

Green Korea 2001

In pursuit of economic and environmental sustainability

*Ministry of Environment
Republic of Korea*

Preface

The past century has witnessed humankind benefit from the material progress made possible due to scientific and technological achievements. At the same time, however, we saw our planet come under ever-increasing stress that now challenges its ability to provide for future generations.

Human activities are causing climate change; oceans are rising and threatening entire societies. Seemingly everywhere around us we see greater water and air pollution, growing waste, and shrinking green space. If this situation continues, our ways of life and possibly our very survival will not be sustained.

It is time for us to re-evaluate the lifestyles of the past century and harness all the wisdom we have, as a nation and as a community, to find ways to achieve a balanced coexistence between human activities and the ecosphere. The Earth is the source of life for all and is where our children and their children will live. It is imperative that we serve as good stewards and bequeath the planet to them in a better state than it is now. Maintaining sustainability is, at its essence, both a survival strategy and an obligation we have towards future generations, as a government, as businesses, and as individuals.

The Korean government, in keeping with the demands of the times, has been pursuing environmental policies based on sustainability. On World Environment Day (June 5, 2000), President Kim Dae Jung announced his environmental vision of expanding the meaning of peace to include the concept of genuine harmony and reconciliation between human societies and nature. The President's vision, which articulates an environmental policy framework that emphasizes the precautionary principle, is based on market economics and democracy, and attempts to integrate environmental and economic goals. Along with this vision, the Presidential Commission on Sustainable Development was formed in September 2000, with broad participation from the private sector, to help maintain balance between economic development and environmental conservation. And the Ministry of Environment has already begun to promote the Eco-2 Project, which seeks to achieve both environmental conservation and economic development goals in a unified manner. Eco-2 activities focus on developing environmental industry and technology, strengthening resource conservation and recycling, applying demand-side water management, enhancing the environmental information infrastructure, and creating a sustainable development indicator. Taken together, I believe that these project components will improve the ambient environment while strengthening economic and ecosystem health. The Ministry also continues to introduce or revamp advanced policies and administration across environmental media. Finally, the Korean government is striving to preserve the global environment for people the world over, and is emphasizing international cooperation in addressing environmental problems among neighboring countries.

I sincerely hope that this publication will serve as a helpful introduction to Korea's environmental policies, experiences and activities, so that the international community may

better understand Korea's and the Ministry of Environment's perspective, expectations, and vision.

Minister of the Korean Ministry of Environment

The Eco-2 Project

Introduction

In the 20th century, a significant portion of humankind achieved remarkable economic growth, which brought great material abundance. In the new century, however, new focus should be placed on the quality of national development and a quality of life that matches economic gains. Meeting these challenges, the President declared a National Environmental Vision for the New Millennium on Environment Day (June 5th) last year and proclaimed that the Republic of Korea will create a community where both humans and our life-giving environment thrive. The declaration included a convergence of economic and environmental policies and the new principle of "plan first and develop later". It made clear that the government will break away from the outdated policy paradigm which placed priority on economic growth at almost any cost. To execute the national environmental vision successfully, the government identified 80 projects in seven major areas, including land use, the ambient environment, and environmental education. In 2001, the government started to implement the projects in earnest.

For its part, the Ministry of Environment (MOE) is focusing this year on the Eco-2 Project, which seeks to identify strategies designed to produce mutually beneficial outcomes for both the environment and the economy. There are five main activity areas under Eco-2 which will be explained in the next few pages: development of environmental industry and technology, resource conservation and recycling, demand-side water management, expansion of the environmental information infrastructure, and creation of Korea's first sustainable development index.

Key Features of the Eco-2 Project

This year, Korea is faced with the daunting challenge of overcoming economic difficulties by completing the ongoing political, economic, social, and cultural reforms. However, economic development need not result in sacrificing environmental integrity. The view that economic development and environmental integrity cannot be pursued simultaneously is an anachronism. There is now emerging a clear understanding that a clean and healthy environment is an important source of national competitiveness and that without it, economic development cannot be sustained. In other words, we understand that economic development and environmental protection are complementary. In this regard, environmental policies must help create a "virtuous cycle" where good policies help overcome economic difficulties while a vibrant economy, in turn, spurs environmental protection.

Based on this idea, the government established the Eco-2 Project to bring a new impetus for national development.

Environmental Industry, a New Engine for Economic Development

First and foremost, the Eco-2 Project devises and executes strategies and measures to develop environmental industry and technology. The environmental technology (ET) industry, along with information technology (IT) and bio-technology (BT), has emerged as one of the most promising industries in the 21st century. In 2000, the market for the ET industry was estimated

at 11 trillion won in Korea and \$528 billion in the world. Through 2005, the market is expected to experience annual growth of 15% domestically and 6% globally.

