompt and fair relief to victims of environmental pollution damage by clarifying the compensation liability of the damage and alleviating the victim's burden of proof in order to establish an effective damage relief scheme. To that end, the government will clarify the scope of compensation from damages done by responsible facilities, establish polluter pays principles that impose liability without fault, relieve victims' proof burden by inferring causal relations and claims to information, and mandate that companies have an environmental liability insurance policy to secure the fulfillment of obligations. Meanwhile, exceptional cases of unknown origin, nonexistence, and incapacity of the inflictor or damages exceeding compensation ability limits will be compensated by the government.

As the Environmental Pollution Damage Compensation System is settled it will ensure that victims receive compensation for damages in a timely manner, and companies with accidents are mitigated from the burden of compensation through environment liability insurance.

The government plans to make consistent efforts to secure the smooth operation of the system, including the development of environmental liability insurance products, establishment of a system to manage environmental liability insurance operation, and creating compensation criteria for environmental pollution damages.

(3) Fostering Environmental Technology and Industry

Development of Environmental Technology

The development of environmental technology is essential to improve environmental quality and is emerging as a promising growth engine that can lead to the fostering of environmental industry and make inroads into overseas markets. In this regard, the government is endeavoring to facilitate the development of environmental technology.

So far, the Ministry of Environment has offered support for the development of the environmental technologies of domestic businesses and researchers through key R&D projects

such as the G-7 Environmental Engineering Technology Development Project (1992-2000), Next-Generation Core Environmental Technology Development Project (2001-2010), and Eco-Innovation Technology Development Project (2011-2020).

The G-7 project, for which the Ministry invested a total of 180.9 billion won in R&D, is considered to have significantly enhanced the level of domestic environmental technologies and laid the foundation for R&D to develop environmental technologies. For the Next-Generation Project, the government invested a total of 879.1 billion won over the past 10 years, along with 357.6 billion won from the private sector, to focus on the development of technologies to cope with newly emerged environmental issues such as environment conservation & restoration, pollution prevention, and fine dust and endocrine disruptors, which are relatively falling behind the end-of-pipe field. Also, the government established a 10-year comprehensive plan for Next-Generation Project, and prepared the Technology Road Map (TRM) to systematic promote technology development.

For the Eco-Innovation Project, the government plans to inject a total of 1.553 trillion won of national funds, coupled with 600 billion won of investment from the private sector, for the decade, which will be concentrated in relevant technology commercialization and growth engines. Examples of technology fields to be fostered through this project include water industry technology, eco-friendly automobile technology, and technology to recover useful resources from waste. Despite its initial stage, this project is showing remarkable results in the application and registration of intellectual property rights (894 cases) and commercialization performances.

Also, as there is a growing demand for R&D projects for issues associated with environmental policy, the Ministry is promoting various projects, including a soil-groundwater pollution prevention technology development project, an environmentally converged new technology development project converged with nanotechnology and biotechnology, a project to facilitate the industrialization of promising environmental technology that supports verification research after the completion of technology development, an environment health technology development project, a project to develop strategic technology responding to climate change, and a waste-to-energy technology development project.



The Ministry of Environment plans to proceed with strategic and systematic R&D investment according to the Eco-TRM (technology road map) 2022 and promote various measures to use and commercialize superior technologies developed through the R&D projects, including technology exhibitions, consulting, technology transfer and public relations via media outlets.

Environmental Industry Fostering and Support

According to a survey of environmental industrial statistics, the number of businesses related to the environment in Korea is 49,913 as of 2012: manufacturing has 14,913 (29.8%); wholesale & retail 15,801 (31.6%); construction 3,808 (7.6%); waterworks 287(0.5%); services 3,513 (7.0%); and sewage & waste disposal, material recycling and environment restoration 11,591(23.2%). The domestic environmental market has been steadily increasing, with a market size of KRW 44.6 trillion in 2009, KRW 55.5 trillion in 2010, KRW 59.3 trillion in 2011 and KRW 82.2 trillion in 2012.

However, the domestic environmental industry is meager, as its average sales accounts for KRW 1.64 billion, and the average number of employees is just 5.8 as of 2012. Moreover, as investment in the environmental infrastructure of domestic businesses has reached the saturation point, the growth rate of the domestic environment market is decreasing. Thus, now is the time to advance into overseas markets.

