

Republic of Korea. 2015

# Ministry of Environment



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Ministry of Environment, Republic of Korea

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# Minister's Message



Korea is known with its beautiful nature and landscapes, but has many difficulties in maintaining the blessed environment. Approximately 64% of Korea's 100 thousand km<sup>2</sup> territory is mountainous areas and the remaining 36% of land accommodates over 50 million people. Consequently, Korea's population density is the third highest in the world except city-states, causing a serious disadvantage in managing the environment as well as a strong possibility of ecosystem fragmentation. Besides, Korea has a monsoon climate where more than 60% of annual precipitation is concentrated on a rainy season from mid-June to July. This not only places the country at a high risk of water stress, but also leads to difficulties in managing air quality and keeping rich biodiversity.

For the past four decades, Korea has made all-out efforts with a variety of policy measures to overcome the inherent disadvantages in national environment management and succeeded in dramatically improving environmental quality across the country.

Black smoke rising up from factory stacks has disappeared to make way for clear blue sky. As an indicator, SO<sub>2</sub> concentration in the air in Seoul has dramatically reduced from 0.068ppm in 1988 to 0.006ppm in 2013. The Han River, the largest river in Korea crossing the center of the Seoul Metropolitan Area, now shows an average BOD of 1mg/L remarkably improved from 5mg/L in 1970s, so you can see wild fishes freely swimming in the clean river. Only 43% of the Korean people were provided with water supply service in 1970, but now the nationwide water supply rate stands at 98.5%.

As a result of successful implementation of policies such as the Volume-based Waste Fee system and recycling promotions, wastes which were dumped indiscriminately in the past have been greatly reduced in volume with a spectacular growth in material recycling and being converted into renewable energy sources.

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Going beyond the accomplishments in improving environmental quality, the Park Geun-hye Administration has pushed for further advanced environmental management and environmental welfare policies to usher in a sustainable future.

For instance, the Ministry of Environment introduced Off-site Consequence Analysis to evaluate the potential risk of chemical facilities to outside the boundaries. On the other hand, the Act on the Registration and Evaluation of Chemical Substances has been enacted to establish an advanced chemical management system that would meet the standards of the most developed countries.

The Ministry has introduced the Liability, Compensation and Relief System to promptly compensate the damages caused by short-term and long-term pollutions and offer various insurance options that enable enterprises to operate their business plans in the long run. In order to accelerate circulation of resources and energy, the government is working on the construction of Environment-friendly Energy Towns where clean technology-based energy will be produced from incineration plants and landfills, while pursuing the enactment of the Act on the Promotion of Resource Cycle Society.

This year, the Greenhouse Gas Emissions Trading Scheme has begun for the purpose of actively responding to the global challenge of climate change.

Also, the Ministry is working on shifting the existing media-based emission permit systems into an integrated system similar to the EU's Integrated Pollution Prevention and Control. The new system is designed to protect receptors from pollutions with the use of best available techniques.

The Ministry of Environment will continue to endeavor to listen to the voices of not only the present generation but also our future generations as well as the soundless demands of plants and animals, so that we can ensure happy and prosperous life for all of them.

First published back in 1999, ECOREA is a part of our efforts to share Korea's experiences regarding environmental policies with our neighbors on the globe. I hope ECOREA will be widely read by many interested readers to make a useful reference, and go further to contribute to the efforts of countries to address commonly faced environmental challenges.

The Ministry of Environment of Korea always keeps our doors wide open to the opportunities for environmental cooperation with other countries around the world.

April 2015

**Yoon, Seongkyu**  
**Minister of Environment**

윤성규

# Historical Milestones

Environment  
Administration

Ministry of  
Environment  
(Before Government  
Restructuring)

Ministry of  
Environment  
(After Government  
Restructuring)

- **1967**                      Established the Pollution Section of the Ministry of Health and Society
- 
- **1980. 1**                      Established the Environment Administration (EA)
  - **1980. 9**                      Established the Korea Resources Recovery and Reutilization Corporation (KRRRC)
  - **1986.10**                      Set up six environmental branch offices
  - **1987. 3**                      Established the Environmental Management Corporation (EMC)
- 
- **1990. 1**                      Established the Ministry of Environment
  - **1991. 5**                      Set up the Central Environmental Disputes Coordination Commission (CEDCC)
  - **1994. 5**                      Increased the scope of water management (became responsible for water supply and sewerage, drinking water, and water quality inspections)
- 
- **1994.12**                      Given greater authority with its functions and manpower increased
  - **1998. 2**                      Transferred national park management from the Ministry of Home Affairs to Ministry of Environment
  - **1999. 5**                      Reorganized the Hangang Environmental Management Office into Hangang River Basin Environmental Management Office
  - **2000. 7**                      Established the Sudokwon Landfill Site Management Corporation
  - **2002. 8**                      Set up River Basin Environmental Offices for the four major rivers
  - **2005. 1**                      Reorganized the Gyeongin Regional Environmental Office into Metropolitan Air Quality Management Office
  - **2006. 2**                      Newly established the National Institute of Environmental Human Resources Development
  - **2007. 2**                      Newly established the National Institute of Biological Resources
  - **2008. 2**                      Korea Meteorological Administration became a subsidiary
  - **2009. 4**                      Established the Korea Environmental Industry & Technology Institute (KEITI)
  - **2010. 1**                      Established the Korea Environment Corporation (KECO)
  - **2010. 7**                      Newly established the Greenhouse Gas Inventory and Research Center of Korea (GIR)
  - **2012. 7**                      Expanded and reorganized the Jeonju Regional Environmental Office into Saemangeum Regional Environmental Office
  - **2012. 12**                      Ministry of Environment relocated to Sejong-si.
  - **2013. 9**                      Newly established the National Institute of Chemical Safety
  - **2013.10**                      Established the National Institute of Ecology



Photo: Government Complex Sejong

# Environmental Conditions and Environmental Quality Trends in Korea

## Key Facts

Area: 100,033km<sup>2</sup>  
 Population: 50,220,000  
 Density: 501/km<sup>2</sup>  
 Average Temperature: 12.5°C  
 Annual Precipitation: 1307.7mm

Note: Population and density (2013),  
 Average temperature and annual precipitation  
 (1981-2010 average)

Korea has over 50 million people in about 100 thousand km<sup>2</sup> territory, resulting in a high population density. Mountains account for approximately 64% of the national territory, leaving only a limited proportion of the land for human residence. The country has the monsoon climate and 1,307.7mm annual average precipitation. However, 50-60% of the rainfall is concentrated during summer season placing the country at a high risk of water stress. Ecological axes across the country were disconnected or damaged during the rapid economic growth since 1960s. Population growth, urbanization and industrialization have accompanied air and water pollution, increasing wastes, destruction of ecosystems. However, Korea has come up with a wide variety of policy measures to overcome the inherent disadvantages and improve environmental quality across the country and made remarkable accomplishments in many areas.

## Air Quality

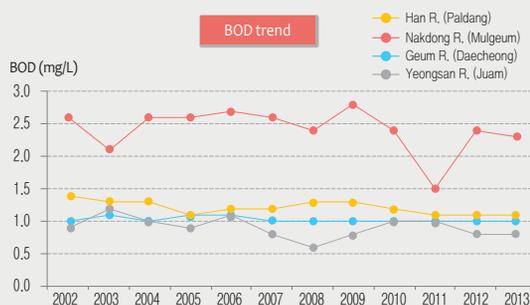
SO<sub>2</sub> and CO concentration in the air have significantly decreased since late 1990s with a slight reduction of PM<sub>10</sub>. NO<sub>2</sub> and O<sub>3</sub> have been maintained below the standards, although without notable improvement in the figures.

	1998	2000	2005	2010	2013
SO <sub>2</sub> (ppm)	0.009	0.008	0.006	0.005	0.006
NO <sub>2</sub> (ppm)	0.020	0.024	0.022	0.025	0.024
O <sub>3</sub> (ppm)	0.020	0.020	0.022	0.023	0.026
CO (ppm)	1.0	0.9	0.6	0.5	0.5
PM <sub>10</sub> (μg/m <sup>3</sup> )	55	53	57	51	49

Trend in Air Pollution Levels

## Water Quality, Water Supply and Sewerage

Water quality, including those in the four major rivers has shown steady improvement thanks to continued policy efforts, especially in BOD and T-P level. Water supply and sewerage service have greatly expanded standing at 98.5% and 92.1% respectively. The government is now focusing on further expanding the service to cover rural villages.



Water Pollution Trend in Four Major Rivers

	1980	1990	2000	2010	2013
Water Supply Rate (%)	55.0	78.4	87.1	97.7	98.5
Sewerage Distribution Rate (%)	8.3	32.9	70.5	90.1	92.1

Trends in Waterworks and Sewerage Distribution

### Waste

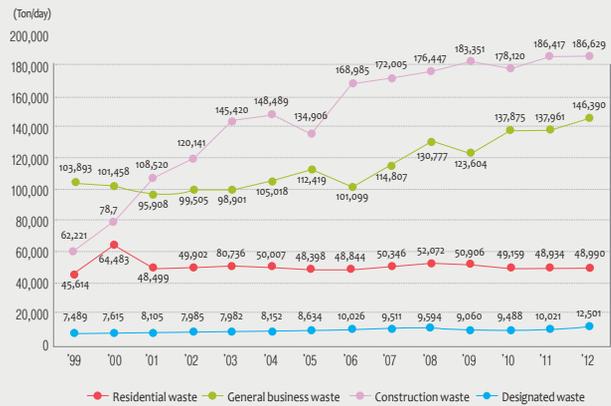
Generation of domestic wastes has been substantially decreased since the enforcement of volume-based garbage bag system and separate disposal of recyclables and food wastes, staying at a level around 0.95kg/day/person (as of 2012) down from 1.3kg/day/person in 1994. When it comes to waste treatment, recycling rate has been greatly increased with a remarkable decrease in landfilling, while seeing a slight increase in incineration.

### Nature

A total of 42,756 indigenous plant and animal species inhabit Korea, and 2,422 of them are endemic species.<sup>1)</sup>

For the purpose to conserve natural ecosystems, the government has designated 246 plants and animals as endangered wild species while managing legal protected zones including 84 Natural Parks, 32 Landscape/Ecosystem Protected Areas, and 219 Protected Island Areas.

