

From Greening to Sustainable Forest Management in the Republic of Korea

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Hyun Park

National Institute of Forest Science, ROK



OUTLINE

1. Greening : Forest Restoration in Korea
2. Needs in Forestry for the 21st Century
3. International forest cooperation
4. Cooperation in the future



I. Greening : Forest Restoration in Korea

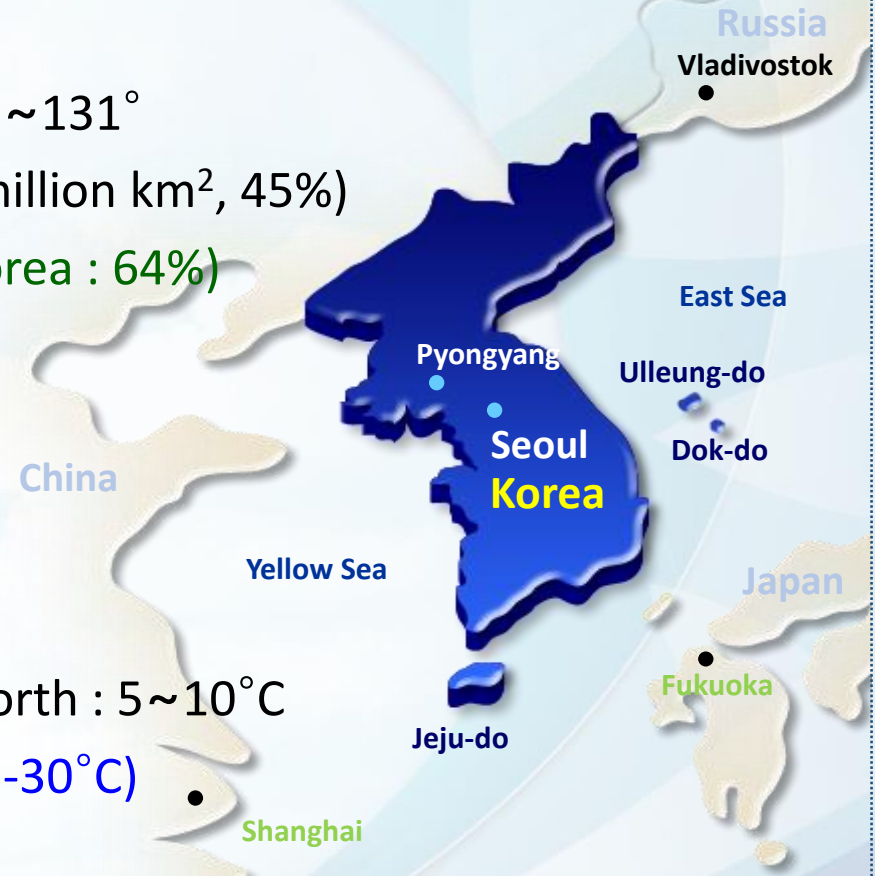


❖ Geography

- Latitude : N 33° ~ 43°, Longitude : E 124° ~ 131°
- Land : 2.2 million km² (South Korea : 1 million km², 45%)
- Forest : 70% of total land area (South Korea : 64%)
- Average Elevation : 420 m

❖ Climate

- Annual mean Temperature
South : 12~14°C, Central : 10~12°C, North : 5~10°C
- ❖ Cold winter : down to - 20°C (extreme -30°C)
- Annual mean rainfall : 500~1,500 mm
- ❖ Heavy rainfall
: 60% of rainfall is measured during monsoon (early summer)



Japanese colonial stage (1910 ~ 1945)



Overexploitation during the Japanese Occupation

- Overexploitation of timber
- Little plantation

During & After Korean War (1950 ~ 1953, ~ 1960s)