▶ Fostering Domestic Environmental industry

The Ministry of Environment is making a multifaceted support policy to help relatively small environment-related businesses grow quantitatively as well as qualitatively through various programs, including establishing the infrastructure to foster the domestic environmental industry, training of experts and offering policy fund.

- Environmental Industry Application Research Complex

The Ministry is establishing environmental industry application research complexes for small and medium-sized businesses to provide comprehensive support for the entire process of business operation from R&D and commercialization to entering overseas markets. The metropolitan environmental industry application research complex will be located within the Environment Research Complex in Incheon and is under construction on about 180,000 m² of land with funding by the national treasury of KRW 156 billion. The building is scheduled for completion by 2017. The environmental industry application research complex will consist of research support facilities and offices, a pilot test facility, application research facility and prototype development support facility, and measures to support companies within the complex for new technology certification and technology verification, commercialization and overseas market advance are currently under review. An environmental industry application research complex in the Honam region was completed in 2013 at a cost of KRW 29 billion for the project. It houses a pilot test facility, an ecological environment test facility and a production test laboratory, and serves as a hub of environmental technology and industry.

Fig. 10-2 Aerial View of Environmental industry Application Research Complex





- Commercialization Support for Small Environmental Businesses

Small and medium-sized enterprises (SMEs) with environment-related business often experience hardships in commercialization even after they succeed in developing excellent environmental technology due to a lack of commercialization strategies and difficulties in securing investment funds. To resolve these problems, the Ministry is offering various kinds of support for SMEs, including management consulting, commercialization fund support and investment fund attraction support, according to the commercialization stages consisting of a commercialization groundwork stage, commercialization development facilitation stage and commercialization investment attraction stage.

The SMEs with environment-related businesses that received support for commercialization groundwork in 2013 showed positive results, as they reported an average sales growth of 1.9%, number of contracts won at 455 cases worth KRW 25.9 billion, increase in the number of new employees by 33 and increase in the number of new clients by 51, while SMEs with commercialization development facilitation support reported an average revenue growth of 11.8% and increase in the number of new employees by 26. Through the commercialization investment attraction support, companies succeeded in attracting a total of KRW 9 billion. The government plans to expand the financial scale of the commercialization support programs.

- Designation and Support for Outstanding Environmental Companies

The Ministry offers support in the areas of finance, export, manpower and marketing by designating promising domestic environmental companies with outstanding performances and technology and strong growth potential as “Outstanding Environmental Companies.” Designated companies are provided with various kinds of support, including the promotion of their brand via detailed analysis of their business, creating an overseas buyer’s network, strengthening export competitiveness and recruiting specialized human resources, etc.

Nine environmental companies were designated as Outstanding Environmental Companies for the first time in 2009, and 15 companies were additionally designated as such businesses

in 2013 and 2014, respectively. The government plans to designate and foster 100 outstanding environmental businesses by 2017.

- Environmental Industry Policy Fund

To facilitate management support and investment in the environmental equipment of environmental companies and to systematically foster the environmental industry, the Ministry has been operating the Environmental Industry Fostering Fund, Recycling Industry Fostering Fund and Environment Improvement Fund with long-term, low-interest rates.

The scale of these environmental industry policy funds has been consistently expanded each year, and the combined amount of the three funds stood at KRW 135 billion in 2013, including KRW 14 billion for the Environmental Industry Fostering Fund, KRW 73 billion for the Recycling Industry Fostering Fund and KRW 48 billion for the Environment Improvement Fund. However, the increased demand for such loans from businesses far exceeds the budget limits, resulting in the early depletion of the funds each year.

Against this background, the government expanded the scope of loan support to KRW 182.5 billion in 2014, and the Environmental Industry Fostering Fund, as well as the Environment Improvement Fund, are being operated by shifting to an interest subsidy program in which the government subsidizes the interest rate differences between banks and the government-set fixed rate by using private funds.

▶ Support for Overseas Expansion of Environmental Industry

The exports of Korea's environmental industry have increased markedly, from KRW 1.27 trillion in 2006 to KRW 7.3 trillion in 2012. To promote the overseas expansion of the domestic environmental industry, the government offers diverse support policy programs.



- Developing new environmental projects and expanding overseas application research project

A project to support developing countries in establishing master plans for environmental improvement has been implemented to help them establish a comprehensive environmental improvement scheme and build a cooperative network at the government level to establish friendly conditions for Korean environmental companies to move into overseas markets. Starting with Vietnam in 2007, the project was conducted in a total of 16 countries in Asia, Africa and Latin America, etc. as of 2013.