1) Number of indigenous species (2014), endemic species (2014)



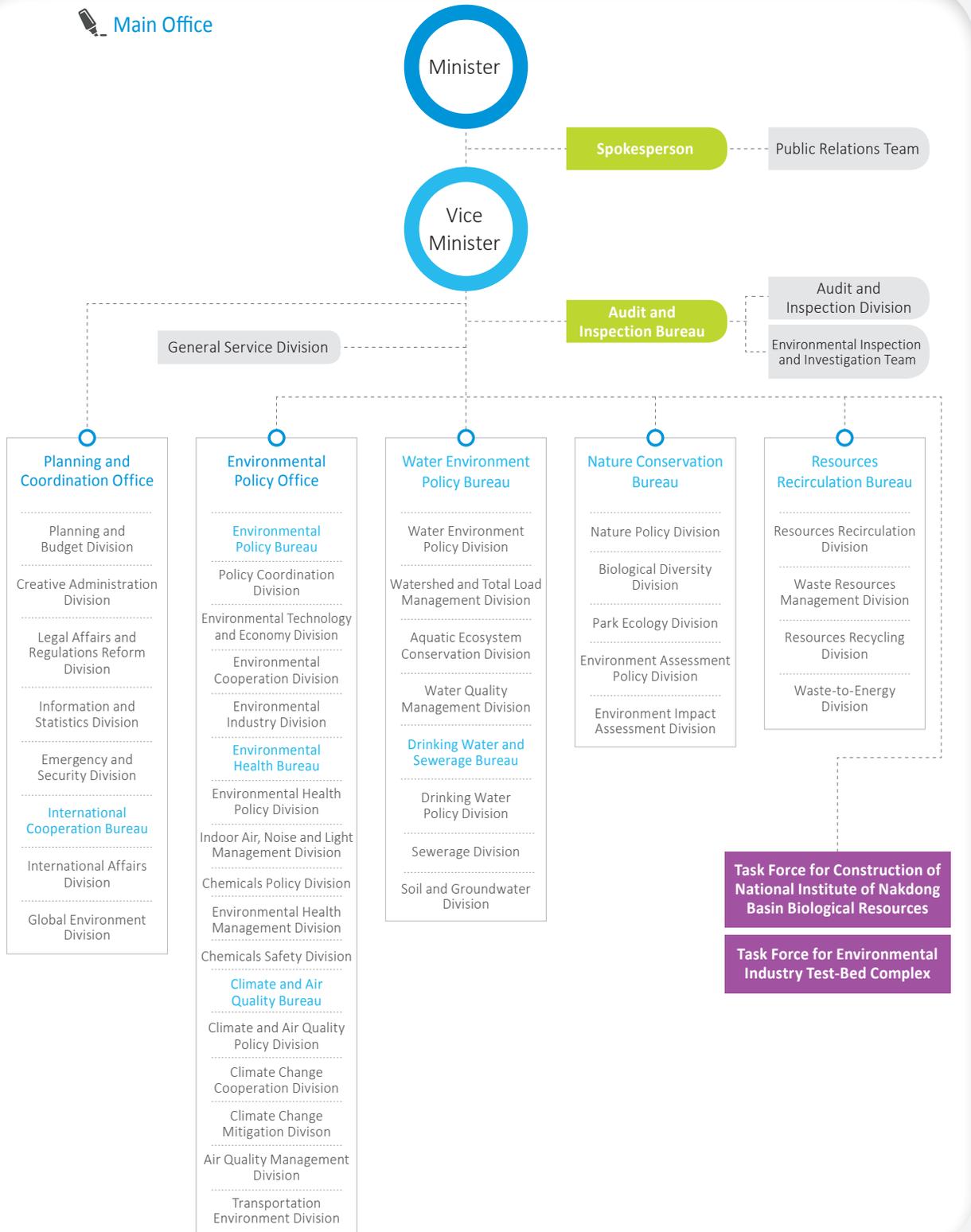
Trends in Waste Generation



Residential Waste Treatment

# Organization

 Main Office



The Ministry of Environment is the competent ministry in charge of environmental conservation and is responsible for formulating comprehensive environmental policies. As of July 2014, the main office of the Ministry of Environment consists of 527 officials, two departments, three bureaus, six offices, 37 divisions, two teams, and two task forces, as well as eight regional offices, associated subsidiaries, and affiliated public institutions. The key functions of the Ministry of Environment are to: (1) Establish a basic environmental administration system for enacting and amending environmental legislation, introducing environment-related schemes, and otherwise managing the national environment; (2) Formulate and enforce mid- and long-term comprehensive plans for environmental conservation; (3) Set various regulatory standards; (4) Provide administrative and financial support to regional environmental offices and local governments for environmental management; and (5) Cooperate with other countries regarding environmental conservation.

The Planning and Coordination Department is in charge of administrative innovation, formulating key operation plans, budgeting, organizational management, environment information, and emergency plans. The International Cooperation Office consists of the International Affairs Division, in charge of international environmental cooperation, and the Global Environment Division, in charge of global environmental conservation.

The Environmental Policy Department consists of the Environmental Policy Office, which is in charge of formulating comprehensive plans on environmental conservation, environmental technology development, environmental industries, environmental education, and environment-related cooperation with private organizations; the Environmental Health Policy Office, which is in charge of environmental health and management of hazardous chemicals, indoor air quality, noise, and other aspects of living environment management; and the Climate and Air Quality Policy Office, which is in charge of formulating air quality conservation policies, managing air pollutant-emitting establishments, vehicle pollution prevention, clean fuels, and climate change measures.

The Water Environment Policy Bureau is in charge of formulating water environment management master plans, water quality control measures for each affected area of each river, water quality total load management, water ecosystem restoration, and managing factory wastewater, livestock excreta, and nonpoint sources. The Water Supply and Sewerage Policy Office is in charge of water supply policies, water demand management, water industry nurturing and support, sewerage and domestic wastewater policies, and soil and groundwater policies.

The Nature Conservation Bureau is mainly responsible for formulating basic policies on natural environmental conservation, natural ecosystem conservation, managing national parks, and environmental impact assessments. The Resources Recirculation Bureau is in charge of formulating master plans and comprehensive plans on waste treatment, managing domestic wastes and commercial wastes, waste-to-energy policies, recycling policies, and nurturing the recycling industry.

The Spokesperson's Office is responsible for the public promotion of key policies. The Auditor's Office consists of the Audit and Inspection Office, in charge of inspection affairs, and the Environmental Inspection and Investigation Team, in charge of the comprehensive coordination of the monitoring of environmental pollutant-emitting facilities.

Temporary task force teams are being operated to build the National Institute of Nakdong Basin Biological Resources for the management of biological resources in the Nakdonggang and Yeongnam regions and to build a metropolitan environmental-industrial test bed for small to medium-sized enterprises.

## Key Projects of the

# Environmental Policy Office

## 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 an environmental industry and make inroads into overseas markets. In this regard, the government is endeavoring to facilitate the development of environmental technology. The Ministry of Environment has been supporting the development of environmental technology through major R&D projects since the 1990s. Currently in progress is the Eco-Innovation Technology Development Project (2011-2020), which focuses on developing water industry technology, eco-friendly vehicle technology, and technologies to convert wastes into useful resources. The Ministry of Environment is also working on issue-associated R&D projects such as a soil-groundwater pollution prevention technology development project, an environmentally converged new technology development project, a project to facilitate the industrialization of promising environmental technology, 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 outstanding technologies developed through the R&D projects, including technology exhibitions, consulting, technology transfer and public relations via media outlets.

### · Fostering Environmental Industry

Although the Korean environmental market has recently demonstrated steady growth, it is necessary to overcome the smallness of businesses, and the saturated domestic market makes it essential to enter overseas markets.

The Ministry of Environment provides multifaceted support to foster the growth of small companies in environmental industry. It is building environmental industry application research complexes for small to medium-sized enterprises, through which it will provide assistance throughout the entire process of R&D, commercialization, and entry into overseas markets. The research complex in the Honam region was completed in 2013, and one in the Metropolitan area is scheduled for completion in 2017. Launched in 2010, the commercialization support project for small to medium-sized companies in environmental industry aims to facilitate the commercialization of excellent environmental technologies developed by small to medium-sized companies by offering business consulting

for each stage of commercialization, funding support for commercialization, and support for fundraising. The Outstanding Environmental Company Designation System, initiated in 2012, designates promising environmental companies with outstanding business performance and technology and high growth potential as “Outstanding Environmental Companies” and offers a package of financing, export, personnel, and marketing support. To facilitate management support for and encourage environmental facility investments in environmental companies, the Environmental Policy Fund Project offers long-term, low-interest loans to support the Environmental Industry Fostering Fund, Recycling Industry Fostering Fund, and Environment Improvement Fund.

The Ministry of Environment is involved in a wide range of support projects to ensure the success of overseas ventures by the environment industry. For example, it is laying the groundwork for cooperation by supporting the formulation of environmental improvement master plans in developing countries, facilitating business exploration by subsidizing the costs of feasibility studies for overseas environmental projects, and ensuring that businesses are suitable for

local conditions by supporting joint commercialization of outstanding technologies with the target country. In recognition of the fact that environmental projects are often government-led, the Ministry of Environment is helping to build a network with the governments of target countries by sending private-public delegations to organize face-to-face talks between companies and local government officials, and inviting key persons and buyers from promising countries to hold B2B conferences. It also publishes a guidebook that analyzes market trends in promising countries and suggests methods of entry in order to help with overseas entry strategies.

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### Introduction of the Integrated Environmental Management System

A permit system for pollution-emitting facilities is one of the most fundamental measures of pollution control policies. Although environmental pollution is becoming



The environmental industry application research complexes will provide assistance for SMEs in environmental industry. (Photo: Environmental Industry Application Research Complex in Incheon)

increasingly complex, the previous emissions permit system was segmented by medium and substance, unable to address cross-media issues. Accordingly, Korea is combining the previous emissions permit system with the Integrated Pollution Prevention and Control (IPPC) system of the EU, aiming for a fundamental shift in the pollution control paradigm.

The new permit system reduces the administrative burden by combining permits for each media into a single procedure. Permit details are regularly examined to reflect technological advancements and changing circumstances, providing opportunities to correct any errors in the permit. “Best Available Techniques” (BAT) are selected for each industry by accounting for the effectiveness of pollution reduction and economic feasibility. Permissible emission levels are customized for each establishment by considering the BAT and circumstances specific to each local area and establishment. This ensures that emissions regulations are implemented at the optimum level of environmental protection and accounts for economic costs of each establishment.

To enforce the new system, an expert technical panel will be established to be in charge of matters such as technical reviews of permit applications. Industries will directly participate in a technical working group, which will consider factors such as the current technology of each industry to select BATs. An online “Integrated Environment Permit System” will also be established to provide the technical information necessary for the integrated permit and support the permit procedure.

Legislative procedures for the Integrated Environmental Management System are currently underway. The system will be applied to 20 target industry sectors when the legislation is complete.

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. Against this background, circumstances, the government is pursuing the introduction of an environmental pollution damage compensation system to offer prompt relief for people with environmental pollution damages and secure the stable management of businesses with such accidents.