In January 2001, the MOE formulated the ET Development Strategy to nurture Korea's ET industry into a highly competitive strategic export-oriented industry. The strategy will be funded with around 2 trillion won for three years and will engage eight government agencies, including the Ministry of Finance and Economy, in 54 strategic tasks in five main areas. It aims to lay a firm foundation for the Korean ET industry to reach the level of advanced countries by 2010.

According to the ET Development Strategy, an investment fund of 10 billion won will be established this year with help from government, the environmental industry, and the financial sector, to assist environmental venture businesses. An incubation center for new environmental technology start-ups will be set up under the National Environment Institute to provide office space, management know-how, technology, and capital-intensive equipment and machinery.

The Eco-2 Project also includes the Eco-technopia 21 program, which, with a 2001 budget of 50 billion won, will develop environmental technology essential for the growth and competitiveness of the ET industry. The plan aims to develop new technology expected to be in high demand. At the same time, medium-high technology already in use will be improved to create additional value and to minimize technological reliance on other countries.

There are ten local Environment Technology Development Centers to promote cooperation and build research capacity of universities, research institutes, and businesses. The centers help examine local environmental issues and work on devising technology-based solutions. This year, eight more local centers will be established. Environment technology support units will be set up in the centers to strengthen the function of supporting environmental SMEs with necessary technologies, which will also help revive local economies and communities.

Many brilliant new technologies are not in use because of financial or other reasons. The MOE has devised measures to stop such inefficiency. The government will adopt a scheme in which, if a business builds environmental infrastructure within its plant and reduces the environment impacts of its operations, the government will reimburse the cost. The government will also put in place a system to evaluate newly developed environmental technologies and promote the use of promising technologies.

In addition, the government will invest 5.5 trillion won in building the environmental infrastructure, including wastewater treatment plants and waste incinerators, to help create market demand for ET. Major environmental requirements will be strengthened step-by-step to expand the ET market while giving businesses enough time to cope with the strengthened requirements by informing them of changes five to ten years in advance.

There are also plans to enter international environmental markets, including those of China and Southeast Asia. A permanent exhibition center is being built in Beijing for Korea's environmental industry and technology. The center will serve as a springboard for the entry of Korea's environmental industry into the quickly emerging Chinese market. In June 2001, Korea will host the Korea-China-Japan Environmental Industry Roundtable Meeting and hold the Green Business Expo, to promote Korea's environmental industry and advanced technology. Private and government delegations will be sent to various countries to facilitate market entry by Korea's environmental industry. Lastly, tapping into the economic cooperative fund, the government will help businesses win contracts for constructing environment facilities in international markets.

Resource Conservation and Waste Recycling

The Eco-2 Project aims to establish an economic system of cyclical resources, where waste generation is minimized through resource conservation and efficient resource use, and where

the generated waste is recycled as much as possible. To that aim, the Extended Producers Recycling System (EPRS) will be introduced, in which product manufacturers will take full responsibility for the recycling and disposal of the products that it produces and sells. This year, a pilot project for the EPRS will be launched for home appliances and fluorescent light bulbs. Three major home appliance manufacturers and fluorescent light bulb manufactures will collect and recycle their products after consumers use and discard them. This measure will not only promote recycling but also force manufacturers to improve product design so that waste generation is minimized and recycling becomes easier. The EPRS will be expanded to include product packaging, batteries, and tires. If the EPRS is officially launched nationwide, 400 billion won is expected to be saved in waste treatment and industry costs.

The Eco-2 Project will also create new jobs by developing recycling technologies and supporting the recycling industry. The government will invest 12.7 billion won in “the 21st Century Frontier Research & Development Project” to develop recycling technologies. It will provide recycling businesses with 60 billion won in long-term loans at low interest to help develop technologies and build recycling facilities. In order to increase the demand for recycled products, more public institutions, including the central government, local governments, and public corporations, must buy recycled products. Measures will also be taken to facilitate the use of online recycling markets.

Korea does not have abundant natural resources and thus imports most of its resources and energy. In this light, recycling is a good way to address the current difficulty of high oil prices. The MOE plans to launch a nationwide program called “Recycle 2001” to collect and recycle waste in conjunction with private organizations, industry, and local governments. “Recycle 2001” will also support the recycling business since waste paper, beverage cans and plastic bottles at homes, schools, offices and military camps will be collected and delivered to recycling businesses.

In addition, methane gas from landfills will be utilized to generate power or to provide heat. As the first step, power plants (50MW) will be constructed by 2004 within the Sudokwon Landfill site in Incheon and Gimpo. It is expected that the power plants will generate power equal to some 900,000 barrels of heavy oil per year, thus saving 20 billion won in energy imports. In addition, various benefits are expected, including odor reduction, landfill safety enhancement, and improvement in the ability to observe the Climate Change Convention agreements.

