

Sharing Experiences on Forest Ecosystem Restoration in the Republic of Korea

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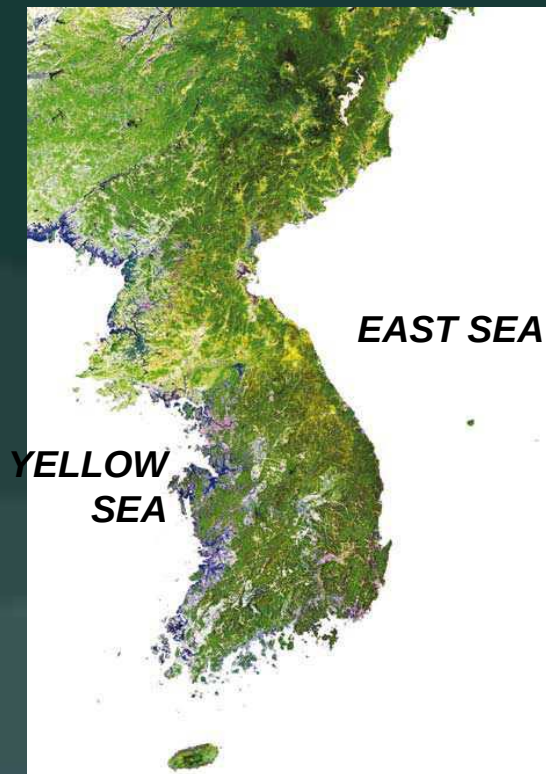
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Forest Rehabilitation in the ROK

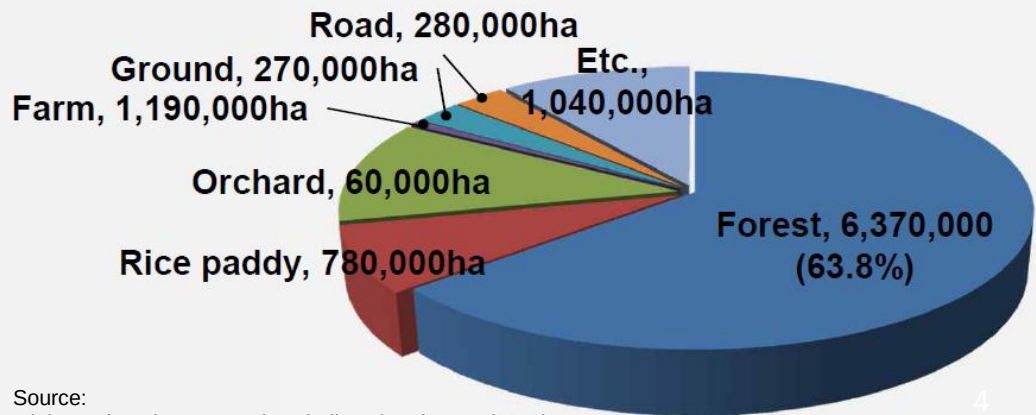


Large scale ecosystem restoration in Korea

- Forest ecosystem (64%) as key component of biodiversity in Korea
- *Quercus* spp. and *Pinus densiflora* forest are major natural forests
- Continuous increase in developed area through industrialization
- Shrinking and fragmentation of forest and agricultural area



- Whole land area : 9,990,000ha
- Forest area : 6,370,000ha(63.8%)
- Agricultural land : 2,030,000ha(20.3%)
- Developed area : 1,590,000ha(15.9%)

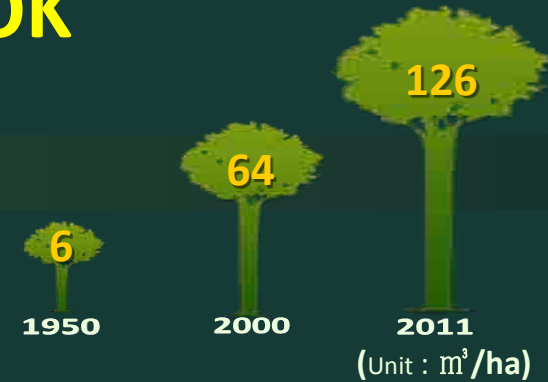


Source:
Ministry of Environment, The Biodiversity of Korea(2012)

Reforestation in the ROK

12 billion trees planted in degraded areas from 1962 !!!

