

Subject	The four major rivers restoration project
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Reference: The four major rivers restoration project

- The essence of the four major rivers restoration project is establishing fundamental countermeasures against repetitive damage from floods and droughts.
- The project consists of five core challenges aimed for the renewal of territory.
- As a part of the Green New Deal, the project will provide Korea an opportunity to position itself as a powerhouse in water resources.
- Contribution to overcoming the recession by creating new jobs and revitalizing local economies
- Provision of various spaces and programs to meet the rising public demand for water sports and cultural activities
 - < Five core challenges >
- Securing abundant water resources against water scarcity
 - Around 1.3 billion m³ of water will be secured.
- Implementing comprehensive flood control measures
 - We will prepare against 200-year floods by securing 920 million m³ of flood control capacity.
- Improving water quality and restoring the ecosystem
 - Water quality in the mainstream will improve to an average of level two (BOD less than 3ppm) by 2012.
 - We will resuscitate the ecosystem through ecological rivers restoration, development of wetlands, and readjustment of farmlands.
- Creation of multipurpose spaces for local residents
 - ex) Building bicycle lanes (1,206 km)
- Regional development centered on rivers
 - Ministry of Culture and Tourism (MOCT): Four major rivers that flow with culture
 - Ministry of Food, Agriculture, Forestry and Fisheries (MOFAFF): Creating a vivid land of beautiful scenery

I. Background

□ Korea needs fundamental measures against damages from floods and droughts that are increasing due to climate change.

- We need an adequate amount of water resources to prepare for future water scarcity. (800 million m³ in 2011, and one billion m³ in 2016 expected)

- Excessive amount of budget has been spent in recovering water-related damages that could have been saved through investment in disaster prevention measures.

* Annual flood damage: 170 billion KRW in the 1970's 2.7 trillion KRW now

* Annual investment in flood prevention: 1.1 trillion KRW

* Recovery expenses: 4.2 trillion KRW

- We need to strengthen the management of pollutants to improve water quality due to the increase of COD that takes a long time for degradation and TP that results in eutrophication.

□ Existing spaces and programs for water sports and cultural activities cannot meet the rising demand from the rise of income levels.

□ River restoration plans should be congruous and comprehensive since rivers have diverse functions related to water storage and control, environment, development, and leisure.

□ The four major rivers restoration project will contribute to recovering the real economy from the recession through job creation and local economic revitalization.

The rivers restoration is a packaged project that will resolve water-related problems and renew our territory centering on water. It is also a comprehensive pan-government project that consists of various plans set up by diverse ministries with massive investment over a short-term period.

II. Policy direction

- Proactive response against climate change
 - Secure water resources in various ways to deal with droughts
 - Convert from investment centered on disaster recovery into investment focused on prevention

- Diversification of ways to secure water resources
 - Dredging sediments, installment of reservoirs
 - Expansion and connection of existing water resources facilities
 - Continuous development of new water resources

- Paradigm shift in waterway management policies
 - Waterway management policies such as dredging sediment will expand the flood spilling capacity
 - Initial investment for prevention measures to minimize flood damages will be augmented.

- Utilization of river areas as multipurpose spaces for the co-existence of the people and environment
 - Gradual adjustment of riverside farmlands
 - Creation of new areas for leisurely activities utilizing rivers
 - Improvement of the access to waterfronts
 - Enhance the value of the riverside as scenic areas
 - Pursue regional development centered on rivers
 - : Four major rivers that flow with culture
 - Creating a vivid land of beautiful scenery
 - Promotion of green growth projects

III. Main aspects

□ Implementation of five core challenges to achieve the goal of renewing the territory by restoring the four major rivers

① We must secure adequate water supply (1.3 billion m³) to respond to future water scarcity and severe drought due to climate change. To this end, we will build reservoirs and small- and medium-sized dams, and expand the storage capacity of agricultural reservoirs.

② Preemptive measures are necessary against repetitive floods due to climate change, as well as 200-year floods. Therefore, we will dredge sediment, strengthen old levees, and build dams. (Secure 920 million m³ of flood control capacity)

③ By 2012, the water quality of the mainstream will be improved to an average of level two (BOD less than 3ppm) by expanding sewage treatment facilities and establishing green algae reduction facilities. Moreover, we will restore ecological rivers, create wetlands, and readjust farmlands to rehabilitate the ecosystem.

