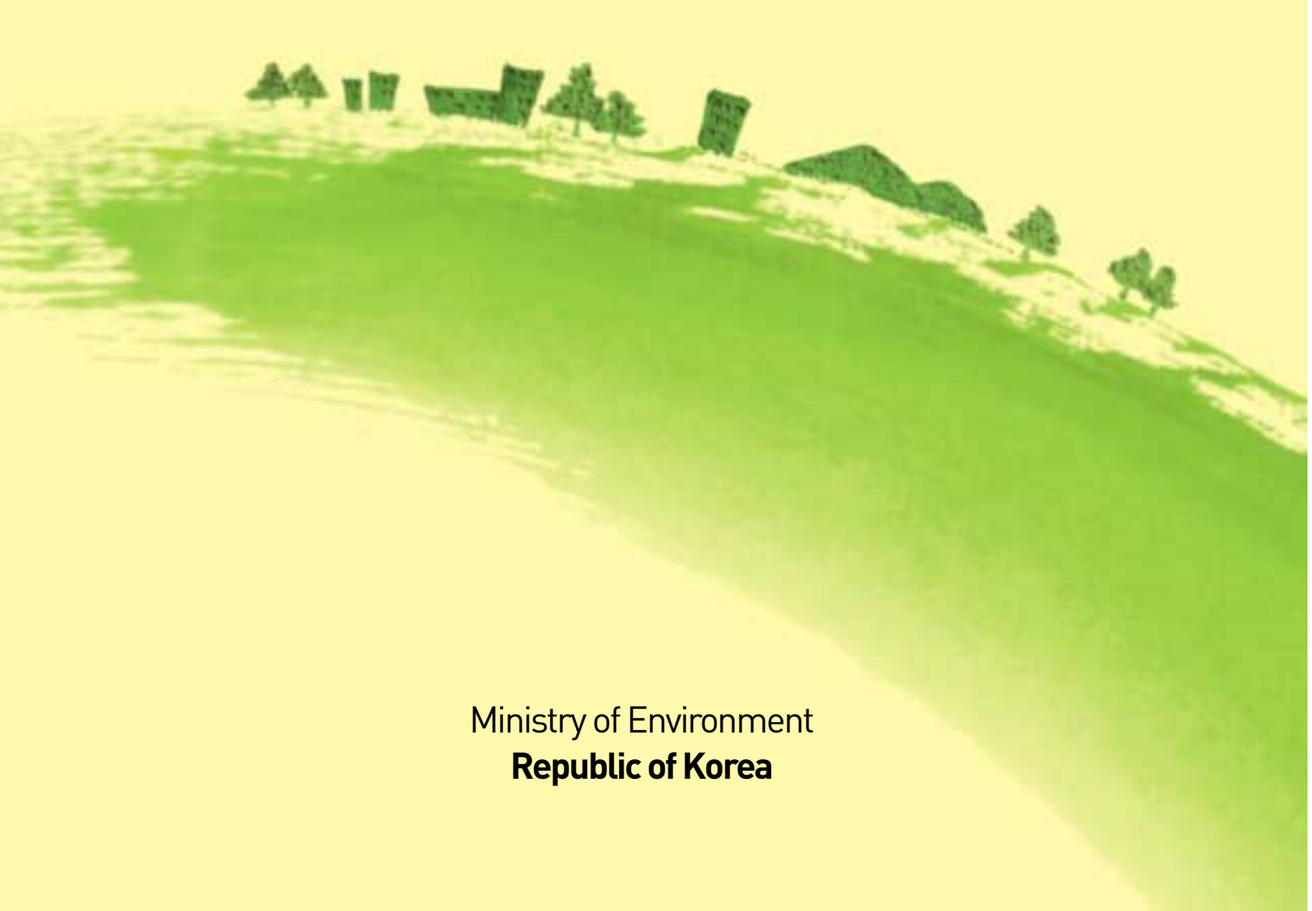
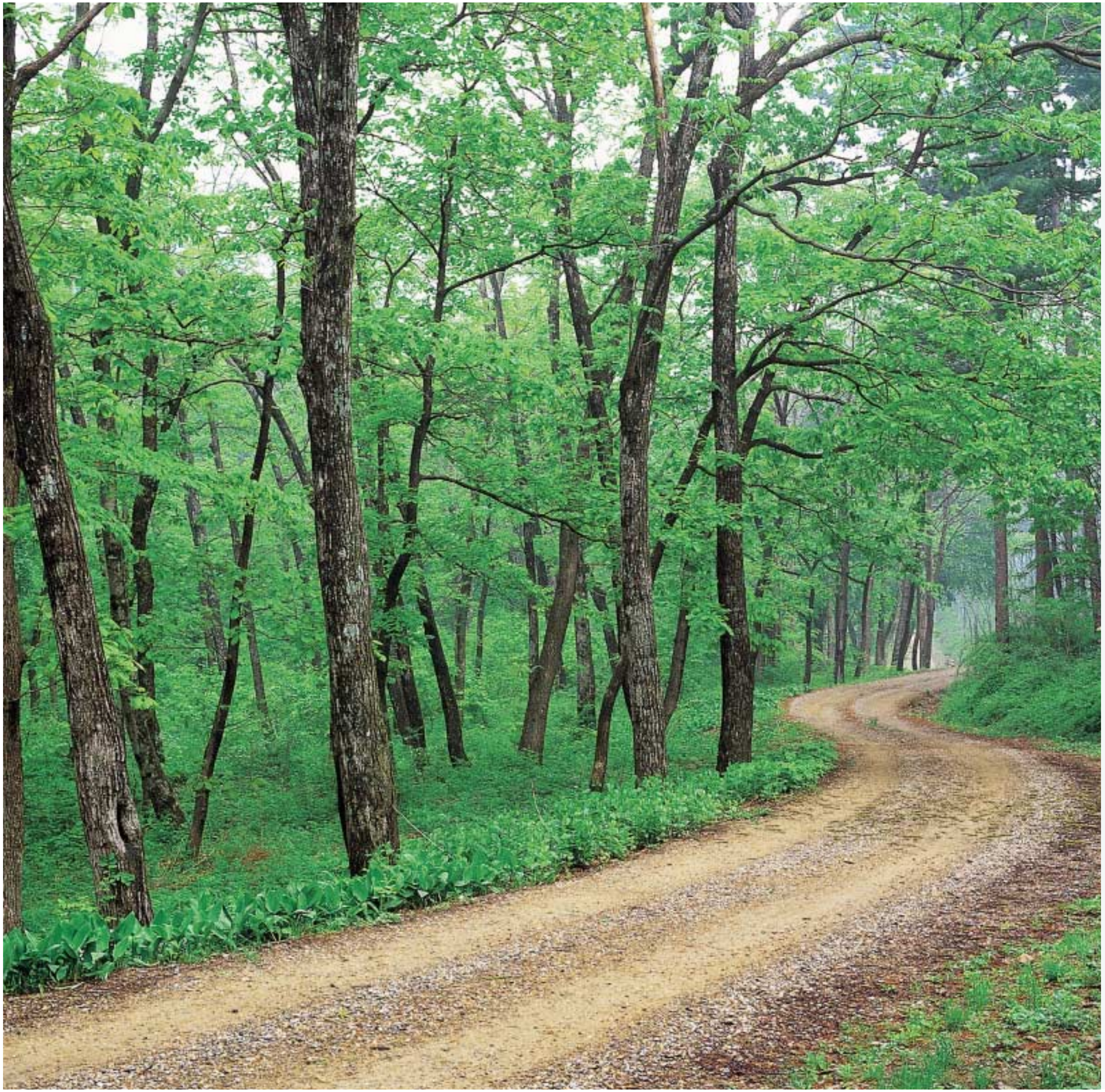
Green Korea 2005

Towards the Harmonization of Human and the Nature



Ministry of Environment
Republic of Korea



Green Korea 2005

Contents

Minister's Message

It is my great pleasure to publish "Green Korea 2005," a yearbook that introduces major environmental policies of the Ministry of Environment (MOE) in Korea to readers at home and abroad. Especially, in this age where information is the key to competitiveness, I am confident that "Green Korea 2005" will be a great source of useful information.

Up until now, humans have looked at the environment as a means to achieve material growth by using up the natural resources in faster and larger scale. Also behind the unprecedented rapid economic growth, there was the assumption that natural resources were infinite and we could have unlimited access to them.

However, the rapidly growing human activities have reached its limit of exceeding the environmental capacity. If we are unable to control our endless desire for more material abundance, then we will have no choice but to face various environmental problems that could arise from it. The environmental problems like pollution and noise not only threaten human health, but also raise new social problems such as environmental conservation in the process of national land development.

Now is the time for us to look back on the wisdoms of our ancestors, who considered the environment and humans as inseparable from each other. Without taking into consideration the environmental sustainability, we cannot achieve sustainable national development. Therefore, we have to minimize the effects of human activities on the environment, and also change the activities themselves to be environmentally friendly ones. To accomplish this, environmentally friendly laws and systems have to be established and economic inducements for environmentally sound activities have to be provided.

In this context, the Ministry of Environment of the Republic of Korea has been committed to effectively implementing countermeasures such as receptor-oriented environmental policies and preventive environmental conservation in order to resolve environmental problems of our society that are getting more complicated and magnified.

The Green Korea 2005 demonstrates our efforts to establish the Comprehensive National Environmental Plan and the Strategic Environmental Assessment System to take a holistic approach on the environment and development. In addition, sections on the promotion of purchasing environmentally friendly products and the distribution of environmentally friendly diesel vehicles through price mechanism to enhance environmental sustainability, and also policies on the water, air and waste sector were included. There is also a special section that introduces the Tripartite Environment Ministers Meeting (TEMM), which aims to strengthen the environmental cooperation among the three countries in environmental management of the region.

It is difficult to predict what the MOE will be doing 10 years or 20 years later, but one thing I am certain is that all human activities will put environmental considerations first and environmentally friendly activities will be regarded as the most reasonable and economic ones in the near future. As the agency in charge of environmental conservation, our Ministry will initiate the efforts so that such a society is realized.

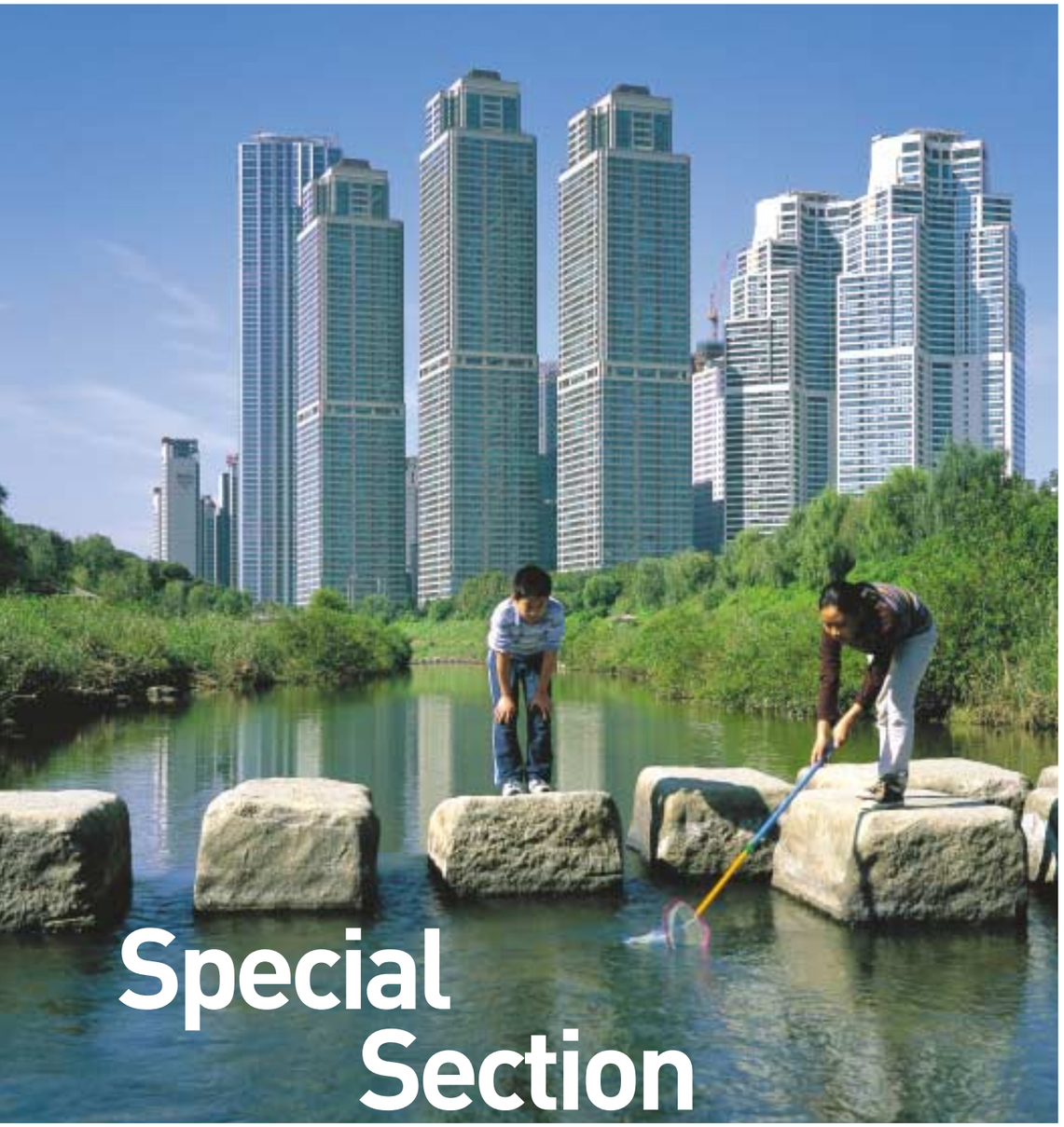
The Korean Ministry of Environment has been publishing Green Korea annually in an attempt to share information on our environmental policies and experiences. I sincerely hope that "Green Korea 2005" will help readers get a better understanding of Korea's environmental administration, and also provide valuable information to other countries and scholars who are striving to make the environment better.

Thank you.

December 2005

이재용

Lee Jae-yong
Minister of Environment
Republic of Korea



Special Section

Being held every five years since 1985, the Ministerial Conference on Environment and Development (MCED) in Asia and the Pacific has been an important forum for the assessment of the state of the environment, the formulation of actions in response to imperatives posed by important global forums, and the synthesis of regional perspectives, priorities and forward-looking agendas. MCED 2005 has been designed to advance the sustainable development agenda established at MCED 2000 and the WSSD taking into consideration emerging issues and realities particularly in the process of globalization.

The Fifth Ministerial Conference on Environment and Development in Asia and the Pacific

The Fifth Ministerial Conference on Environment and Development in Asia and the Pacific (UN ESCAP MCED 2005) was held in Seoul 24~29 March, 2005 under the theme of "Achieving environmentally sustainable economic growth." About 1,400 participants from 52 countries and 24 international organizations attended the meeting.

The meeting proposed "achieving environmentally sustainable economic growth" as a means to seek a win-win solution between pressures on the environmental carrying capacity of the Asia-Pacific region and reducing poverty, which has been exacerbated by rapid economic growth and high population density. In order to implement this in Asia and the Pacific, the Ministerial Declaration on Environment and Development, the Regional Implementation Plan for Sustainable Development in Asia and the Pacific 2006-2010, and the Seoul Initiative for Environmentally Sustainable Economic Growth were adopted.

The meeting was comprised of the Preparatory Meeting of Senior Officials of MCED 2005, the Ministerial Conference on Environment and Development (MCED) and 10 side events. At the Preparatory Meeting of Senior Officials of MCED 2005 that was held for four days from March 24, 2005, participating countries evaluated the environmental state of the Asia-Pacific region for the past 5 years and there was a briefing on the Tsunami that occurred in December 2004. Also, reports and resolutions to be

The Fifth Ministerial Conference on Environment and Development in Asia and the Pacific 2005 is in session in Seoul 24-29 March 2005.

The First meeting of the Seoul Initiative Network on Green Growth

discussed at MCED were drawn up. Many countries mentioned their countries' environmental state and progress in implementing sustainable development. In addition, they announced their support for the theme of the meeting, which was "environmentally sustainable economic growth." Participating countries recognized how important economic growth is to the eradication of poverty and to the achievement of environmental sustainability.

Along with the Preparatory Meeting of Senior Officials of MCED, side events such as the Civil Society Forum, Private Sector Forum, Eminent Scientist Symposium, etc. were held, which discussed the roles and challenges of each sector of society to achieve environmentally sustainable economic growth. The outcomes of those discussions were reported back to the Roundtable.

The Ministerial Conference on Environment and Development took place for two days, opening ceremony of which President Roh Moo-hyun of the Republic of Korea attended. In his speech, Roh stressed the importance of implementing "Green Growth," saying economic growth that does not take environmental sustainability into consideration will inevitably result in serious environmental devastation. With Kwak Kyul-ho, the former Korean Minster of Environment acting as chairman for the meeting, participating countries exchanged views on experiences and lessons they had learned while working to achieve environmentally sustainable economic growth. At the MCED 2005, environment ministers from 52 countries officially adopted the outcomes of the meeting including the Ministerial Declaration on Environment and Development.

Korea, as the host country, was able to demonstrate its commitment to active participation in regional environmental cooperation. The meeting was an opportunity to spread the new concept of "environmentally sustainable economic growth." In particular, the Seoul Initiative on Environmentally Sustainable Economic

Summary of Side Events

Name of Event	Number of Participants	Outcomes
Civil Society Forum	166	Discussed strategies for 2005-2010 about sustainable consumption and production in Asia and the Pacific region Adopted「Civil Society Forum 2005 Seoul Declaration」and encouraged participation and collaboration between civil society for green growth in Asia and the Pacific region
Private Sector Forum	350	Proposed outstanding environmental business management of major enterprises and the challenge of governmental policies for sustainability and stressed the importance of the role of industry
Eminent Scientist Symposium	70	Discussed environmental issues like protection of biodiversity, natural disasters, water resources, and sustainable development
Multi-Stake Holders Forum (APFED)	125	Announced APFED final report and proposed recommendation of Environment Ministers Meeting Established integrated approaches for sustainable development and build partnership among stakeholders
Environmental Economist Symposium	70	Discussed ways to overcome environmental problems and achieve continuous economic growth Called for active participation of environmental economists in policy making process
Environmental Technology Forum	200	Presented and discussed the current status and outlook of environmental technology in Asia and the Pacific region Promoted environmental industry and technologies of Korea by introducing outstanding environmental technologies and visiting programs to environment-friendly facilities
Briefing on Prevention and Control of DSS Project	90	Established regional network to prevent and control DSS phenomenon in Northeast Asia Presented a plan to develop DSS monitoring network
Knowledge Partnership Project	30	Discussed advanced environmental policies and projects implemented by the World Bank & ways to expand Knowledge Partnership Project
Water Forum	20	Set up a system for preparatory work for the World Water Forum (June 2006) Organized sub-region institutes for the Pacific and Central Asia countries

Growth will be carried out for the next 5 years, and it will aim to achieve the three targets of enhancing environmental sustainability, improving environmental performance, and strengthening the role of the environment as the engine for economic growth. It is expected that the Seoul Initiative will establish the framework for environmental cooperation in achieving green growth in member countries.

In addition, the Korean government held bilateral meetings with 13 countries and international organizations during the MCED 2005 to strengthen environmental cooperation among participating countries. These efforts allowed the government to create collaboration with countries that were not active in environmental cooperation, while strengthening existing environmental cooperation. The participants at the meeting included Iran, India, Singapore, the Maldives, Japan, NEASPEC, ASEAN, UNEP, the World Bank, IPCC, UNCCD, and IGES.

It was very meaningful that Korea hosted such a meeting where the economic growth and the environment were discussed, since Korea is a country that has achieved rapid economic growth during the past 40 years to be recognized as a model of economic development in Asia and the Pacific. The successful hosting of the MCED and the implementation of the follow-up measures including "the Seoul Initiative" will build a regional consensus in achieving sustainable development in the Asia-Pacific region. Korean government expects participating countries to continue to take an interest and to actively join in these efforts.

Seoul Initiative on Environmentally Sustainable Economic Growth

The Asia-Pacific region has experienced the fastest economic growth of any region in the world. Asia and the Pacific is also home to over half the world's population, where over two thirds of the world population living in poverty are located. It is necessary to have economic growth in order to eradicate poverty, but the current state does not allow sustainable development. The theme of MCED 2005, which was "Achieving environmentally sustainable economic growth in Asia and the Pacific," will make leaders of countries from around the world to come up with concrete strategies to spread "green growth" across the region.

The main focus of the meeting was to find ways to pursue economic growth, while also maintaining environmental sustainability. The "Green growth" focuses on reducing the increasing environmental pressures which arise from economic growth, thus enabling economic growth to reduce poverty while ensuring consumption and production are maintained within the environmental carrying capacity. It requires us to reduce environmental pressures of economic growth by improving ecological efficiency of production and consumption patterns in order to create a win-win synergy between the economy and environment.

The area of the Asia-Pacific Region is vast, covering 40% of the world's territory and is home to 61% of the world's population. Rapid economic growth in past decades has enabled the alleviation of poverty and promoted social progress in parts of the region. However, dramatic increases in industrial and agricultural production, as well as rising levels of consumption, have placed enormous pressure on the environment. Therefore, the green growth calls for consideration of the environment while coming up with economic plans and also during the process of development. Also it allows economic development to reinforce environmental sustainability and in some cases give rise to new opportunities for economic growth.