- Planting for restoration: 2.1 mil ha, 12 bil trees
- Fuelwood forests: 643,000 ha
- Rehabilitation by erosion control: 120,000 ha



Changes in Growing Stock

6.43 million ha of forests cover 64.2% of the land

THE PAST

GDP per Capita in 1953 = USD 67

Population density = 222 people/km²



THE PRESENT

GDP per Capita in 2013 = USD 23,837

Population density = 498 people/km²



Reforestation in the ROK

Sungbok-dong, Seoul Forest Ecosystem Restoration Project

THE PAST



After the Korean Civil War

THE PRESENT



Now

Reforestation in the ROK

Young-il Forest Ecosystem Restoration Project

➔ From the year 1973 to 1977, 3.6m people, 4,538ha restoration

Before



After



Stages of Rehabilitation



Stages of Forest Rehabilitation in the ROK

Field Study

Forest Resources Survey and Forest Soil Survey

Establishment of Plan at the National Level

The First and Second 10-Year National Forest Plan

Seed and Seedling Production

Fuelwood Plantation, Reforestation, Erosion Control

Maintenance and Enforcement

Strengthening Law Enforcement

Sustainable Forest Management for Resources Development
(After successful forest rehabilitation)

Challenges & Overcoming



Challenges & Overcoming



Lack of basic information and data

- Survey of national and private forest
- Identification of forest land-use category (67-69)
- Establishment of Tree Breeding Research Institute



Lack of technology, funding, and human resources

- Support from the international community such as UNDP, FAO, WFP, IBRD, etc.
- R&D by Tree Breeding Research Institute / Korea-Germany Forest Management Program
- Establishment of Sanlimgye (community based forest management) / Linking with Saemaeul Undong (New Village Movement)

Challenges & Overcoming(cont'd)



Poor seed sources and seedling production

- Establishment of seed orchard and designation of seed stand
- Development of nursery clusters



Fuelwood needs nationwide

- Fuelwood plantation (640,000 ha)



Slash-and-burn farming practice

- Slash-and-burn control (86,073 ha)



Poor law enforcement and governance

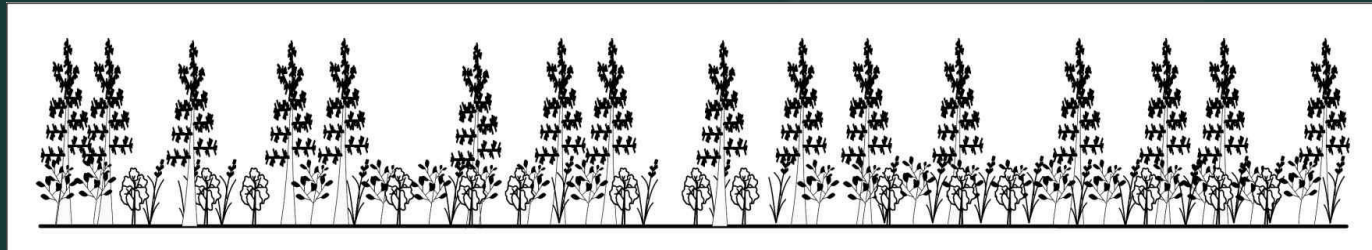
- Establishment of the Korea Forest Service
- Strong law enforcement through transferring forest sector tasks

Challenges & Overcoming(cont'd)

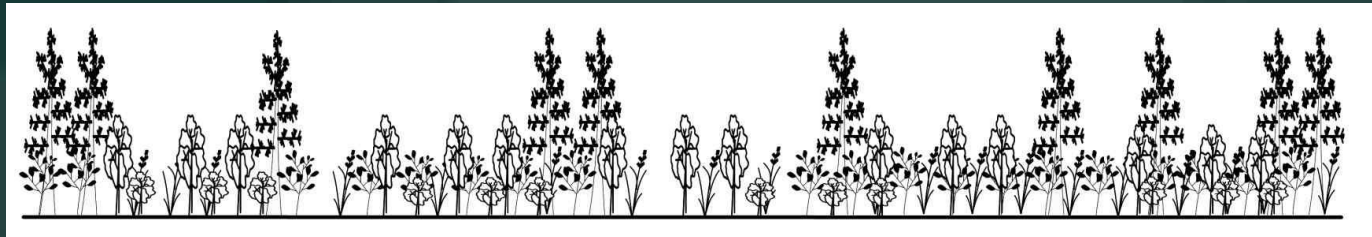
Emerging challenges and opportunities

- Schematic diagram for restoring natural vegetation in coniferous plantation
- Application of ecological theories
 - gap theory and intermediate disturbance hypothesis