The Environmental Pollution Damage Compensation System aims to provide timely and fair relief to victims of environmental pollution damage. It clarifies the scope of responsible facilities and damage compensation, establishes polluter pays principles that impose liability without fault, relieves victims' proof burden by inferring causal relations and claims to information, and mandates that companies have an environmental liability insurance policy to secure the fulfillment of obligations. Meanwhile, cases of the unknown origin, nonexistence, and incapacity of the inflictor or damages exceeding compensation ability limits will be compensated by the government. Once established, this system will ensure that victims receive compensation for damages in a timely manner through environment liability insurance, and the companies with the accidents are mitigated from the burden of compensation, enabling stable management.

To establish the framework of the new system, the government opened a “Policy Forum for Compensation and Relief of Environmental Pollution Damages” consisting of various stakeholders comprising the National Assembly, academia, industrial and insurance circles, judicial organizations and civic groups in April 2013, and established a draft of the act, for which legislation is currently underway.

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## Introduction of the Environmental Pollution Damage Compensation System

When environmental pollution accidents occur, victims file lawsuits to receive compensation for the damage. However, the victims of environmental pollution accidents

## Key Projects of the

# Environmental Health Policy Office

## Chemical Safety Management System

The Ministry of Environment is reestablishing the chemical safety management system by wholly amending the “Chemicals Control Act” (CCA) and enacting the “Act on the Registration and Evaluation, etc. of Chemicals” (AREC). Both acts will be enforced as of January 1, 2015.

The new CCA tightens controls over toxic chemicals and chemical accidents. A toxic chemicals business permit system will be introduced requiring toxic chemicals businesses to submit an off-site consequence analysis report, test report, and risk management plan and be equipped with facilities, equipment, and staff of a certain standard in order to obtain a permit. The handlers of substances requiring preparation for accidents must formulate a risk management plan every five years, and also have a greater responsibility to report any accidents. The chemical accident response system was reorganized so that the Ministry of Environment is in supreme charge of all chemical accidents, and the National Institute of Chemical Safety (NICS) was newly established in 2014 as a specialized institution to be in charge of chemical accident prevention and responses.

The AREC introduces an advanced chemical registration and evaluation system to register the toxicity and harmfulness information on chemicals that are domestically produced or imported and to conduct toxicity evaluations and harmfulness assessments of registered chemicals. The chemical safety information thus obtained will be shared across industries and the government and is expected to enhance the effectiveness of safety management and policy formulation. Furthermore, products containing toxic chemicals must be reported, and any household chemicals such as cleaning agents and pesticides must be produced and imported in accordance with safety and labeling requirements.

## Prevention and Control of Environmental Diseases

Korea’s environmental policy paradigm is shifting from media-specific management to a receptor focus and ensuring of environmental rights, and accordingly, policies aim to minimize the health damage caused by environmental pollution.

The Ministry of Environment is putting a particular emphasis on protecting the health of children, a population sensitive to environmental pollution. Since 2006 it has been carrying out environment monitoring in children’s playgrounds, childcare



As the Ministry puts an emphasis on children's health, their activity spaces such as playgrounds are being monitored for risks.

facilities, schools, school zones, and other facilities of major concern and is preparing control measures based on the results. In 2009, environmental safety control standards were prepared on indoor air pollutants, heavy metals, and parasites in children's activity spaces and were applied to elementary schools, parks, daycare centers, and indoor and outdoor playgrounds. An environmental safety diagnosis and improvement project is in progress regarding these facilities. Also in 2009, an announcement was made specifying 135 types of environmental hazards contained in baby bottles, toys, and other children's products. A risk assessment is conducted on such products and transfer or content limits are prescribed for children's products regarding any substance whose risk is confirmed through the assessment. To encourage children's product manufacturers to engage in self-management to voluntarily reduce environmental hazards, an associated guideline has been in distribution since 2012 and financial assistance is offered to cover the consultation costs for formulating self-management plans.

Basic information is being collected and an institutional groundwork is being laid to ensure more systematic and active responses to the health impacts of environmental pollution. The National Environmental Health Survey and the "Maternal and Infant Health Impact Survey," "Children and Young Adults' Health Impact Survey," and "Senior Population Health Impact Survey" for sensitive populations are being carried out to gather basic data for formulating environmental health policies by investigating people's exposure to hazardous pollutants and health impacts.

The previous environmental impact assessment system was enhanced to create the Health Impact Assessment (HIA), which assesses impacts on human health in addition

to environmental impacts. HIA has been implemented since 2010 and is targeting major development projects.

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## Quiet and Pleasant Living Environment

While intensifying urbanization has made it difficult to control noise and indoor air quality, there is greater public demand for quality of life, and it is becoming increasingly necessary to improve people's everyday living environments. Accordingly, the Ministry of Environment has formulated various measures to address everyday matters such as indoor air quality, indoor radon, and noise levels, while also carrying out basic research regarding electromagnetic waves, light pollution, and other issues that lack adequate controls.

The "Indoor Air Quality Control in Public-use Facilities, etc. Act" was wholly amended in 2004 to control indoor air quality in public-use facilities and newly built multi-unit dwellings, and accordingly, 21 facility groups, including subway stations, underground road shopping districts, medical institutions, steam rooms, large shops, and movie theaters are required to comply with maintenance limits regarding five substances: fine dust (PM<sub>10</sub>), carbon dioxide (CO<sub>2</sub>), formaldehyde (HCHO), total airborne bacteria, and carbon monoxide (CO). Constructors of newly built multi-unit dwellings consisting of 100 or more homes, for which the "sick house syndrome" is of particular concern, are required to determine and announce the indoor air quality before the residents move in, and construction materials that produce large amounts of pollutants are prohibited from indoor use in public-use facilities and multi-unit dwellings. An indoor air quality guideline for public transportation was formulated and has been enforced since March 2014. A manual has also been developed and distributed since 2007 for small facilities that are not subject to legal controls to encourage the facility managers themselves to manage indoor air quality.

Since 2008, indoor radon has been investigated in schools, government offices, public-use facilities, and homes nationwide, and the results will be used to create a national radon map. A free radon diagnosis and consultation service has been provided since 2012 to underground and ground floor residences, which are vulnerable to radon exposure.

Factory noise, traffic noise, and factory-generated vibration are managed by the Noise and Vibration Control



An expert visits a family in multi-unit dwelling and provides diagnosis and consultation for noise between floors.

Act. The Airport Noise Prevention and Area Assistance Act was separately enacted (Ministry of Land, Infrastructure and Transport) for aircraft noise in 2010. Recently there has been a rapid increase in civil complaints regarding everyday noise, and in particular there have been frequent incidents of noise between floors in multi-unit dwellings (apartments), resulting in conflicts between neighbors and creating a social problem. Accordingly, the Ministry of Environment jointly enacted the “Control Standards on Noise between Floors in Multi-unit Dwellings” with the Ministry of Land, Infrastructure and Transport. In 2012, a professional agency was also established to provide consultation and mediation regarding noise between floors.

In terms of light pollution, the “Act on the Prevention of Light Pollution by Artificial Lighting” was enforced as of February 2013, requiring any lighting equipment installed in a lighting environment control area to comply with permissible light emission levels. Installation and management standards for public lighting, advertisement lighting, and decorative lighting are also being prepared.

## Asbestos Safety

Asbestos, when inhaled into the human body, is known to cause diseases such as malignant mesothelioma and lung cancer after an incubation period of 10-40 years. It was intensively used in Korea in the 1970s to 1990s, mainly for construction materials (82%). The Korean government announced 2007 as the first year of asbestos safety management, and several associated government ministries have been implementing multifaceted policies.

Asbestos use in Korea was wholly prohibited as of 2009,

and as a result, asbestos safety management became particularly important in terms of environmental health rather than industrial health. The Ministry of Environment is focusing on developing and implementing asbestos control policies in the environmental health sector such as the safe management and demolition of buildings in which asbestos has been used, appropriate treatment of waste asbestos, managing and restoring asbestos mines and areas with naturally occurring asbestos, and preparing a relief system for people whose health has been negatively affected by asbestos.

The Asbestos Injury Relief Act was enacted in 2011 and a relief system was implemented for people affected by asbestos injury. The Asbestos Safety Management Act aims to manage the entire asbestos life cycle and was enforced as of April 2012. Accordingly, an asbestos survey must be carried out in schools, public-use facilities, medical institutions, children’s facilities, and other buildings. Buildings in which large amounts of asbestos have been used must prepare a building asbestos map and designate an asbestos building safety manager. If it is deemed that health risks caused by asbestos are of concern, orders may be given to dismantle or remove the asbestos from the building.

Slate is a construction material that typically has a high asbestos content (10-15%). It was widely used in Korea around the 1970s, especially in rural areas. The deterioration of such a large number of asbestos slate roofs is raising concern over damage to residents’ health, but it was highly likely that their removal would be delayed or handled inadequately in rural areas due to cost burdens. To address this, the government worked together with associated government ministries to formulate the Comprehensive Plan on Slate Control in 2010 and is working towards the timely removal of slate roofs by providing budget support.



▲ Before slate removal



▲ After roof renovation

Korean government provides financial support for timely removal of slate roofs containing asbestos.

## Key Projects of the

# Climate and Air Quality Policy Office

### Seoul Metropolitan Air Pollutant Emission-Cap Management System

The Seoul Metropolitan air pollutant emission-cap management system has been implemented since 2008 as part of measures to control metropolitan air quality. It allocates yearly emission allowances for nitrogen oxides (NO<sub>x</sub>) and sulfur oxides (SO<sub>x</sub>) to large establishments, requiring them to keep their emissions within the allowances and allowing them to trade any surplus allocations. It began with 117 large establishments(Class 1<sup>2)</sup>) in January 2008, and 295 establishments are participating in emission-cap management as of the end of 2013.

Allocations in the first year of implementation in 2008 were higher than emissions by 2.3 and 2.1 times for NO<sub>x</sub> and SO<sub>x</sub>, respectively, casting doubt on the effectiveness of the emission-cap management system. However, allocations have since been continuously reduced, and in 2013, both NO<sub>x</sub> and SO<sub>x</sub> allocations are around 1.2 times the emissions. Future allocations will be assigned at actual emission levels to ensure effective operation. Emissions trading was only 1.4% for NO<sub>x</sub> and 0.5% for SO<sub>x</sub> in the first year of implementation in 2008, but these have increased to 6% and 23%, respectively, at unit prices of 285,000 won per ton of NO<sub>x</sub> and 180,000 won per ton of SO<sub>x</sub> as of 2013. Demand for emissions trading is expected to increase in the future as allocations approach actual emissions.

### Air Pollutant Tele-Monitoring System (TMS)

A smokestack tele-monitoring system (TMS) called CleanSYS is being used to constantly monitor the air pollutants emitted by major industrial emitters. Automatic sensors installed in smokestacks continuously measure seven types of air pollutants (dust, SO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>, HCl, HF, and CO) to produce data every 5 and 30 minutes.