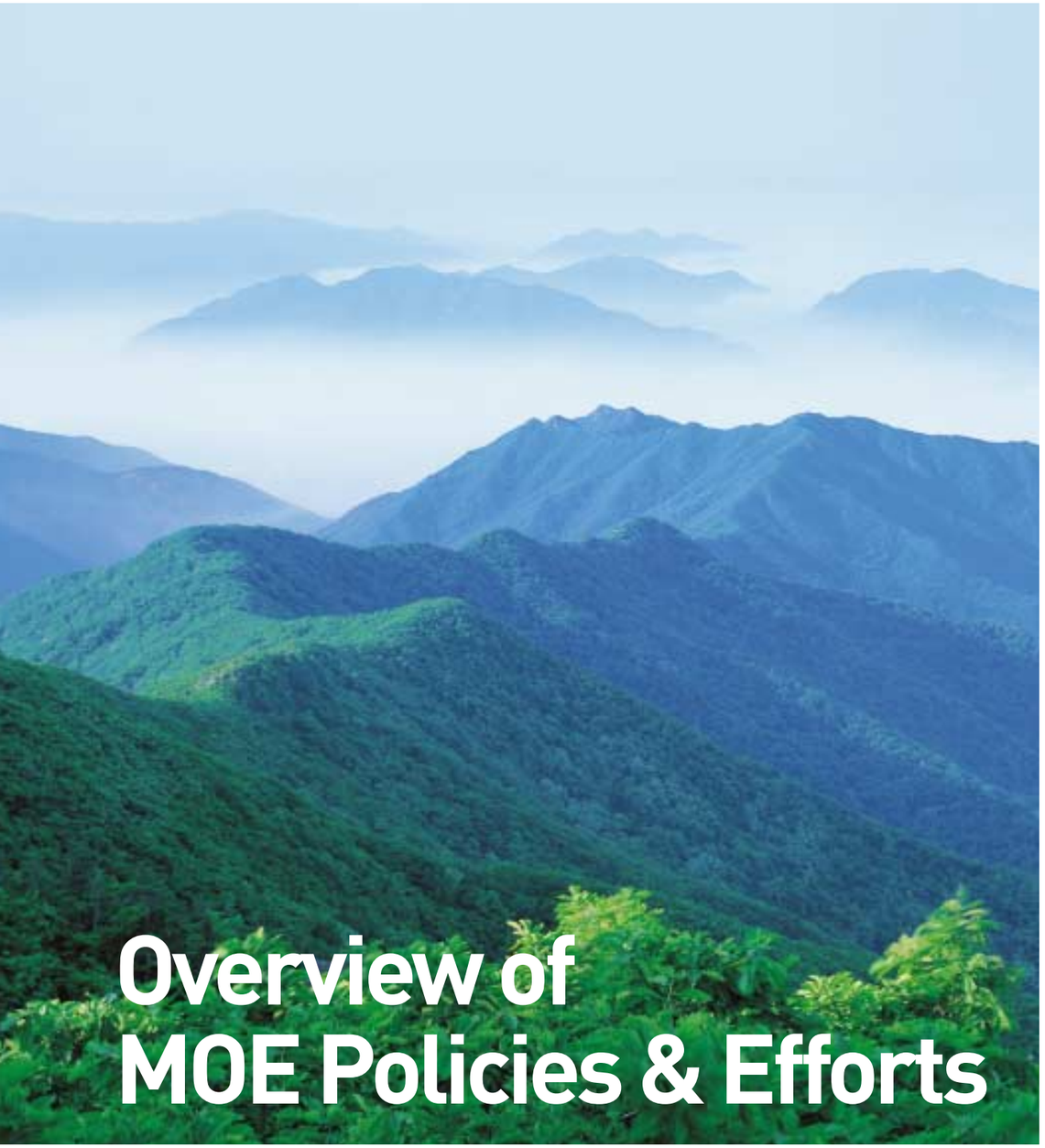
In this regard, the "Seoul Initiative on Environmentally Sustainable Economic Growth (also referred to as "SI")" was adopted officially at the MCED 2005 held in Seoul in March 2005, as one of the regional implementation plans for sustainable development in Asia and the Pacific. It aims to achieve 3 policy goals and 24 policy areas to maintain the balance of the environment and economic growth.

The SI proposes various international projects to strengthen environmental cooperation among ESCAP member countries in achieving green growth and also to seek implementation plans for Asia and the Pacific. First, the SI establishes a network among member countries to enhance interest in green growth and to build consensus in the region. Later on, the SI will seek outstanding models based on the cases presented by countries attending periodic policy forums. Also, capacity building programs will be implemented for developing countries so that policy-makers of member countries understand the necessity of green growth and come up with implementation plans. Not only that, small scale pilot projects will be implemented through voluntary participation of countries.

Korea will reconfirm its commitment for sustainable development in the region by continuing on with the implementation of the Seoul Initiative for the next five years so that UN ESCAP and member countries can strengthen environmental cooperation in the process of achieving green growth in Asia and the Pacific region.

Main Agenda of Seoul Initiative

Targets	Policy Areas
Improving environmental sustainability	(a) Incorporate the concept of ecological efficiency and environmental sustainability into economic and social development planning, since ecological efficiency is critical in ensuring environmental sustainability (b) Share experiences on assessing the pressure being placed on the environment by rapid economic growth (c) Enhance the ecological efficiency of economic growth and harmonizing fast growth with environmental sustainability (d) Promote sustainable production and consumption patterns by changing the way society produces and consumes as called for by the Johannesburg Plan of Implementation, possibly by linking them with traditional lifestyles and cultural values (e) Internalize environmental costs into the price structure by employing various economic instruments such as green GDP and tax incentives of expenditures aimed at ecological sustainability (f) Promote demand-side management to improve the ecological efficiency in the way society produces and consumes natural resources such as water, energy and raw materials (g) Promote a circular economy by improving the way society uses the available resources (h) Promote capacity-building and awareness of Governments, the private sector and civil society concerning the need to improve ecological efficiency (i) Promote partnership among various stakeholders in society to improve ecological efficiency and environmental sustainability and awareness of the respective roles they are expected to play
Enhancing environmental performance	(a) Promote the "polluter-pays principle" in managing and protecting the quality of natural resources such as air, water and the natural ecosystem (b) Promote environmentally friendly production processes through the promotion of cleaner production and development and transfer of environmentally sound technologies (c) Promote the effectiveness of environmental governance by upgrading environmental regulations and standards and effectively enforcing legal instruments for pollution control and ecosystem management (d) Promote best practices such as integrated natural resources management and total pollution load control for water, air and oceans (e) Promote partnership among the various stakeholders to enhance their participation and compliance with environmental governance (f) Strengthen close cooperation among the member States and the concerned stakeholders to address transboundary pollution and environmental risks
Promoting environment as an opportunity for economic growth and development	(a) Promote environment-related investment and environmental technology research and development as an opportunity for economic growth, employment and industrial competitiveness (b) Promote and create a positive synergy between environment and economy (c) Promote the role of the private sector in presenting the environment as a business opportunity not as a burden or cost for the economy and private sector (d) Present environmental regulations and demands for environmental quality as an opportunity to promote the environmental industry and the market for environmental goods and services (e) Establish policy frameworks that encourage the creation of new market opportunities for infrastructure, goods and services as well as technologies related to pollution control and environmental resource management (f) Promote environmentally sound technologies and facilitate their adaptation, diffusion and transfer (g) Take advantage of government purchasing power in facilitating market-building and secure profitability for cleaner production activities in the early stages (h) Enhance consumer awareness of environmentally friendly products (i) Encourage sustainable ecotourism taking into consideration the natural environment of the Asia-Pacific region to generate income for its residents



Overview of MOE Policies & Efforts

The MOE has been carrying out integrated policies on the nation's nature conservation and management of water quality, air quality, water supply, sewage, waste disposal and recycling under the global banner of "Sustainable Development." It also has positively participated in international efforts to address environmental issues and disputes through collaboration with various international agencies and organizations. Especially, the ministry is working to come up with solutions for regional problems, DSS for example, in cooperation with Northeastern countries through the "Tripartite Environment Ministers Meeting" and similar endeavors.

Nature Conservation

Korea has diverse natural habitats and abundant biodiversity, as 65.4% of the land is covered with forests and three sides of its land are surrounded by the ocean. This is why it has long been called "Geum-Su-Gang-San," which refers to a beautiful land seemingly embroidered with silky mountains and rivers.

However, during the past 40 years Korea has been following supply-oriented development policies based on economic efficiency rather than on sustainable conservation and management. As a result, Korea achieved rapid economic growth in a short period of time, but this led to problems of degradation in the natural environment such as the destruction of ecosystems as well as the reduction of forests in the Baekdudaegan (the Baekdu Mountain Range) and tidal flats in many islands and coastal regions. However, as living standards improved, the demand for an enhanced quality of life has increased as well. Therefore, there is an expectation of sustainable development, where nature and society can stand together in harmony.

Conservation and Management of Scenic Beauty & Outstanding Ecosystem

The MOE recognizes the need to systematically conserve and manage outstanding ecosystem, scenic natural sites, and biodiversity on the Korean Peninsula. Currently there are 24 ecosystem conservation areas (248Km^2), 15 wetland protection areas (187Km^2), and 20 national parks (6,580Km^2) for a total of 75 natural parks covering 7,772Km^2. In addition, there are 153 designated special islands including Dokdo Island comprising 9,985Km^2.

In addition, several areas in Korea are internationally recognized for its conservation values. On March 30th, 2005, Jangdo Wetland in Shinan was the third wetland site in Korea to be registered in the Ramsar List of Wetlands of International Importance under the Ramsar Convention following the Yong Wetland in Mt. Daeam (106ha), which is the oldest high wetland in the country, and the Woopo Wetland in Changnyeong (854ha), which is the largest natural inland wetland in Korea. Also in October 2004, Mt. Guwol was designated as the fourth UNESCO Biosphere Reserve of Korea along with Mt. Baekdu (in DPRK), Mt. Seorak (3,932Km^2), and parts of Jeju Island (Mt. Halla, two stream corridors, and three islets, 831Km^2).

The Natural Environment Conservation Act amended in December 2004 was a breakthrough in preventing development projects from recklessly destroying scenic beauty. One of the biggest improvements made was the introduction of the Assessment System for Natural Sites of Scenic Beauty, which will be reviewed by the Environmental Preservation Advisory Committee of the MOE or the Scenery Assessment System supervised by the Scenic Beauty Committee of local environment authority. Also

the MOE is currently working on the enactment of the National Trust Act on Cultural Heritages and Natural Environmental Assets, which will allow the private sector to raise money for trusts to conserve cultural heritages and natural environmental assets that need to be highly conserved.

Eco-Network on the Korean Peninsula

Recently, the MOE is creating an integrated eco-network as a key initiative so that it will be possible to manage animals that move from the northern part to the southern part of the Korean Peninsula. Therefore, the Baekdudaegan (Baekdu Mountain Range), the Demilitarized Zone (DMZ), and various small islands and coastal regions were selected so as to be included in three national ecological core patches.

Baekdudaegan (Baekdu Mountain Range)

The Baekdudaegan is the geographical backbone of the Korean Peninsula and has great ecological significance with various plants and animal habitants. Recently on January 1, 2005, the Act Relating to the Baekdudaegan (Baekdu Mountain Range) was enacted under the jurisdiction of the Ministry of Environment and the Ministry of Agriculture and Forestry (specifically the Korea Forest Service). The MOE set the principles and standards for designating Baekdudaegan Protected Areas in October 2004, and the Korea Forest Service designated Baekdudaegan Protected Areas in September 2005 (about 2,634 km^2), and will establish the basic action plan according to these principles and standards in late December 2005.

Demilitarized Zone (DMZ)

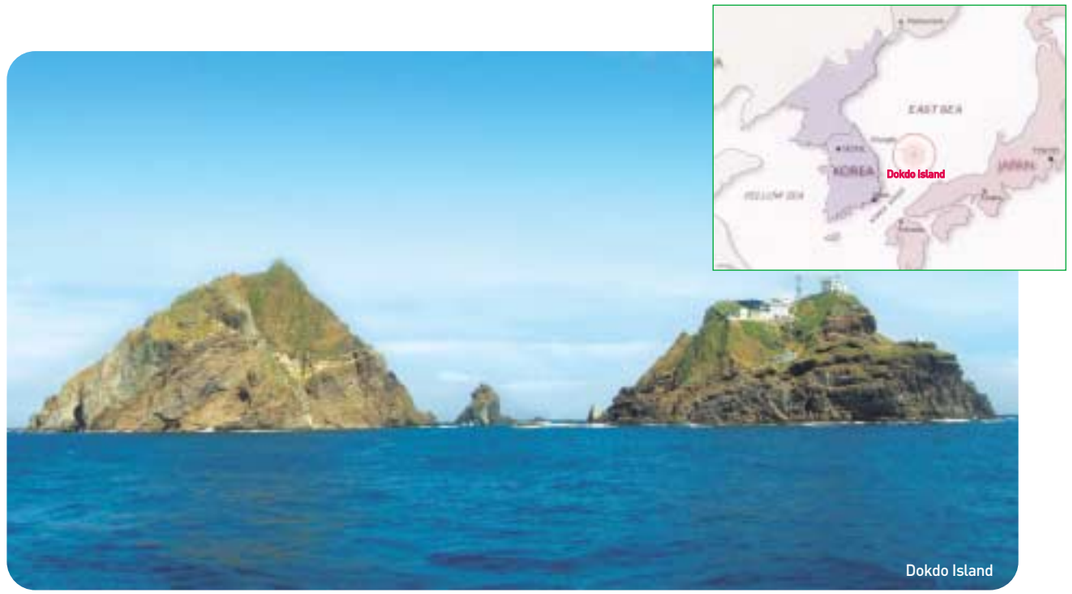
The Demilitarized Zone (DMZ) was created when the armistice was signed between the Republic of Korea (ROK) and the Democratic People's Republic of Korea (DPRK) ending the Korean War in 1953. A strip of land encompassing approximately 907 km^2, the DMZ extends west-east for 248 km (155 miles) and north-south for 4 km (2.4 miles) in the middle of the Korean Peninsula. The Civilian Control Zone (CCZ) was established in the area within 20 km of the southern DMZ border. As humans have not set foot there for more than 50 years, it has become a unique treasure trove of wild flora and fauna. In other words, the bio-diversity in the DMZ and bordering regions has been well preserved and restored.

The Ministry of Environment established and implemented the Ecological Conservation Plan of the DMZ in August 22, 2005, based on the research results of 2002~2004, in order to prevent reckless development in the DMZ. Also after the historic summit between the two Koreas in June 2000, both ROK and DPRK regained interest of one another. In the future, if the Environment Ministers of both Koreas meet, there would be the possibility that they would pursue the designation of the DMZ as a UNESCO biological conservation area in order to enhance environmental cooperation on the Korean Peninsula.

Small Islands and Coastal Regions

The Korean Peninsula has around 3,200 islands in its territory. The range of small islands, coastal areas, and various shorelines provide valuable socio-economic resources as well as numerous ecological benefits in terms of marine resources, the ability to purify environmental pollution, outstanding natural scenery, and habitats for wild fauna and flora.

Recently, in order to conserve internationally acknowledged wetlands, Korea concluded an agreement with UNDP so that both sides can carry out the UNDP/GEF National Wetland Conservation Project for 4 years from 2004 to 2007. This project includes investigating national wetlands and organizing and operating national wetland committees. In May 2005, the 10-Year Basic Plan for Special Island Conservation was established to strengthen supervision and monitoring of ecological destruction. Also periodic monitoring was carried out and the changes in the ecosystems of the 153 special islands were observed. Especially, Dokdo Island has more than 100 different kinds of plants, insects, and other endangered species, so it was designated as the first special island on September 5, 2000. However, as many visitors to Dokdo Island have increased the ecological threat of the Islet, the MOE has initiated natural ecological investigation to monitor the ecological effect on the Islet in the short and long term from April 2005 to March 2006.



Conservation of Biological Resources and Wildlife

The Wildlife Protection Act which came into effect on February 10, 2005, integrates regulations stated in the Environmental Conservation Act and Act Relating to the Protection of Birds, Mammals & Hunting in relation to wildlife. In this new Wildlife Protection Act, the MOE designated 50 endangered species and 171 threatened species to be protected, and also the revised act added the articles to punish people that knowingly eat illegally captured wildlife and distribute goods made of them.

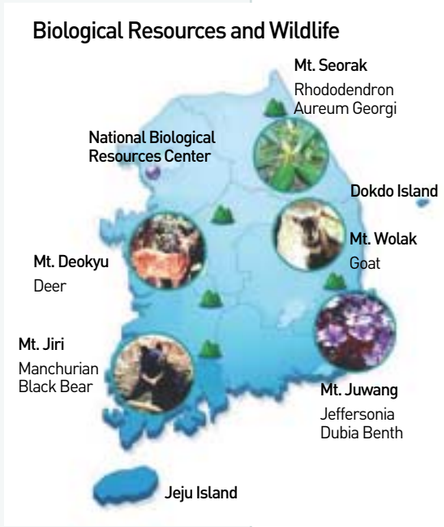
"The Comprehensive Measure for Conservation of Biological Resources (2005~2014)" was established in January of 2005 and includes systematic investigation of biological resources and finding indigenous species, restoring endangered species, and strengthening the management of invasive species. In the future, a 'Distribution Map of fauna and flora in the Korean Peninsula' will be developed, which includes information on biological resources such as 70,000 wildlife and indigenous species. Besides, the National Biological Resources Center is planned to be open to the public in 2007. In December 2005, each national park will draw up its own Master Plan for Restoration of Endangered Species which should include at least one project for every national park to restore one endangered species, including the Restoration Project of the Asiatic Black Bear in Mt. Jiri.

Establishment of Precautionary Environmental Management System for National Land

The Second Long-Term Comprehensive Plan for Environmental Preservation (2006~2015) will be established in order to have a planned and sustainable management of national environment for coexistence of environmental conservation and sustainable development. Also a National Environmental Zoning Map will be completed during 2005, which will divide the conservation areas and possible development areas on the Korean Peninsula.

Since 1981, the Environmental Impact Assessment System has been implemented, which reviews and evaluates environmental impacts before any development projects take place, and the Prior Consultation Service for Site Development was also introduced to strengthen the Environmental Impact Assessment System in August 2000.

As the Framework Act on Environmental Policy was amended in May 2005, the Strategic Environmental Assessment System will be implemented in June 2006. This will include reviewing opinions of experts, civil organizations, local residents, and stakeholders in order to minimize conflicts arising after the projects are implemented.



Air Quality Management

The deterioration of air quality from aggressive industrial activities and the soaring number of vehicles on the road is one of the most serious challenges that Korea has experienced during the process of economic and social growth. In particular, air related risks such as particulate air pollution in major cities and others causing serious health concerns, including respiratory problems and early deaths, have called for immediate corrective actions to be taken.

In response to these problems, the Ministry of Environment not only has set up air quality standards on six major air pollutants including carbon monoxide, ozone, and particulate matters, but introduced practical measures to pave the way for achieving these goals. The measures include the Special Measures for Seoul Metropolitan Air Quality Improvement, a landmark policy that stipulates emission standards, a total air pollution load management system, an emission trading system, and the supply of low emission vehicles.

A view of Seoul from Mt. Nam in Spring

Improvement of air quality

Today, legally binding emission standards are actively enforced in industrial sites. Korea took initial steps by setting the emission standard on nitrogen oxide in February 1979, followed by standards on carbon monoxide, nitrogen dioxide, dust, ozone, and hydrocarbon in 1983, and lead in February 1991. These were further strengthened in 1993 by the establishment of new standards on sulfurous acid gas and hydrocarbon.

In parallel, in order to clearly understand the air quality status and secure basic information required for the establishment of improvement measures, the Ministry of Environment and local governments have installed and are operating a total of 10 monitoring networks to monitor national and regional data, as well as the levels of heavy metal and photochemical pollutants in the ambient air. There were 372 monitoring centers operating in Korea as of April 2004.

Seoul and its vicinities take up only 12 % of the total national land area, yet they account for 46% of the total population and vehicles, making it very difficult to manage the urban air quality. The air pollution level in the region marks 1.7-3.5 times higher than those in other major cities globally, and social costs inflicted by air pollution reach 10 trillion won ($8.7 billion) annually. To effectively deal with these serious challenges, the Ministry of Environment has been promoting the Special Measures for Seoul Metropolitan Air Quality Improvement that includes total air pollution load management, an emission trading system, and mandatory purchase of low emission vehicles by public institutions. Such efforts had led to the legislation of the Special Act on Seoul Metropolitan Air Quality Improvement in December 2003, which has been implemented since January 2005. The plan is to invest about 4.9 trillion won by 2014 to promote the Special Act in stages, which will lead to a substantial reduction of major pollutants including particulate matters and nitrogen oxides.

Point source pollution management

To control point pollution sources (e.g. particulate matters, SOx and NOx) generated from industrial sites, the MOE has set emission standards for each pollutant and is expanding the restrictions in stages. Furthermore, industrial sites are categorized into five groups according to the amount of annual emission discharge, so as to wield stronger control over large-scale industrial activities.

