Korea's Green Growth Projects: Case Studies

In support of presentation by Dr. Soogil Young

1. Cheong Gye Cheon Project
2. Four Rivers Project
3. HSR Network Plan

Presidential Committee on Green Growth
Republic of Korea

Toward Sustainable Development

- Cheong Gye Cheon Restoration Project -

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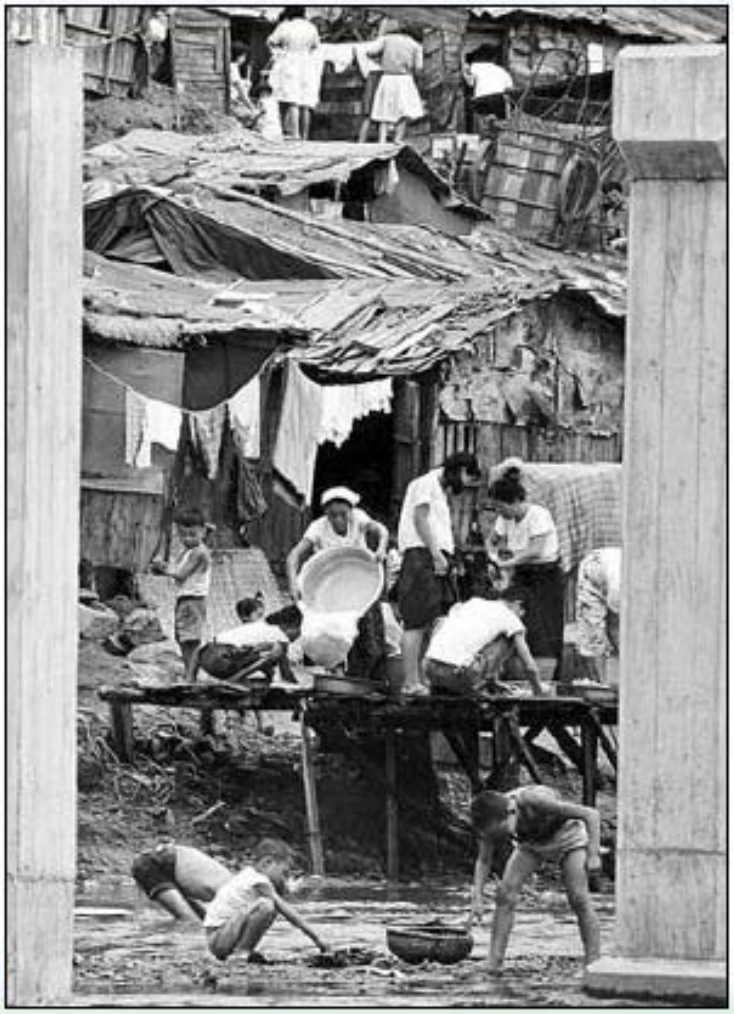
Early 20C

common people's lives :

Place for washing in Cheong Gye Cheon

Problem: sanitation



After War: Urban squatter until 1970's

(Homeless citizens' shelter gathered along its banks)

Solution: covering

Construction of Cheong Gye Cheon Elevated Highway started in 1967 and was completed in 1976.

Covering work : 1958~1977

Cheonggye Highway : 1967~1971

Highway in 1990s

Before

After

2003

2005

Challenge 1: Transport

- **Cheonggye road & hwy**
  - Urban backbone corridor
  - 170,000 vehicles/day
- **Traffic disaster warned**
  - Media, interest groups
  - Traffic simulation
  - Project delay

Solutions to transport

- **Discourage driving cars in the city centre**
  - Leave cars at home one out of 10 days
- **Improve traffic flow system**
  - One-way streets
- **Improve public transport**
  - Bus-only lanes
  - Downtown shuttle buses

Challenge 2: Neighboring merchants

- **Business decline**
  - Access difficulty : traffic congestion
  - Worse environment : noise & dust due to construction