The SmokeStack TMS was first installed in the Ulsan-Onsan Industrial Complex in 1988, and as of the end of July 2014, it has been installed in 1,477 smokestacks of 569 major industrial emitters (Classes 1 to 3) nationwide. The construction of control centers to collect measurements began in 1998, and a total of four control centers are being operated in each region. The transmitted data is also used as administrative information for emission charges and administrative dispositions. Based on its stable operation over the

2) Class 1 air pollutant-emitting facilities are large establishments that generate no less than 80 tons of total air pollutants per year.

years, the SmokeStack TMS has been the foundation of the Seoul Metropolitan Air Pollutant Emission-Cap Management System from 2007.

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## Preparing for the Greenhouse Gas Emissions Trading Scheme

The emissions trading scheme is a system in which the government allocates emission allowances to greenhouse gas-emitting businesses, requiring them to keep their emissions within the allocated emission limit. Emissions of allocated businesses are annually assessed, and businesses may trade any surplus or shortage of emission permits with other businesses. Firms with a high reduction capacity (low marginal abatement costs) can achieve greater reductions and sell surplus emission allowances on the emission market, and those with a low reduction capacity (high marginal abatement costs) can cut costs by purchasing emission permits instead of directly reducing emissions.

Korea is actively participating in international efforts to relieve climate change and is endeavoring to fulfill the national greenhouse gas reduction goals set in 2009. As part of such efforts, Korea will implement the greenhouse gas

emissions trading scheme starting in 2015. An associated law was enacted in 2012 and a national emission allocation plan, associated guidelines, and other relevant measures were prepared by September 2014. The relevant infrastructure was established by designating an emissions permit exchange and building a trading system. Allocations to each business will be completed and a mock exchange among target businesses will be held in 2014.

Allocation will be 100% free during the early stage of implementation from 2015 to 2017. The proportion of auctioned allocation will be gradually increased to 3% from 2018 to 2020, and to at least 10% in 2021 to reduce the industrial burden in the early stages of implementation and ensure the soft landing of the scheme. An establishment that has been allocated emission allowances is required to carry out emission and reduction activities during the period concerned, measure its emissions, and report it to the government after verification by an external agency. The government evaluates the appropriateness and certifies the emissions.

In addition, the Greenhouse Gas Inventory and Research Center of Korea (GIR) was established in 2010 to ensure the systematic management of greenhouse gas emissions information. It is in charge of setting greenhouse gas reduction goals for each sector and industry and managing statistical data.



The tele-monitoring systems (TMS) called CleanSYS are installed on smokestacks for constant monitoring of air pollutants.

## Electric Vehicles

Korea is endeavoring to promote the technological development and distribution of electric vehicles, plug-in hybrid electric vehicles (PHEV), hybrid vehicles (HEV), fuel cell electric vehicles (FCEV), and other eco-friendly cars that have outstanding fuel efficiency and satisfy low-pollution requirements. This matter is covered by the “Green Car Development Strategies and Projects” announced by the Presidential Committee on Green Growth in December 2010.

The groundwork was established to distribute electric vehicles by setting funding criteria for electric vehicle and charging facility based on the results of an electric vehicle verification project in 2011 and expert advice. National agencies, local governments, and public institutions, upon purchasing an electric vehicle, are provided with a subsidy to partially cover the price difference compared to an equivalent standard vehicle, and assistance is being provided to build a charging infrastructure.

In addition, 10 cities, including Seoul and Jeju, were selected as leading electric vehicle (EV) cities. A charging infrastructure network will be established around these cities, which will be nurtured as hubs for full-scale electric vehicle distribution. Private sector distribution was expanded throughout the country from 2014 to stimulate the distribution of electric vehicles. To ensure successful private

sector distribution, an electric vehicle charging infrastructure information system was built to provide drivers with real-time information on charging stations, and tax benefits of up to 4.2 million won are offered for acquisition tax and special consumption tax. A total of 1,871 electric vehicles and 1,971 charging stations had been distributed by 2013. Public parking discounts, expansion of dedicated parking lots, and other various incentives will also be increased.

Mid- to long-term measures are being implemented to expand the charging infrastructure to account for the fact that Korea has a high number of apartments and other multi-unit dwellings, which makes it difficult to establish individual charging facilities. First, the charging infrastructure will be expanded in the public sector. Support measures will be prepared regarding the installation of private charging stations to encourage the charging infrastructure to expand into major supermarkets, public parking lots, and expressway service areas.



Korean government endeavors to strengthen the infrastructure for electric vehicles, including the charging station network.

## Key Projects of the

# Water Environment Policy Bureau

## Total Water Pollution Load Management System(TPLMS)

The Total Water Pollution Load Management System(TPLMS) determines water quality goals for each river basin based on scientific evidence, calculates total pollutant emissions to reach the water quality goals, and allocates emissions to each local government in the river basin to keep the total volume of emissions from each section under the permissible level.

The system was first introduced in 1998 to manage Paldangho and other Hangang water supply sources and was legislated through the Act on Water Management and Resident Support in the Four Major River Basins. The three major river basins of Nakdonggang, Geumgang, and Yeongsangang-Seomjingang are required to implement load management in the event that they do not reach the water quality goals. Accordingly, load management was implemented in Busan and Daegu Metropolitan City for the Nakdonggang River basin in August 2004. In the early stages of implementation for the Hangang River basin, the local government was able to arbitrarily determine whether or not to implement load management, and consequently, seven local governments at the headwaters of Paldangho Lake carried out load management until 2012. An amendment in 2010 mandated load management in the Hangang River basin, and accordingly, the mandate was first implemented in Seoul, Incheon, and Gyeonggi from June 2013 and will be gradually extended to other regions. The load management system is also being extended to areas that are not part of the four major river basins but are affected by severe water pollution. As of March 2014, TPLMS has been implemented by a total of 114 local governments, including the four major river basins. Only BOD was targeted by load management until 2010, but from stage 2 (2011-2015), T-P was also added, except in some regions.

Local governments implementing the load management system must formulate a “pollution load management master plan” that includes the allocated pollution load and reduction plans to satisfy the



Photo: Before and after ecological stream restoration of Musimcheon Stream, Cheongju-si

allocation. To ensure the effectiveness of the plan, a yearly fulfillment evaluation regarding plan progress is carried out. According to the implementation evaluation results for stage 1 (2004-2010) of TPLMS implemented by a total of 66 local governments, water quality goals and annual load allocations specified in the load plan were observed even though implementation was in its early stages. This indicates that the TPLMS is being stably established.

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## Ecological Stream Restoration Project

Ecological stream restoration refers to activities to remove artificial ecological disturbance factors from in and around rivers to ensure close-to-nature restoration and maintain healthy ecosystems. It involves restoring the low water channels and other physical foundation of rivers to their natural form to ensure that rivers maintain their self-purifying ability for water quality improvement and their ecological function as habitats while also acting as water-friendly features for the public to enjoy.

The government has injected 1.6153 trillion won (in 1,510 projects) since when the ecological stream restoration project first began in 1987 until 2013 to restore 1,034km of polluted or damaged rivers. It is currently aiming to first restore 1,667km of rivers in urgent need of restoration between 2011 and 2017 according to a comprehensive mid- to long-term plan on the ecological stream restoration project formulated in 2010.

The key projects for ecological stream restoration consist of improving water quality, restoring urban rivers, and restoring aquatic life. Water quality will be addressed through water quality improvement projects such as dredging contaminated sediments, constructing wetlands, and installing riverbed filtration facilities; the project to restore aquatic ecosystem includes creation of riffles and polls, construction of biotopes, and restoration of meanders; the ecology observation post and the facility for experiential learning will be built, too. Urban rivers will be restored by removing cover structures and restoring disappeared waterways, building ecological waterfront and providing dry and damaged rivers with the water necessary for ecological maintenance. Aquatic life will be restored by selecting and restoring flagships species in each river.

Ecological stream restoration has not only resulted in



The ecological stream restoration project has restored 1,034km of polluted or damaged rivers.

improved water quality and aquatic ecosystem restoration, but also in a variety of benefits for the public, including provision of ecological spaces, job creation and other economic effects, and adaptation to climate change by decreasing city temperatures. A survey of 53 ecological streams restored between 2007 and 2010 indicated that BOD was reduced by 64.8% (7.1mg/L→ 2.5mg/L) on average, and increased biodiversity was also confirmed. Cheonggyecheon in Seoul showed a temperature reduction of 0.3 to 3.3°C. There have been confirmed cases of significant increases in the number of fish species after river restoration, suggesting the improved health of the aquatic ecosystem.

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## River Basin Management for Co-prosperity of Upstream and Downstream Reaches

Water management policies were previously based on administrative districts and focused on restricting behaviors in upstream regions focused on emission regulation and end-of-pipe treatment and through the designation of water source protection areas. This meant that upstream residents were subject to regulations for water source protection and were therefore disadvantaged while downstream regions enjoyed the resulting benefits, creating conflicts between upstream and downstream reaches. After recognizing the limitations of this approach, water management policies since the 2000s have gone beyond administrative districts and instead focus on river basins to address conflicts between upstream and downstream reaches and between urban and agricultural regions. The key measures for

river basin management include the water pollutant load management system, riparian zone designation, land purchase, establishment of a river management fund from water use charges, and operation of the River Management Committee.

Water use charges and river management funds are used as effective financial measures for river basin management, mediating interests between upstream and downstream reaches to prevent conflicts and preparing financial resources to improve water quality in water source areas. Water use charges are collected from downstream users who are supplied with tap water produced from upstream water. These charges are placed into river management funds to carry out water quality improvement projects for water source areas in the upstream reaches, as well as to support the upstream residents who are negatively affected by regulations to protect water sources.

Water use charges are imposed on water users according to the “user pays principle.” In other words, the charges are imposed on end users who are supplied with source water or purified water collected from the public waters of the four major rivers. The charges are proportionate to the amount of water used and included in the water bill. Water use charges take on the properties of a user charge because they are non-tax charges imposed for the purpose of carrying out the specific administrative task of water quality improvement in water sources only for the beneficiary groups that use the water.

These water use charges are collected to form the river management funds. First, the Hangang River Management Fund was established in August 1999, followed by the Three Major Rivers Management Fund in July 2002. Water quality improvement projects and resident support projects were carried out using the river funds starting in 2003. The funds are used for such purposes as: (1) Environmental infrastructure installation, operation, and other water quality improvements and water source protection projects carried out by local governments in the upstream areas of water sources; (2) Resident support projects in water source management areas that are subject to regulations; and (3) Purchase of land in riparian zones that have a significant influence on the water quality of water sources. Resident support projects include income generation, welfare enhancement, education, scholarship assistance, and housing improvement.