Partial cutting or girdling
in coniferous plantation



Facilitation of
natural succession



Restoration of
natural vegetation
and improving
vegetation diversity



Restoration effects achieved by restoration project

- Regional landscape quality was completely recovered through large scale restoration project
- Recovery of forest function was achieved, maybe partly
- In ecosystem level, each restored stands showed differences to natural vegetation in terms of structure and composition by plantation type and management history
- Environmental variables such as in-forest environments and soil properties were recovered almost

Key points of the success of the restoration project

- Fuel revolution from wood to gas and briquet in 1970s
- Incentive measures to local residents by participating nursery
- Strong regulations to prevent utilizing of forest resources for fuel and food
- Primarily, transformation of social system from agricultural to industrial society during 1970s to 1990s

Factors of Successful Rehabilitation



Factors of Successful Forest Rehabilitation

- Strong leadership of the president
- Efficient administration
- Prompt recognition of accomplishments

Strong and Effective Leadership



- Establishment of the KFS
- Capacity building of professionals
- First and Second 10-year National Forest Plan

Integrated Planning and Implementation



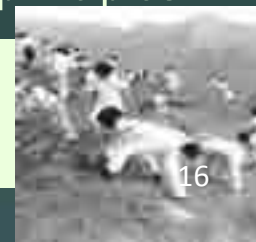
- Active participation from the public
- Community involvement
- Saemaeul Undong (New Village Movement)

Participation of Stakeholders



- Providing low-priced alternative fuel sources
- Control regulations
- Public-private cooperation and instillation of moral principles

Coordination with Related Policy



Examples of FLR



➤ Areas protected for watershed management and nature conservation



**Areas of Forest Genetic
Resources Reserve**



Riparian Forest

➤ Sustainably-managed commercial plantation



Pinus koraiensis (Korean pine)



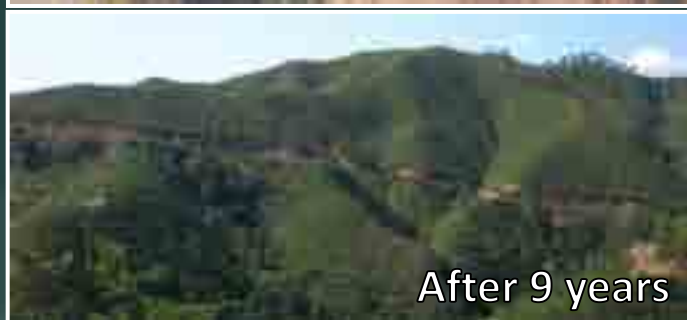
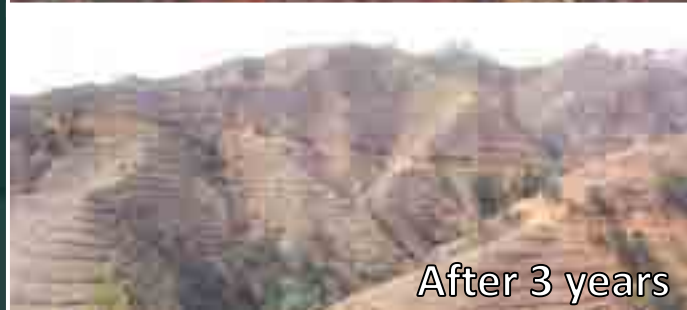
Chamaecyparis obtusa
(Hinoki Cypress)

➤ **Wilderness areas that retain their natural forms**



Pastureland in Dae-Gwan-Ryeong, Gang-Won Province

➤ Areas reforested after timber felling or fire



Post Forest Fire Restoration in East Coastal Areas

➤ Buffer zones along rivers or coastal areas



Coastal Disaster Prevention Forest

➤ Eco-tourism and healing forest



Forest path, Walking path

Healing forest

➤ Tree farm and agroforestry



Temporary Nursery in Forest



Enrichment Planting

➤ Establishment of plantations in marginal agricultural areas



Plantation in Marginal Farm

➤ Planned community development



Mountain Eco-Villages

Sharing with International Communities



Contributing through AFoCO*

- * AFoCO: Asian Forest Cooperation Organization
- Signing of the Agreement on ASEAN-ROK Forest Cooperation (18 November 2011)
- Strengthening regional forest cooperation among ASEAN and ROK at the initial stage which will be later expanded to the broader region of Asia
- SFM, forest rehabilitation, forest biodiversity conservation, technology transfer