Solutions to merchants

- Demonstrations against CRP Project

- Leadership for Conflict Resolution
  - Meeting 4,200 times

Construction progress

- **Started on 1 July 2003**

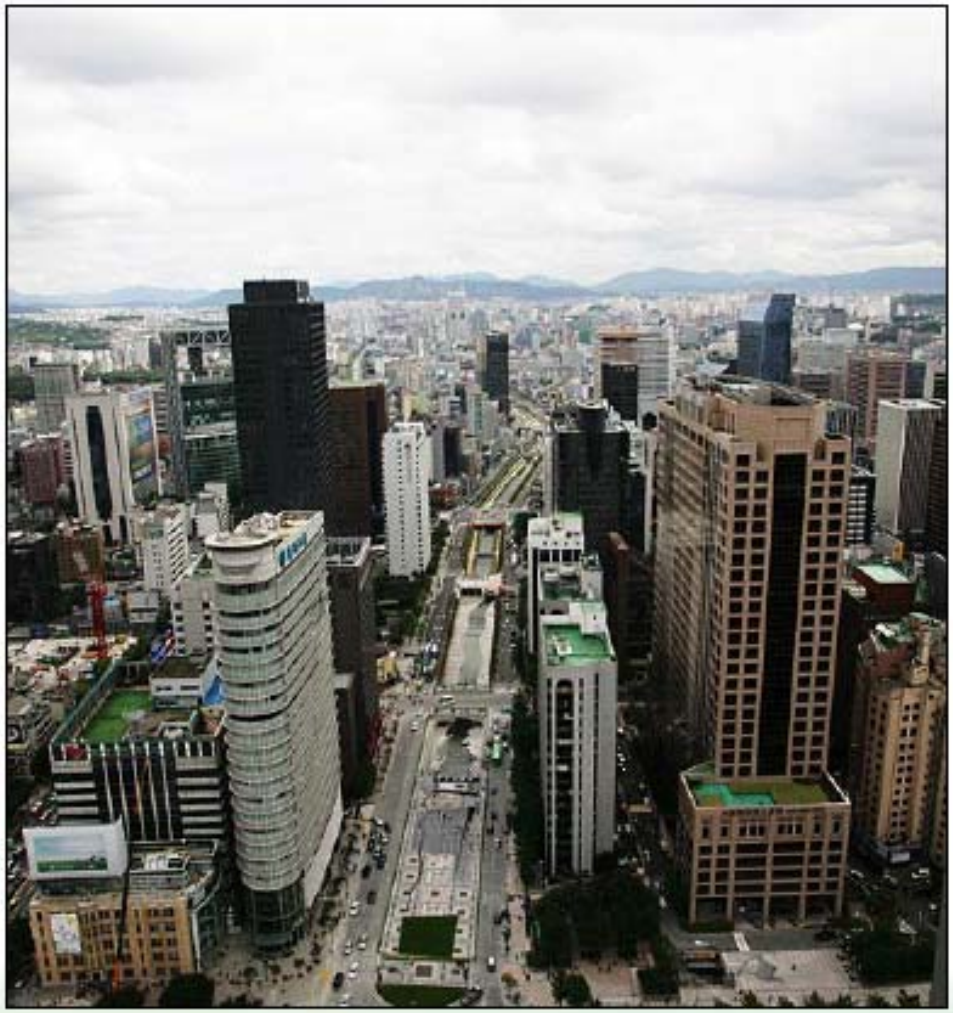
First water supply

1 June 2005

...In 2005, 47 years after being covered with concrete, Cheong Gye Cheon was restored to its old state of water freely flowing.

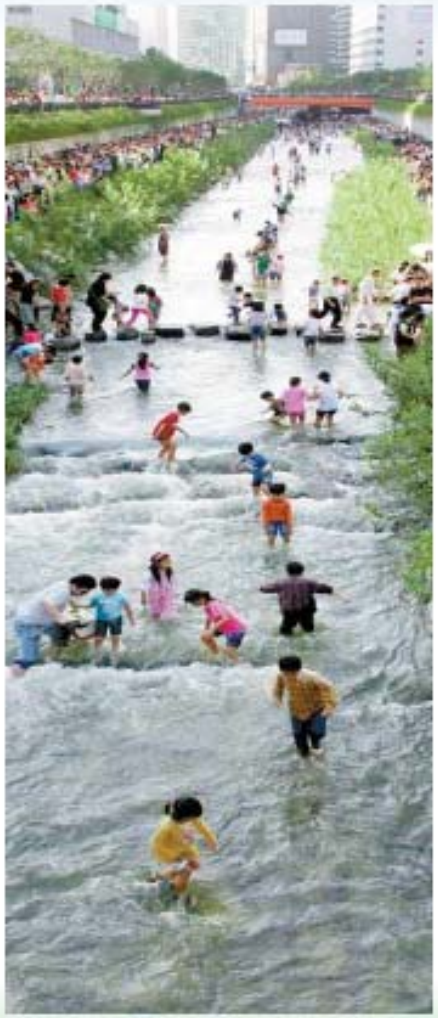
Restoring Cheong Gye Cheon helped recover 600 years of Seoul's history and culture and is helping Seoul be reborn as an cologically friendly city. …

Grand Opening (Oct. 1, 2005)



After Grand Opening (Oct. 1, 2005)

Cheong Gye Cheon emerges as a new attraction stream for Citizens.