Water Management Focused on Demand Control

Korea is no longer a nation with abundant water resources. In 1997, the UN designated Korea as a water-stressed country. Population growth and economic development have increased demand while the water supply cannot be easily expanded because of difficulties in siting dam construction and strong public opposition to new dams. Eco-2 aims to decrease water demand and conserve water resources in order to save money, create a new market for water-saving facilities, and help revive the economy.

Public institutions must set water conservation targets and install water-saving devices or facilities. By the end of 2001, every elementary, middle, and high school will be installed with water-saving devices. Last year, 18% of all households had water-saving devices installed and this year the figure will rise to 31%. Hotels, department stores, other large buildings, and industrial plants that produce more than 1,500 tons of waste water are all required to install facilities to reuse wastewater for flushing toilets and for landscaping. The water-saving companies (known as WASCO) will install the facilities or devices and get reimbursed when the cost-savings are realized. Through these measures, Korea hopes to secure its water needs while promoting economic development.

Expansion of Environmental Knowledge and Information

Eco-2 also includes the More from Less project. The goal is to minimize the use of resources such as fuel and energy while maximizing productivity, customer satisfaction, and environmental integrity. Some examples include home appliances with high energy efficiency, environmentally benign but powerful detergents, and power plants that utilize the waste heat of cement production plants. In other words, More from Less aims to establish a production and consumption system that conserves and recirculates resources.

The Eco-2 Forum will be held to establish an environmental knowledge and information network which connect the government, industry, and consumers. Policymakers, CEOs and civic groups will be invited to participate in the forum, which will serve as an opportunity for businesses to put environmental management into practice, for consumers to buy green products and participate in conservation efforts, and for the government to develop supporting policies and initiatives.

Also, the government will encourage businesses to practice environmentally friendly management. Such businesses will be designated as environmentally friendly and will be rewarded with benefits. The Environmental Performance Rating System will evaluate and note the environmental impacts throughout a products lifecycle, from production, to use and ultimate disposal. The Green Building Certificate will be introduced to recognize environment-friendly buildings in a manner similar to the Environmental Performance Rating System. These measures will encourage industry to make products and buildings that are much less environmentally harmful.

Development of a Sustainable Development Indicator

A sustainable development indicator is being created to help quantify the economic value of environmental impacts. We hope to show that money which goes to improve environmental quality should be regarded as a capital investment rather than an expense. For example, if there is 1ppm improvement in water quality as a result of environmental investment, the index will show the economic value of the investment by quantifying the effects, such as an increase in usable water resources and a decrease in water treatment cost in industrial complexes. Additionally, Green GDP will be phased in to reflect environmental factors such as pollution reduction and environmental improvements in gross domestic production.

These efforts are intended to enhance the efficiency of industry's investment in the environment and to help drive the economy while maintaining environmental integrity.

Path to economic and environmental sustainability

The government has discarded the growth-driven policies of the past. It now strives to achieve sustainable development that pursues environmental preservation and economic development simultaneously, to ensure everyone a high quality of life. The government is fully committed to reviving both the economy and the environment and to marking 2001 as the year that Korea embarked on its path to economic and environmental sustainability. The Eco-2 Project will hopefully prove itself to be an efficient tool in achieving this objective.

A Green World Cup 2002

General Environmental Management Guidelines

Korea and Japan will jointly hold the 2002 FIFA World Cup from May 31 to June 30 in 10 cities in each country. The two countries will each host 32 final games 64 games in all. About 13,000 people are expected to come to see the games. The matches held in Korea will be in Seoul, Incheon, Suwon, Daejeon, Jeonju, Daegu, Gwangju, Ulsan, Busan and Seogwipo.

Korea decided to draw up environmental management guidelines for the 2002 World Cup as well as the Asian Games. The guidelines focus on tackling problems that received attention during previous game preparations. Korea is placing a great emphasis on hosting an environmentally-friendly and efficient World Cup, which will contribute to heightening Korea's image abroad. Basic directions and strategies, step-by-step measures, and environmental guidelines for each sector will be set up to manage the international events in an environmentally sustainable manner.

Basic Directions

Environmentally-friendly design and construction of game facilities

All game facilities, such as the main stadiums and players accommodations, should be located, designed, and constructed to minimize impact on the environment. The designs should make the utmost use of natural landforms, and include facilities that utilize natural resources such as solar power, natural sunlight and wind. Measures to reduce water use, noise pollution and dust should also be included.

Improve the environments of the host cities ahead of the World Cup

Improve each city according to its historical, cultural and environmental characteristics, by recovering waterways, planting trees, and organizing signals and mileposts.