The River Management Committee is a major decision-

making body for managing the four major river basins. It deliberates on and coordinates matters such as operation of the river management fund for the rivers concerned, water use charges, pollutant reduction plans and land purchases to improve water quality, resident support project plans, and assistance for private water quality monitoring. The committee is chaired by the Vice Minister of Environment, and its members consist of the deputy mayors or deputy governors of the wide-area local governments (si or do) concerned, the CEO of K-water and heads of other associated institutions, and high-level public officials of associated government ministries. In other words, the wide-area local governments participate in the River Management Committee to represent local residents, who are stakeholders in the river basins, and ensure resident opinions are reflected in decision making.



## Key Projects of the

# Water Supply and Sewerage Policy Office

## Promoting the Drinking of Tap Water

Korea's tap water drinking rate is lower than that of major leading countries, and this appears to be mainly due to vague anxiety and other psychological factors. In the United States and the United Kingdom, respectively, 82% and 90% of households drink the tap water, and 56% and 70% drink directly from the tap (as of 2002). In contrast, only 53.1% of Korean households drink the tap water, and a mere 3.7% directly from the tap. Accordingly, many households are relying on water purifiers or bottled mineral water for drinking, and this is generating unnecessary additional costs.

The Ministry of Environment is endeavoring to enhance the tap water drinking rate by addressing the vague anxiety of people through tap water quality tests and promotional activities. Since March 2014, the "Household Tap Water Checking Service" has been in operation in seven special and metropolitan cities nationwide, carrying out water quality tests on the tap water at home upon request. The Ministry of Environment is also aiming to boost the credibility of water quality tests by integrating and standardizing previous water quality tests. "Tap Water Loving Villages" have been in operation since July 2013 and are expected to act as a central point to improve the reputation of tap water. The Tap Water Loving Villages will engage in tap water quality tests, drinking water treatment plant visits and education, and voluntary promotional activities led by civil groups and local residents with assistance from the Ministry of Environment. There were 10 Tap Water Loving Villages in 2013, and this has been increased to 50 locations in 2014.



Ministry of Environment endeavors to promote drinking of tap water, which appears to be suppressed mainly due to vague anxiety.

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## Prevention of Urban Flooding

Due to climate changes, the frequency of intensive rainfall events keeps on increasing. For example, some areas in downtown Seoul were flooded by localized heavy rainfalls in series (2010 and 2011).

The government prepared the “Comprehensive Plan on Sewage Maintenance against Urban Flooding” in May 2012 in order to improve the drainage capacity of public sewage system, which involves constructing facilities such as stormwater detention vaults or deep tunnel stormwater storage systems, implementing advanced design and operation techniques to drain stormwater and reforming institutions to prevent flooding.

The flood-prone areas will be designated as “Priority Area for Sewage Maintenance” and managed more thoroughly. After the system was introduced in February 2012, 21 sites were designated as “Priority Area for Sewage Maintenance” by the end of 2013. The number of the designated sites will be increased to 60 by 2017.

Sewage infrastructures such as stormwater pipelines, sewage detention facilities, stormwater pumping stations are also being expanded. As a pilot project, 232.7 billion KRW is invested at the 6 selected sites for upgrading the sewage infrastructures. The deep stormwater storage system is constructed at the sites where it is not sufficient to prevent urban flooding by expanding stormwater pipelines and detention facilities. A technical support team is operated

by the Korea Environment Corporation to relieve the administrative burden and to shorten the construction period.

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## The Safe Groundwater Service

As of 2012, the national waterworks distribution rate, excluding small waterworks and small water supply systems, equates to 95.1%, but is only 62.2% in agricultural and fishing villages. Groundwater sources such as wells that have been used from the past are often still in operation for drinking without water quality tests, in the most vulnerable areas of islands, coastal regions, and agricultural villages without waterworks. In some agricultural regions, 30 to 40% of samples exceeded drinking water quality limits in terms of total coliforms and nitrate nitrogen. However, the safety management of groundwater for drinking was limited, as water quality tests have a long cycle of two to three years and there are many cases in which the water is used without being reported.

Accordingly, the Ministry of Environment is endeavoring to expand waterworks facilities in agricultural and fishing villages while also striving to supply vulnerable regions with safe drinking water from groundwater through the “Safe Groundwater Service” project, which involves water



As the frequency of heavy rainfalls is increasing in regards to the climate change, Korean government endeavors to maintain and upgrade the sewage system to prevent urban flooding.

quality tests of groundwater for drinking and safe supply of groundwater.

To achieve this, the Ministry of Environment has conducted a pilot project on free water quality tests for the safe use of groundwater from 2012. A diagnostic kit is used to carry out a water quality test regarding nitrate nitrogen and total coliforms, the limits of which are most frequently exceeded in agricultural regions. If the results of the first test using the diagnostic kit indicate that the limits have been exceeded, a second water quality test is carried out free of charge by the waterworks office of the local government on 13 items, and residents are notified of the results. If the results of the first test confirm severe contamination, this is addressed by an expert on-site survey, investigation of nearby pollution sources, and internal examination of wells using CCTV, and the technical support necessary for groundwater quality control is provided.

By 2013, groundwater quality tests were conducted in a total of 11,861 locations in eight *si* and *gun* areas and safety measures were taken or drinking water wells were supplied according to the results. In 2014, water quality tests will be conducted in 25,000, or 10% of the drinking water wells in selected areas where tap water is not available, in addition to causal investigations of contamination, investigations of unreported wells, and community education. Unreported wells and wells that exceed the limits as identified in the investigation will be reported to the local government to ensure that they can be addressed by legalization (tightened controls through reporting), facility improvements, and supply of alternative water sources. The “Drinking Water Safety Management Plan for Vulnerable Regions” will also be formulated to ensure that the project is carried out in a systematic manner.



Photo: the Safe Groundwater Service – Briefing to the local residents (above) and water quality test (below)

## Key Projects of the

# Nature Conservation Bureau

## The Protected Areas

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. As of the end of 2013, the Ministry of Environment has designated nine ecological and scenery conservation areas (241.615 km<sup>2</sup>), si and do areas have designated 23 ecological and scenery conservation areas (42.53 km<sup>2</sup>), and there are 206 (11.705 km<sup>2</sup>) specified islands.

Nature parks are designated to protect natural ecosystems, beautiful natural landscapes, and cultural heritage sites and thereby 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 designated a total of 81 nature parks (total area of 8,144 km<sup>2</sup>, 8.1% of the national land). 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 underway after investigating the damaged areas, and areas of serious damage have been designated “special protection zones” to facilitate the recovery of nature. As of the end of 2013, 139 special protection zones (274 km<sup>2</sup>) have been designated inside national parks. 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. The islands



The Upo Wetland (photo) is one of the areas designated as the Wetland of International Importance under the Ramsar Convention.

of Jejudo and Ulleungdo/Dokdo became the first certified national geoparks in December 2012, and as of the end of 2013, three locations (total area of 112 km<sup>2</sup>) have been certified.

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

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## Sustainable Use of Natural Resources

### · Stimulating Eco-tourism

There has been a recent growth in demand for leisure activities in 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 policy efforts to stimulate eco-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 will be nurtured in regional units by providing financial and other forms of assistance to the designated zones.

In 2014, four selected regions with outstanding eco-tourism potential (Yeongsando Myeongpum Village, Jeju

Seonheul 1-ri, Inje Eco-village, and Gochang Yonggye Village) are being intensively nurtured to maximize the effectiveness of policies to stimulate eco-tourism. These efforts will allow the early achievement of eco-tourism success, which will then spread throughout the country.

### · 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 “Toegye<sup>3)</sup> 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.

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



Ministry of Environment is nurturing eco-tourism in selected regions with outstanding potential, including the Inje Eco-Village(photo).

## Biodiversity Conservation and Use

The Nagoya Protocol, an international treaty that recognizes state sovereignty over biological resources, was adopted at the 10th Conference of Parties to the Convention on Biological Diversity in October 2010 and took effect as of October 2014. Korea is preparing for a new international system on “access to genetic resources and benefit-sharing” (ABS) that will be introduced as a result.

To conserve biological resources, the Korean 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 ministries.

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.

The Ministry of Environment is also 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 ministries. It will be linked to genomes and other derived information to boost industrial utilization.

The National Institute of Biological Resources and National Institute of Ecology were founded as professional institutions to secure and manage biological resources. The National Institute of Biological Resources opened in 2007 as a national organization to systematically collect, manage, and study biological specimens of Korean endemic species and native organisms. The National Institute of Ecology opened in December 2013 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.



The National Institute of Ecology (photo), which opened in December 2013, aims to study ecosystem and climate change, secure and conserve biological species, and provide public education.

## Key Projects of the

# Resource Recirculation Bureau

## Extended Producer Responsibility

Extended Producer Responsibility (EPR) was introduced to promote the reduction, reuse and recycling of waste by encouraging manufacturers to consider the environment through the whole process of product design, manufacturing, distribution, consumption and disposal.

Prior to introducing EPR, the Wastes Deposit Program had been implemented since 1992 as a way to strengthen the role of manufacturers regarding recycling. The Wastes Deposit Program required manufacturers to make a deposit in proportion to their production output and retrieve it in the amount in proportion to their records in recycling. It was designed to encourage businesses to recycle by offering financial incentives, but the system faced criticism because companies simply paid the charge and did not make actual recycling efforts.

Under these circumstances, the Waste Deposit Program was abolished and EPR was introduced to ensure the practical efforts of businesses. After a pilot stage that began with seven items, including electronic products, between 2000 and 2002 based on a voluntary agreement between the government and industry, the full-fledged Extended Producer Responsibility system was introduced in 2003. The total amount of recycling has grown from 938,000 tons in 2002 to 1,519,000 tons in 2012, an increase of about 62%, which implies that EPR contributed to quantitative growth of the recycling sector.

At the time of the initial operation of EPR in 2003, the target items were limited to products and packaging containers such as paper packs, glass bottles, metal cans, synthetic resin packaging, batteries, tires, lubricants and electronic products, but the list of applicable items has been consistently increased.

If manufacturers subject to mandatory recycling fail to meet their targets, they should pay fees. The fees are assessed at less than 130% of the actual recycling cost per item, and vary depending on the recycling performance. If manufacturers exceed their targets, the amounts that surpassed the targets can be used for 2 years.

Since 2008, the long-term recycling targets for 5 years have been announced to help manufacturers establish recycling plans from a long-term perspective.

In addition, electric and electronic products such as TVs, refrigerators, washing machines, computers and mobile phones are designated as items subject to mandatory recovery through retail stores. In other words, the retailers of electronic and electrical products must collect the packaging of new products and the waste products of the same kind free of charge upon the purchaser's request.