After Grand Opening (Oct. 1, 2005)

Cheong Gye Cheon emerges as a new attraction stream for Citizens.

Monitoring Cheong Gye Cheon Project

Traffic Speed
Accessibility
Public Transportation, etc.

Air Quality
Wind Corridor
Thermal Image
Ecology, etc.

Media Preference
Citizens' Attitudes,
etc.

Land Transaction
Construction
Land Price
Pedestrians, etc.

Business/Employees
Business Change
Industry Structure, etc.

Environment

- **Air Quality**
  - NO_2: 69.7 ⇨ 46.0 ppb (-34%)
  - PM10: 74.0 ⇨ 60.0 μg/m^3 (-19%)
- **Water quality**
  - BOD: 100~250 ⇨ 1~2 ppm
- **Noise level reduced**
- **Heat island effect relieved**
- **Wind corridor created**

Ecology : Fishes

- **4 ⇨ 15 ⇨ 19species**
  (2005) (2007)

Ecology : Birds

- **6 ⇨ 29species**
  (2007)

Ecology : Insects

- 15 ⇨ 84 ⇨ 174 species
  (2005) (2007)

Overall Effects of the CRP Project

- **Visualise the urban management changes**
- **Nature & Ecological restoration**
- **CBD regeneration**

Ripple effects

- *Public transport reform*
- Stream restoration: home and abroad

Good example of

- solving conflicts over a public project
- successful project management

City Center Development Master Plan

Hangang (river) Renaissance

The Four Major Rivers Restoration Project and Green Growth of Korea

July 1st, 2010.

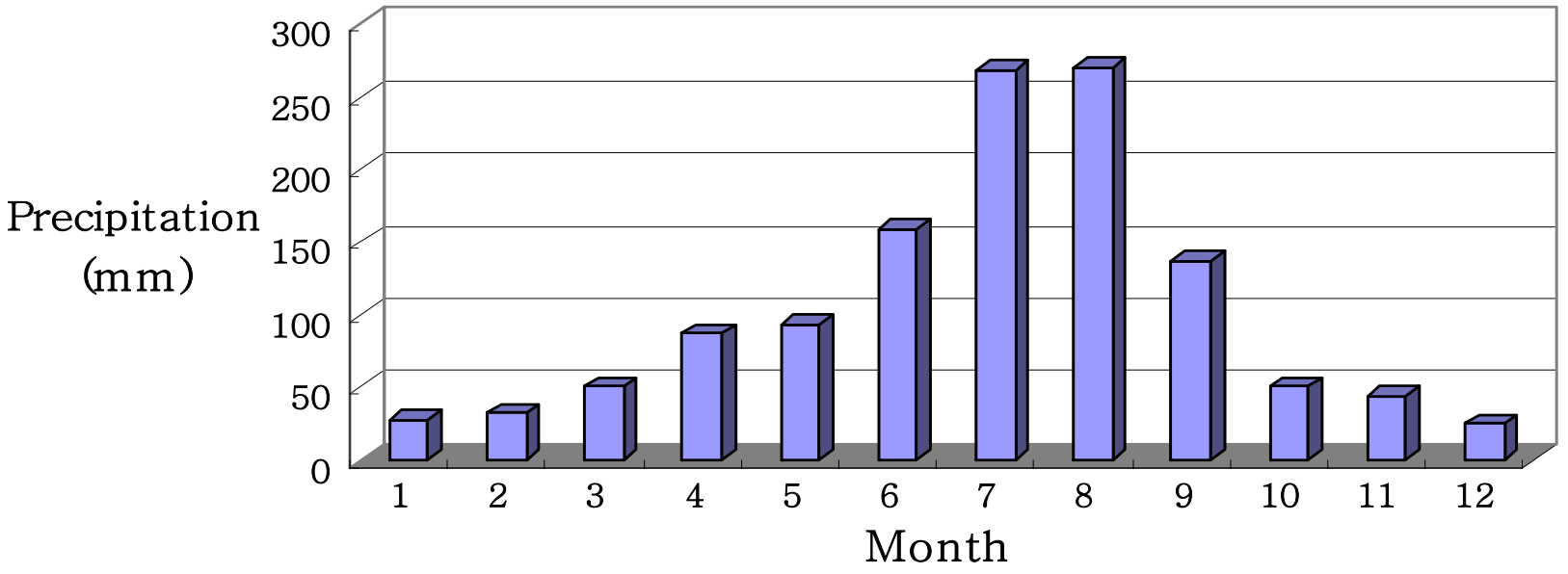
Office of National River Restoration

Ministry of Land, Transport and Maritime Affairs

Republic of Korea

Hydrological Characteristics in Korea

- Wide variation in seasonal precipitation
  - * 2/3 of annual rainfall during rainy season (Jun.~Sept.)