Korean War

- Devastation of whole forestland
- Use of fuelwood

▶ Forest stock : $6\text{m}^3/\text{ha}$ (1953), $12\text{m}^3/\text{ha}$ (1960)

| With Laws and Plans |

Partial success, Slow progress

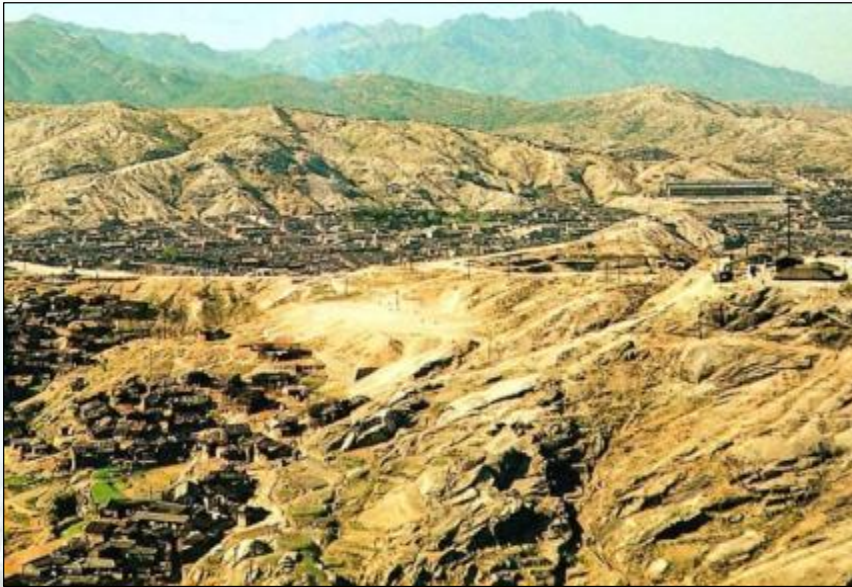
- 1945 Liberation from Japanese occupation
- 1946 Arbor day designation (April 5; early spring)
- 1950 Korean War broke out (~ 1953)
- 1951 Temporary Forest Protection Act
- 1952 3-year reforestation plan
- 1953 5-year erosion control plan
- 1954 2nd 10-year private forest reforestation plan
- 1958 10-year upstream soil conservation plan
- 1959 5-year fuelwood forest establishment plan



Planting by President Lee SM
(1948~1960)

❖ **Lack of** government's will, budget, & **diminutive** public participation

After Korean War (1953)



- ❖ GNI per capita : US \$67 (475 times)
- ❖ Population : 26 million (~ 2 times)
- ❖ Forest Stock : 6 m³/ha (28 times)

Present (2020)



- ❖ GNI per capita : US\$ 31,800
- ❖ Population : 51.8 million
- ❖ Forest Stock : 165 m³/ha

❖ How ?

| Multiple Factors |

Significant Changes in Policy - Leadership

- Reorganization of Forestry administration (1967, 1973)
 - ❖ Establish Korea Forest Service from bureau level to Administration
 - ❖ Move from Min. of Agriculture to Min. of Home Affairs (local government)
- Empowerment for cooperative participation with 'Saemaul Movement'

Social Environment – Economic growth & Readiness

- Successful result of 'Resettlement policy' to prohibit the 'slash & burn farming'
- Changes in fuel from wood to coal (petroleum fuel)
- **Strategic Plan** & Practical Implementation
 - ❖ Under the support from scientific knowledge (with foreign countries' aid)
 - ❖ Field survey, Erosion control, righteous planting, monitoring

❖ **Strong Leadership, Social Condition, Systematic approach**

| Science & Technology is the Basis |

- Forest greening projects should be developed by systematic policies including scientific and technological approaches.
- The technologies covering the processes preceded forestry policies.
- The 5 key technologies for successful forest greening (**during 1960s**)
 - (i) Forest survey & inventory : understanding the situation
 - (ii) Tree improvement : for long-term investment, selection of suitable trees
 - (iii) Seeds & Nurseries : high-quality seedlings
 - (iv) Tree planting & tending : not for a tree, but for making forests
 - (v) Forest pest control : endless nurturing (**until now**)
- Some technologies contributed greatly to forest restoration coupled with cooperation with the private sector (extension, use of developed technique)