## Volume-based Food Waste Fee System

Recently, the Ministry of Environment has been shifting its policy direction to restrict the generation of food waste and has implemented a volume-based food waste fee system that imposes fees in proportion to the amount of food waste generated. This program expanded targets to include multi-unit dwellings in 2013, and now is nationwide

The Volume-based Waste Fee System is a policy, in accordance with the polluter pays principle, to fundamentally reduce waste generation and facilitate the separation and discharge of recyclable materials by imposing waste fees in proportion to the amount of waste generation except recycled ones. It has been enforced in Korea since 1995 and is considered to have significantly decreased the generation of residential waste.

The previous Volume-based Waste Fee System was limited to residential waste and did not charge fees for separated recyclables and food wastes in proportion to the amount. However, as the amount of food waste generated has been increasing since the direct landfill of food waste was banned in 2005, people's living standards have improved, and the number of one- or two-person households now accounts for 48% of the total households, there is an increasing need to reduce the amount of food waste. In 2012, the daily generation of food waste was about 13,209 tons, which makes up about 27% of the total amount of residential waste (48,990 tons/day).

Subsequently, the relevant ministries jointly adopted the "Comprehensive Measures for Food Waste Reduction"

in 2010 and are promoting various measures fit for the characteristics of food waste by the stage and source of generation. As part of the implementation measures, the Volume-based Food Waste Fee System was implemented.

The Volume-based Food Waste Fee System can be implemented by choosing one of three billing systems: a designated standard bag system, a chip or sticker system, or an RFID system. The standard bag system is one in which a discharger buys a standard plastic bag to dispose of food waste. The fees are collected in proportion to the amount of food waste through the cost of purchasing the bags. The chip or sticker system requires a discharger to buy a payment chip or sticker and attach it to a collection container to be picked up. The RFID system allows identification of the discharger through an electronic tag, and fees are charged according to the waste volume. Since the RFID system is the most suitable option for the objective of the volume-based fee system, the Ministry of Environment recommends this system.

As of June 2014, 142 out of 145 local governments are participating in the Volume-based Food Waste Fee System. In particular, the system was improved by correcting inconvenient details that appeared in a pilot project using an RFID system between 2010 and 2011. Based on these results, the RFID system has been expanding in earnest since 2012.



Payment chips(left), RFIDs(center), or standard bags(right) are used to charge the volume-based fee for food waste.

## Free Collection for Large-scale Household Appliances Waste

The Free Collection Service for Large-scale Household Appliances Waste is a system in which a person can reserve to dispose of a bulky home appliance such as a TV, refrigerator, washing machine, etc., using the Internet or via a call center, and then a task force team visits the household to collect the item free of charge.

In the previous system, residents were required to purchase a disposal sticker (between 3,000 won and 15,000 won) from the municipal government, attach the sticker to the waste home appliance and put it outside to be collected. Moreover, as the collected items failed to be delivered to recycling centers intactly, and some core parts containing rare metals were illegally collected to be sold or exported, such problems caused severe environmental pollution and resource outflows. A survey showed that less than 5% of the collected waste home appliances were transferred to recycling centers in their original state with the previous system.

Under such circumstances, the Ministry of Environment initiated a free pick-up service for waste home appliances in Seoul as a pilot project in June 2012, and five metropolitan cities and Gyeonggi Province participated in the program in May 2013. A total of 162,000 units of waste home appliances were collected through the program in 2013. Compared to the collection performance results in 2012 under the previous system, collections in 2013 increased significantly, 1.5 to six times by each local government. If the program succeeds, it is expected to greatly contribute to achieving the national recycling target for electrical and electronic products. In addition, as the intact recovery rate of appliances improved remarkably, from below 5% to over 95%, the program is expected to contribute to the circulation of rare metals. The ministry plans to gradually expand the free pick-up service for waste electrical and electronic products nationwide starting in 2014.



Free collection service for bulky home appliances, such as refrigerator, is expected to promote recycling and recovery of rare metals.

## Key Projects of the

# International Cooperation Office

## Bilateral and Multilateral Environmental Cooperation

### · Northeast Asia Region

The Tripartite Environment Ministers Meeting (TEMM), proposed by Korea, has been held annually since 1999 to come up with cooperative measures among Korea, China, and Japan to tackle the environmental issues of the Northeast Asia region including yellow dust, acid rain, air pollution, and hazardous wastes management. Korea has demanded that the three countries of the Northeast Asia region should deal with yellow dust as an important environmental cooperation task and take joint action. Accordingly, a joint research team was formed in 2007 and is engaging in working-level meetings and joint research.

Korea and China concluded the Korea-China Environmental Cooperation Agreement in October 1993, and 18 annual meetings of the Joint Committee of Korea-China Environmental Cooperation have been held since 1994. Bilateral environmental technology circuit meetings have been held since 2008 for environmental industrial exchanges, and on the occasion of the state visit of Chinese President Xi Jinping in 2014, the two countries agreed to conduct a cooperative project in the atmospheric environmental field.

Korea and Japan concluded the Korea-Japan Environmental Cooperation Agreement in June 1993, and meetings of the Joint Committee on Korea-Japan Environmental Cooperation have been held in turn annually since 1994.

In 2007, the Environment Ministers Meeting between Korea-Mongolia was held, and the two countries agreed to cooperate regarding yellow dust and natural protected areas in the Northeast Asia region. In 2012, the two countries reached an agreement on a cooperative project on water supply and sewerage and collaboration on international environmental education.

### · Southeast Asia Region

The ASEAN+3 Environment Ministers Meeting and the East Asia Summit Environment Ministers Meeting have been held routinely since 2002 and 2008, respectively. A variety of cooperative projects are being carried out based on these meetings, including the "Project for Restoring Destroyed Tropical Forests in South East Asia," the "CLMV<sup>4)</sup> Resource-Circulative Low-Carbon Green City Master Plan Project," and the "Korea-ASEAN Partnership for Coping with Climate Change."

4) Cambodia, Laos, Myanmar, & Vietnam



The Tripartite Environment Ministers Meetings among Korea, China, and Japan is being held annually. (Photo: TEMM-16 in Daegu, Korea (2014))

Korea signed environmental cooperation MOUs with Vietnam, Cambodia, and Indonesia and is working on the "Cambodia Environment Improvement Master Plan Establishment Project" and various other cooperative projects, public officials training programs, and dispatching of environmental consultants. Korea and Vietnam have been regularly holding the Korea-Vietnam Environment Ministers Meeting since 2000. Korea and Indonesia have also agreed to continue their environment ministerial meetings following the first Korea-Indonesia Environment Ministers Meeting held in 2013.

#### · Middle East and Central Asia regions

Korea signed an environmental cooperation MOU with Iran in March 2005, followed by ones with Azerbaijan, Kuwait, Israel, United Arab Emirates, and Kazakhstan. In 2011, Korea hosted the "Cooperation Seminar between Seoul Initiative on Green Growth and Astana Green Bridge Initiative" with Kazakhstan and the two countries agreed to cooperate on matters such as green economy strategies through a bilateral environment ministers meeting in December 2013.

#### · Africa region

the Korea-Africa Environmental Cooperation Forum has been held each year since 2010. Korea has signed environmental cooperation MOUs with 10 African nations, based on which bilateral environment ministers meetings are held and assistance programs are being conducted in the waste and water supply and sewerage fields.

#### · Europe and the Americas

Korea has signed environmental cooperation MOUs with countries such as the United States, Canada, the United Kingdom, France, Denmark, Netherlands, Germany, Norway, Hungary, and Russia, based on which joint seminars, expert exchanges, and joint cooperation projects are being conducted. Korea has also signed environmental cooperation MOUs with Ecuador, Peru, Chile, Costa Rica, Colombia, Mexico, and other Latin American countries and is engaging in environmental cooperation with a focus on biodiversity, water quality, and wastes.

## Response to International Environmental Conventions

The Korean government is contributing to joint effort to resolve environmental issues by actively participating in a variety of international environmental conventions, including the United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity, CITES, Ramsar Convention, and the Antarctic Treaty System.

#### · UNFCCC

With respect to the UNFCCC, as an advanced developing country that has achieved rapid economic development, Korea is making effort to serve as a bridge to rebuild trust between developing and developed countries and to contribute constructively towards creating an effective new climate regime. Also, as the host country of the Green Climate Fund launched in Songdo, Incheon, which will become an important channel for international climate funding, Korea aims to play a supporting role to ensure that resources and implementation measures for coping with climate change are effectively delivered to recipient developing countries.

#### · Biodiversity

After the Convention on Biological Diversity was adopted in Rio in 1992, Korea joined the Convention in October 1994, and the 12th Conference of the Parties was held in Pyeongchang in October 2014. The Korean government also passed the Living Modified Organisms (LMOs) Act in 2001 to fulfill the Cartagena Protocol on Biodiversity adopted in 2000 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. Korea is in the process of enacting laws for the domestic implementation of the Nagoya Protocol with regard to access to genetic resources and benefit sharing adopted in 2010. Korea joined the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in July 1993. Ministry of Environment is endeavoring to restrict the illegal trade of endangered wildlife by enacting relevant

laws and cooperating with relevant authorities. Since Korea joined the Ramsar Convention in March 1997, 18 wetlands, including Upo Wetland, have been listed as Ramsar Wetlands. In October 2008, Changwon hosted the 10th COP to Ramsar Convention, during which the Changwon Declaration on Human Well-being and Wetlands was adopted. In 2009, Korea successfully bid for the Ramsar Regional Center - East Asia in Changwon, Gyeongsangnam-do Province, which has a key role in protecting wetlands in the East Asian region. In establishing the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), Korea hosted the third intergovernmental and multi-stakeholder meeting in Busan in 2010, where the delegates reached an agreement on the establishment of IPBES and adopted the “Busan Outcome” on the Platform’s main functions and operating principles. In March 2014, the National Institute of Ecology successfully bid to host the IPBES Technical Support Unit (TSU), which it is currently in operation.

· The Antarctic Treaty System

Korea joined the Antarctic Treaty System in 1986 and achieved consultative party status in October 1989 after being recognized for its practical activities, including the establishment of a scientific research station called King Sejong in 1988. In 2009, a site near King Sejong Station was designated as an Antarctic Specially Protected Area (ASP), where changes in the penguin population and the surrounding ecosystem are monitored.

## Hosting the 12<sup>th</sup> Conference of the Parties to the Convention on Biological Diversity

The 12<sup>th</sup> Conference of the Parties (COP12) to the Convention on Biological Diversity was held in Pyeongchang, Korea from October 6 to 17, 2014. Korea did its best to prepare for the event, and has contributed towards the advancement of the Convention on Biological Diversity by leading a variety of discussions at COP12.