Monthly Precipitation (Mean of 10yrs)

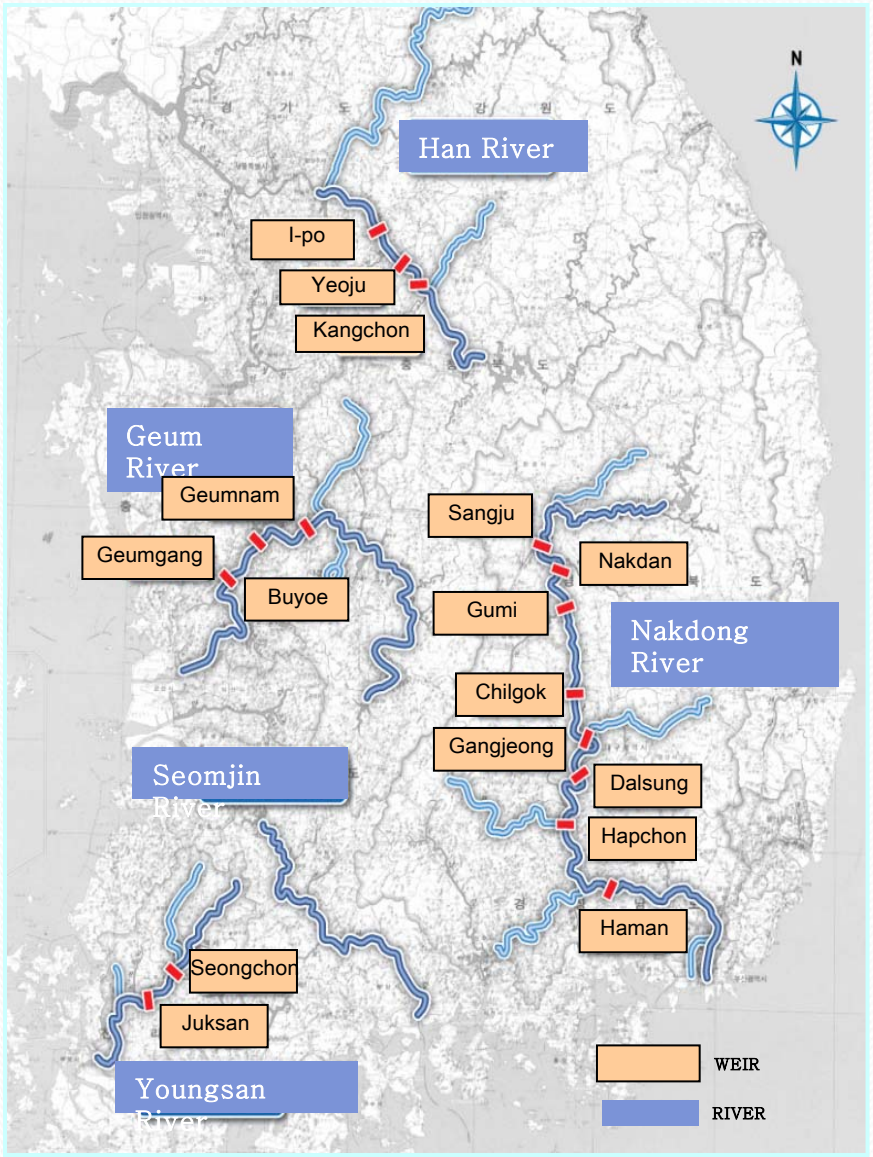
Flood damages

Water Shortage … Droughts

Severe Water Pollution


Protecting against Flooding & Drought
Storing Water
Improving Water Quality
Multi-purpose Green Growth Project
Creating Public Spaces for Residents
Making Economic Growth
Restoring Ecology in River
River-oriented Community Development

The Four Major Rivers Restoration Project



Storing Water – 1.3 billion m^3

Building weirs(16) and dredging

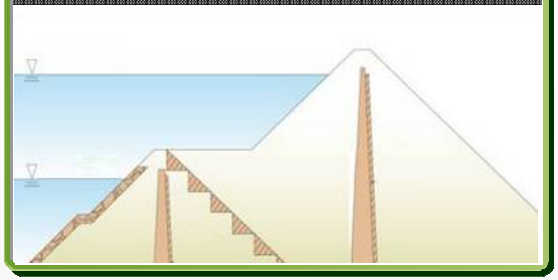
Ipo Weir (The Han River)