A Tele-Monitoring System (TMS) has also been installed in the smoke stacks of high emission discharge volumes since September 1996. Based on the information measured by TMS, the Ministry has mandated improvements and imposed charges to those who exceed emission standards since February 2002. As of December 2004, 1,856 TMS were installed in 787 chimney stacks of 319 industrial sites.

Vehicle emission management

Efforts are also being made to fundamentally reduce air pollution caused by vehicle emissions, which is the highest contributor to air quality degradation (In the metropolitan region only, 65% of PM-10 and 51% of NOx are from vehicle exhaust). The Ministry has set the vehicle emission standards on newly launched vehicles and in-use vehicles, together with the fuel quality standards. In particular, starting in 2006, emission standards on new gasoline and natural gas vehicles will be strengthened to the level of ULEV (Ultra Low Emission Vehicle) and diesel vehicles to the level of EURO-4.

The MOE has started to operate natural gas vehicles (NGVs) to replace vehicles with high emission discharge. As of October 2005, 8,068 diesel vehicles were replaced with NGVs, and 23,000 diesel vehicles will be replaced with NGVs by 2010. Also, as a policy to control in-use diesel vehicles that are not subject to the replacement, the Ministry is promoting another project to encourage the attachment of Diesel Particulate Filters (DPF) and Diesel Oxidation Catalysts (DOC).

Noise & vibration management

Industrial plants located near residential areas are mandated to attain a noise permit and comply with the standards set by the MOE. The government also promotes other creative measures to control excessive municipal noise, for example, encouraging the installation of noise and vibration prevention devices and rearranging working hours at construction sites.

In particular, a noise labeling system for construction equipment was introduced in December 2004 in order to reduce noise at construction sites as there have been soaring complaints about noise from those sites. Currently follow-up measures are in place for smooth implementation of the system and it is expected that the noise level at construction sites will decrease and there will be more use of low-noise construction equipment. In addition, a train noise-monitoring network has been established and is in operation, paving the way for the adoption of train noise standards. In order to meet the demand of the public and to establish comprehensive noise management, inclusive measures on reduction of noise will be developed, which is expected to be implemented in December 2005.

Noise & vibration from railway traffic

Noise & vibration from construction site

Countermeasures for new environmental demand

In recent years, the Sick House Syndrome has been globally recognized as a significant environmental problem, and has also emerged as an environmental challenge in Korea. Rising public awareness of adopting a healthy lifestyle and submission of complaints involving headaches, vomiting, and skin ailments in new housing has called for immediate measures to cope with the situation. Against this backdrop, the MOE is implementing the Indoor Air Quality Control Act (May 2004), which stipulates the restriction of the use of paints, adhesives and other building materials with high pollutant discharge, among many other regulations. Also, the MOE promotes a certification system on environmentally-friendly construction materials and plans to develop the Mid- & Long-term Comprehensive Measures for Indoor Air Quality Management that will serve as a blue print of Korea's indoor air quality management strategies. Efforts have been made to reduce offensive odors by enacting the Foul Odor Prevention Act in February 2005. Also areas that need to be monitored for foul odor and permissible emission standards will be established so that new environmental demands can be satisfied.

Water Quality Management

Since the 1960s, the government and the public have recognized the need to address the deterioration of water resources due to rapid industrialization and urbanization, especially after the safety of tap water became a social problem. Therefore, the Office of the Prime Minister led the way in establishing the Comprehensive Measures on the Provision of Clean Water in 1989.

However, the measures mainly focused on end-of-pipe controls like constructing sewage treatment facilities (with the investment of 27 trillion won by 2005), which were unable to meet the demand for clean water, and so in 1998 the Comprehensive Water Quality Management Measures for the Four Major Rivers was established. The four major rivers are the Han River, the Nakdong River, the Geum River, and the Yeongsan River. To facilitate the implementation of the measures, the Act on Watershed Management and Community Support was enacted for each of the rivers from 1999 to 2002. The Comprehensive Water Quality Management Measures for the four major rivers strengthened precautionary policies by introducing the Total Maximum Daily Load Management System, which contributes to sustainable management of water resources by setting a target water quality. The water quality target has been set differently based on the results of an environmental survey conducted on each river basin and also taking into consideration specific water use.

Also, a joint management system including upstream and downstream has been established and it includes the management of non-point source pollution, which was not managed up until now. More than 400 explanatory meetings, public hearings and forums have been held to reach an agreement between residents in the upstream and downstream areas of the four major rivers since those living in upstream areas are against stricter regulations, while the residents downstream want access to cleaner water. This is because upstream residents have previously experienced strict regulations on economic activities to protect the water source areas, while downstream residents have benefited from flourishing economic activities.

Total Maximum Daily Load Management System (TMDL)

The Total Maximum Daily Load Management System allows total discharge of pollutants within the range of targets set by different river basins. Therefore, unlike the regulations that limited the concentration of pollutants and restricted the usage of lands, the system guarantees both water quality conservation and regional development to the extent that much regional development would be made, as long as the discharge of pollutants is controlled.

The Total Maximum Daily Load Management System was implemented in several phases starting from Busan and Daegu on August 1, 2004. As of June 2005, the system is still in effect in those two cities where the Nakdong River flows, and from August, the measure will also be implemented in provinces and cities which are responsible for water systems in the Geum River and the Yeongsan River, and cities linked with the water system of the Nakdong River.

Designation of riparian buffer zones

As precautionary measures, riparian buffer zones are established in the areas for up to 300m~1000m from the water edge along the upstream banks of the four major rivers, where the establishment of new restaurants, lodgings, livestock farming, and industrial facilities has been restricted. This is because pollutants emitted near rivers do not go through any purification processes, which can cause serious problems due to water pollution.

As of June 2005, about 1% of national territory (about 1,062 km^2) was designated as riparian buffer zones in order to prevent water pollution from non-point sources, among other things. The government bought 12 million m^2 of land to be used as buffer zones and is carrying out campaigns to plant 2 million trees on the land to create a new green belt as a means to placate opposition from the residents.

Establishment of basic environmental facilities

As of 2004, 26.1 trillion won has been invested in building basic environmental facilities including 630 sewage treatment facilities and waste water treatment facilities (22.63 million tons/day). As a result, the rate of sewage treatment has increased to about 80%.

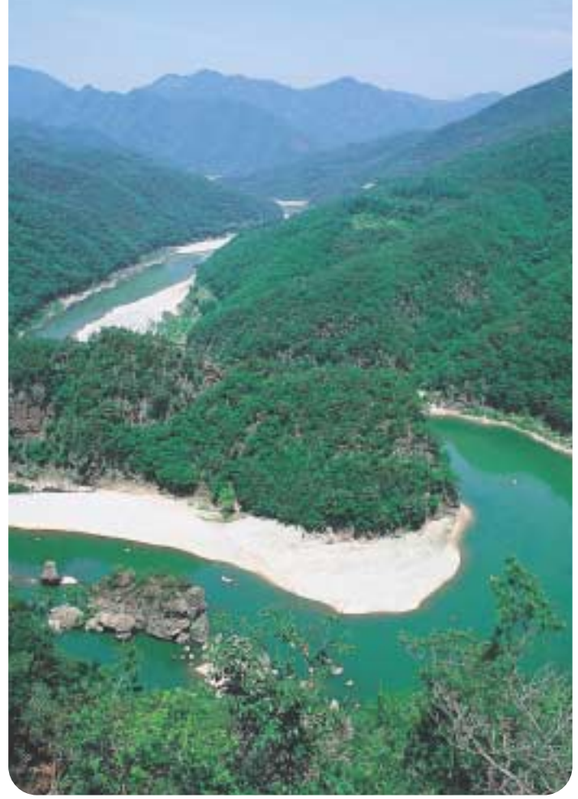
Restriction on factory construction & strengthening emission standards

The MOE has restricted approvals granted for constructing factories that discharge specific water pollutants into drainage areas of 14,103.9km^2 located 20km upstream. As for biological oxygen demand (BOD), the emission standards have been strengthened from 60~80mg/L to 30~40mg/L.

Strengthened management of livestock waste water & non-point source pollution

The MOE and the Ministry of Agriculture and Forestry established the Countermeasures for Livestock Waste Management and Use in November 2004 in an attempt to reduce the amount of livestock excretions and to utilize them to make fertilizers or manure and also to appropriately deal with excretions that are not utilized. In 2005, there are plans to draw up laws to back up the Countermeasures for Livestock Waste Management and Use.

Also the Office of the Prime Minister will lead the way in establishing policies to reduce the amount of non-point source pollution by 34.3% (381 tons/day → 250 tons/day) through negotiations with other governmental agencies. To achieve this, a total of 560.9 billion won will be invested by 2020. If the policies are implemented, it is expected that the water quality will be improved so that BOD will be about 0.2~0.6mg/L.



Establishment of a cooperative system among upstream and downstream areas

The MOE has levied a water use charge on end users in order to make up for the loss made to the upstream residents due to restrictions on land use, and also to encourage water conservation by raising the price of water. The water use charge collected will be used to support the upstream residents and to build and operate basic environmental facilities.

In 2004, the water use charges between 110 won and 130 won per ton were levied on the amount of water used and a total of 490 billion won was collected. The MOE invested 150 billion won of the funds to support the upstream residents, 130 billion won to establish basic environmental facilities, and 96 billion won to support the operation of the facilities.

Evaluation and outlook of the Comprehensive Water Quality Management Measures for the Four Major Rivers

Due to the implementation of the Comprehensive Water Quality Management Measures for the four major rivers, the levels of water quality have been improved to Level I and II, and rivers across the nation are steadily making progress in achieving environmental standards of water quality. However, we are still short of meeting the demands of the residents.

Until now, the Ministry has been implementing policies that aim at achieving short-term goals instead of maintaining safe sources of water. However, from now on, the goal of the policies will be altered to guarantee the soundness of water ecosystems. To achieve this, the Total Maximum Daily Load Management System will be firmly established, the water pollutant management will be strengthened, and policies will be implemented so as to improve the environmental soundness of rivers. Also, in order to build consensus among local communities, more support needs to be provided for residents, together with the strengthening of riparian buffer zones, in addition to the measures to develop a governance system to include the participation of residents in the process of decision making.

Improvement of Water Supply Systems

Korea has 30% higher annual precipitation (1,283mm) than world average (973mm), but because of Korea's high population density, the average annual rainfall per capita (2,705m^2) is only about 10% of the global average. Also, water resources available to the public are only 1,550m^2 per capita, which is the reason why Korea is classified as a water-stressed nation.

Despite concerns about water shortages, Korea's per capita water usage is high compared with that of other OECD countries. Until now, the Korean government implemented water supply policies focusing on dam construction, which has now reached its limits due to environmental degradation and opposition from the residents.

In addition, Korea's water supply policies focused mostly on large cities, so distribution of tap water has increased to 98.5% in the metropolitan areas. On the other hand, the rate is only 31.1% in rural areas, and regions vulnerable to water shortage, such as islands, are suffering from frequent water shortages - even seeing short periods of drought from time to time.

Water purification facility

The MOE has established the Comprehensive Measures for Water Conservation in March 2000 and has shifted policy focus from water supply to meeting the demand for water. Also, the MOE has invested a large portion of the national budget in improving the water supply system and sewage system, and is making efforts to increase the efficiency and fairness of the policies by easing the imbalance in the provision of water supply and sewage systems between rural and urban areas as well as improving water purification to enable the provision of safe and clean tap water.

Improvement of the water supply system

In December 2003, 89.4% of the Korean population had access to water supply pipes and 79% were supplied with sewage systems. Moreover, the daily capacity of water supply facilities in Korea was 28.25 million m^2 and the daily capacity of sewage facilities was 20.88 million m^2.

In 2004, 1.11 trillion won was invested and a total of 638 sewage facilities were constructed, including 225 sewage treatment plants, 354 sewage works in villages, and 197 sewage works upstream of dams.

Enhancement of the water purification process to supply safe tap water

Due to industrial development, new hazardous pollutants are discharged and water quality of water sources has been degraded as more municipal sewage and industrial wastewater are discharged. Therefore, it was necessary to introduce advanced water purification methods at some treatment plants. A "water purification standard" was introduced in April 2003 to eliminate viruses, which was one of the main reasons for public distrust in tap water, and a comprehensive program was developed and distributed at water treatment plants to enhance their efficiency. In addition, technological support was provided for 70 poorly performing water treatment plants and 70 temporary waterworks.

Advanced water purification methods were implemented in 20 water treatment plants including 3 plants on the Han River, 15 plants on the Nakdong River, and 2 plants on the Geum River, where water quality at the sources has been degraded due to the discharge of municipal sewage and industrial wastewater. 50% of the cost will be covered through the national budget.

As of 2004, construction of 17 water treatment plants were constructed and in the future 3 advanced water treatment facilities will be installed at 3 plants in Paju, Daegu, and Changwon. Professional education has been provided to officials responsible for advanced water treatment plants, and efficiency in water treatment plant operation has been evaluated by experts from 1999.

From 1997 until 2011, 3.8 trillion won will be invested to replace 42,757km of old water pipes to prevent the quality of tap water from degrading and to reduce water leakages. As a result, 18,603km of pipes were replaced with 2.52 trillion won invested from 1997 to 2004.

The Ministry plans to increase public trust in tap water quality by guaranteeing its safety through scientific water management and strengthening consumer-centered water management.

Implementation of water management strategy for efficient water use

The Korean government has been implementing the Comprehensive Measures for Water Conservation, distributing water saving equipment to households and installing wastewater reclamation and reusing systems. This resulted in saving 674 million tons of water. The savings from the policy reached 602.4 billion won including 402.5 billion won for tap water production cost and 199.9 billion won for sewage treatment costs.

www.ilovewater.or.kr

Korea has raised awareness of the need to conserve water by celebrating the anniversary of World Water Day, establishing and operating a website to promote water conservation (www.ilovewater.or.kr), holding an exhibition for digital photographs on the theme of water and children, and distributing educational materials on water conservation for children.

Sewage & Excretions Management System

In the early 1990s, Korea began installing sewage treatment plants after establishing the Comprehensive Measures to Distribute Clean Water. And currently, the supply rate of sewage systems based on sewage treatment plants has reached about 79.9%. However, in regions where pollutants are numerous, like rural areas, installation of sewage pipe lines is not feasible. Therefore, such regions cannot solely rely on sewage treatment plants to treat household sewage.

Recently, with the increase in the use of flush toilets, most excretions are treated together with other sewage. Districts with separated sewage treatment systems have sewage linked directly to the wastewater treatment plants, and districts with combined sewage treatment systems have sewage going through separate sewage disposal tanks before arriving at the wastewater treatment plants. Also, districts not classified as sewage treatment districts have separate sewage disposal tanks or sewage treatment facilities.

Improvement & Efficient Management of Sewage Systems

According to the Comprehensive Measures for Water Management established in August 1996, 16.6 trillion won was invested from 1996 to 2005 to expand sewage treatment plants and more efforts will be made to improve the quality of water resources in Korea to level 2. As of the end of 2004, 268 sewage treatment facilities were being operated, thereby meeting the objective of increasing access to sewage systems. In 2005, 560.1 billion won will be invested to establish 225 sewage treatment facilities.

Since the Ministry of Environment designated 2002 as the "Year of Special Maintenance for Sewage Pipelines" and organized a sewage maintenance task force team consisting of officials from the MOE, environmental offices of local governments, and the Environmental Management Corporation, it was able to implement efficient policies for sewage pipelines. In particular, 9 local governments using the Paldang watershed are currently implementing pilot projects for maintenance of sewage pipelines by investing a total of 650 billion won.

Circulatory Waste Resources Management System

The Korean economy has been expanding rapidly, leading to swift improvement in the standard of living during the past 40 years in an environment of limited carrying capacity (population density is 490 people/km^2, 3rd highest in the world). As a result, waste generation has continued to increase (1,836kg/ha), while establishing incineration facilities and landfills is extremely difficult due to the NIMBY syndrome.

In response, the Ministry of Environment established the 2nd Comprehensive National Waste Management Plan (2002-2011) in March 2002. The plan has a policy goal of the"establishment of a resource-circulating socioeconomic framework." In order to realize this goal, the Ministry has implemented a waste reduction policy, maximized the recycling of waste, and treated waste that cannot be recycled safely.

Haneul Park, an environment-friendly green zone for citizens, which was created on a former waste landfill site in Seoul

Waste Recycling Policy

To effectively address the waste issue, it is important to reduce waste generation and recycle unavoidable waste as much as possible. To that end, the Korean government is focusing on minimizing waste generation through regulating the use of disposable products and the generation of packaging material waste, and implementing the Extended Producer Responsibility policy. Other measures include establishing a source separation of domestic waste program, expanding recycling facilities suitable to regional conditions, developing relevant technologies and encouraging the use of recycled products, etc. thereby establishing a recycling system conducive both to the minimization of waste and the circulation of resources.

Municipal waste generation per capita has been reduced from 1.3kg/day in 1994 to 1.05kg in 2003; the target for 2008 is 0.94kg. The rate of municipal waste recycling is targeted for increasing from 44% in 2002 to 50% in 2008.

With the implementation of the circulatory waste management policy, 45.2% of municipal waste was recycled in 2003, up from 26.2% in 1996. The incineration rate also increased from 5.5% in 1996 to 14.5% in 2003. Meanwhile, landfill disposal decreased from 68.3% in 1996 to 40.3% in 2003, which marked for the first time, more waste was recycled than buried in landfills.

Extended Producer Responsibility (EPR) System

While the waste generation has been reduced, and recycling increased since the implementation of the Volume-based Waste Fee System and Waste Deposit-Refund System, some have pointed out that in order to further systematically and efficiently reduce waste and increase recycling, manufacturers should consider waste reduction and recycling from the initial stage of production.

In response, the Waste Deposit-Refund System was abolished in 2003 and replaced by the Extended Producer Responsibility system, which was successfully introduced and implemented for a total of 15 products, including paper cartons, glass bottles, metal cans, packaging film, batteries, tires, lubricants, electronic products, etc. Mobile phones and audio equipment were added in 2005; the list will include fax machines, printers and photocopy machines starting in 2006.

The MOE plans to successfully establish the EPR system and introduce the WEEE (Waste Electrical and Electronic Equipment) and ELV (End-of-Life Vehicle) policies in 2005. Also, it will tighten the regulations on industrial waste, disposable product use, and packaging material waste control, thereby having the circulatory waste resources management system firmly take root.

Regulation of the Use of Disposable Products

The use of disposable products has been regulated since March 1994, leading to the significant reduction of the use of plastic and paper bags in retail and wholesale stores. The use of disposable cups, plates and containers is prohibited in the hospitality industry, forcing the use of environmentally friendly materials such as paper or pulp in place of plastic, for lunch box containers for example. This has resulted not only in the reduction of synthetic resins waste generation, but also in the environment-friendly improvement of the nature of the waste itself.

And, in an effort to encourage voluntary abstinence of the citizens from using disposable products, 43 department stores and large discount retailers have raised the price of their plastic bags from 20 to 50 won per bag in May 2002, and have been promoting the use of cloth shopping bags by giving incentives such as discount mileage or coupons to those customers who bring their own shopping bags. In order to implement more efficient regulation and spontaneous compliance of relevant workplaces via public participation, the Ministry started a report system on January 1, 2004, by which those who inform on any breach of the regulation on the use of disposable products get monetary rewards.

The MOE is also pursuing policies to both quantitatively and qualitatively reduce the generation of packaging waste. Thus unnecessary packaging has been reduced and disposable packaging materials are increasingly replaced with environmentally-friendly materials to facilitate recycling.

At the present time, three policies are being implemented to reduce disposable packaging: regulation on packaging material, controls on packaging methods and phasing out plastic packaging material. The packaging material regulation controls the use of plastic that is not recyclable. Since September 1993, the use of expanded polystyrene (EPS) has been banned on all packaged products and toys. And since January 2001, PVC shrink film and packaging material laminated or coated with PVC have been prohibited, PVC has also been banned from packaging for eggs, deep-fried food, hamburgers and sandwiches since January 2004.

Policy on Construction Waste Recycling

Improvement in the living environment and booming rebuilding and redeveloping projects in Korea had resulted in construction waste soaring from 10 million tons in 1996 to 53 million tons in 2003. Concrete and asphalt accounted for 40.5 million tons, or 76.3%, of the construction waste generated in 2003.

As a result, the Act on the Promotion of Construction Waste Recycling was enacted in December 2003, institutionally backing the recycling of construction waste, and in January 2005, the Enforcement Ordinances and Regulations of the law were established.

Meanwhile, to enable stable supply of recycled aggregates, a Construction Waste Management System has been established, which links supply and demand with information on the production & demand volume and quality of recycled aggregates. Moreover, in order to encourage the production and supply of high-quality recycled aggregates, the MOE is pursuing a series of methods such as qual-

ity standards and certifications for recycled aggregates and notification of the mandatory volume.

Recycling Food Waste

Food waste in 2003 amounted to 11,400 tons a day, accounting for about 23% of the total municipal waste. The government in response has been implementing a wide variety of policies to reduce waste generation from the source and recycle as much food waste as possible.

Since 2002, in an attempt to emphasize the importance of reducing food waste and to encourage public participation, the Korean government has been implementing education and publicity campaigns in collaboration with NGOs. The government also launched a PR campaign in 2004 to reduce food waste through outdoor electronic billboards and advertisements at cinemas and subways.