The Conference saw the launch of the 4<sup>th</sup> Global Biodiversity Outlook, involved a mid-term review of the Aichi Target for achieving the purpose of the Convention on Biological Diversity, and the Pyeongchang Roadmap was adopted to support the future fulfillment of the Aichi Target. Korea also successfully proposed the Bio-Bridge Initiative as a cooperative measure in the field of science and technology based on the Pyeongchang Roadmap. This initiative involves building a network of organizations specializing in biodiversity, analyzing technology demand in developing nations, then linking the specialist organizations to the developing country demand, and otherwise supporting the achievement of the Aichi Target. The High-Level Segment adopted the Gangwon Declaration on Biodiversity for Sustainable Development, which conveys such messages as biodiversity for sustainable development and biodiversity and peace.

The Conference created an opportunity to carry out public promotions through various workshops, exhibitions, and other side events in conjunction with NGOs, with an aim to build a domestic and international cooperative network on biodiversity and to work towards boosting public awareness.

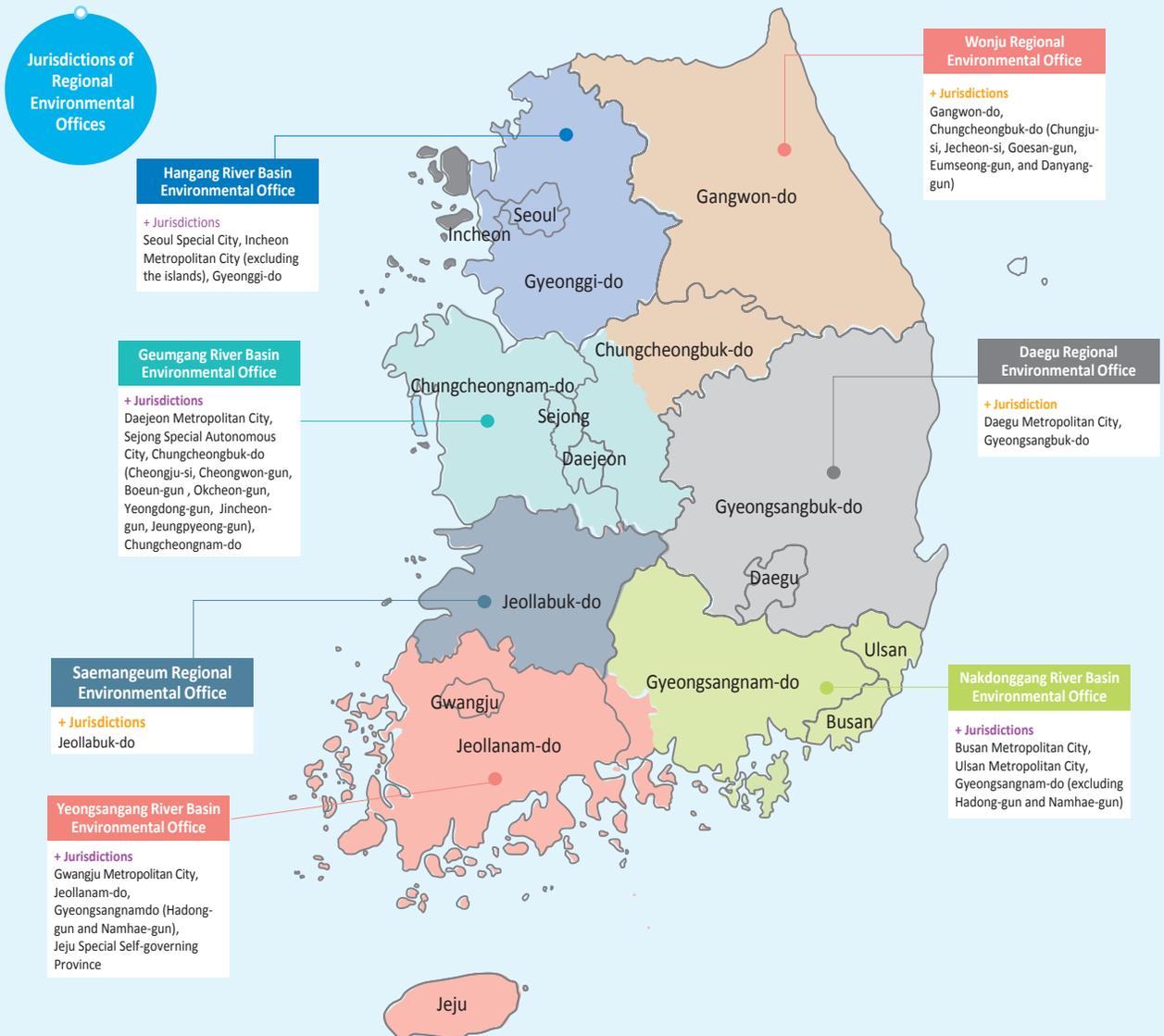


Korea hosted the COP-12 to the Convention on Biological Diversity. (Photo: COP-12 in Pyeongchang, Korea (2014))

# Regional Environmental Offices

The Ministry of Environment has four River Basin Environmental Offices at Hangang, Nakdonggang, Geumgang, and Yeongsansang and three Regional Environmental Offices in Wonju, Daegu, and Saemangeum as specialized local administrative agencies to manage the watersheds of the four major rivers, and the Metropolitan Air Quality Management Office as an exclusive organization in charge of improving the metropolitan air quality.

Regional Environmental Offices handle such affairs as: (1) Formulation and implementation of environmental management plans in each area of influence; (2) Consultations on the Prior Environmental Review System (PERS) and Environmental Impact Assessment (EIA); (3) Conservation of natural ecosystems and other natural environments; (4) Environmental pollution source investigations and environmental pollution measurements and analyses; (5) Nurturing of and support for environment-related businesses; (6) Management of businesses that discharge or handle specified wastes; and (7) Guidance and supervision regarding environmental infrastructure operation.



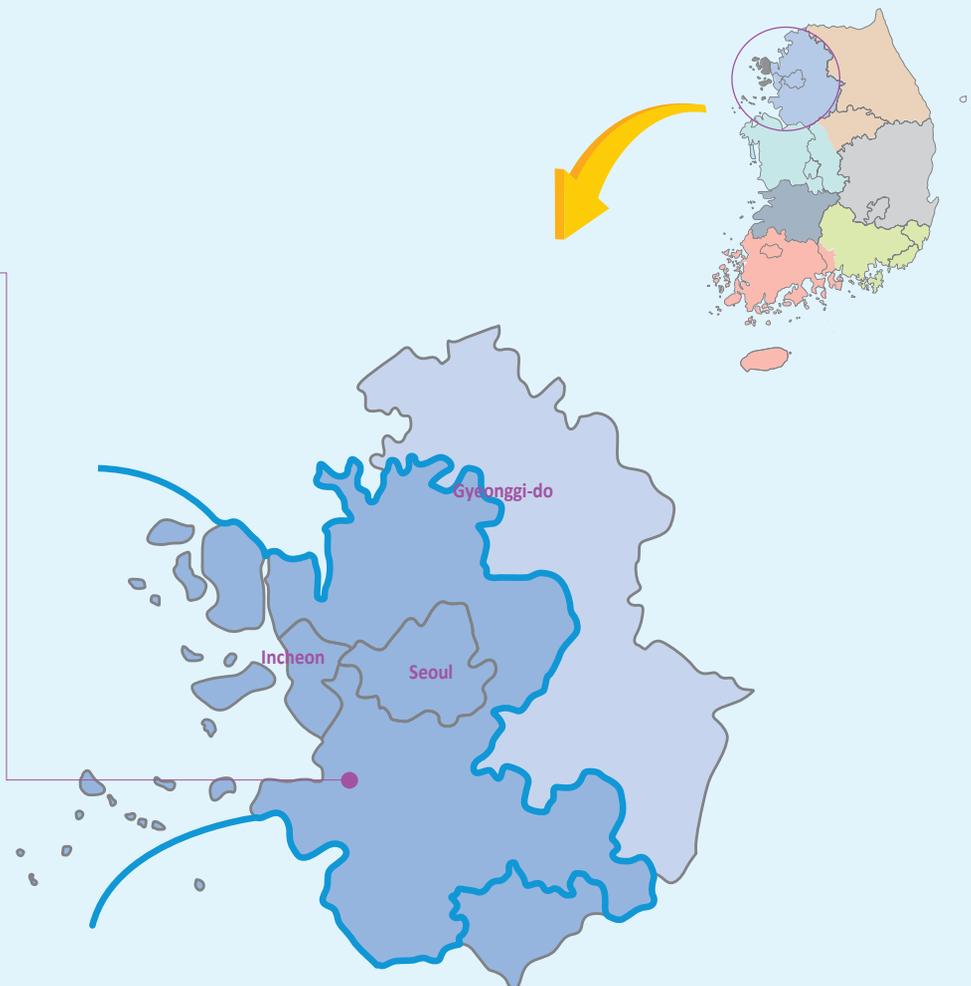
The four River Basin Environmental Offices are responsible for operating the watershed management committee, managing the watershed management fund, approval of local government water quality improvement projects, approval and evaluation of Total Water Pollutant Load Management System (TPLMS) implementation plans, imposing and collecting water use charges regarding dedicated water supply business operators, and other aspects of river basin management, in addition to duties prescribed under the special act on watersheds. The Metropolitan Air Quality Management Office, in accordance with the Special Act on the Improvement of Air Quality in Seoul Metropolitan Area, is in charge of preventive and wide-area metropolitan air quality management such as emission-cap management in business establishments, reduction of vehicle gas emissions, and assistance for air quality improvement in small and medium-sized establishments.

**Jurisdictions of Metropolitan Air Quality Management Office**

**Metropolitan Air Quality Management Office**

**+ Jurisdictions**

Seoul Special City, Incheon Metropolitan City (excluding Ongjin-gun after except for Yeongheung-myeon), Gyeonggi-do (Gimpo-si, Goyang-si, Uijeongbu-si, Namyangju-si, Guri-si, Hanam-si, Seongnam-si, Uiwang-si, Gunpo-si, Gwacheon-si, Anyang-si, Gwangmyeong-si, Siheung-si, Bucheon-si, Ansan-si, Suwon-si, Yongin-si, Hwaseong-si, Osan-si, Pyeongtaek-si, Paju-si, Dongducheon-si, Yangju-si, Icheon-si)



# Affiliated Organizations

External Agency	Affiliates	Subsidiaries
Korea Meteorological Administration	National Environmental Dispute Resolution Commission	Korea Environmental Corporation
	National Institute of Environmental Research	Korea National Park Service
	National Institute of Biological Resources	Sudokwon Landfill Site Management Corp.
	National Institute of Environmental Human Resources Development	Korea Environmental Industry & Technology Institute
	Greenhouse Gas Inventory & Research Center of Korea	National Institute of Ecology
	National Institute of Chemical Safety	

## Korea Meteorological Administration (KMA)

<http://web.kma.go.kr/eng>

With the increasing importance of responsiveness to climate change and extreme weather, the Korea Meteorological Administration (KMA) was transferred from the Ministry of Science and Technology in 2008 to become an external agency of the Ministry of Environment. It is exclusively in charge of producing and reporting on meteorological information, monitoring and predicting climate change, and observing, monitoring, and reporting on earthquakes and tsunamis. In February 2014, the KMA and National Institute of Environmental Research of the Ministry of Environment jointly launched the Environmental-Meteorological Forecast Center. It aims to provide accurate and reliable forecasts by combining the fine dust, ultrafine dust, ozone, and other air pollution forecasts previously managed by the National Institute of Environmental Research with the yellow dust forecast of the KMA.