Dredging Riverbeds

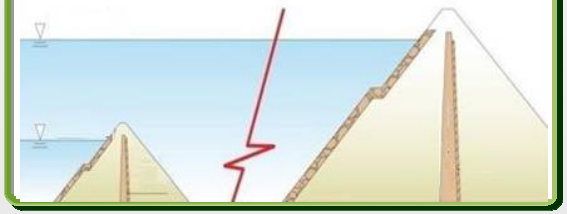
800 million m^3

Embanking Agricultural Reservoirs (96)

Heightening the River Banks



Reinforcing the River Banks

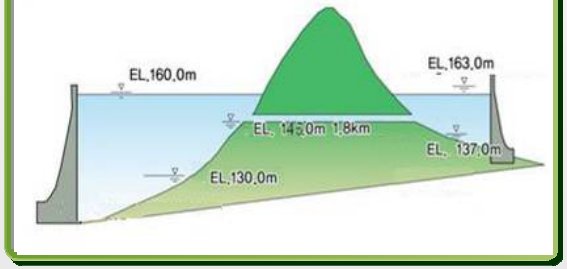


250 million m^3

Constructing New Dams (2)

Yeongju Dam

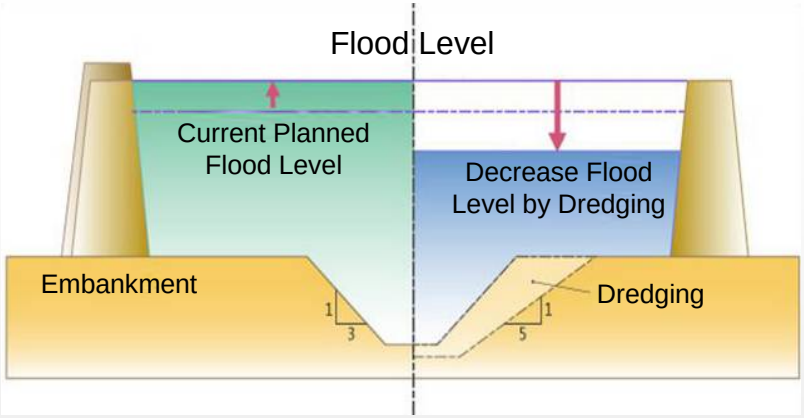
Connecting Andong and Imha Dams



250 million m^3

Floods Control & Community Development

Protecting Floods



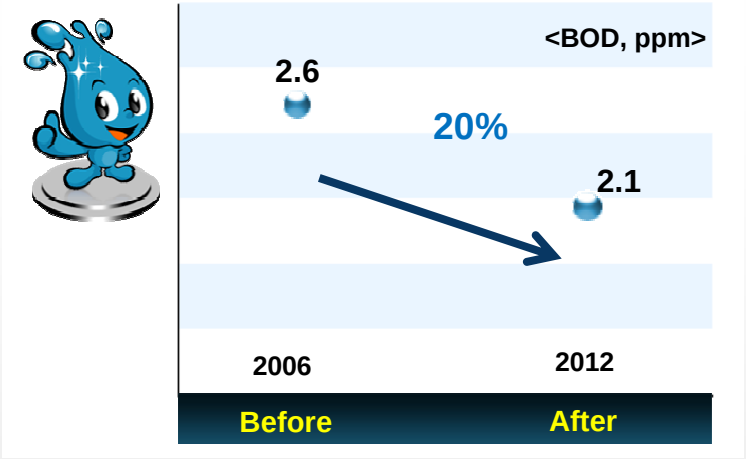
- 100 Year Flood → 200 Year Flood
- Embankment → Dredging

Community Development

- Bicycle Lanes
- Waterfront Uses

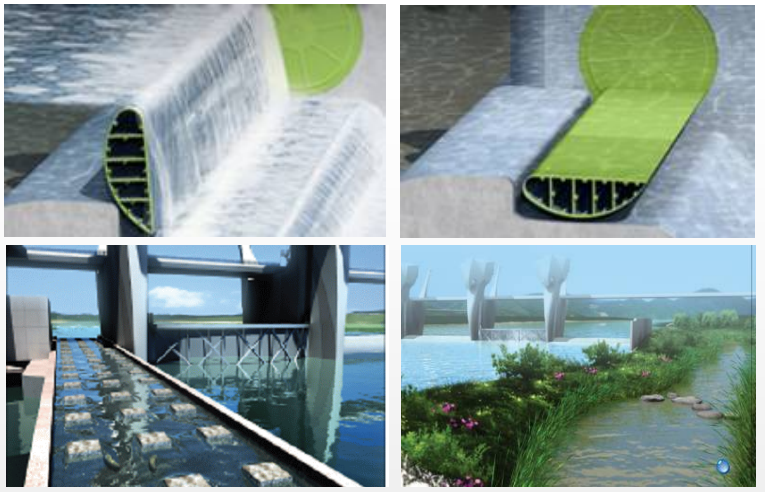
Improving Water Quality & Restoring Ecology