The support of feasibility studies for overseas environmental projects is promoting the development of new projects, by supporting the cost of feasibility studies, which are necessary in the initial stage of international environmental projects. This project, which started in 2008, assisted a total of 116 environmental projects from 46 countries by the end of 2013, leading to obtaining overseas contracts worth KRW 102 billion.

To reduce the business risks associated with the various environmental regulations and systems of each country, it is necessary to promote joint projects with target countries. The Joint International Environmental Technology Localization Program was designed to promote joint research with target countries' research institutes to apply the superior environmental technologies developed in Korea to the overseas countries in consideration of their conditions and regulations and support local application researches for the projects. Through this project, environmental technologies worth KRW 218.5 billion were exported from 2006 to 2012. In 2013, Korea succeeded in winning contracts amounting to KRW 69.4 billion by applying for 28 relevant overseas projects.

Furthermore, Korea is seeking to expand exchanges between itself and African countries, create new markets and help Korean environmental companies make inroads into the African market by establishing the Aid Program for Piped Water Supply Installation in African Villages, which is intended to install drinking water facilities for African people suffering from water shortages. This project started with Ghana in 2011 and is now spreading the environmental technology of Korea

by offering easy access to 100 to 150 tons of clean and safe drinking water per day to people in Nigeria and Kenya.

- Strengthening Competitiveness through Public-Private Partnership

Since environmental projects are often implemented under the government's lead, it is important to establish a network with the target governments. The Korean government has been dispatching public and private joint market development groups to resolve difficulties for the entrance of private entities into the international market and to provide political support through consultations with the government officials of target countries for major international environmental projects. In 2013, the government dispatched these groups to five regions: North Africa, Asia, Latin America, the Middle East and Middle and Eastern Europe.

Moreover, the government is making efforts to support domestic environmental companies in building an overseas network by selecting promising foreign countries for environmental exports and inviting key figures and major buyers of the countries to offer Business-to-Business consulting. Since 2010, the Global Green Hub Korea Program has been implemented by inviting the key figures of regions with promising export markets such as China, Southeast Asia, the Middle East, Latin America and North Africa to offer various environmental industry-related programs such as environmental cooperation forums, project consulting and briefing sessions and field trips to excellent domestic environmental facilities. A Global Green Hub Korea event held in the Songdo District of Incheon, Korea, in May 2014 was participated in by 107 key figures from 36 countries around the world and 229 domestic companies. Through the event, numerous projects worth KRW 38 trillion were created, and consulting and advisory services for 587 cases of such projects equivalent to about KRW 2 trillion were provided.



- Establishing Strategies for Overseas Expansion

Since 2001, the government has established international environmental industry cooperation centers in main target countries, including China, Vietnam and Indonesia, to utilize as a foothold for cooperation with foreign countries. These centers offer business lounges free of charge, create cooperative projects with relevant local organizations and hold various forums and consulting sessions to provide domestic companies with information about local projects.

The government also publishes the “Guide for Advancing into Promising Environmental Markets,” which provides a detailed analysis of the environmental markets and market trends of target countries by selecting countries with promising environmental markets by continent, and offers insights for entering the environmental markets of the target countries. From 2009 to 2013, such guide books have been published based on research and surveys of 14 countries.

(4) Rationalization of Environmental Regulations

The Ministry of Environment is making effort to rationalize its regulations, to cost-effectively protect the environment and public health, activate the economy and enhance corporate competitiveness through the rational improvement of environmental regulations. The three basic directions of the regulation rationalization pursued by the Ministry are to abolish regulations that are unreasonable, unrealistic and old and thus difficult to comply with, to imbue the preemptive regulatory requirements with autonomy and flexibility in consideration of technological advancements, and to secure compliance through strict monitoring based on laws and principles.

It is seeking to reform relevant regulations and move toward an open regulatory system to abolish irrational regulations. The Ministry plans to implement active regulatory improvement by receiving suggestions on regulations that need to be improved on its website and reporting the results of deliberation, and to create a consultative group consisting of public and private organizations to communicate with economic and industrial circles on a regular basis. Moreover, it intends to introduce regulation indexes quantifying ripple effects and suitability of regulations to

evaluate and publish performances in regulatory improvement.