## National Environmental Dispute Resolution Commission

Established in 1991, the National Environmental Dispute Resolution Commission is a quasi-judicial body that resolves disputes regarding health, property, and psychological damage caused by environmental pollution through an environmental dispute resolution system in a timely, low-cost manner via simple procedures. The Commission settles disputes caused by environmental damage equivalent to more than 100 million won, resolves disputes to which the state or a local government is a party, resolves disputes concerning two or more *si* or *do* jurisdictions, mediates authority, and resolves disputes that cannot be addressed by regional environmental dispute resolution committees in *si* or *do* areas and have been transferred to the Commission.

### National Institute of Environmental Research (NIER)

<http://www.nier.go.kr/eric/portal/eng>

The National Institute of Environmental Research (NIER) is mainly concerned with the testing and evaluation studies on environmental conservation and prevention of environmental pollution. It has been establishing its presence as a national research institute specializing in the environmental sector since separating from Korea National Institute of Health in July 1978. The NIER carries out research in the fields of environmental health, climate and air quality, water environment, environmental

### National Institute of Biological Resources (NIBR)

<http://www.nibr.go.kr/eng>

The National Institute of Biological Resources (NIBR) was founded in March 2007 as a research institute specializing in biological resources. It was established for the purposes of ensuring the efficient conservation and management of national biological resources, strengthening the foundation for nurturing the bio-industry, and organizing exhibitions and training on biological resources. It obtains specimens and genetic resources of the native and endemic species of the Korean Peninsula and useful biological resources from overseas, carries out research on biological resources and biodiversity, is building an information system (database) on national biological resources, and produces publications such as "The Flora and Fauna of Korea" and "Endemic Species of Korea." In addition to research space, it is equipped with the largest storage facility in the East, capable of accommodating more than 11 million biological specimens, as well as exhibition space with replicas of the native and endemic species and ecosystems of the Korean Peninsula.

### National Institute of Environmental Human Resources Development (NIEHRD)

<http://ehrd.me.go.kr/memberEng/EngMain.do>

The National Institute of Environmental Human Resources Development (NIEHRD) was founded in December 2006 as a training institution specializing in the

environmental field. It is in charge of training public officials and civilians in environmental area. It offers capacity building for Ministry of Environment officials as well as training for environmental specialists at industrial field, a cyber learning system, instructor training, and international environmental education.

### Greenhouse Gas Inventory & Research Center of Korea (GIR)

<http://www.gir.go.kr/eng>

The Greenhouse Gas Inventory & Research Center of Korea (GIR) was established in June 2010 for comprehensive and systematic management of greenhouse gas emissions information. It is in charge of formulating mid- to long-term greenhouse gas inventory management plans, setting national and sectoral greenhouse gas reduction goals, managing greenhouse gas statistics and operating the National Greenhouse Gas Management System (NGMS), providing support for operating the greenhouse gas and energy target management system, and organizing international cooperation and research on greenhouse gas reduction.

### National Institute of Chemical Safety (NICS)

<http://nics.me.go.kr>

The National Institute of Chemical Safety (NICS) opened its doors in January 2014 as an institution responsible for chemical safety and is in charge of the prevention of and responses to chemical accidents as part of measures to improve safety management regarding chemicals and chemical accidents. The NICS is building an accident response information system, organizes accident response manuals, provides support for responding to and restoring accident sites, and offers professional training to persons who handle or respond to chemicals, thereby preventing chemical accidents and terrorism in advance and acting as a risk management and response control tower that can respond to any emergency in a timely manner.

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## Korea Environment Corporation (KECO)

<http://www.keco.or.kr/en/main/index.do>

The Korea Environment Corporation (KECO) was established to ensure the efficient operation of projects related to pollution prevention, environmental improvement, promotion of resource circulation, and climate change response. The Korea Resources Recovery and Reutilization Corporation, established in 1980, and the Environmental Management Corporation, established in 1987, were combined to form KECO in 2010. KECO carries out waste reduction, recirculation and utilization, and eco-friendly treatment projects; installs and operates sewage and wastewater treatment facilities, waste-to-energy facilities, and other composite environmental facilities; tests and analyzes environmentally hazardous chemicals; installs and operates environmental monitoring networks and control centers; carries out greenhouse gas reduction projects; studies, develops, and provides support for policies regarding prevention of environmental pollution, environmental improvement, and resource circulation; and carries out projects to support the development of environment-friendly cities.

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## Korea National Park Service (KNPS)

<http://english.knps.or.kr>

Established in 1987, Korea National Park Service (KNPS) is an agency specializing in national park management. It was transferred from the Ministry of Home Affairs to the Ministry of Environment in 1998. It is involved in such activities as national park conservation, research on park resources, installation and management of park facilities, and guidance on and promotion of park use. It is also working on a project to restore and propagate wild fauna and flora to boost biodiversity.

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## Sudokwon Landfill Site Management Corp. (SLC)

[http://www.slc.or.kr/design/eng/index\\_eng.asp](http://www.slc.or.kr/design/eng/index_eng.asp)

The Sudokwon Landfill Site Management Corporation (SLC) was established in July 2000 to promote the appropriate treatment and utilization of wastes generated in the Seoul Metropolitan Region and to contribute towards creating a pleasant living environment for the residents of

the surrounding areas. Situated 40 minutes from Seoul, Sudokwon Landfill Site measures 20 million square meters and receives and handles residential, construction, and commercial wastes discharged by the 24 million citizens of the Seoul, Incheon, and Gyeonggi regions. SLC ensures appropriate treatment of wastes brought to this landfill site, carries out support projects for residents of the nearby affected areas, and also carries out waste utilization and waste-to-energy projects such as power generation using landfill gas.

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## Korea Environmental Industry & Technology Institute (KEITI)

<http://www.keiti.re.kr/eng/action.do>

The Korea Environmental Industry & Technology Institute (KEITI) was established to nurture environmental technologies and industries and to promote the purchase of green products. It was formed in 2009 by combining the Korea Eco-products Institute and Environmental Technology Institute founded in 2005. KEITI plans and manages environmental R&D projects, promotes the distribution and utilization of the environmental technologies developed, offers research assistance for environmental technologies and businesses, supports overseas ventures by the environmental industry, lays the industrial groundwork to stimulate the environmental industry, trains environmental, technology, and business experts, and promotes the production and distribution of green products.

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## National Institute of Ecology

[http://www.nie.re.kr/nie\\_eng/index.html](http://www.nie.re.kr/nie_eng/index.html)

The National Institute of Ecology, which opened in December 2013, is a comprehensive ecological research institute that aims to predict and study ecosystem changes on the Korean Peninsula following climate change, secure and conserve biological species, and educate the public on the environment. It carries out research on matters such as long-term changes to the national ecosystem following climate and environmental changes and operates exhibits such as an ecology experience center (Ecorium) and the Korean Peninsula Forest, Wetland Eco Park, and Alpine Eco Park, where visitors can encounter the unique ecosystem of the Korean Peninsula.

# Recent Achievements in 2014

During 2014, the Korean government endeavored to meet ever heightening international environmental standards, and take a responsible part in the efforts of the international community to tackle global climate change. Domestically, the government promoted a variety of environmental policies focusing on four core areas towards the ultimate vision of realizing "high quality environmental welfare for people's happiness and wellbeing".

## 1. Transition to Sustainable Society

- A series of concrete actions were taken for national greenhouse gas reduction including the preparation for the implementation of the nationwide emission trading system in 2015 and the establishment of the second national standards on average GHG emissions and fuel efficiency for vehicles.
- Efforts were made to promote recycling and resource cycle including starting the construction of eco-friendly energy town (Oct '14), expanding the Waste Electronics Pick Up Service, and submitting a bill for "the Act on the Promotion of Resource Cycle Society" to the National Assembly. (Oct. '14)
- The government promoted exports of Korea's environment industry and made successful cases by obtaining overseas contracts including river improvement project in Constantine, Algeria (KRW 203.3 billion) and desulfurization project in Tarapaca, Chile. (KRW 64.7 billion)

## 2. Advanced and Scientific Environment Management System

- A bill for "the Act on integrated management of environment pollution generating facilities" was submitted to the National Assembly.
- Environmental regulations were reformed in a way to support enterprises and small business owners.
- Environment Administration 3.0 was promoted in line with the efforts for government innovation. For instance, creative ideas in the environment area were supported to find business opportunity.

## 3. Expansion of Environmental Service for People's Happiness

- A trial operation of nationwide fine dust forecasting was carried out while the accuracy of the forecast was improved from 73% ('13) to 83% ('14).
- The government focused on ensuring health water environment and safe drinking water. As the result, water quality in 90 of the total 111 midium influence ares in the country was measured to be improved in terms of T-P concentration. (The clean water government standard was met at 81.1% in 2014, up from 80.7% in 2013.) Meanwhile, water supply in rural villages was expanded. (Of the total 160 thousand rural residents, 71.4% were provided with access to water supply in 2014, compared to 67.6% in 2013.)
- In order to recover the health of ecosystems and provide people with greater opportunities to enjoy nature, new eco-tourism destinations were designated (12 ('13) → 17 ('14)). The number of tourists in the areas with excellent ecosystems was increased by 14.6%. ('14)

## 4. Environmental Safety Management for Protecting Public Health

- The Act on Liability of Compensation and Relief of Injury Caused by Environmental Pollutions was enacted and announced with the purpose to establish an environmentally safe society. ('14.12)
- Lower statues of the Chemicals Management Act and the Act on the Registration and Evaluation, etc. of Chemical Substances were developed through stakeholder consultations. In the meantime, an inter-ministerial joint support team for industry chemical safety was established (Apr '14) aiming at an advanced chemical safety management system.
- Harmful substances in surroundings were more stringently managed. For example, the Ministry of Environment supported to remove asbestos slate roofs from 21,437 house units in collaboration with the Ministry of Agriculture, Food and Rural Affairs as well as local governments.

# Policy Direction in 2015