Improving Water Quality



- Sewage treatment facility: 709
- Wastewater treatment facility: 170
- Livestock manure treatment facility: 21
- Black water treatment facility: 38
- Non-point pollution treatment facility: 21

Movable Weirs & Natural Fish-way



- Prevent Accumulation (movable weir)
- Address flood and drought (movable weir)
- Protect fishery species (natural fish-way)

Restoring Ecology & Biodiversity

Flood Control Retention

<Not Flooded – Damyang Flood Control Retention>

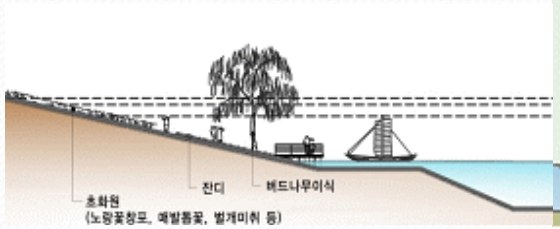
<Flooded – Damyang Flood Control Retention>

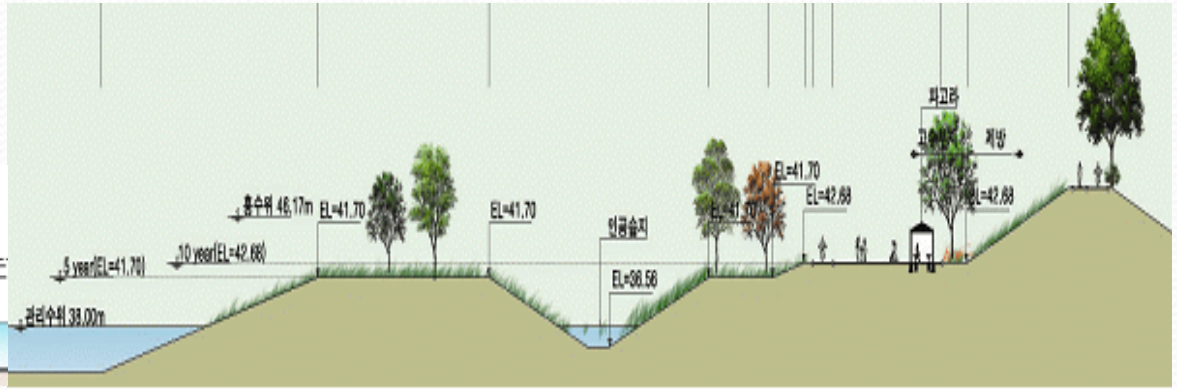
Establish Waterfront Eco-belt

- Relocating agricultural land within the rivers (177.5million m^2)
- Removing Vinyl Greenhouse (Approx. 28,000)

Minimizing Non-point pollution through establishing waterfront eco-belt (8million m^2 Eco-forest by 2012)

Restoring Ecology





Riverside Spectacles after project

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Riverside Spectacles after project