For the stable operation of food waste processing facilities, the government provided about 27.7 billion won in 2004. Also in 2005, to enhance the efficiency and safety of facility operation and management, the government is making efforts to improve facilities and disseminate relevant technologies through inspection of treatment facilities nationwide and holding seminars and workshops for the responsible officials.

Meanwhile, the MOE is pursuing a government-wide establishment of "Comprehensive Measures on Food Waste (2005-2009)" through the formation of a governmental food waste policy council with nine government agencies. In 2005, the MOE established the Food Waste Forum, thereby providing a means of building consensus among various stakeholders including academia, relevant institutes and civic groups on food waste-related issues.

Recycling Landfill Gas

To prevent secondary pollution and global warming in the process of recycling landfill gas, landfill gas power plants have been installed nationwide and are producing electricity in 8 landfills, including the Saenggok landfill in Busan. Three more landfills including the Daegu Dasa Landfill are being equipped with relevant facilities.

As for the 50MW landfill gas power generation project in the metropolitan area, which is expected to be completed soon, the entire cost of the project (77.3 billion won) is financed by private capital. Once the facilities are completed, the air quality will be improved thanks to the decreased odors around the landfill, leading to significant import substitution effect with about 20 billion won of electricity generated.

A bird's- eye- view of the Sudokwon Landfill Site being changed into a grand park with various leisure and amusement facilities

Management of Infectious Waste

Waste from certain facilities like hospitals has the potential for secondary infection through pathogens. Therefore, with the need to treat medical or other infectious waste in a proper way, institutes producing such waste are increasingly under regulation. Moreover, to ensure safety during collection and transport, discarded surgical instrument and needles, as well as medical waste in liquid form, are required to be stored in specially made plastic containers.

Incineration facilities for infectious waste are subject to more stringent emissions standards for dioxin and air pollutants and a TMS (Tele-metering System) attachment is mandatory for them to monitor the emission of pollutants during incineration on a real-time basis.

Expansion of waste management facilities

The MOE plans to reduce municipal waste until 2011 by 12% of 2000 levels to provide a stable infrastructure for treatment. Landfill burial, incineration and recycling are targeted to be balanced at rates of 53%, 30%, and 17% respectively.

As of 2005, the number of waste treatment facilities in operation is as follow: 81 for incineration facilities (9,416 tons/day), 235 for landfill sites (disposal capacity: 201,397 tons/day) and 252 for food waste recycling facilities (11,589 tons/day).

Harmony of Environmental Protection and Economic Growth

The Ministry of Environment is pursuing environmental policies that facilitate a win-win synergy between the environment and economy by achieving economic development while also protecting the environment. Currently, the Comprehensive Plan for National Environmental Management (2006~2015) is being drawn up in order to come up with a basis for implementing environmental policies that achieve sustainable development, with efforts made to strengthen partnerships in every walk of life. Also, the importance of environmental education is being emphasized in schools and society as a whole in an effort to enhance public awareness on environmental issues. There have been efforts made to educate manpower in the field of environmental technology as well.

Besides focusing on the management of natural elements like water and air, environmental policies will be implemented to protect receptors such as people and the ecosystems that suffer from environment pollution.

Yeongdeok Wind Power Plant, Gyeongsangbuk-do

Development of environmental technology to become an environmental powerhouse

The Korean government is pushing forward the"Eco-Technopia 21 Project (ET21) (2001~2010)," with the aim of being the world's fifth largest environment industry. The government invested 280 billion won from 2001 to 2004 for implementing 659 tasks, and it is expected that 88.2 billion won will be invested in future projects. In particular, starting from 2004, strategic environmental technologies were selected as future growth engines and are being managed separately as the "ECO-STAR Project (2004~2010)." This project includes the technological development in two fields: "Zero or Low Emission Vehicles" and "Advancement of Water Treatment Processes."

In addition, financial support will be provided to a total of 10 universities to educate manpower in the fields of core environmental technology. Also, education in new technologies will be available at the "Environmental Technology Education Center" to foster environmental professionals in the industries.

Fostering environmental industry into strategic export industry

Korea has established the "Environmental Industry Development Strategies" in 2001 and has been implementing the strategy to support Korean companies in the environmental industry so that they can enter the global environmental market, which has grown by more than 3% each year. In particular, in order to encourage and facilitate Korea's entry into the rapidly growing environmental market in China, Korea and China discussed ways to encourage cooperation in the environmental industries of both countries at the Environment Ministers Meeting held in Beijing in June 2005. Moreover, the "Korea-China Environmental Industry Center," located in Beijing, was moved to another location and its role was strengthened. Also, a team to explain environmental technology was dispatched to 10 provinces and cities in China that were selected for their high market potential. More exchanges will take place in the environmental industry between the two countries including the joint development of technology (4 billion won to be invested in 20 tasks in 2005).

In addition, a joint office of two affiliate institutions of the Korean Ministry of Environment was established in June, 2005, in Hanoi, Vietnam, which has an economy with the second highest growth rate in Asia after China. It is expected that the office will act as a base for environmental cooperation between Korea and Southeast Asian countries.

Establishment of green business management & green GDP

The Ministry of Environment has developed and popularized environmental management guidelines to make business management and production more environmentally-friendly. Also, the MOE has increased the number of items to be entitled as eco-label and expanded the range of the subject of Common Criteria Recognition Arrangement (CCRA). Also, "The Law on Promotion of environmentally-friendly

Products Purchasing" has come into effect on July 1, 2005, in an attempt to encourage the purchase of environmentally-friendly products by making it mandatory for government agencies to buy green products. The Ministry is also implementing a 10-year plan to establish an integrated account of the environment and economy in order to calculate the Green GDP.

Improvement of environmental public health & management of hazardous chemicals

In 2004, the MOE expanded the environmental policies which had been mostly about the management of natural elements such as air or water, to be receptor-oriented policies which protect those affected by environmental pollutions. In 2005, a 10-year Comprehensive Environmental Protection Plan was established and policies will be implemented to protect the public from contracting diseases like cancer, asthma, and atopic dermatitis that result from exposure to hazardous chemicals. In addition, the "Toxic Chemicals Control Act" will be amended to be implemented from January 1, 2006 to include a Risk Assessment System and Chemical Treatment Restriction which puts limits on the use of hazardous substances by specifying and managing high-risk substances. In addition, in order to follow the Stockholm Convention on Persistent Organic Pollutants (POPs), the MOE is planning to enact a Persistent Organic Pollutants Management Act. Therefore, basic researches focusing on finding out the range of contamination by endocrine disruptors will be changed into an in-depth investigation on areas that are suspected to be influenced by POPs. The Ministry will extend support to related agencies to establish cooperation among those agencies and to strengthen international environmental cooperation to control and manage endocrine disruptors.

Establishment of framework for sustainable development and strengthened partnership

The Ministry of Environment will set goals for environmental improvement for the next 10 years (2006~2015) and in order to achieve this, the Ministry is preparing to come up with 10 long-term plans for the environment; including action plans for national environmental management, nature conservation, and marine environment protection.

Also, a local government with an outstanding environmental management record will be selected every 2 years as a "Green City" in order to encourage local governments to implement environmentally-friendly administration. In 2004, 9 local governments were selected, including the Bukgu District in the city of Gwangju. Currently, the MOE is negotiating with the Ministry of National Defense to enhance cooperation in environmental management of military troops. Other efforts have also been made to strengthen partnerships with all sectors of society, including holding policy conferences to allow negotiations between NGOs, religious organizations, and other enterprises.

Promotion of environmental education at schools and in society

Altogether 32 schools have been designated as environmental conservation schools (13 kindergartens, 13 primary schools, 3 middle schools, and 3 high schools), which are receiving financial support from the MOE and being provided with environmental education materials.

In addition, a youth environmental education program is being operated, which includes visits to basic environmental facilities, tidal flats, and outstanding eco-tour sites. Eco-tour visitors totaled 37,000 in 203 programs in 2004 alone.

Furthermore, a traveling environmental class is in operation in places where there is no environmental education facility. In the first half of 2005, 9 environmental education text books were published and a total of 80,000 copies were provided to schools and social organizations for free.

International Cooperation

Today environmental problems transcend national borders with wide-ranging impacts across the nations. This makes concerted efforts by the international community an integral element in mitigating environmental challenges such as global warming and desertification. With this recognition, the Ministry of Environment has been making joint efforts towards both regional and international environmental protection. In particular, Korea hosted the Eighth Special Session of the UNEP Governing Council and Global Ministerial Environment Forum in March 2004, and the Fifth Ministerial Conference on Environment and Development in Asia and the Pacific in March 2005, which were great opportunities for Korea to increase its role in the international community.

Regional efforts

Korea, China, and Japan are geographically close to one another and they are under the influences of environmental problems that arise from Northeast Asia. The rapid industrial development of the region has exacerbated environmental problems with a substantial increase in transboundary threats like acid rain and marine contamination.

These problems have highlighted the need for joint countermeasures, and environmental cooperation in the region has expanded significantly since the 1990s. Many multilateral agreements were entered into, and regional organizations like the Northeast Asia Conference on Environmental Cooperation (NEAC) and the Northeast Asian Sub-regional Program of Environmental Cooperation (NEASPEC) were established. In particular, the Tripartite Environment Ministers Meeting among Korea, China, and Japan (TEMM) was established in 1999, for a regular discussion of major environmental issues in Northeast Asia. In addition, the first Environment Ministers Meeting between Korea and Vietnam was held in 2000, and since then, cooperation with other Southeast Asian countries has been steadily activated through environmental conservation programs, environmental industry exchanges, and the Knowledge Partnership Programs.

The Seventh Tripartite Environment Ministers Meeting (TEMM)

Tripartite Environment Ministers Meeting among Korea, China and Japan , TEMM

Since its first meeting in Seoul in January 1999, the Tripartite Environment Ministers Meeting among Korea, China and Japan (TEMM) has been a regular ministerial conference held in one of the three countries in turns. It implements specific cooperative programs to address in collaboration with environmental problems in the Northeast Asian region and to present long-term visions for it.

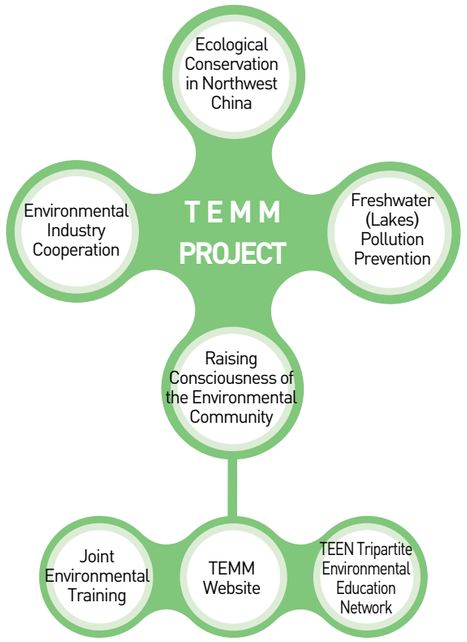
At the 4th TEMM held in Seoul in April 2002, the three countries agreed to prepare joint measures to solve the DSS (Dust and Sandstorm) issue, the most urgent problem in the region, and requested participation from international organizations like UNEP and UNESCAP. TEMM has also paved the way for international cooperation to address DSS problems.

At the 5th TEMM held in Beijing in December 2003, there was a special session called "Senior Officers Meeting to prevent and control DSS in Northeast Asia," where Korea, China, Japan, Mongolia, North Korea and international bodies such as ADB and UNEP were present. This meeting was successful in bringing global attention to the importance of environmental conservation. Also it decided to jointly promote environmental education programs for children.

At the 6th TEMM held in Tokyo in December 2004, the Ministers agreed to install a working group of TEMM which would take charge of preparing programs to strengthen the role of TEMM in Northeast Asia.

At the 7th TEMM held in Seoul in October 2005, the Ministers paid particular attention to sound material-cycle society or circular economy, DSS and climate change.

Structure of TEMM Collaboration



Meanwhile, TEMM has focused on boosting community sentiment among the three countries and promoted TEMM projects such as Environmental Industry Cooperation Round Table, Freshwater (Lakes) Pollution Prevention Project, Ecological Conservation in Northwest China, etc.

The status of those projects is outlined as follows:

Tripartite Environmental Education Network (TEEN)

This project aims at sharing information through composing networks for environmental education in the three countries. This is the only cooperative project implemented in the civil sector. Since its first workshop and symposium was held in Shizuoka, Japan in Oct. 2000, it is held annually by each country in turn. In the fifth workshop & symposium, held in Tianjin in December 2004, the development of joint environmental education materials were discussed.

Environmental Industry Cooperation Round Table (RT)

This is an annual conference aiming to develop environmental industry and to strengthen regional collaboration through the exchanges of information on environmental industry and policies. The first meeting was held in Seoul in June 2001, and three more sessions followed until 2004.

At the 3rd RT which was in Beijing in December 2003, participants agreed that the environmental policies should be about sharing information and promoting cooperation, not focusing on regulations.

The 4th RT in Seoul in June 2004 discussed environmental technology exchange, corporate strategies for sustainable development, environmental labeling and policy sharing among the three countries to promote the purchase of environmentally-friendly products.

Tripartite Joint Environmental Training

The joint environmental training for public officials in the environment ministry in the three countries took place 4 times after 2001, with the purpose to offer information on the Northeast Asian environment and to cultivate environmental community spirit. The theme of the joint training is determined through tripartite consultation and a joint instructor team that consists of experts from the three countries in charge of the training. The 5th Tripartite Joint Environmental Training was held in Incheon, Korea in November 2005.

TEMM Website

In order to introduce TEMM-related and other environment-related materials of the three countries, and also to inform the status of environmental cooperation of Northeast Asia countries, the 2nd TEMM (Beijing, Feb. 2000) decided to make a joint home page, which was created in 2001 under the supervision of the National Institute of Environmental Research.

Joint TEMM Home page (www.temm.org)

Ecological Conservation in Northwest China

This project, which does field research of Inner Mongolia and civil officials' training, was adopted at the 2nd TEMM in an attempt to improve the environment of northwestern China. So far, a field seminar to boost initial promotion capacity, ecological research by experts from the three countries and training programs for Chinese public officials have been implemented. Recently, the research on the ecological restoration of Northwestern China is underway through building a pilot Eco-village Project in Inner Mongolia.

Freshwater (Lakes) Pollution Prevention Project

This project was established at the 2nd TEMM with the purpose to study the measures for integrated management of freshwater quality in China. As for the project site, Lake Xihu in Hangzhou, China was selected. Since then, the three countries have split up the tasks; China collects and provides materials related to Xihu; Japan has invested 1 million yen in this project and takes charge of developing enhanced water quality technology; Korea works on developing the water quality management system. Under this project, the joint manual of the management of freshwater eutrophication has been completed and freshwater quality system has been established. The International Symposium on Freshwater(Lakes and Marshes) Pollution Prevention was held in November 8~10th, 2005 in Incheon, Korea, and a technical training program for Chinese experts will take place in December 2005.

Combating Dust and Sandstorm (DSS) in Northeast Asia

The environment ministers of Korea, China, and Japan agreed to develop a joint DSS monitoring network at TEMM 4 held in Seoul, Korea in April 2002. This was in recognition of the fact that DSS was one of the most serious environmental issues in Northeast Asia and they agreed to promote joint training and education programs to help mitigate DSS. The three countries also agreed to promote cooperation with international organizations like UNEP and UNESCAP. In this light, Korea, China, Japan, and Mongolia, in collaboration with ADB, UNESCAP, UNEP, and UNCCD, have been promoting the first stages of "the ADB-GEF Project on DSS in Northeast Asia" from January 2003 to March 2005. The project was implemented with US$1,000,000, which was co-funded by the Asian Development Bank and the Global Environment Facility. Also, a Senior Officials Meeting to prevent and control DSS in Northeast Asia was

held as a special session at the fifth TEMM in December 2003 in Beijing. The goal of the meeting was to come up with specific implementation plans to combat DSS with the participation of the Republic of Korea, Japan, China, Mongolia, and DPRK and international organizations such as ADB and UNEP. In particular, the meeting laid the foundation for close cooperation among countries in Northeast Asia by including DPRK as a participating country.

Dust and Sandstorm phenomenon in China

Seoul affected by a Dust and Sandstorm in Spring

Bilateral cooperation with Northeast Asian countries

Environmental cooperation with China began in full force with the establishment of the Korea-China Environmental Cooperation Agreement in 1993. On the basis of this agreement, the Joint Committee on Korea-China Environmental Cooperation has been alternately hosted every year since 1994. At the 10th meeting held in Zhangjiajie, China, the two countries agreed to carry out 10 bilateral cooperation projects such as projects to combat Dust and Sandstorm (DSS) and they also concluded Korea-China migratory bird protection agreement.

In June 2005, at the Korea-China Environmental Ministers Meeting, the two ministers signed an arrangement on Ground Monitoring and Information Exchange for Dust and Sandstorms. As a result, 6 monitoring stations were set up where DSS originated in China and where DSS travels to the Korean Peninsula. They are providing DSS information (PM10) in the form of e-mail to Korea in real time. Also, after the monitoring equipment and the transmission systems are modified from 2006 to 2007, Korea and China could share real-time DSS information starting from 2008. In order to achieve this, Korea agreed to invest 563 million won from KOICA to develop the system, and China will takes responsibility of the operation cost. It is expected that Korea will receive information about DSS that takes place in China beforehand, which will help reduce damage caused by DSS by utilizing the information as data to give early warnings about DSS.

Environmental cooperation with Japan also gained speed through the conclusion of the Korea-Japan Environmental Cooperation Agreement in 1993. Since 1994, the Joint Committee on Korea-Japan Environmental Cooperation has been meeting annually in alternate locations to exchange environmental policy experiences of each country and discuss ways to collaborate on global environmental issues. At the 8th Korea-Japan Joint Environmental Committee held in Seoul in 2003, the two nations agreed to undertake 23 new joint projects and discussed measures to strengthen bilateral cooperation within the frameworks of global initiatives including the Decade of Environmental Education for Sustainable Development, the Cartagena Biosafety Protocol, the Climate Change Convention, Convention on International Trade in Endangered Species (CITES) and other multilateral initiatives in Northeast Asia.

Korea also established an environmental cooperation agreement with Russia in 1994 for collaboration in selected research areas, like the protection of transboundary migratory birds. The 3rd Korea-Russia Joint Committee was held in March 2004.

With Mongolia, Korea held the Korea-Mongolia Environment Ministers Meeting in Tokyo in 2000 and established an environmental arrangement for major areas of interest such as DSS monitoring and research and the development of Mongolia's water resources.

In addition, some NGOs in Korea are making voluntary efforts to undertake afforestation projects and provide training and education in DSS sources in China and Mongolia.

Global efforts

There are about 220 international conventions in the areas of air quality, water quality, waste and natural environment. Korea has joined 45 such conventions including the Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), the Montreal Protocol on Substances that Deplete the Ozone Layer, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the Convention to Combat Desertification (UNCCD) as means to contribute to global environmental conservation efforts.

Also, Korea has been making contributions to financially support global environmental preservation projects of developing countries by establishing the Global Environment Facility (GEF). The GEF Fund has brought on not only regional support in Northeast Asia in projects related to DSS, but it also helped global environmental conservation. Korea has contributed approximately US$17 million to the 1st, 2nd, and 3rd term funds during 1994-2005, and plans to allocate approximately US$6~7 million for the 4th contribution (2005-2009).

COP 11 of the United Nations Climate Change Conference held in Montreal, Canada

Addressing Global Warming

At the Earth Summit (UNCED) in Rio de Janeiro in 1992, most nations joined the United Nations Framework Convention on Climate Change (UNFCCC), an international treaty that seeks to mitigate global warming by reducing greenhouse gases such as CO2 and methane. The convention also mandated 39 developed countries to set targets for greenhouse gas reduction (to cut greenhouse gas emissions by an average of 5.2% from 1990 levels during the 1st commitment period from 2008 to 2012). Furthermore, the governments agreed to an additional treaty, the Kyoto Protocol, in December 1997 with concrete and legally binding measures for the effective implementation of UNFCCC. Korea signed the UNFCCC in December 1992 and ratified the Kyoto Protocol in November 2002.

Although Korea is excluded from the list of Annex 1 countries, the nation falls under significant impact from greenhouse gases and there is a need for the government to develop long-term national strategies to fight the impact of climate change. Therefore, Korea formed the Inter-Ministerial Committee on UNFCCC in 1998 and has been promoting the Comprehensive Action Plans since 1999. The 2nd phase of the Comprehensive Plans was implemented from 2002 to 2004, including 84 projects in 5 areas, such as emissions reduction.

In order to cost-effectively expedite greenhouse gas reduction, the MOE has developed and promoted the measures for the pilot operation of the Emission Trading System specifically targeting greenhouse gas emissions since February 2004. The Ministry has contracted research projects (2.15 million won) with five research institutes including the Korea Environment Institute (KEI) and Korea Energy Economics Institute to develop a final set of measures for system implementation. Furthermore, the MOE-Korea Meteorological Administration Joint Climate Change Symposium was organized in August 2003 and November 2004 with expert presentations on climate change and adaptation measures, research demonstrations, and cooperation forums. Efforts also included the implementation of 18 projects, such as providing climate change impact assessment systems and climate change adaptation programs, expanding the deployment of CNG (Compressed Natural Gas) buses, and promoting the utilization of landfill gases. The MOE has further expanded the scope of the measures and launched new actions to increase public awareness on climate change by organizing local seminars and utilizing various communication methods such as online and mass media. For example, a Korean website (www.gihoo.or.kr) on climate change was set up in 2003, allowing the public to get access to useful information.