❖ **From fundamentals, but prior to the practical policy !**

| With considering geo-climatic condition |

● Keen interest in Economy & Forest

- ❖ Enactment of Forest Law : Dec. 27, 1961
- ❖ Erosion Control Act : Jan. 15, 1962
- ❖ Establishment of Korea Forest Service in 1967
(enlarge the organization : bureau ⇒ agency)



Military Coup by General Park (May 16, 1961)

● Eradication of 5 major social ills

1. Smuggling
2. Narcotics
3. **Illegal timber harvesting**
4. Gangster
5. Quasi-reporter

治山治水

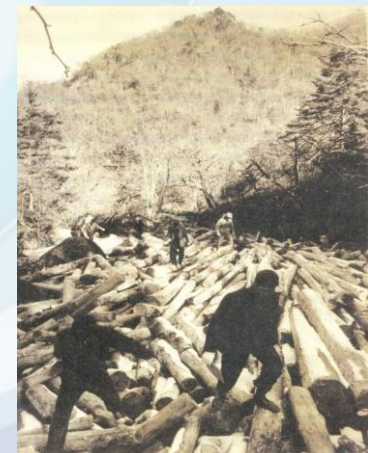
一九七七年四月五日

大統領 朴正熙

※ Put 600 people into jail due to illegal logging in 1964

Management of
mountain & water
should be **the first step**
for national economy

Incidence of large-scale illegal logging



* Forest Landscape Restoration

PLAN (P)

Establishment of Plan at the National Level (1973 ~ 1987)



❖ Announcement of the 1st and 2nd 10-year Forest Rehabilitation Plans



❖ A Hard Copy of the 10-year Forest Rehabilitation Plan

- Landscape : A large area defined by common productive characteristics or administrative management including every component such as land, water, wildlife, people and so on

DO (D)

Seed and Seedling Production (for righteous planting; step by step)

: proper tree species in each site (pioneer species & fertilizer trees such as legumes)

✕ Poplars, Pines, Black locust, Alders



CHECK (C)

Maintenance and Enforcement

: with 3rd step inspection system for checking survival rate of planted trees



- ❖ Cross-Inspector from other County (city), Province & Federal government
- ❖ Survival rate (**90% in average**) was linked into the evaluation of government officials
- ❖ Limit of replanting (impossible to use false trick)
 - ⇒ Sincere efforts (irrigation, fertilizer) & Implementation of science, technology (in addition, preventing corruption)

ACT (A) : Not only planting, but also with good care

Erosion Control, Fuel-wood Plantation, Reforestation (tending)
: under good inventory (national survey) & scientific technology

山清地區砂防

○ 總事業量 : 3,983^{ha} → 1,562 (39%) ○ 79計劃 : 564^{ha}
○ '93-'98実績 : 1,562^{ha} ○ 残量 : 1,897^{ha}

▲前, 泗川, 昆明, 三亭 (特殊/2^{ha})

❖ Before the project

❖ During the project

❖ After the completion

ACT (A)

Participation, Governance

Spiritual campaign : Patriotism

“If you love your country, plant trees”



| Strategic approach & Strong leadership |

Plan – Do – Check – Act (PDCA) strategy

- Establishment of plan at the National Level
 - ❖ Based on Fundamental Study : *Forest soil & Forest resources Survey*
 - ✘ under the support of UNDP, FAO, GTZ (GIZ; Germany)
 - ❖ **1st (1973~1978) and 2nd (1979~1987) 10-year Forest Rehabilitation plans**
- Practical choice for righteous planting : considering survival rate, fertility
 - ❖ With production of Seed and Seedling : *Seed orchard, Nursery clusters*
 - ❖ Black locust, Alder, Pitch pine, Poplar ... **for greening** (vs. future use)
- **Maintenance** and enforcement : 3rd step tree inspection system
- Consensus from people : Erosion control **for cropland, fuelwood** plantation
 - ❖ With empowerment for the planting activity : appeal to patriotism