미래 녹색국토 구현을 위한

KTX 고속철도망 구축전략

2010. 9. 1

대통령자문 PCNC 국가경쟁력강화위원회

GREEN GROWTH KOREA

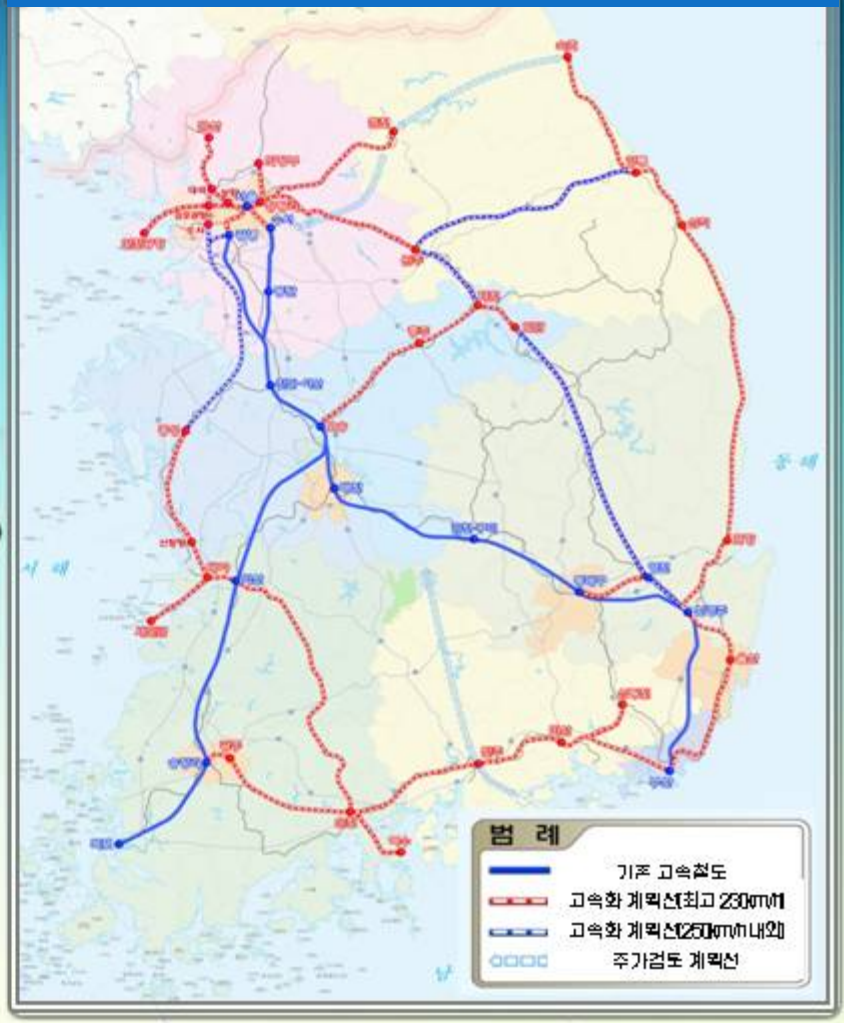
미래기획위원회

지역발전위원회

국토해양부

National Railroad Network

KTX High-speed Railroad Network



5+2 Metropolitan Economic Zone

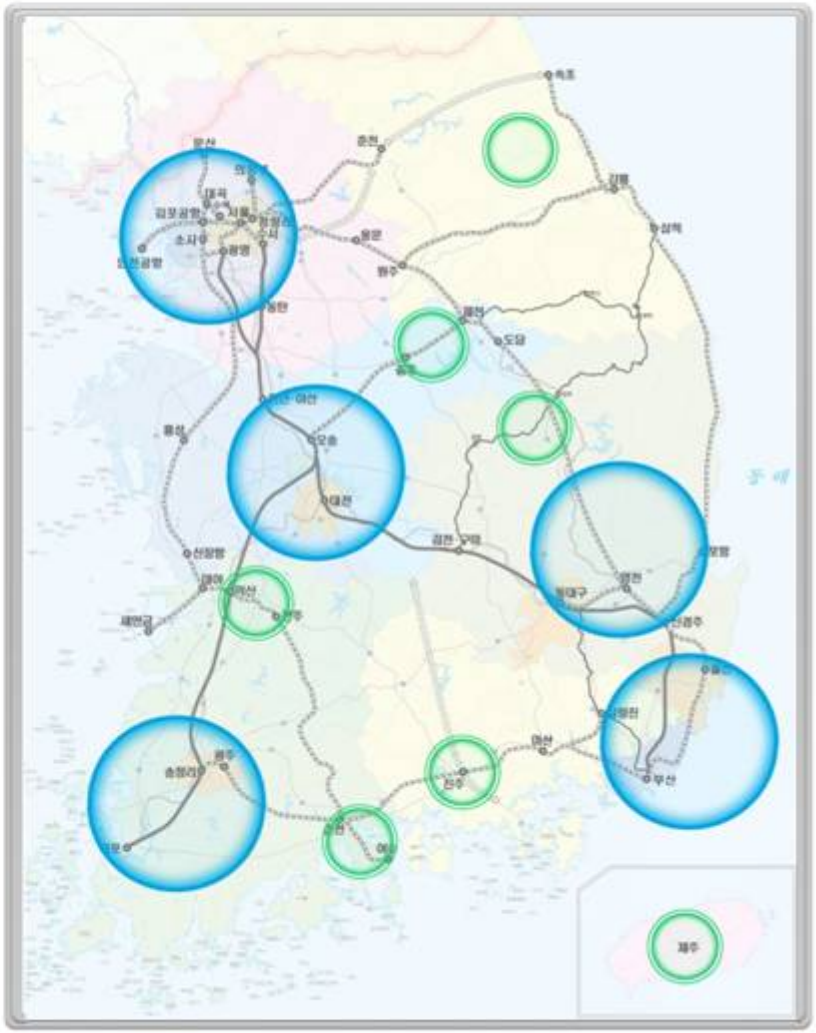
Cities of KTX Stations Developed as Centers of Local Growth