Changwon Initiative towards LDNW*

- * LDNW: Land Degradation Neutral World
- Supported and welcomed by the parties at the UNCCD COP 10 (10-21 October 2011)
- Enhancing scientific process, global partnership, and Land for Life Award
- Contributing to achieving the global MDGs through UNCCD as one of the Rio conventions

FLR : New thematic approach

**Ecosystemic development
through sharing
knowledge and benefit**

FLR : New thematic approach

Strengthening bilateral cooperation

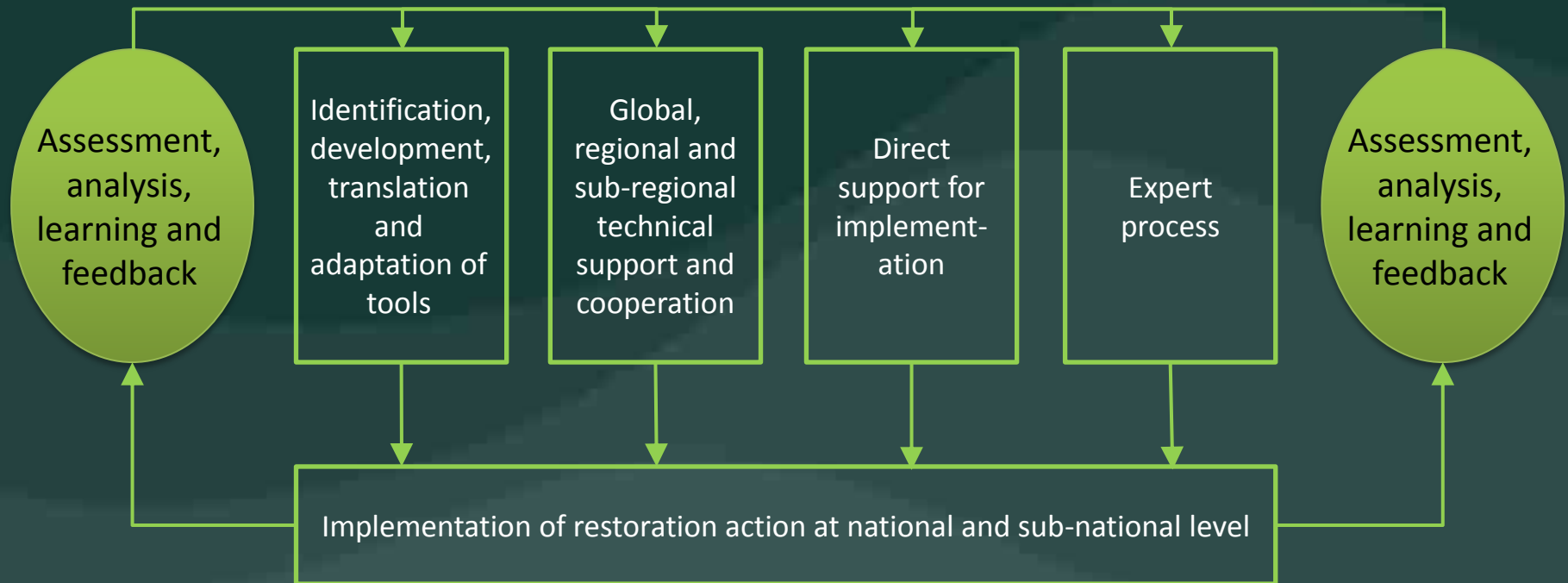
- Fostering bilateral partnership in the forest sector in Asia, Africa and Latin America
- * Asia 8, Africa 5, Latin America 5, Europe 2, Oceania 2
- Expanding scope of cooperation to include ODA, resources development, exchange of human resources, joint researches and others

Promoting ODA in forestry sector

- Promoting ODA programs to more developing countries in Asia as well as Africa
- Giving higher priority to ODA programs