④ Rivers will turn into multipurpose areas for lifestyle, leisure, tourism, cultural activities, and green growth. To this end, bicycle lanes (1,206km) will be developed, hands-on tour programs will be promoted, and walkways and sports facilities will be expanded.

⑤ The project will also contribute to regional development through various plans that utilize the infrastructure planned in the project and the scenery. The examples are 'Four major rivers that flow with culture' of MOCT, and 'Creating a vivid land of beautiful scenery' of MOFAFF.

□ Project time and cost

- Restoration of the four mainstreams such as dredging sediments and building reservoirs will be completed by 2011. Projects for the branch streams as well as building dams and agricultural reservoirs will be completed by 2012.

- Total cost is estimated at 16.9 trillion KRW.

- Twelve cities and provinces submitted 836 recommendations worth 98.3 trillion KRW.

- River-related 213 cases worth 6.9 trillion KRW that were coherent with the master plan were reflected. Examples are dredging sediments, fortifying levees, and restoring ecological rivers.

IV. Expected benefits

1. Fundamental resolution of floods and water scarcity

- 1.3 billion m³ of water secured will strengthen our capacity to respond to future water shortage and droughts.

- Increased water storage thanks to dredging sediment and building reservoirs will equip us against droughts.

- We will be able to secure river maintenance water and strengthen flood control capacity even during droughts by building small- and medium-sized multipurpose dams and expanding existing agricultural reservoirs.

- Flood control capacity increased by 920 million m³ will enable us to fight climate change and keep our rivers safe even upon 200-year floods.

- Flood damage and recovery expenses will decrease by dredging sediment.

- The down-streams will be protected by retention and riverside reservoirs.

- The reinforcement of old levees will raise the safety in flood control

2. Contribution to sound restoration of the ecosystem through water quality enhancement and rehabilitation of rivers

- Secure swimmable water quality (level two, BOD 3ppm) by 2012, earlier than the originally scheduled 2015.

- Improvement of the environment through restoration of ecological rivers and development of waterside belts

 - Readjustment of farmlands in riversides will reduce non-point pollution sources and improve the ecological environment.

 - We will secure green-area belts through the development of ecological wetlands and riverside forests.

3. Increased quality of cultural and leisurely activities, and lives

- Local residents will enjoy culture, relaxation, and sports in redeveloped waterfronts

- The promotion of water sports and the construction of bicycle lanes will increase the opportunity for leisurely activities.

4. Local economies revitalized through the Green New Deal

- The real economy will be recovered by stimulating domestic demand and creating new jobs.

- As a part of the Green New Deal, the rivers restoration project will be utilized as a new growth engine.

- The benefits reaped from the project on the four major rivers areas which account for 70 percent of our territory will contribute to regional development.

- Regional growth will be accelerated through the rivers-oriented development.

5. Promotion of green growth projects utilizing the four major rivers

□ We will develop clean-IT sensors to manage the river environment and disasters.

- The development of remote sensors will enable real-time monitoring of water pollution, water level, vulnerable areas upon disasters, and facilities such as bridges and dams.

□ Establishment of a digital tour system for the four major rivers

- Digital tours on the culture and historic sites of the four major rivers will be promoted. To this end, the government will support technological development, commercialization, and international standardization of wireless communication, and positioning system.

□ Development of unmanned underwater robots for environmental management of the four major rivers

- Scientific management of resources and environment of the underwater which is difficult to access will become possible by using robots.

□ Installment of photovoltaic and small hydropower power plants

- Photovoltaic power generation facilities will be built in riversides that are not submerged.

- We will construct small hydropower plants when expanding existing reservoirs and agricultural reservoirs.

6. Enhancement of national status as a global leader in water management

□ The experiences and technology accumulated through the project could be transferred to other countries and Korean companies will be able to enter into relevant overseas markets.

An opportunity for Korea to position itself as a powerhouse in water resources in the international community.