In particular, starting from February the Kyoto Protocol came into effect so the 3rd phase of Comprehensive Measures for UNFCCC were drawn up to establish the implementation basis for the Kyoto Protocol and to reduce green house gases efficiently.

From 2005 to 2007, the 3rd Comprehensive Measures will be carried out with the implementation of 90 projects, including establishment of an implementation basis for the UNFCCC and development of climate change adaptation programs. In addition, projects like climate change monitoring and disaster prevention system will be established as part of climate change adaptation programs. Research will be carried out on the impact that climate change has on the ecosystem and public health.

Efforts toward sustainable development

In August 2002, Korea participated in the World Summit on Sustainable Development in Johannesburg. In addition to the governmental delegates, various members of the National Assembly, Local Agenda 21 and NGOs attended the WSSD. Furthermore, Korea played a role in disseminating exemplary practices for environmental protection by introducing the environmentally sound hosting of the 2002 Korea-Japan FIFA World Cup titled "Dynamic Korea, Clean Korea" and the successful implementation of the Volume-Based Waste Fee System at the official exhibition center. At the Johannesburg Summit, Korea's efforts to implement Agenda 21 in the areas of poverty eradication and sanitation, which constitute the crux of sustainable development, were highly praised in the Agenda 21 implementation report produced by the United Nations.

Including almost 400 delegates from Korea, 60,000 people participated in WSSD showing ever increasing concern about this meeting and also global environmental issues. This high turn out, which was almost doubled from last year, was due to the poverty and ecological devastation problems which are getting increasingly serious. All the participants shared the urgent feeling that without addressing the current situation, where 40% of the global population suffer from water deficiency and two third of the whole population live on less than 2 dollars a day, sustainability of the global community and our ecosystem could not be realized. With the exception of the agenda to increase the use of recyclable energy to 15%, most of the discussion focused on the eradication of poverty.

Mutual Development through Environment & Trade Negotiations

Korea has been making considerable efforts in international negotiations on environment and trade by joining numerous initiatives, including the WTO Doha Development Plan, the OECD Trade & Environment Working Group and others to enable Korea to achieve the mutual development of environment, economy and trade. In March 2003 and in May 2005, the Korean government submitted the first and second initial offer of its schedule of specific commitments regarding environmental services to the WTO and has been negotiating with the WTO members including EU, US and Japan on this matter. In order to improve the global environment through free trade of environmentally-friendly products, Korea submitted a proposal of environmentally-friendly products based on the list from OECD/APEC after negotiating with stakeholders. The MOE has also prepared a list of environmentally-friendly products as a means to contribute to the global environment by encouraging the active

trade of these products.

In addition, efforts are being made to improve the environmental soundness of bilateral Free Trade Agreements by seeking ways to minimize the FTAs' negative impacts on the environment. The efforts to achieve mutual development of environment and economy include the establishment of FTA Environmental Assessment methods, mutual agreement on environmental labeling and cooperation among environmental industries.

Cooperation with international organizations

Korea maintains close cooperation with many international environmental organizations to exchange information and to play its part in global environmental conservation. For example, Korea promotes many cooperation initiatives with UNEP through the secondment of the MOE officials to UNEP and making trust fund contributions. In particular, the successful hosting of the 8th UNEP Special Session of the Governing Council in Jeju Island in March 2004 strengthened the relations between ROK and UNEP. In addition, Korea not only promotes a partnership project with UN ESCAP through secondment of the MOE officials, but also is actively engaged in environmental conservation in Asia and the Pacific region by hosting the Fifth UN ESCAP Ministerial Conference on Environment and Development in 2005.

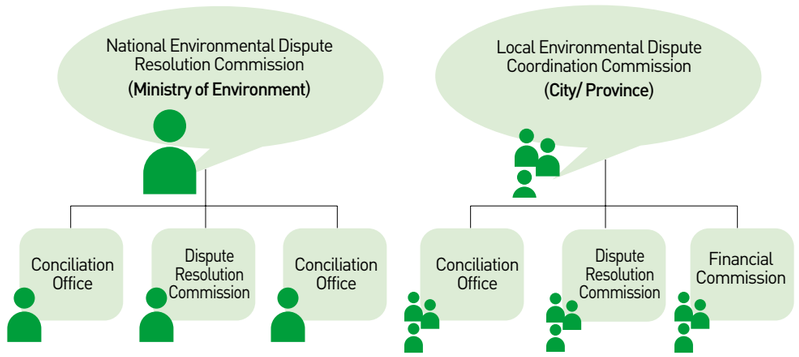
Cooperation with international funding organizations including the World Bank and GEF is also being maintained. In particular, Korea promotes the Knowledge Partnership Project in collaboration with the World Bank, which is aimed at disseminating Korea's environmental experiences and expertise to the developing countries of Asia. In 2003, Korea successfully carried out three projects for the first term of the project, which included "the Environmental Management of Small and Medium sized Enterprises (SMEs) and Industrial Zones" in China, "Integrated Watershed Management for Laguna de Bay" in the Philippines and "Regional Environmental Management for Traditional Villages" in Vietnam. As part of the second term of the project, five new projects were launched in 2004, which include markets for biodiversity in East Asia, ecological design strategy for a new urban development area in Vietnam, a rural development strategy in Laos, livestock waste management in China, and rules and regulations for clean water in the Philippines.

National Environmental Dispute Resolution Commission

The Government of Korea legislated the Environmental Dispute Adjustment Act in August 1990, followed by the formation of the National Environmental Dispute Resolution Commission (NEDRC) and Local Environmental Dispute Resolution Commissions in 16 local cities in July 1991. With these accomplishments, Korea has been providing citizens with a structured dispute settlement system that secures the citizens' rights and mutual benefits without going through traditional legal proceedings.

The National Environmental Dispute Resolution Commission is a permanent commission that has 9 members including the commissioner. The commission handles environmental disputes that have financial damages exceeding one hundred million Korean won, or if the government or local authorities are involved in the disputes. On the other hand, the Local Environmental Dispute Coordination Commission, a non-permanent body, is responsible for cases with financial damages amounting to less than 100 million won, where the disputes took place in the jurisdictions of cities and provinces.

Organization of National Environment Dispute Resolution Commission



From 1991 to 2004, a total of 2,124 environmental disputes were reported and 1,660 of them were successfully settled. Out of them, financial disputes accounted for 38% of all such cases (632 cases) and coordinated cases took up 11% (179 cases) and 51% (849 cases) of them reached an agreement.

Percentage of cases (%)

Classification	Reported	Settled			
		Total	Financial	Coordinated	Agreed
Total	2,124(100)	1,660(100)	632(38)	179(11)	849(51)
Central	1,540(73)	1,239(75)	599(36)	33(2)	607(37)
Local	584(27)	421(25)	33(2)	146(9)	242(14)

Out of the 1,660 cases that were settled, environmental disputes arising from noise & vibration marked 1,420 cases, which accounted for 85% of the total number of disputes. This was followed by air pollution with 146 cases (9%) and water pollution with 69 cases (4%).

Percentage of cases (%)

Classification	Total	Noise & Vibration	Air Pollution	Water Pollution	Marine Pollution	Others
Total	1,660(100)	1,420(85)	146(9)	69(4)	9(1)	16(1)
Central	1,239(75)	1,065(64)	105(6)	50(3)	9(1)	10(1)
Local	421(25)	355(21)	41(3)	19(1)	0(0)	6(0)

In addition, psychological damages accounted for the largest share of damage due to environmental pollution with 670 cases (40%), which clearly shows a strong public desire for not just physical property, but also for a pleasant living environment.

Percentage of cases (%)

Classification	Total	Psychological	Construction +Psychological	Livestock	Agricultural	Construction	Others
Total	1,660(100)	670(40)	366(22)	240(14)	106(6)	96(6)	182(12)
Central	1,239(75)	499(30)	280(17)	188(11)	70(4)	52(3)	150(10)
Local	421(25)	171(10)	86(5)	52(3)	36(2)	44(3)	32(2)

On the other hand, among the environmental disputes settled by the National Environmental Dispute Resolution Commission, the Seoul metropolitan area accounted for 57% of the total disputes (702 cases). Seoul took up 28% (349 cases), Gyeonggi Province, 23% (284 cases) and Incheon, 6% (69 cases). Other cities and provinces comprised the rest of the disputes with 43% (537 cases).

Percentage of cases (%)

Classification	Total	Seoul	Gyeonggi	Incheon	Others
Central	1,239(100)	349(28)	284(23)	69(6)	537(43)

It is expected that environmental disputes will continue to grow in various sectors since public demand for a pleasant living environment will increase with better living standards. Therefore, it is important to strengthen the expertise of people responsible for settling environmental disputes, to promote scientific and structured negotiation procedures, and to ensure a transparent decision-making processes. As a quasi-legal institution, the National Environmental Dispute Resolution Commission will make the utmost efforts to do its best to gain the trust of the public by assisting people involved in environmental disputes.

Featured MOE Policies & Efforts

The MOE is putting more energy into realizing environmentally sound and sustainable development and spreading public awareness toward the environment by designating Green Cities, aimed at spurring the sustainable development of provincial areas or introducing the eco-label certification policy, for example. It has also improved environment assessment procedures designed to maintain environmental standards and protect the ecosystem by implementing such programs as the Prior Environmental Review System and the Environment Impact Assessment.

Green City Designation

Background and Objective

Since its inauguration, the Participatory Government has supported the implementation of decentralization policies. However, institutional instruments to allow environmentally sound local administration has been lacking. Therefore, the MOE has adopted Green City designation system to foster local governments into becoming the center of local administration through the enhancement of their local environmental management capacity, thereby realizing environmentally sound and sustainable development on the local level.

The concept of this system is that by making local governments with excellent environmental bases and policies to enter in a contest and designating them as Green Cities, it will raise the interest and participation of local government chiefs and residents and elicit constructive competition between local governments for the development of local administration.

Outline

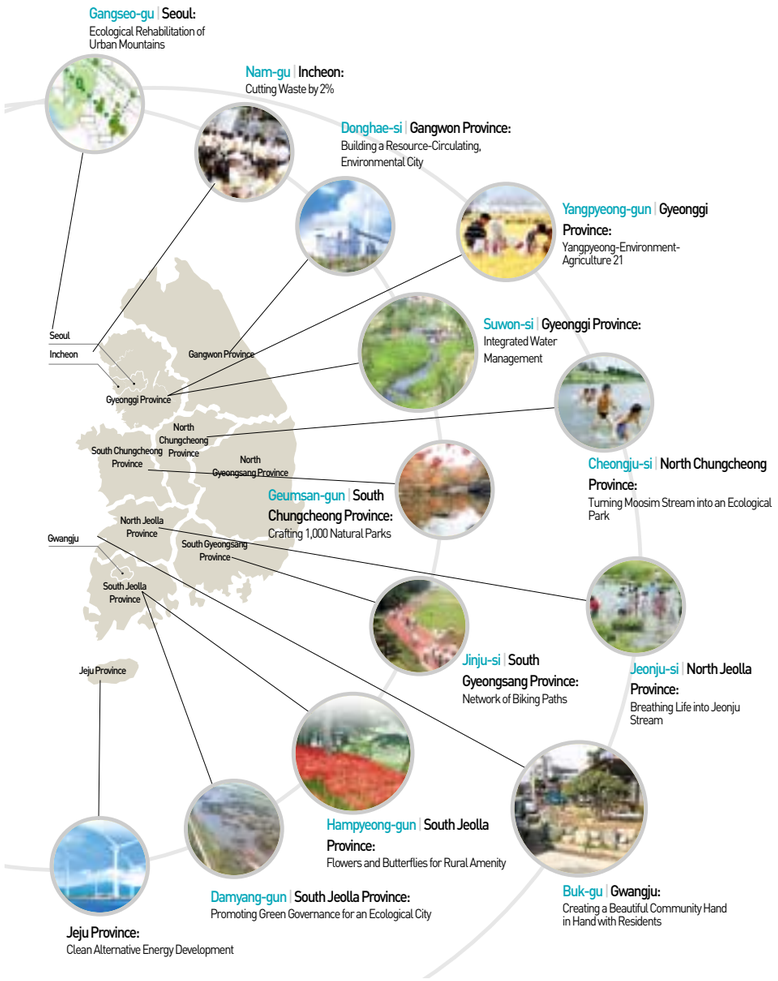
Green Cities are exemplary local districts that have practiced environmentally-friendly local administration through natural preservation and improvement of both the living and urban environment through public participation. By implementing various innovative policies, the Green Cities embody sustainable local development. Green Cities were selected through a contest convened by the Ministry of Environment and organized by Green Korea United, Korean Council of Local Agenda 21, Korea Environmental Policy and Administration Society, Seoul Broadcasting System and Donga Daily.

The Selection Committee consisted of experts and representatives from academia and civic organizations.

Green Cities were selected from a pool of basic environmental administration units, namely, cities (-si), counties (-gun), and sub-local authorities (-gu). 83 local administrative units participated in the 1st Contest (May ~ July 2004).

17 Green Cities were selected after a thorough field investigation of those units that had passed the paper review on elements affecting the environmental resource base, including natural ecosystem, air, water, waste and policy tools.

Green City Map



Awards in the First Green City Contest

- Presidential Award: Buk-gu in Gwangju-si
- Prime Minister Award: Suwon-si & Hampyeong-gun
- Environment Minister Award: Jeju-do, Jinju-si, Cheongju-si, Damyang-gun, Geumsan-gun & Gangseo-gu
- Joint Organizers Special Award: Donghae-si (Korean Council of Local Agenda 21), Jeonju-si (Korea Environmental Policy and Administration Society), Yangpyeong-gun (Seoul Broadcasting System) and Nam-gu (Donga Daily)

Environment-Friendly Products

The World Summit on Sustainable Development (WSSD) in 2002 recommended the establishment of 10-year framework programs on sustainable consumption and production to achieve the goals of sustainable development.

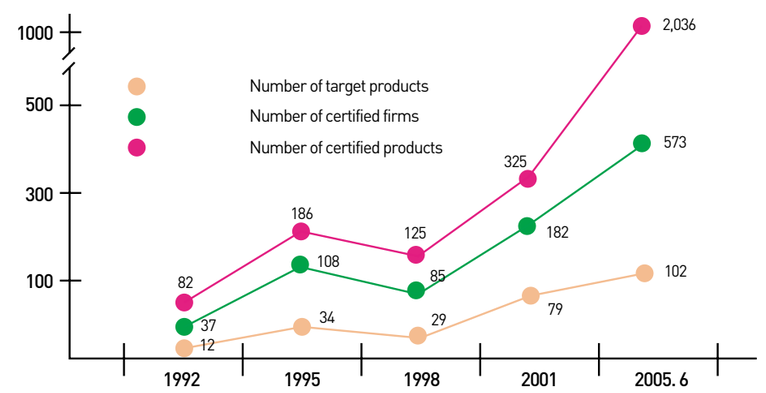
Also in the report titled "The Environmental Performance of Public Procurement" the OECD stated the need for mandatory policies regarding environmentally sustainable government procurement, pointing out that the latter will gain synergy when integrated with relevant policies, such as the Local Agenda 21.

Eco-label policy

The MOE has implemented from 1992 the eco-label certification policy to facilitate the production and consumption of environment-friendly products (Eco-Products). Recently, the number of Eco-Product certification has risen dramatically with tighter environmental regulations in the international market and increased interest in well-being.

Eco-labeling standards are currently in operation for 107 items; approximately 2,300 products received certification as of August 2005.

Number of Eco-labeled Products



Introduction and operation of the Environmental Declaration of Products policy

Since 2002, the MOE has introduced and operated the Environmental Declaration of Products (EDP) policy. The EDP quantifies and labels the impact of products on the environment -- natural resources used in the entire processes of manufacturing, consumption and disposal, as well as pollutant emissions from the processes.

EDP certification is granted for 22 items, including refrigerators and LCD monitors, with 278 items certified as of July 2005.

Title	Environmental Declaration of Products		
Logo			

Mandatory purchasing of Eco-Products

To build the capacity of the Environmental Small and Medium Enterprises (SMEs), the MOE has operated a policy making the purchase of products with the eco-label and Good Recycled Product mark mandatory for public institutions since1994.

To consolidate the leading role of government institutions in promoting the environment-friendly product market, the Act on the Promotion of the Purchase of Environmentally Friendly Products, which mandates the purchase of environment-friendly products, was legislated (December 31, 2004) and implemented on July 1, 2005.

Major Details

Eco-Products are categorized as products certified with the eco-label or Good Recycled Mark and in compliance with certification standards for each category.

Section	Certificate of Environment Mark	Certificate of Good Recycled
Logo		Good Recycled
Certificate Authority	Korea Eco-product Institute	Korean Agency for Technology and Standards (Ministry of Commerce, Industry and Energy)

The MOE has designated the central and local governments, subsidiary organizations, government-invested enterprises and government-funded research institutes as target organizations for mandatory purchase of Eco-Products.

The Ministry establishes the Basic Plan for encouraging the purchase of Eco-Products every five years. It also announces guidelines on policies to provide Eco-Products every year, thereby presenting a direction for policies to make such products available.

The heads of public institutions are required to devise annual purchase plans. If the desired item is available as an Eco-Product, the relevant institution should purchase the eco-products and publicly announce its purchase plans and the amount of Eco-Products purchased. The Korea Eco-Product Institute (KOECO) was established and is currently in operation. The Korea Eco-Labeling Association, which had been established in 1994, was changed into the KOECO in September 2005, a legal entity, to expand its role and strengthen its expertise.

The KOECO plays the role of providing information and education and promoting Eco-Products, thereby supporting the purchase of Eco-Products by public institutions.

Future Plans

The MOE aims to raise consumer awareness of Eco-Products through continuous training and publicity, as well as continuing to train purchasing personnel of public institutions. Moreover, communication between producers of Eco-Products and consumers is improved through the hosting of an Eco-Product exhibition in November each year.

In addition, the policy for Eco-Product purchase is implemented throughout the industrial sector, including the voluntary agreement on Green Purchasing.

Furthermore, the MOE will establish a production/consumption network for Eco-Products between public agencies, consumers and businesses through an information portal site on environment-friendly products beginning in the first half of 2006.

Lastly, the production of Eco-Products will be complemented through the dissemination of Eco-Design Techniques, etc.

Eco Products Korea 2005

Innovation in Environmental Assessment

The Ministry of Environment is implementing a Prior Environmental Review System (PERS) for various administrative plans and the Environmental Impact Assessment (EIA) for development projects, aiming to achieve "environmentally sound and sustainable development" by maintaining environmental standards and protecting the ecosystem. Historically, many projects have run into opposition by local residents and environmentalists after being put into operation. These problems resulted mostly from the lack of sufficient discussion and disputes often led to forced suspension of projects and changes in plans. In this context, the ministry is promoting systemic and operational reforms of Environmental Assessment.

Strategic Environmental Assessment

Governmental plans and development programs & projects used to be examined and concluded only internally by organizations in charge, and had not gone through any procedures for public opinion collection. Therefore, when projects were launched and opened to the public, environmental disputes and conflicts inevitably followed and this mostly ended up with suspending ongoing projects. The MOE is carrying out radical reform in system and operation of Environmental Assessment and also is strengthening Sustainability Appraisal to resolve this problem.

There have been criticisms on PERS, because of limitation on the range of business, shortage of time for review and also inadequate procedures to collect public opinions which have often led to social conflict.

Therefore, related statutes are currently being amended to enable the introduction of Strategic Environmental Assessment (SEA), an appraisal system to minimize social disputes arising from difference in opinions regarding development and preservation. With this, the MOE will improve and develop the PERS so that the suitability and feasibility of the projects can be reviewed and determined through profound comparison of various alternatives from an environmental perspective during the drafting phase, with various public opinions taken into consideration.

The amendment of the Framework Act on Environmental Policy was completed on May 31st, 2005 in order to improve the PERS. Also detailed guidelines on related subordinate laws are being drawn up before the enforcement scheduled for June 1st, 2006.

Improvement of Prior Environmental Review System

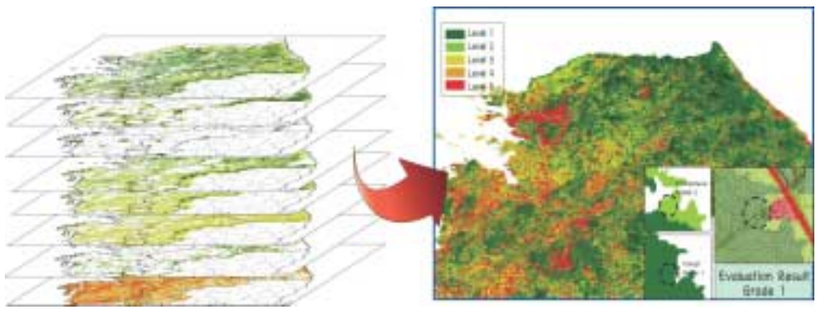
	Current	Revised
Objects	Restricted to 48 kinds of plans & programs	In principle, all plans & programs of the projects
Time	After blueprint, no feedback given	Alternative analysis
Assessment Method	No public participation	Public participation mandatory
Consultation	No alternative analysis	During blueprint, feedback is given

Development of National Environmental Zoning Map

Currently, a National Environmental Zoning Map is being developed so that objective information on the environment can be provided when reviewing the feasibility of the plans and projects. This is to make sure Sustainability Appraisal is implemented scientifically and to enhance the predictability of negotiations between project developers and authorities responsible for plans and programs.