➤ Schematic representation of the Forest Ecosystem Restoration Initiative of the Republic of Korea



➤ Forest Ecosystem Restoration Initiative

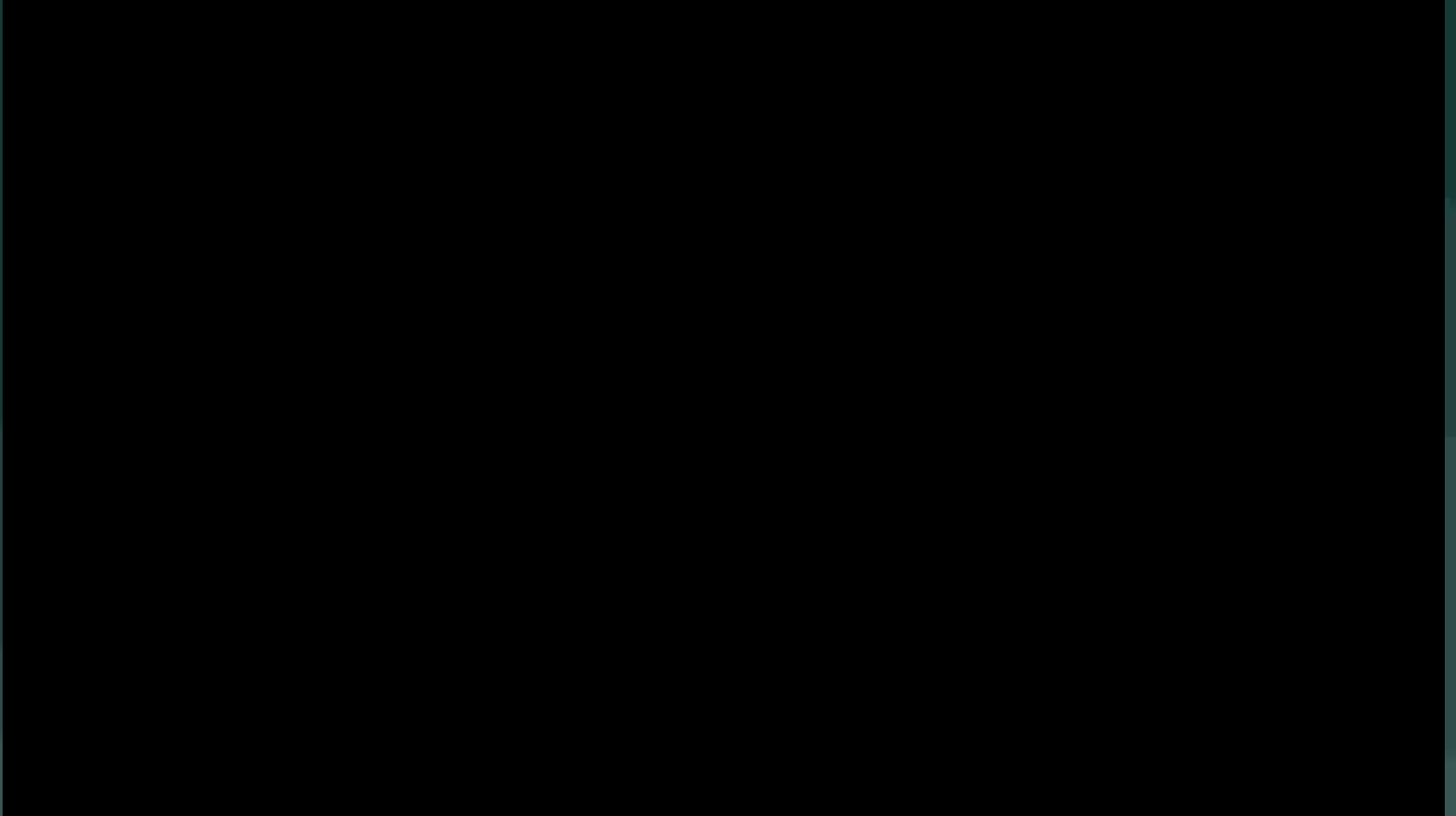
Contents

- ✓ Capacity Building
- ✓ Implementation support
- ✓ Technical support and cooperation
- ✓ Expert process
- ✓ **What Else?**



➤ Young-il Forest erosion control project

◆ The Green Will



Thank You



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<http://english.forest.go.kr>