Sharing Experiences on Forest Ecosystem Restoration in the Republic of Korea

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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

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

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

“Korea is the sole developing country in the world that has been successful in reforestation after the Second World War”
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
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 and Effective Leadership
- Strong leadership of the president
- Efficient administration
- Prompt recognition of accomplishments

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

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

Coordination with Related Policy
- Providing low-priced alternative fuel sources
- Control regulations
- Public-private cooperation and instillation of moral principles
Examples of FLR
Areas protected for watershed management and nature conservation

Areas of Forest Genetic Resources Reserve

Riparian Forest
- Sustainably-managed commercial plantation

*Chamaecyparis obtusa* (Hinoki Cypress)

*Pinus koraiensis* (Korean pine)
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
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
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

**Ecosystemic development through sharing knowledge and benefit**

**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

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* FLR: New thematic approach

**Contributing through AFoCO***

* AFoCO: Asian Forest Cooperation Organization

**Changwon Initiative towards LDNW***

* LDNW: Land Degradation Neutral World
Aichi Target (2020)

Pyungchang Road Map (2014 – 2020)

Korea Biodiversity Initiative

MOF
Marine Protected Area

MOE
Science & Tech. Cooperation

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

- Assessment, analysis, learning and feedback
  - Identification, development, translation and adaptation of tools
  - Global, regional and sub-regional technical support and cooperation
  - Direct support for implementation
  - Expert process
- Implementation of restoration action at national and sub-national level
- Assessment, analysis, learning and feedback
Forest Ecosystem Restoration Initiative

Contents

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

Aichi Targets
Young-il Forest erosion control project

- The Green Will
Thank You