II. Needs in Forestry for the 21st century



| Identity of Forest Management (FM) ? |

Awareness of the role of forest & forestry

- Fact : **Forest Rehabilitation** took a key role for rural development in Korea
 - ❖ In a rocky country, FM is the base for preventing flood (for stable farming)
 - ❖ Ultimately, FM was one of the key components for economic development
 - However, the public says
 - ❖ Yes, Planting tree is good !
 - ❖ But, Planting forest is not good, **because it is almost useless.**
 - ❖ Trees are growing naturally, it is easy to make our land green.
 - Needs to enlarge awareness of the role of forest & forestry
 - ❖ Forest still provides us lots of benefit such as ecosystem services
 - ❖ **Forest needs continuous tending as nurturing kids**
- ❖ Expect **free service** since considering forest as natural (free) products

| Changes in Forest Management |

Beyond greening : Paradigm Shift

- 1st and 2nd 10-year plan (1973~1987) **Forest Rehabilitation Projects**
 - ❖ Not for forest management but **just for greening**
 - ❖ No demand from publics for profit at the greened area
- 3rd 10-year plan (1988~1997) **Development of Forest Resources**
 - ❖ With stable and better condition of forest land
 - ❖ **Not just for forest covering but for forest resource management**
- 4th 10-year plan (1998~2007) **Pursuing Sustainable Forest Management**
 - ❖ **Long-term** forest management with considering public needs
 - ❖ New demands : profit return, ecosystem service, etc.
- 5th 10-year plan (2008~2017) **Forest as a key player of Green Economy**
- 6th National Forest Plan (2018~2037) **Forest as solutions to Human & Social problems**

❖ **New needs from public** (practical profit, ecosystem service, NbS)

| Forest provides diverse benefit |

[Land Management]

Land cover

[Environment Conservation]

Ecosystem management

[Forest Industry]

Sustainable Forestry

Supply

- Lumber (wood)
- Food, medicine
- Clean water
- Genetic resource

Control

- Protect natural disaster
- Filtering pollutants
(Clean air and water)
- Mitigation of climate ch.

Cultural Service

- Scenic view
- Recreation, therapy
- Cultural heritage
- Spiritual service

[Fundamental] Supporting (soil, biodiversity, gene conservation, etc.)

| Benefits both for the present & the future |

Forest that contributes to National happiness through Virtuous circle

- Sustainable Forest Management(SFM)* * 18C in Germany
✘ Focused on timber production in the past
 - ❖ Normalized stand
 - ❖ Sustaining growing stocks by harvesting under the annual growth
- New SFM in 21st Century : Forest for the Green Growth
 - ❖ For the production of practical goods for the rural economy
 - ❖ For creating jobs : tending activity for nurturing forest by specialist
 - ❖ New business : 6th industry “1st X 2nd X 3rd industry”
- Sustainable Development(SD) in forest & forestry
 - ❖ **Good forest** is the starting point for the happy future
 - ❖ Comprehensive & long-term strategy is the prerequisite for relevant use
 - ❖ Not just for the forest products, but for the people in relation to forest

❖ Not just for foresters !

| Sustainable Development Goals (SDGs) |

Forest for Peace & Happiness

- Sustainable Forestry
 - ❖ Normalized forest not only for timber, but forest income
 - ❖ To sustain the resilience of mother nature (forest ecosystem)
- Sustainable Development in Forestry
 - ❖ Good forest is the starting point for further progress in forestry
 - ❖ Comprehensive and long-term plan is a prerequisite of proper use
 - ❖ Need to **focus on people** rather than just on forest & forest products
- To keep/expand the function of forest as the **ecosystem service** provider
 - ❖ Various SDGs targets : 1(livelihood), 2(food), 5(equity), 6(water), 8(job), 13(climate change), **15(terrestrial ecosystem)**, 17(global partnership)
 - ❖ Holistic approach to keep 'homeostasis' of global society