Preemptive regulation is also subject to regulatory rationalization. The Ministry plans to give more flexibility on preemptive site regulations of emission facilities according to the conditions of the local area and facility, reestablish emission allowance standards in consideration of technological advancement, and differentiate noise standard by land-use zone.

To relieve the burden arising from irrational regulations, the Ministry plans to regularly review regulations (in every three to five years) for improvement by expanding the application of the sunset law. In addition, with regard to the increased use of information communications technology (ICT) in pollutant discharge and treatment process, the Ministry is making efforts to remove old regulations, including obligations to manually prepare and maintain documents when such information is processed electronically.

As part of the smart regulations, revision of recycling law is underway : the revised law would permit recycling of substances that cause no environmental hazards, while the existing law rigidly allows recycling only in designated uses and methods. The existing regulation came under criticism because it hampers recycling technology development, since the complicated statute amendment procedures, which take more than two years, make it difficult for new recycling techniques to be timely commercialized.

The Ministry is making efforts to create conditions that benefit both the economy and environment by reducing regulatory burdens on people and businesses while protecting the environment safely through regulatory rationalization measures.



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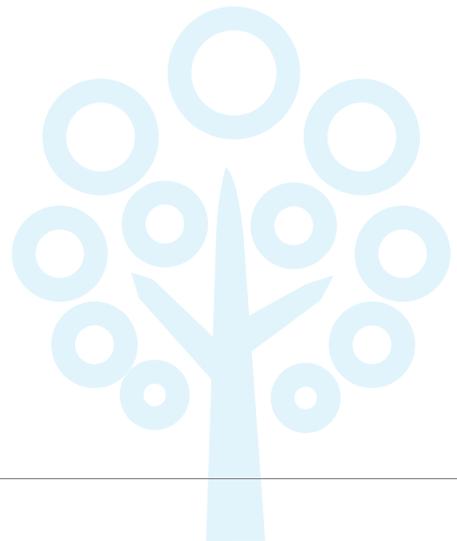
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Abbreviation

Volume 4

ABS	access to genetic resources and benefit-sharing	MCED-5	the 5th Ministerial Conference on Environment and Development
ASEAN	Association of Southeast Asian Nations	MEA	multilateral environmental agreements
ASPA	Antarctic Specially Protected Area	MEE	Management Effectiveness Evaluation
BAT	Best Available Techniques	MEP	Multidisciplinary Expert Panel
BAU	business as usual	MOU	memorandum of understanding
BREF	Best Available Techniques Reference Document	NAMA	Nationally Appropriate Mitigation Action
CBD	Convention on Biological Diversity	NBSAP	National Biodiversity Strategy and Action Plan
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora	NEASPEC	Northeast Asian Programme of Environmental Cooperation
COP	Conference of the Parties	NGO	non-governmental organization
CRAES	Chinese Research Academy of Environmental Sciences	NIBR	National Institute of Biological Resources
DMZ	Demilitarized Zone	NIE	National Institute of Ecology
EANET	Acid Deposition Monitoring Network in East Asia	NIER	National Institute of Environment Research
EAS	East Asia Summit	NIES	National Institute for Environmental Studies (Japan)
EHRD	National institute of Environmental Human Resources Development	ODA	Official Development Assistance
EIA	environmental impact assessment	PAC	Pacific Accreditation Cooperation
EU	European Union	PoWPA	Programme of Work on Protected Areas
GCF	Green Climate Fund	SEA	strategic environmental assessment
GIS-DB	geographic information system database	SLC	Sudokwon Landfill Site Management Corporation
ICT	information communications technology	SME	Small and Medium-sized Enterprises
IED	Industrial Emission Directive	TEMM	Tripartite Environment Ministers Meeting
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services	TRM	Technology Road Map
IPPC	Integrated Pollution Prevention and Control	UN	United Nations
IUCN	International Union for Conservation of Nature	UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
KECO	Korea Environment Corporation	UNESCO	United Nations Educational, Scientific and Cultural Organization
KNPS	Korea National Park Service	UNFCCC	United Nations Framework Convention on Climate Change
KOICA	Korea International Cooperation Agency	US	the United States
KRW	Korean Won (currency)	US-AEP	the United States-Asia Environmental Partnership
LMOs	living modified organisms	WHO	World Health Organization
MAB	Man and the Biosphere Programme		