5 Metropolitan Areas

-Gyeongin: Financing, Int'l Affairs, Culture
-Daejeon: Science , Technology
-Gwangju: Optical industry, Design
-Busan, Ulsan: Logistics, Shipbuilding, Tourism
-Daegu: Mechatronics, Advanced material parts

7 Small-Medium Urban Areas Near Metropolitan Areas

-Gangwon: Bio industry, Medicine, Tourism
-Jeju: Water industry, Tourism & Leisure
-Gwangju: Optical industry, Design
*Other cities where KTX passes will be developed as base cities

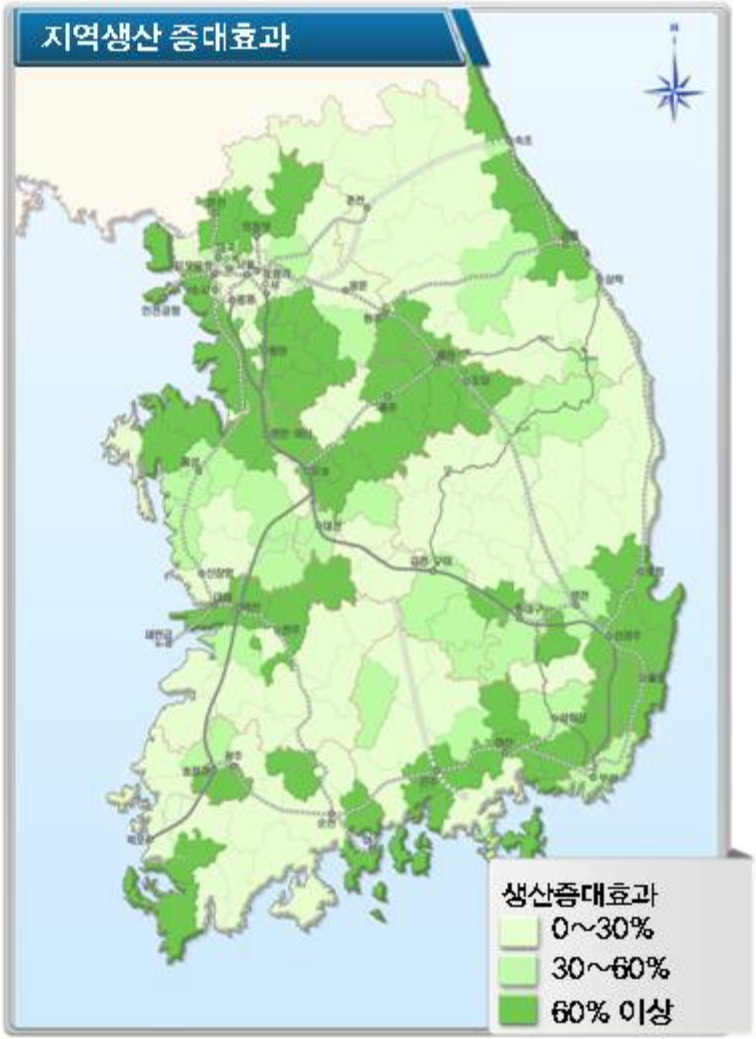


Whole Nation becomes a single metropolitan economic zone

-Thanks to better flow of logistics, businesses & factories can move to anywhere in the country.

-Nationwide high-speed/large-volume logistics network will increase business-driven investment in local areas.

-Korea will secure fast-growing int'l railroad market and use the industry as national growth engine.
→Gross production in local areas will increase by 91 trillion won (974→1,065trillion won, as of 2007)



An Example of "Me First" Spirit : GGGI

- Announced at the 15th UN Climate Change Conference (Copenhagen, 2009.12)
- An emphasis on the need for new resources for Global Green Growth Partnership
- Initially Korea will be a lead financier : annual 10 million USD for 3 years (2010 ~ 2012)
- Common Asset for the Global Community: an inter-governmental organization by 2012

What GGGI will focus on;

Global Green Growth Institute

Systemizing Theory

- Achieve the theoretical systemization of green growth as a new global development paradigm
- Develop the GGGI model for GHG emissions analysis by 2011

Spreading Green Growth Model

- Host the Annual Global Green Growth Conference in connection with the East Asia Climate Forum
- Issue an Annual Global Green Growth Report

Support to Developing Countries

- Establish green growth master plans for developing countries
- Establish a detailed development plan for green growth industries and technologies

END