The National Environmental Zoning Map has a wide range of national environmental data, including 56 conservation areas designated by various statutes and 11 clauses of environmental and ecological information. The national territory is divided into 5 different levels by objective evaluation of the value for conservation. Once the map is completed, it will be available to the public via the Internet to allow institutions establishing plans and programs or enterprises coming up with development projects to know beforehand what data will be reviewed by the consulting institution of Sustainability Appraisal. This will have the effect of preventing any losses that might occur due to unexpected suspension of projects according to the result of Sustainability Appraisal.

The National Environmental Zoning Map for the Seoul Metropolitan Area was finished in 2003 and the map for central area of Korea in 2004. The production of the map for southern Korea is underway and expected to be concluded by the end of 2005, enabling the completion of the National Environmental Zoning Map of the entire country.



Process of Producing the National Environmental Zoning Map

Prior Consultation Service for Site Development

In case the result of Environmental Assessment turns out to be negative, the project has to be suspended or drastically changed in design, even after the site purchase and designing has already been completed. In an effort to prevent unnecessary spending, the MOE has initiated the Prior Consultation Service for Site Development. The expected advantages of this service are as follows: estimation of the potential of project site, prevention of additional costs by avoiding inappropriate project sites and unsuitable project designs, and shortened time for consultation on the official Sustainability Appraisal.

Environment-Friendly Low Emission Vehicles

Air pollution in large cities has become more serious due to emissions from vehicles. Therefore, it is important to manufacture vehicles that emit less pollutants. Air pollution reduction can be classified into two methods: development of engines that emit less pollutants and the development of LEV or ULEV.

As the development of low emission engine technology has reached its limits, many advanced countries, including Korea, strengthened permissible emission standards starting from early 1990s, and developed and distributed low emission vehicles, which can reduce air pollution substantially.

There is no question that low emission vehicles will lead the future automobile market. The Ministry of Environment is taking part in developing low emission vehicles, which is also one of the future growth engines. Together with coming up with countermeasures for UNFCCC, policies on distributing low emission vehicles need to be implemented in order to resolve basic air pollution problems.

Distribution policy for hybrid vehicles

Hybrid vehicles combine the benefits of gasoline engines and electric motors and emit less pollutants from 30% to 50% compared to gasoline vehicles. In 2004, the MOE distributed 50 hybrid-electric vehicles (HEV) to the National Police Agency and public institutions and provided 350 more HEV vehicles to the police and public institutions in Seoul and its vicinities in 2005. The hybrid vehicles introduced in 2005 were Hyundai Motor's Verna and Kia Motor's Pride and there were incentives such as the compensation of cost gap between gasoline vehicles and hybrid vehicles.

Outline of support to hybrid vehicles distribution

Project name	Budget	Details	Reference
Hybrid-electric vehicle	9,800 million won	50 vehicles × 28 million won	- Central governmental organs including National Police Agency - Local governments including Seoul Metropolitan Government

Hybrid Car Verna (Hyundai Motor)

Two-wheeled Electric Vehicle (Ecocar)

Distribution policy for two-wheeled electric vehicles

There has been difficulty in managing emissions from vehicles that are operated because two-wheeled electric vehicles (also known as scooters), which are found mainly in the residential area, are excluded from the Automobile Management Act. Scooters produce a greater amount of pollutants than vehicles, including 10 times more CO and 30 times more HC. Therefore, the MOE promotes two-wheeled electric vehicles which have no emission gases and noise. Korea expects that export competitiveness of two-wheeled electric vehicles will increase, taking into consideration domestic advanced battery technology.

In 2005, scooters less than 50cc in size will be mainly distributed to public institutions located in Seoul and its vicinities. In the future, two-wheeled vehicles more than 50cc will be manufactured as well based on future demand and the development of technology. Also, more scooters will be supplied to those sites that need vehicles for delivery. Financial support for two-wheeled electric vehicles will include providing incentives for the cost differences with existing gasoline two-wheeled vehicles. In 2005, a total of 300 vehicles will be distributed with an incentive of 1 million won for each vehicle.

Distribution policy for natural gas vehicles

Buses operating in the cities are seen as a main source of air pollution. However, currently the only solution is to distribute natural gas buses, which emit 70% less Ozone Precursors, including NOx and HC, and emit almost no smoke compared to the existing diesel buses. The MOE plans to distribute 23,000 natural gas buses nation wide by 2010, and in 2004, altogether 1,809 natural gas buses and 41 natural gas garbage trucks were distributed and 54 fixed charging stations were installed.

Achievement & target of natural gas buses and charging stations

	Total	2000~2004(Achievement)	2005	2006~2010
Number of natural gas vehicles	23,000	6,121	2,500	14,379
Number of charging station	440	170	25	245

Up until now, airport buses and school buses were excluded from receiving subsidies from the government. However, related guidelines have been revised so that more natural gas vehicles can be replaced and distributed. Also restrictions placed on charging stations have been eased so that CNG gas refilling stations can be installed in the existing garages depending on their purpose.

Natural Gas Bus

Future plans

Internal-combustion vehicles currently operating on fossil fuel will decrease starting from 2010 and it is expected that environment-friendly vehicles like hybrid vehicles and hydrogen fuel-cell vehicles will completely take over the automobile market. Therefore, the MOE will continue to distribute hybrid vehicles until they are widely available to the public. Once hybrid vehicles are commercialized, subsidies such as tax incentives will be provided. Also, starting in 2007, the Ministry will expand distribution of hydrogen fuel-cell vehicles and establish the basis for hydrogen charging stations so that Korea can join in the establishment of a hydrogen society.

Air Pollution Monitoring Network

In Korea, monitoring equipment is installed and operating at air pollution monitoring stations in order to determine the state of air pollutants, including sulfurous acid gas, nitrogen dioxide, carbon monoxide, ozone, and particulate matter. The air pollution monitoring stations are located across the nation, and make up a network to constantly monitor air conditions.

Details of Air Pollution Monitoring Network

Section		Measured Items	Purpose of Installation
General Monitoring Network	Regional Atmosphere	SO2, NO2, O3, CO, PM10, Wind, Velocity Temperature, Humidity	To measure the average pollutants density of urban atmosphere to decide whether it meets the environmental standards or not
	Regional Background	SO2, NO2, O3, CO, PM10, Wind, Velocity Temperature, Humidity	To measure and analyze the density of atmospheric pollutants in suburban districts
	National Background	SO2, NO2, O3, CO, PM10, Wind, Velocity Temperature, Humidity	To measure the density of atmospheric pollutants nationwide and analyze the in/outflow of pollutants from/to foreign countries
	Roadside	SO2, PM10, O3, NOX, CO, THC, Wind, Velocity Temperature	To measure the density of pollutants in the air around roadsides where floating population is high and is frequently visited by vehicles
Special Monitoring Network	Acid Deposition	Dry: PM2.5 Wet: pH, Cl^-, $NO3^-$, $SO4^{-2}$ $NH4^+$, Na^+, K^+, Ca^{+2}, Mg^{+2}, Conductivity, Precipitation	To measure the dry deposition of pollutants from the air and wet deposition by rain and snow
	Photochemistry	O3, NO2, PM10, PM2.5, VOCs(56 kinds including ethane), Carbonyl, Solar Radiation, Ultraviolet Rays Dose, Temperature, Humidity, Wind, Velocity, Precipitation, Air Pressure	To measure the density of VOCs(Volatile Organic Compounds), the main cause of ozone pollution in urban area, in order to use as a fundamental data for identification of ozone problem and forecast of it
	Atmospheric Visibility	Atmospheric Visibility, PM2.5	To measure atmospheric visibility of urban atmosphere to analyze sensory pollution
	Hazardous Atmosphere	VOCs(13 kinds including Benzene and Toluene), PAHs(7 kinds including Benzo(a)anthracene)	To measure actual condition of pollution by certain atmospheric hazardous materials
	Heavy Metal	Periodical Monitoring: Pb, Cd, Cr, Cu, Mn, Fe, Ni, Al, Si, Ca, Mg | Yellow Storm Season Monitoring: Pb, Cd, Cr, Cu, Mn, Fe, Ni, Al, Si, Ca, Mg	To measure actual condition of pollution by certain atmospheric hazardous materials
	Global Atmosphere	CO2, CFCs, N2O, CH4 * Measures PFCs, HFCs, SF6 as occasion demands.	To measure the density of greenhouse gases and ozone damaging materials in the air

The air pollution monitoring network can be divided into a national network or local government network depending on who operates the network. According to the purpose of the network installation, the network can be divided largely into the "general air pollutant monitoring network" and the "special air pollutant monitoring network." The general air pollutant monitoring network can be divided into regional air monitoring network, regional background monitoring network, etc. Also, the special air pollutant monitoring network is divided into the acid deposition monitoring network, photochemical monitoring network, etc. Items monitored by each monitoring station and the purpose of installation are stated in the table above.

As of December 2004 there are a total of 389 air pollution monitoring stations across the nation, out of which 112 are national monitoring stations and 267 are local government monitoring stations.

Status of National Monitoring Station

Section	Total	National Monitoring Network							Local Government Monitoring Network				
		Subtotal	National Background	Regional Background	Photo Chemistry	Hazardoous Atmosphere	Global Atmosphere	Acid Deposition	Subtotal	Regional Atmosphere	Road Sides	Atmospheric Visibility	Heavy Metal
Total	389	122	5	12	22	16	1	66	267	202	22	4	39
National	83	78	5	11	13	16	1	32	5	5	-	-	-
Local gov't	306	44	-	1	9	-	-	34	262	197	22	4	39

Establishment & Operation of Air Pollution Monitoring Network

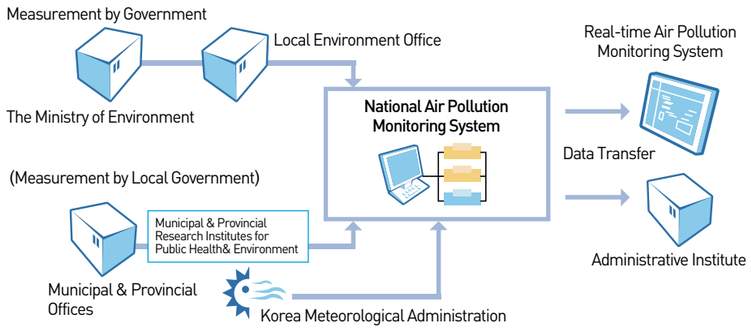
Installation of monitoring stations

Monitoring equipment is examined regularly and inspected thoroughly so that the credibility of the data from monitoring stations can be enhanced. First, the monitored data is confirmed by the monitoring institution and then the National Institute of Environmental Research makes the final confirmation and the information is available to the public through monthly reports or the annual report.

Operation of National Air Monitoring Information System (NAMIS)

Air pollution monitoring stations across the nation collect data on air pollution, including information about sulfurous acid gas, nitrogen dioxide, carbon monoxide, ozone, and particulate matter. Then the data is managed by the National Air Monitoring Information System (NAMIS), where data is sorted out and made into statistics so that public institutions like national and local governments can use it as basic information for air preservation policies.

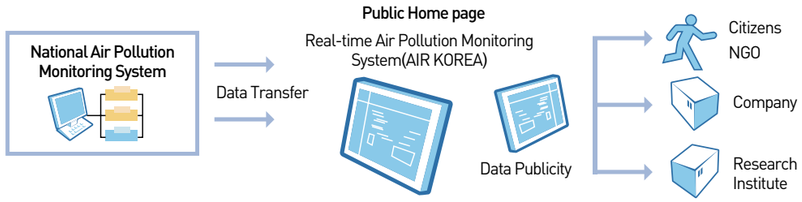
National Air Pollution Monitoring Network



Real-time access to data collected from monitoring stations

A website is being developed so that the public can have real-time access to air pollution information managed by NAMIS. Currently there is data collected from 16 monitoring stations available to the public in real-time, and starting from December 28th, 2005, data obtained from 202 regional air monitoring stations will also be available in real-time. People can get real-time access to all sorts of information collected from monitoring stations, including the air pollution index (sulfurous acid gas, nitrogen dioxide, carbon monoxide, ozone, and particulates) of regional air monitoring stations, air pollution warning data (particulates, ozone, and dust and sand storm), and monitoring methods.

Provision of Air Pollution Data



Utilization of Data from Monitoring Stations & Expected Effects

Data collected from air pollution monitoring stations are used to find out whether air quality standards are met and to designate the Air Environment Regulation Areas. Also the data is important information in determining the pollution level of future air quality. In addition, the national background monitoring station, acid deposition monitoring station, and air quality monitoring station evaluate the impact of trans-boundary air pollutants so that national measures can be made. As air pollution monitoring stations are installed and operated, it is expected that it will be easier to determine the state of air pollution and also it is possible to come up with quick countermeasures to domestic and international environmental problems are possible. People can avoid any health risk as there is an early warning system and also we can expect reduction in air pollutants emitted by having people join in the effort for air quality protection.

Total Maximum Daily Load Management System

The Total Maximum Daily Load Management System (TMDL) involves determining the target water quality standard for each block of the water systems, computing the maximum allowable load, and regulating the amount of pollutants discharged from the total pollution load management watershed unit, a watershed within a water system route for which the target level of water quality is determined within the maximum permissible load. In addition, this system helps achieve a balance between preservation-oriented and development-oriented aspects in carrying out regional development projects approved by the government, given that their target water quality levels are attainable. Korea's Total Maximum Daily Load Management System distinguishes the Han River from the other three rivers. For the Han River water system, local governments may operate the system at their option, whereas for the water system of the other three rivers (Nakdong River, Geum River and Yeongsan River), neighboring metropolitan cities (Gwangyoek-si) and cities/counties should adhere to the Total Maximum Daily Load Management System if local authorities fail to attain its water quality standard on the system. The table below shows detailed information on the commencement of the system. Major items related to determining the target water quality standard, setting priorities, producing the action plan, allocating pollution quotas, investigating and assessing the performance, and punishing against nonperformers are described in detail below.

Minister's Orders for TMDL

The Ministry of Environment announced 'Minister's Orders for a Total Maximum Daily Load Management System (TMDL)', providing the guidelines necessary in carrying out a 'Master Plan for TMDL' prepared by the local city and province neighboring the river, and an 'Action Plan for TMDL' made by the local city and county (Gun) neighboring the river. These orders encompass basic principles and processes for the system, such as specific chemicals requiring TMDL, guidelines to work out a TMDL plan, and standards and methods of pollution load allocation.

Commencement of Obligatory TMDL

Water system	Size of City	Commencement
The Nakdong River Basin	Metropolitan City (Gwangyeok-si)	July, 2004
	City	July, 2005
	County (Gun)	July, 2006
The Geum River/ Yeongsan River Basin	Metropolitan City	July, 2005
	Daecheong Lake and Juam Lake Watershed Regions	July, 2006
	Other Counties	July, 2008

Determining the Target Water Quality Standard

The Minister of the MOE determines the target water quality standard for waters running along the boundaries between large cities, as well as for local authorities of each watershed, while the head of each local authority determines a target water quality standard for the regional management units within the watershed. The success of this management strategy depends on the appropriate division of the area into total pollution load management units and local authority's efforts to meet the target water quality standard set forth by the MOE. According to this specification, the MOE determines such standards if the head of a local authority fails to set proper water quality standards. In case of the Nakdong River, the government determined and announced its target water quality standards in September 2003, after three years of negotiation; whereas for the Geum River and Yeongsan River, discussions between the Ministry and related local authorities are in progress. Regarding the target water quality standard for each sub-basin in urbanized watersheds, the city mayor and the head of the province are required to announce target standards consistent with the MOE's standard upon the approval from the MOE.

Master Plan for TMDL

The heads of the metropolitan authorities related to water management should establish a master plan for the TMDL based on the principles of the MOE, and then attain approval from the Minister. The master plan is needed in order to describe different issues (i.e., allocation of pollution quotas of each unit watershed and each local authority, and pollution reduction strategies).

Action Plan for TMDL

The mayors of metropolitan cities, the mayors of regular cities and the heads of the counties should establish an action plan for TMDL after considering the government-approved master plan, in order to get approval from the MOE. However, in some cases, like determining target standards for the region responsible for the metropolitan cities, the head of the Watershed Environmental Office in the region can approve an action plan. If significant difficulties are anticipated in meeting water quality standards specified by the MOE, the authoritative figures, like the Minister, the mayor, or the head of county within the region are given the right to prohibit construction of buildings, wastewater discharge facilities and livestock excretion discharge facilities.

Allocation of Pollution Quotas to Individual Polluters

The action plan describes in detail pollution quotas and affordable levels of the discharge amount for each major polluter (i.e., discharge facilities, public treatment facilities with a certain size or larger). Specification of pollution quotas and discharge amounts are not affected by the current maximum permissible discharge standard.

Investigation and Assessment of Performance

The city mayor and the county headman within a region are asked to prepare an annual performance assessment report according to the guidelines of the MOE for submission to the head of the River Basin Environmental Office. In addition, the head of the River Basin Environmental Office should monitor water quality in designated regions at least 30 times per year in order to assess water quality.

Sanctions Taken Against Non-compliance

If a polluter releases pollutants in excess of given quotas or the allocated amount, appropriate sanctions shall be taken against the polluter, such as a charge imposed upon the excess, additional dues, order of improvement or closure, etc.

「Execution agencies for assessment on the excess of total pollution load」 Execution agencies consist of the head of the local 'River Basin Environmental Office', the mayor of local city, and the head of county related to water management. The head of the local 'River Basin Environmental Office' is responsible for conducting assessments upon the excessive load of pollution at volume basis, and investigating the situation of public treatment facilities, including sewage treatment and wastewater treatment facilities. On the other hand, the city mayor and the head of the county related to water management should assess water quality using the total pollution load. Also, they investigate the discharge of each business place within the local administrative boundary, including wastewater discharge facilities.

「Subjects of Punishment」 Polluters who release pollutants over the given pollution quotas or assigned amount, according to the Special Act on three major rivers and the total pollution load management plan, shall be punished.

「Punishment Process」 Punishment decision is made by considering the polluter's illegal gain earned from excess pollution discharges (equal to the treatment expenses that would have been paid for the treatment of the excess pollutants), and considering the location and the number of violations. Additionally, given that the agencies fail to prepare an action plan for total pollution load management or fail to carry it out, the central government would rule out regional/urban development, industrial complex construction, tourist resort and complex, or pollution discharge facilities with a size of 200 square meters or larger built in the local areas.

Riparian Buffer Zone Management

In the past, the Comprehensive Water Quality Management Measures for the Four Major Rivers was implemented together with policies restricting discharge of pollutants, which focused on expansion of basic environmental facilities and designating water source protection areas. However, there had been limitations in effectively controlling water pollution due to the characteristic of water pollution which was caused by a combination of factors.

In 1990, the quality of the Paldang Reservoir, which supplies water to 25 million people in Seoul and its vicinities, was Level 1 (BOD 1.0mg/L), but after 1997 the quality had degraded to 1.5mg/L, and in the early 1998, it had worsened further to 2.0mg/L. Therefore, in 1998 the Comprehensive Water Quality Management Measures for the Four Major Rivers was established and implemented, and also riparian buffer zones were designated to control sites discharging pollutants within certain distance from the river, together with implementation of Total Maximum Daily Load Management System.

Achievements

The pollutants that are discharged from areas adjacent to rivers can have more serious effects on the water quality of the river because there is no purification process and the pollutants are directly discharged to the river. Therefore, certain areas adjacent to the river (300m~1km) are designated as riparian buffer zones, preventing restaurants, lodgings, factories, etc. from being built in those zones, thereby preventing new pollutants from being discharged into the river. The government is buying land within riparian buffer zones after going through negotiations with residents to create riparian buffer forests in an effort to restore the riverside ecosystems. This will also lower the impact of water pollution arising from non-point source pollutants.

As of June 2005, a total of 1,062km^2 is designated and managed as riparian buffer zones, including 191km^2 in areas of the Han River, 275km^2 in areas of the Nakdong River, 373km^2 in areas of the Geum River and 223km^2 in areas of the Yeongsan River.

Designated Area as Riparian Buffer Zone

Water System	Total	Han River	Nakdong River	Geum River	Yeongsan River
Designated Area(km^2)	1,062	191	275	373	223

In the process of designating certain areas near the 4 major rivers as riparian buffer zones, there have been disputes over the infringement of private properties. In a bid to resolve such problems, the government is currently purchasing land to be designated as riparian buffer zones with the Watershed Management Fund which are created with the proceeds from the water use charge imposed on downstream residents. Land purchasing started in 2000 for the Han River and in 2003 for the rest of the three rivers and, as of June 2005, altogether 12,829 thousand m^2 (about 3.88 million acres) of land was bought for the purchasing cost of 265.4 billion won.