Pursue a pollution-free World Cup

Introducing no or low pollution vehicles such as compressed natural gas (CNG) buses and minimizing emissions through controlling pollutant discharge are some of the measures needed to achieve improved environmental performance during the games. An environment-friendly resource management system should be established by reducing waste, improving recycling, and reducing packaging material and disposable goods.

Development of various environmental programs for the public

To successfully run a green World Cup, various events for citizens, as well as environmental and civic organizations, will be planned ahead of the games. The events include eco-tourism packages, environment education and publicity programs, painting exhibitions and festivals introducing local products.

Step-by-step Measures

Selection of the sites

Various environmental factors were considered in choosing the sites, which are in areas selected to minimize environmental damage. Buffer zones, such as reservoir protection areas and natural ecosystem conservation areas, were set up near the stadiums.

Setting up operation plans

Construction was carried out with the intent of utilizing existing facilities to the fullest, and the natural environment was kept intact as much as possible, to be used as resting areas and cultural venues. Environmental design was incorporated into all new venues developed for the games with an emphasis on water and energy conservation, passive solar design, and recycling.

Construction of stadiums

Inspections were carried out to check whether environment-related regulations were followed in the construction process. Environmental damage resulting from noise pollution, scattered dust and soil erosion were minimized.

Management of the games

With active participation of citizens, the government will manage the air, water, and waste at the stadiums and surrounding areas according to established environmental principles.

After the games close

A thorough environmental assessment will be conducted of the games, to be used as reference for future domestic and international events.

Environmental Guidelines for each Category

The design and construction of game venues

After conducting an assessment of the suitable size of the venues, existing facilities should be utilized to minimize the construction of new buildings. All construction must abide by environmental regulations and various factors considered when designing and building the facilities, such as selecting buffer zones, promoting water and energy conservation, available public transportation, as well as reductions in noise pollution, soil erosion, and dust.

Management of pollutants

For maintaining good air quality, programs to conserve energy should be drawn up, such as those involving renewable energy and energy-efficient devices, as well as policies to curb vehicular emissions. Water usage can be regulated by recycling rainwater and sewage water while emphasizing water conservation. To effectively manage water resources, water quality inspections should be strengthened at hotels and wastewater systems should be improved. In waste management, efforts must be carried out to control the amount of garbage produced at stadiums and to encourage recycling while cutting down on the use of disposable goods.

Measures in restructuring the cities

Environmental activities include re-coloring, improving signals, and planting trees. Cleaning up rivers and creeks and preparing spotless public bathrooms are also some of the environmental projects currently in process.

To heighten environmental awareness

For publicity, various activities such as designing environmental symbols, staging photo exhibitions, and promoting eco-tourism will be considered.

World Cup host cities' examples of environmental management

Seoul

Seoul's World Cup stadium is located at Sangam-dong, Mapo-gu, the site of the closed Nanjido landfill. Through staging the World Cup, the wasteland will be reborn as an ultramodern city that leaves a lasting legacy of environmental achievement for the global community.

Measures include restoring the natural environment of the surrounding rivers, such as the Nanji River, and conducting a land remediation project for the entire Nanjido area. The building of the Peace Park in the area, as part of the Millennium Park project currently in process, will make significant gains in improving the environmental quality of the region. Also, by building a state-of-the-art city in the Sangam-dong area, development of the northwestern Seoul area will match levels of Seoul's other districts.

Busan

Busan is promoting efforts in a number of areas such as construction and management of venues. The VIP parking lots around the venues will be made of grass blocks and clay pavement, and passageways will be built for native animals to move about the area in their natural habitats. Solar powered lights will be installed and venues designed with an emphasis on improved water and air quality. Special attention will be also given to improving the city's appearance by preparing flower gardens, setting up parks and playgrounds, building natural waterways and creating eco-tourism packages.

Incheon

Through the opening of the Incheon International Airport in March, 2001, as well as hosting the World Cup, Incheon plans to promote a new image of an environment-friendly city through various improvement projects. Incheon will take on strong environmental initiatives as part of World Cup preparations, such as securing clean and safe drinking water, renovating sewage systems, afforestation, and clean-up campaigns.

Daegu

Noting the fact that the ambient environment is closely related to athletic performance, Daegu aims to highlight the city's image as a "Green Forest City" during the World Cup. In 1996, the city initiated a five-year management plan to achieve specific environmental outcomes. Activities included tearing down walls, building parks, strengthening air and water quality monitoring, and enhancing public bathrooms. The city also decided to restructure the city landscape and emphasize environment-friendly management throughout the games.

Gwangju

Gwangju is aiming to build sporting venues that deliver both ecological and economic benefits.

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