Land Purchased by the Government

(June 2005)

	Total	Han River	Nakdong River	Geum River	Yeongsan River
Area (thousand m^2)	12,819	4,443	2,373	4,415	1,588
Amount (hundred million won)	2,654	1,830	291	99	434

The government also plans to purchase land or structures in the riparian areas, which have a significant effect on the quality of the water supply. Those lands will be used as resting green zones for local residents. Thanks to the restoration of the ecosystem in those areas, it is expected that non-point source pollutants will be highly reduced, thereby contributing to the improvement of fresh water quality.

Plans for the purchased land

	Area (m^2)	Project Cost (one million won)
Total	608,742	7,342
Establishment of eco-learning zones	71,735	1,677
Establishment of riparian buffer forests	147,823	172
Ecological restoration project	389,184	5,493

Future Plans

In the future, about 850 billion won will be invested from 2005 to 2010 so that 58,700 thousand m^2 of land can be purchased, especially those with huge effects on the quality of water sources in the riparian buffer zones of the four major rivers. Afterwards, the purchased lands will be developed into green zones, which is expected to contribute to the improvement of the quality of river waters.

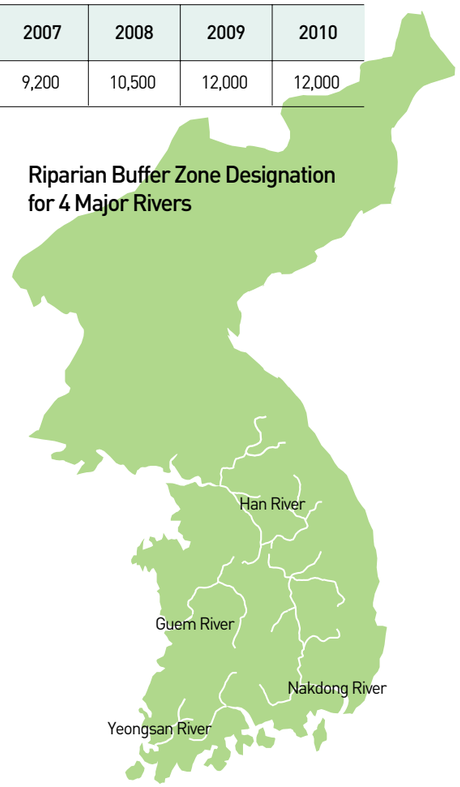
Outlook on land purchasing

Total	2005	2006	2007	2008	2009	2010
58,700(1,000 m^2)	7,000	8,000	9,200	10,500	12,000	12,000

In addition, in order to come up with the Basic Plan for Riparian Buffer Zones Management, research will be conducted on the water systems of the four major rivers to identify the exact land use. Based on this, the Basic Plan for Riparian Buffer Zones Management will be developed and carried out after priorities and the direction of implementing ecological restoration are decided.

Also, the Ministry is planning to establish a separate corporation which will conduct end-of-pipe control and land purchasing in a more systemic and professional way.

Riparian Buffer Zone Designation for 4 Major Rivers



Tap Water Quality Management

Koreans have only been drinking tap water for 100 years. In August 1908, the Seoul residents first tasted tap water when the water purification plant on the Han River's Ttuk Island was completed. Since then, the tap water supply for drinking has expanded to other cities such as Incheon, Pyongyang, Busan and Daegu so that people can receive safe and clean tap water at home.

In the past when the piped water supply was not available, people got their water from wells or small streams, which was why people were often infected with waterborne diseases and their average lifes- pan was very short. For example, in 1814, the average lifespan in Britain did not exceed 26 years. However, it is without a doubt that the average lifespan has increased considerably these days ever since the number of people infected with waterborne diseases decreased due to the wide distribution of safe drinking water.

Today people can drink safe and clean tap water at home. Tap water is treated as following: first, water is collected from water sources and then impurities are filtered at the water purification plant. Even the finest particles are removed as the water passes the filter basin and the water without any

impurities is sterilized with chlorine so the water meets the water quality standards. There was a time when tap water was barometer for high living standards not everyone having the luxury of getting access to it.

Recently, due to rapid industrialization and urbanization, however, the tap water sources such as rivers and lakes have been polluted and has become a serious social problem. Yet, we do not have to think that tap water is unsafe to drink, because despite the fact that the tap water quality has worsened, it still has to meet a strict water quality standard to be supplied as tap water. There were several water pollution incidents, such as the Phenol leak accident in the Nakdong River in 1991 and also a virus controversy in 2001, which all led to deep distrust by the public. A survey conducted to find out the actual number of people who drink tap water revealed that people who drink tap water, including those who boil tap water, decreased from 62% in 2000 to 46% in 2003.

In order to address the public distrust, the Korean government announced and established the "Comprehensive Measures for Improving the Quality of Tap Water" in January 2005 to provide the public with safe and clean tap water. This includes innovative measures which consider the overall procedure of tap water production and distribution. Also, a reporting system on tap water production process and water quality information was provided to the public.

The main objective of the countermeasures is to prevent any deterioration in the tap water quality by finding out the effects of the water quality beforehand.

In particular, until now people had a strong distrust in tap water because of rust stains and impurities. Therefore, countermeasures like introducing a plan to delegate water suppliers the authority to manage and supervise water supply equipment, and providing information such as the production & supply of tap water as well as procedures & results of water quality examinations have been established. Also, public relations activities on supplying safe and clean tap water to the public will be carried out to inform the public that tap water goes through the safest production and supply system so that everyone can drink it. Lastly, Korea will amend the Water Supply & Waterworks Installation Act by the end of 2005 to make sure people are supplied with clean and safe water.

Innovation of Water Supply Pipelines

Current Status

In most cases, rust stains are found in indoor tap water supply pipelines, because of the lack of systematic management, such as water supply equipment examination and water quality examination. According to the result of a research poll conducted in Seoul and the Metropolitan area, 63% of the residents have experiences of rust stain leakages in their tap water system installed with galvanized steel pipes before April 1994; its usage has been banned ever since then. Another recent trend is to introduce public management of indoor water supply pipes so that examinations of facilities and water quality can be conducted. This is to make sure that people have access to safe and clean tap water even if the water supply is managed by each individual household.

Galvanized Steel Pipe	Galvanized Steel Pipe	Stainless
		
After 10 years of use	After 15 years of use	After 10 years of use

Improvement Plan

Water suppliers are given the authority to carry out water supply equipment examination and water quality examination with the consent of people using tap water. People also have the right to ask the relevant water suppliers to carry out the examinations of water quality or water supply pipelines. If the water quality in indoor water supply pipelines does not meet the standards, especially in public buildings, then water suppliers will be ordered to clean, reinstall and repair the pipelines. In case indoor water supply pipelines are modified, some of the cost needed for improving the facilities will be supported by the government.

Development of New Technology & Materials for Worn-out Water Supply Pipelines

Current Status

The evaluation technology of indoor water supply pipelines is developed by research institutes in Korea, but there is neither a standard application method nor relevant markets in their mature stages. Therefore, these technologies are not applied properly. In addition, most indoor water supply pipelines are cleaned, rehabilitated and replaced only in some buildings and apartments due to low technology standards and lack of unity among the residents. Recently, luxury apartments have been using expensive construction materials and anticorrosive materials, but it is highly likely that inferior goods are being used notwithstanding because there is no certification issued by an authorized institution.

Improvement Plan

The Innovation and Integration Water Tech (I2 Water Tech) Bureau of the Ministry of Environment is implementing the Eco-Star Project starting from this year (2005) until 2009 by investing 9.5 billion

won. This will allow new technologies to be developed for indoor water supply pipes and also domestic technologies for related equipment can be developed as well. This project will include the development of world- class technologies and materials for indoor water supply pipes by utilizing high-tech equipment, including microbots. In addition, standard specifications and unit costs will be established and distributed to prevent poor construction, and based on the results of the investigation and the guidelines, an evaluation standard will be set up to decide when the water supply pipes should be cleaned, rehabilitated and/or replaced.

Improvement & Management of Water Tank

Current Status

It is mandatory for the managers of large buildings more than 5,000 m^2 wide to carry out regular sanitation examinations and to clean the water tanks according to the Water Supply & Waterworks Installation Act. However, general bacteria, coliform groups and residual chlorine are not included in the items when examining the drinking water quality, and also most examinations are often mere formalities and examined with the naked eye. (It was mandatory for 225,702 sites to clean and check its sanitation as of the end of 2003). Also, many households are installing small-sized water tanks in preparation for low water pressure and in case of water shut off, but there is lack of management regulation, such as mandatory reporting.

Improvement Plan

It will be mandatory for large-sized water tanks to be cleaned regularly and several items will be added to the checklist when examining the drinking water quality. Also from now on, sanitation examinations, which are currently conducted by the building managers or tank cleaning companies, will be carried out by an authorized institution to examine the drinking water quality. In the case of small-sized water tanks, local governments will manage them by enacting relevant regulations, including sanitation examination and equipment standard-setting.

Introduction of National Certification for Operators of Water Purification Plants

Current Status

With rapidly progressing water treatment technologies, it is essential to secure skilled workers with high expertise to implement strict water quality management. However, 34% of the entire water purification plant personnel are workers hired on a daily basis, so it is urgent to employ workers with higher expertise.

Improvement Plan

The Korean government is planning to issue national certificates to the operators of water purification plants as many advanced countries, like the U.S. and Japan, have in order to protect public welfare.

Qualification & implementation period for operators of water purification plants (Proposal)

Capacity (m^3/day)	Qualification		Starting Year	Number of Sites
	Operation Manager	Administrator		
100,000 and more	- Technician in water supply and drainage - Person with a certificate of Filtration Plant Administrator Class 1 - Person who has at least 5 years of field experience and a certification of Filtration Plant Administrator Class 2	- Person who has at least 3 years of field experience and a certification of Filtration Plant Administrator Class 2 or 3	'07	54
50,000 and more	- Technician in water supply and drainage - Person with a certificate of Filtration Plant Administrator Class 1 - Person who has at least 5 years of field experience and a certification of Filtration Plant Administrator Class 2	- Person who has at least 3 years of field experience and a certification of Filtration Plant Administrator Class 2 or 3	'08	36
5,000 and more	- Technician in water supply and drainage - Person who has at least 3 years of field experience and a certification of Filtration Plant Administrator Class 2 or 3	- At least Class 3 of Filtration Plant Administrator	'09	137
Below 5,000	- At least Class 3 of Filtration Plant Administrator		'09	325

Real-name Transaction System for Tap Water Reporting System on Tap Water Production Process and Water Quality

Current Status

It is important to acquire accurate information about the tap water quality so that people can trust the water they drink and get access to useful information. However, currently Korea does not have any specific regulation on disclosing information about tap water. Therefore, civic groups, organizations and the public find it difficult to trust the water quality information announced by some local governments.

Improvement Plan

It will be mandatory for water suppliers to issue tap water quality reports each year and publish them on the Internet so that the public can have access to full information, including those about water resources and pollution, water quality standards, telephone numbers of water purification plants and relevant agencies. In addition, the MOE will summarize essential information about water quality found in the tap water quality report for water suppliers, and include them when publishing statistics for waterworks.

Disclosure system when water quality standards of tap water are inadequate, violated

Current Status

If the tap water quality standards are violated, then the impact that pollutants have on public health and guidelines for residents will be disclosed through the media in order to enhance the public's confidence in their tap water.

Improvement Plan

If the tap water quality standards are violated, then local residents will receive the emergency notice or 30-days notice depending on what they have violated. In the future, measures to improve the facilities will be established and implemented. Also, the average amount of pollutants in the water that did not meet the water quality standards will be calculated so that fundamental measures can be developed for cases of repeated violations.

Development of pollutant monitoring system & standard treatment method

Current Status

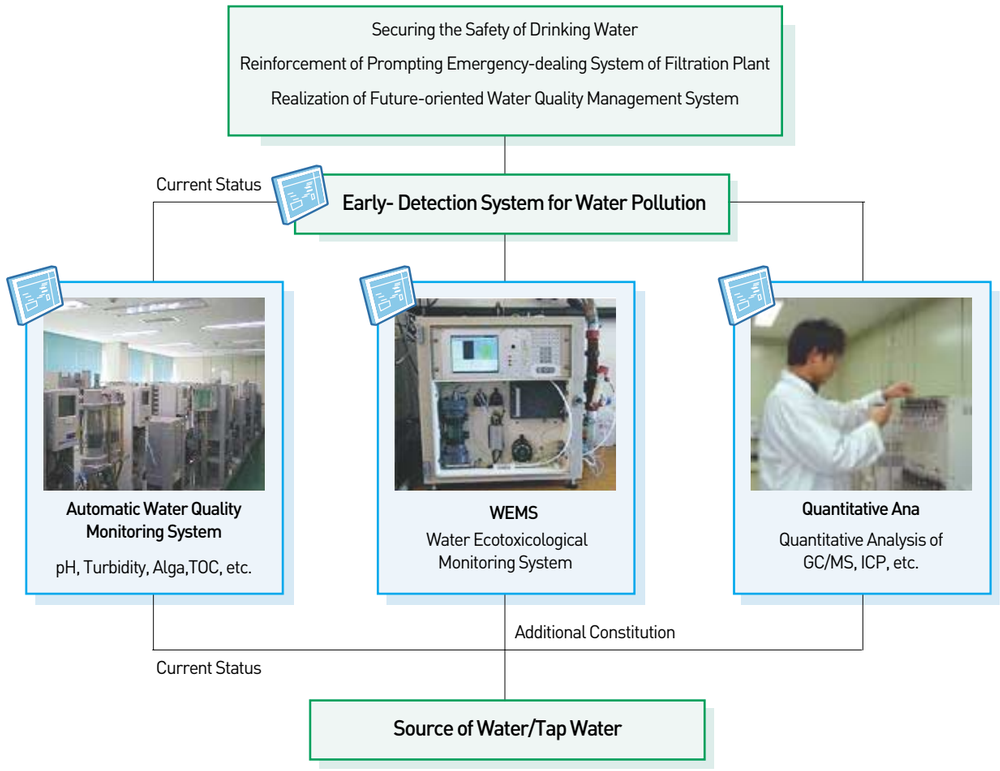
Korea is highly dependent on surface water (92%) as its water resources are vulnerable to various pollutants, but there is lack of a real-time monitoring system to monitor inflow of water pollutants. In addition, there is no standard treatment technology developed and distributed to prevent various water pollutants from polluting water resources. Therefore, there is lack of risk management in case of pollution accidents. On the other hand, Japan and the U.S. have numerous guidelines to develop and distribute optimal treatment technologies for hazardous pollutants.

Improvement Plan

Bio-monitoring system, TOC (Total Organic Carbon) and VOCs (Volatile Organic Compounds) measurement will be installed and operated for water control facilities that are larger than a certain size. The data collected will be uploaded on the Internet real-time so that other water suppliers can share and utilize the information. In addition, a standard treatment method and crisis management system (Dec. 2005) will be established for major hazardous pollutants so that optimal treatment methods can be developed and distributed according to each pollutant (2006~2008).

The control center for water purification plant

Basic Concept of Water Quality Monitoring System



Future Plan

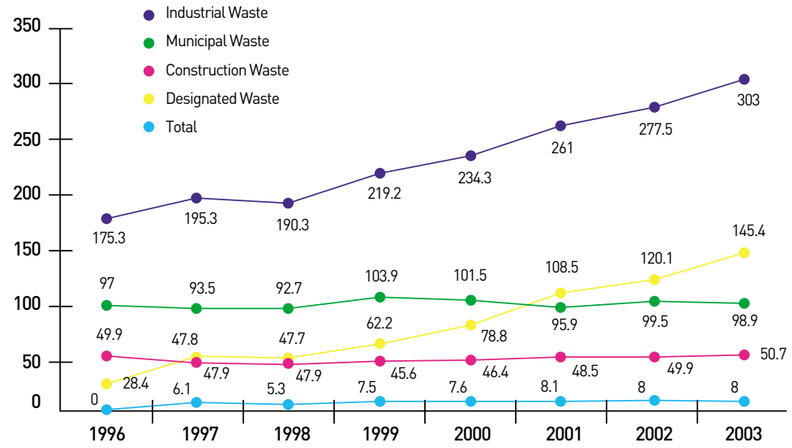
The Korean government amended the Water Supply & Waterworks Installation Act in March 2005 by taking into consideration "Comprehensive Measures for Improving the Quality of Tap water." After that, relevant agencies reviewed the law and gave a preliminary announcement so that it could go through regulatory examination of the Regulatory Reform Committee and the Ministry of Government Legislation. Then the amended law was submitted to the National Assembly in September 2005. Enforcement ordinance and enforcement rules will be revised once the legislative bill is amended and the amended law will be implemented starting from the second half of 2006.

Reduction/Recycling of Construction Waste

Construction work such as redevelopment and rebuilding projects has been increasing in Korea. As a result, construction waste generation has been surging and also re-use of construction waste has been on the rise (89.0% in 2003). The recycling of construction waste is, however, limited to mostly filling or landfill cover soil; recycling of waste into materials with high economic value, such as a base course and concrete aggregates, accounts for only 14%, resulting in the waste of valuable resources.

Annual Trends in Waste Generation

Chart



2003 Trends in Construction Waste Generation

Unit: 1,000 Tons/Year

Category	Total	Sand and Soil	Concretes	Asphalts	Other
Amount	53,078	3,430	33,813	6,698	9,137
Ratio (%)	100.0	6.5	63.7	12.6	17.2

Also, more recycled aggregates were used as alternatives to natural ones due to their shortage in Korea early in 2004 from a ban on extracting aggregates from the sea in order to improve the quality of recycled aggregates. Recycling construction waste (recycled aggregates) is thus emerging as a necessity.

In that context, relevant policies are required in light of the need to protect the natural environment and provide alternatives to the use of natural aggregates. The environmentally-friendly treatment of the large amounts of construction waste generated, thereby producing and proactively re-using high-quality recycled aggregates, is required to that end.

Developments

Providing Regulatory Frameworks for the Production of High-Quality Recycled Aggregates

The Korean government has enacted an Enforcement Decree and Regulations Act on the Promotion of Construction Waste Recycling to provide a regulatory framework for the environmentally sound treatment of construction waste and their recycling to be used as other high value-added purposes. The Act entered into force as of January 2005.

- Furthermore, measures have been established to facilitate the production of high-quality recycled aggregate. Such measures include making it mandatory to use recycled waste at construction sites over a certain size, introducing a quality standard and certification system for recycled aggregates, and strengthening facility standards for construction waste treatment businesses.

Production and Use of Recycled Aggregates

Wastes from construction sites collected for reuse

Construction wastes shredded into minute pieces

Asphalting a road with recycled aggregates

Recycled high-quality aggregates

Regulations on Separate Order of Waste Treatment and Construction of Large Scale Construction Projects

Public sectors producing 100 tons and over (500 tons by 2006) of construction waste are required to separate their contractors into construction and construction waste treatment businesses. Following are the reasons for this policy:

1. To improve construction waste treatment practices in which a construction company orders a large construction project and then outsource the waste treatment to waste treatment businesses, which leads to the improper treatment of waste
2. To facilitate environmentally-friendly and adequate treatment of construction waste by having the ordering side pay directly to the waste treatment business

The MOE will sustain efforts to encourage the proactive implementation of the system through inspection of such separated order-placing and by awarding institutes with exemplary observation of a separate ordering policy.



Mandatory Use for Recycled Aggregates

Recycled aggregate use is mandatory in construction projects where recycled aggregates can replace natural aggregates, in order to promote the recycling of construction waste and to protect the environment through reduction in the extraction of natural aggregates. Such projects include road construction, foundation construction for building industrial complex, drainage pipeline installation, and basic environmental facility construction.

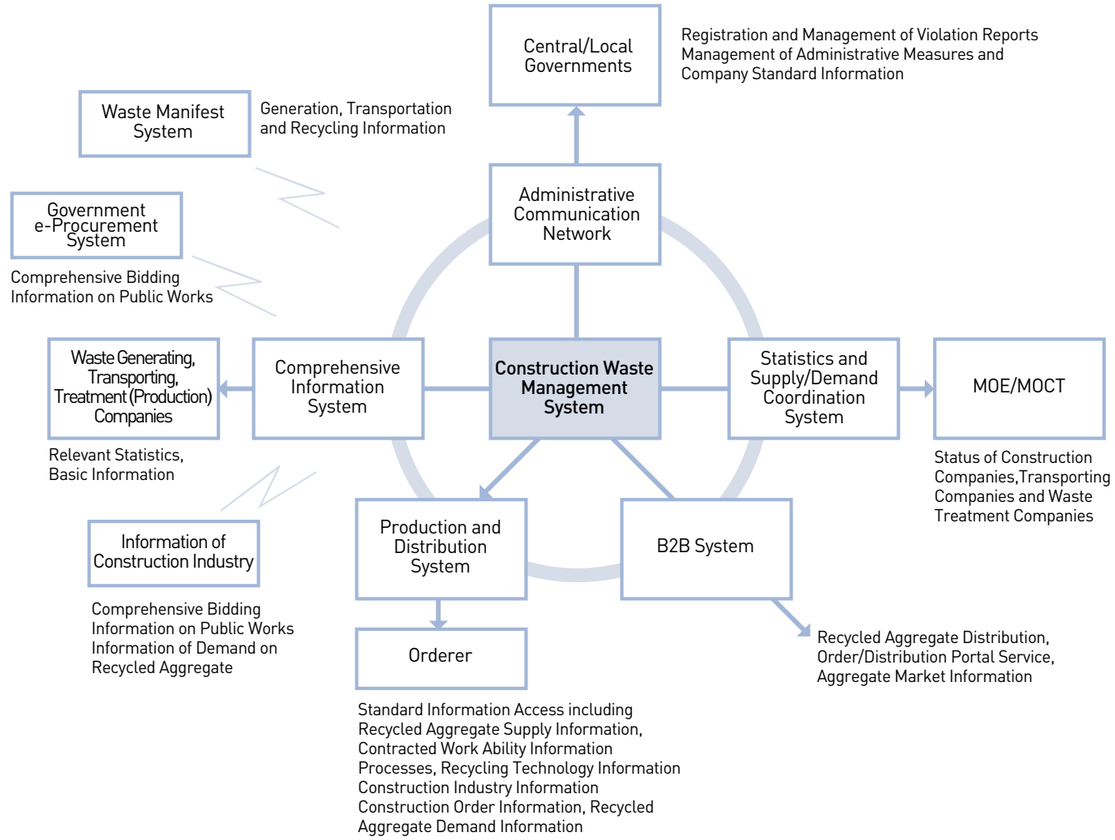
Pilot Project Targeting Expansion of the Recycled Aggregates Market

In efforts to address negative views of constructors towards recycled aggregates, several pilot projects using recycled aggregates, including Namyangju Jingeon wastewater treatment plant construction and a project for replacement of water pipes in the Han River basin were carried out, thereby confirming the safety and durability of recycled aggregate.

Building a Production/ Distribution Information System for Recycled Aggregates

The MOE has been pursuing from June 2004 the formulation of a construction waste management system that directly links the supply and demand sides through online by providing production

Construction Waste Management System



information on the production status, quality and optimal supply/demand. Scheduled to be completed in 2005, the system will also be able to coordinate the supply and demand of recycled aggregates, distribute information and provide supporting services. The system aims to achieve services for facilitating the distribution of recycled aggregates and providing administrative services and information on the environmentally-friendly management and recycling of construction waste.

Future Plans

Quality Standards and Certification Systems for Recycled Aggregate

The Ministry of Construction and Transportation (MOCT) with the consultation of the MOE, is devising design and construction guidelines and quality standards of recycled aggregates for each purpose. The decision on the use for recycled aggregate is based on stipulations in the Promotion of Construction Waste Recycling Act. Quality standards of recycled aggregate will be formulated after reviewing the Korean Industrial Standard (KS), overseas cases and testing and research results.

The MOE is planning to encourage the use of recycled aggregate and gain the trust from the demand side by ensuring the quality of recycled aggregates through testing and certification of recycled aggregate quality.

Notification of Mandatory Recycled Aggregate Use

The MOCT will collaborate with the MOE in a comprehensive review of the supply-demand status and technological level of recycled aggregates that meet relevant quality standards to promote the recycling of construction waste and the production and supply of recycled aggregates. Through the review, target projects that fall under this regulation will be decided in specific terms and notified in the second half of 2005

Evaluation of Construction Waste Treatment Contractors

In addition to introducing competitive bidding, in which detained criteria are applied for the review of suitability, the MOE plans to assess the capability of construction waste treatment companies and open the information for those discharging construction waste to select the appropriate company starting from 2006. Also the Ministry will promote recycling technologies and enhance the capabilities of waste treatment companies.

Appendix

MOE Headquarters Functions

Office/Bureau	Division	Functions
Policy Management and Public Information Office (82) 2-2110-6604	Innovation & Personnel	· Comprehensive support in creating an efficient working environment and administrative procedures · Coordination of subsidiary organizations and human resources allocation
	Legal Affairs Office	· Supervision of law making & enforcement plans · Publications on environmental laws, regulations and judicial precedents
Public Information Office (82) 2-2110-6519	Environmental Data & Information	· Establishment of the environmental information and data system · Publishes the Environmental Statistics Yearbook and operates the MOE official website (Korean)
	Policy Publicity	· Coordination of public relations through press & mass media; press releases and policy information · Public service advertising campaigns & review on the Ministry's public relations activities
Finance & Policy Planning		· Establishment of the annual task list; tasks relating to the National Assembly and political parties · Appropriation, transfer, reallocation of budget and funds; Estimation of expenditures and revenues
Environmental Policy Office (82) 2-2110-6670	Policy Coordination	· Mid & long term plans for environmental preservation; operation of the Basic Environmental Law · Promotion of Local agenda 21; production of MOE Annual Report; cooperation with SOFA, USFK and DPRK
	Environment Economy	· Environment improvement charge system, Green construction material approval system, and environmentally-friendly corporation designation system · Support for environmental industry; operation of pollution prevention facilities
	Environmental Education & Civil Relations	· Promotion of environmental education (i.e. model environmental conservation schools) · Support towards civil environmental preservation activities; organizes environmental ceremonies
	Environmental Technology	· Management of environment technology centers, promotion of Eco-Technopia 21 · Comprehensive support towards the development and growth of environmental technology
	Environmental Health Policy	· Enforcement of the Toxic Chemicals Act; toxicity & risk assessment on new & existing chemicals · Measures to prevent environment-related diseases, management of Environmental Health Index
	Chemicals Safety	· Overall management of toxic & observation chemicals, production & import control · Setting standards, grouping and labeling of chemicals, toxic chemicals reduction measures
	Hazardous Chemicals Management	· Control measures on POPs; tasks relating to Stockholm and Basel Conventions · Research projects on endocrine disruptors, control over internationally restricted chemicals
Nature Conservation Bureau (82) 2-2110-6731	Nature Policy	· Establishment of framework policies on nature conservation; measures to raise ecological soundness · Deals with establishment of conservation/use facilities; conservation of wetlands and selected islands
	Natural Resources	· Endangered & protected wildlife protection, environmental status surveys, and data management · Designation of National Parks, establishment of National Park management plans
	National Environmental Conservation	· Master plan for national conservation, operation of Prior Environmental Performance Review System · Related negotiations on land use, urban, industrial park, and electricity/energy development plans
	Environmental Impact Assessment	· Deals with general EIA issues, management and develop improvement & review guidelines for EIA · Related EIA negotiations, matters dealing with changes in negotiation items & re-negotiation
Air Quality Management Bureau (82) 2-2110-6781	Air Quality Policy	· Establishment of Framework Plan for Air Quality Preservation; deals with relevant laws and statutes · Operation of the air quality monitoring network, fuel quality control, and DSS related measures
	Area-based Air Quality Management	· Enforcement of the Special Act on Metropolitan Air Quality Improvement; emission standards & trading, total air quality load management in the region · Task force operation; air pollution modeling; industry compliance supervision
Air Quality Management Bureau (82) 2-2110-6781	Air Pollution Control	· Industrial emission control, operation of emission standards and emission charge system · Operation of Stack Telemetry Monitoring System, odor prevention measures
	Environmental Transportation Policy	· Establishment of mid and long-term plans for vehicle exhaust emission; promotion of low & zero emission vehicles and On-board diagnosis (OBD) system · Deals with international conventions on environmental transportation; control over manufactured/imported vehicles
	Environmental Transportation Management	· Operation of vehicle inspection system; vehicle recall & warnings; prevention of vehicle idling · Control over vehicles in operation (emission/noise standards); supply of DPF & catalytic converter
	Noise, Vibration & Dust	· Enforcement of noise/vibration control measures, traffic noise control · Enforcement of the Indoor Air Quality Act; deals with relevant laws and statutes
Water Quality Management Bureau (82) 2-2110-6826	Water Quality Policy	· Operation of 4 major rivers comprehensive water quality improvement measures, setting of standards · Non-point source pollution and lacustrine management, livestock waste treatment & utilization
	Watershed Policy	· Riparian buffer zones designation & management · Enforcement of the special laws on the 4 major rivers(Han, Nakdong, Geum and Yoengsan) watershed · Water use charge, operation of Watershed Management Fund, and support for source-area residents
	Total Water Pollution Load Policy	· Total water pollution load management system · Enforcement of the special laws on the 4 major river watersheds · Development and Promotion of *f*
	Industrial Wastewater Control	· Operation of industrial wastewater management system, setting of allowable emission standards · Water pollution accident prevention and response, monitoring and regulation of polluting facilities
Water Supply & Sewerage Bureau (82) 2-2110-6866	Water Supply & Sewerage Policy	· Management and expansion of the waterworks system; deals with relevant laws & statutes · Tap water quality improvement, water utilities statistics
	Sewerage	· Establishment of framework policies on sewage and excreta disposal · Installation and maintenance of sewage & excreta treatment facilities
	Soil & Groundwater Management	· Measures for soil & groundwater preservation; conducts soil contamination surveys · Fountain water quality standards, preservation & management of groundwater
Resource Recirculation Bureau (82) 2-2110-6916	Resource Recirculation Policy	· Establishment of Framework Plan for Waste Management; deals with relevant laws and statutes · Development and promotion of waste reduction policies; operation of waste treatment charge system
	Municipal Waste Management	· Establishment of Framework Plan on Municipal Waste Treatment Facilities, site survey & management · Management & regulation of dioxin emissions at incinerators, food waste reduction and utilization
	Industrial Waste Management	· Deals with industrial waste collection, transport, storage, treatment standards & treatment facilities · Treatment and management of construction waste and infectious waste
	Resource Recycling	· Establishment of Framework Plan for Resource Recycling; deals with relevant laws and statutes · Recycling standards & methods; promotion of recycling industry and recycled products use
Inspector-General Office (82) 2-2110-6530	Audit & Inspection	· Audit & Inspection of MOE and subsidiary organizations · Investigation and settlement of petitions and illegal acts
	Environmental Inspection & Investigation	· Comprehensive coordination of investigation and regulation activities on pollutant emission sources · Mandate the Quasi-Prosecutor authority to environmental officials
International Cooperation Office (82) 2-2110-6550	International Affairs	· Cooperation with international organizations; multilateral & bilateral environmental cooperation · Hosting of and participation at international conferences; international environmental affairs; production of publications and MOE website in English
	Global Environment	· Establishment of framework policies on global environment preservation; environmental trade · Tasks relating to UNCSD, WTO/DDA, UNFCCC, and other international conventions

Regional Offices & Subsidiary/Affiliated Orgs

Organization	Telephone / Website	
National Env'l Dispute Resolution Commission (NEDRC)	(82) 2-2110-6980	http://edc.me.go.kr/
National Institute of Environmental Research (NIER)	(82) 32-560-7700	http://nier.go.kr/
Han River Basin Environmental Office	(82) 31-790-2420	http://hg.me.go.kr/
Nakdong River Basin Environmental Office	(82) 55-211-1761	http://ndg.me.go.kr
Geum River Basin Environmental Office	(82) 42-865-0800	http://gg.me.go.kr/
Yeongsan River Basin Environmental Office	(82) 62-605-5114	http://yeongsan.me.go.kr
Metropolitan Air Quality Management Office	(82) 31-481-1311	http://mamo.me.go.kr
Wonju Regional Environmental Office	(82) 33-764-0982	http://wonju.me.go.kr
Daegu Regional Environmental Office	(82) 53-760-2502	http://daegu.me.go.kr
Jeonju Regional Environmental Office	(82) 63-270-1810	http://jeonju.me.go.kr
Korea Environment & Resources Corporation	(82) 32-560-1588	http://www.envico.or.kr
Environmental Management Corporation	(82) 32-560-2151~3	http://www.emc.or.kr/
National Parks Authority	(82) 2-3272-7931~3	http://www.npa.or.kr/
Sudokwon Landfill Site Management Corporation	(82) 32-562-2549	http://www.slc.or.kr
Presidential Commission on Sustainable Development	(82) 2-3156-7300	http://www.pcsd.go.kr
Korea Environment Institute	(82) 2-380-7777	http://www.kei.re.kr

Relevant Governmental Bodies

Organization	Telephone / Website	
Ministry of Science & Technology	(82) 2-503-7600	http://www.most.go.kr
Ministry of Culture and Tourism	(82) 2-3704-9114	http://www.mct.go.kr
Ministry of Agriculture & Forestry	(82) 2-2110-4000	http://www.maf.go.kr
Ministry of Commerce, Industry & Energy	(82) 2-2110-5071	http://www.mocie.go.kr
Ministry of Labor	(82) 2-2110-7062	http://www.molab.go.kr
Ministry of Construction& Transportation	(82) 2-503-7314	http://www.moct.go.kr
Ministry of Maritime Affairs and Fisheries	(82) 2-3148-6114	http://www.momaf.go.kr
Rural Development Administration	(82) 31-299-2200	http://www.rda.go.kr
Korea Meteorological Administration	(82) 2-836-2385	http://www.kma.go.kr
Korea Forest Service	(82) 42-481-4080	http://www.foa.go.kr

2005 MOE Budget

(Unit : million KRW)

Total	2,855,724
Environmental Policy	201,372
Nature Conservation	126,248
Air Quality Management	193,313
Water Quality Management	228,791
Water Supply & Sewerage	1,605,720
Resource Recirculation	276,910
Environmental Dispute Resolution	338
Regional Offices (8)	32,828
NIER	36,608
Operational costs, etc.	153,597

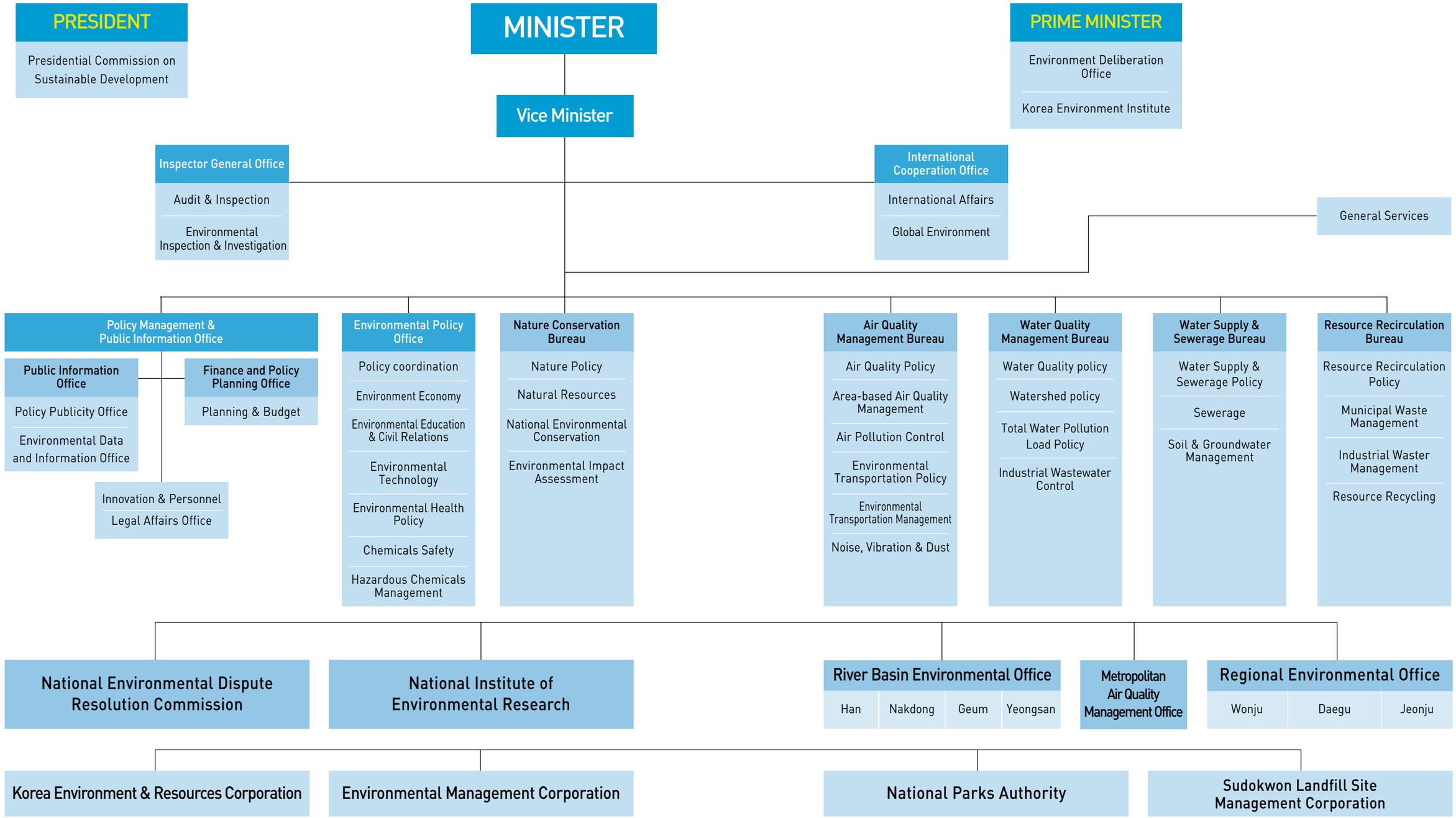
MOE Personnel (1,439)

MOE	Subsidiary Organizations (994)									
	NEDRC	NIER	River Basin Environmental Office(413)				Metropolitan Air Quality Management Office	Regional Environmental Office(182)		
			Han	Nakdong	Geum	Yeongsan		Wonju	Daegu	Jeonju
445	21	271	127	130	98	112	53	62	80	40

MOE Environmental Laws (Total of 39 laws in effect)

Period	Law Name	Enacted on
1960s (6 laws)	*Waste Cleaning Act (Repealed on 12.31.1986)*	*12.30.1961*
	Water Supply & Waterworks Installation Act (2003) *	12.31.1961
	Environmental Pollution Prevention Act (Repealed on 12.31.1977)	*11.05.1963*
	Act Relating to Toxic & Hazardous Substances (Repealed on 08.02.1999)	*12.13.1963*
	Sewerage Act (2005)	08.03.1966
	Act Relating to the Protection of Birds, Mammals & Hunting (Repealed on 02.09.2004)	*03.30.1967*
1970s-1980s (6 laws)	*Environmental Conservation Act (Repealed on 12.30.2002)*	*12.31.1977*
	Compound Waste Treatment Corporation Act (Repealed on 12.30.2003)	*12.28.1979*
	Natural Park Act (2005)	01.04.1980
	Environmental Management Corporation Act(2003)	05.21.1983
	Environmental Pollution Prevention Corporation Act (Repealed on 05.29.2003)	*05.21.1983*
	Waste Control Act (2003)	12.31.1986
1990s-Present (34 laws)	Clean Air Conservation Act (2005)	08.01.1990
	Environmental Dispute Adjustment Act (2002)	08.01.1990
	Framework Act on Environmental Policy (2005)	08.01.1990
	Noise & Vibration Control Act (2004)	08.01.1990
	Toxic Chemicals Control Act (2004)	08.01.1990
	Water Quality Conservation Act (2005)	08.01.1990
	Act on the Disposal of Sewage, Excreta & Livestock Wastewater (2002)	03.08.1991
	Act on Special Measures for the Control of Environmental Offenses (1999)	05.31.1991
	Environmental Improvement Expenses Liability Act (1999)	12.31.1991
	Act on the Control of Transboundary Movement of Hazardous Waste & Their Disposal (2004)	12.08.1992
	Act on the Promotion of Saving and Recycling of Resources (2005)	12.28.1992
	Act Relating to the Special Accounting for Environmental Improvement (1996)	01.05.1994
	Development of & Support for Environmental Technology Act (2004)	12.22.1994
	Management of Drinking Water Act (2005)	01.05.1995
	Promotion of Waste Disposal Facilities & Assistance, etc. to Adjacent Areas Act (2004)	01.05.1995
	Soil Environment Conservation Act (2004)	01.05.1995
	Special Act on the Ecosystem Preservation of Islands such as Dokdo Island (2003)	12.31.1997
	Act Relating to Han River Water Quality Improvement & Community Support (2001)	02.08.1999
	Wetland Conservation Act (2005)	02.08.1999
	Act on Assessment of Impacts of Works on Environment, Transportation, Disasters, etc (2003)	12.31.1999
	Natural Environment Conservation Act (2004)	12.31.1999
	Sudokwon Landfill Site Management Corporation Act	01.21.2000
	Act on Yeongsan & Sumjin River Watershed Management & Community Support	01.14.2002
	Act on Nakdong River Watershed Management & Community Support	01.14.2002
	Act on Geum River Watershed Management & Community Support	01.14.2002
	Indoor Air Quality Management Act(2005) *(Amended from Underground Air Quality Management Act enacted in 12.30.1996)*	05.29.2003
	Korea Environment & Resources Corporation Act *(Amended from Korea Resource Recovery & Reutilization Corporation Act 12.27.1993)*	12.30.2003
	Act on the Promotion of Construction Waste Recycling	12.31.2003
	Act Relating to Baekdu Daegan Mountain System Protection(2005)	12.31.2003
	Special Act on Metropolitan Air Quality Improvement	12.31.2003
	Foul Odor Prevention Act	02.09.2004
	Wildlife Protection Act (2005)	02.09.2004
	Act on Antarctic Activities and Environmental Protection	03.22.2004
	Act on Promotion of the Purchase of Environment-Friendly Products	12.31.2004

MOE Organization Chart



The cover image depicts a wide green field with forest that harbors our dream of a city where precious lives are protected and nursed by nature. The wide stroke of green brush describes Mother Earth we have to share with other creatures.
<Illustrator Park Hyun-jung>

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