❖ **It is time to think about forestry from new perspective !**



III. International forest cooperation



FAO Report (1982)

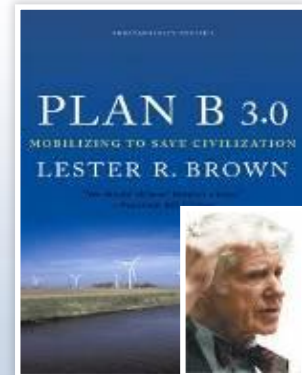
✧ Rural development & reforestation

- Korea is the only one developing country succeeded in **greening** after world war II



Plan B 2.0 (2006)

- Lester Brown, Global environmental activist
- Posted the Korea's success story of reforestation as a model in developing countries



Experience & technology



- Nationwide public participation in reforestation earned success

Global Environment



- climate change and desertification
- insufficient international initiative

VISION

Be a leader for the issues of global forestry

STRATEGIES

Establish international network
through knowledge sharing

Merge reforestation technology (RT)
in combating desertification, REDD+

Contribute to the international community
for Sustainable Development Goals by forestry

Development of new technology and policy
in Forest Ecosystem Service

| From Beneficiary to Donor of ODA |

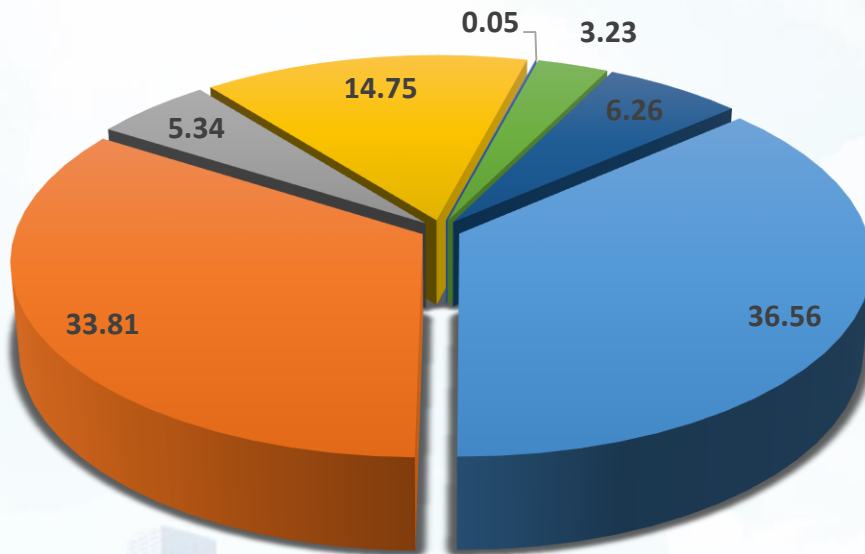
Bilateral & Multilateral System

- Changes in the global status of the Republic of Korea
 - ❖ 1991 Establishment of KOICA (**K**orea **I**nternational **C**ooperation **A**gency)
 - ❖ 1999 Ceasing ODA recipient status (about US\$12 billion)
 - ❖ 2010 Join as the 24th member of OECD DAC
 - ❖ ~2020 Donation US\$2.2 billion, 2010~2020 10.2% increase rate
- Bilateral Cooperation by KFS (**K**orea **F**orest **S**ervice) : 35 countries (~2022.3)
 - ❖ Started from Asian region, to Latin America & African countries
 - ❖ Transfer greening technology : ODA, Loan ※ 0.32% of Korean ODA
- Multilateral Cooperation by KFS
 - ❖ 2011. 10. 20. 12th UNCCD COP, Changwon Initiative ※ LDNW
 - ❖ 2018. 4. 27. Establish AFoCO (Asian Forest Cooperation Organization)
 - ❖ 2020 ~ 2024 Cooperate with CAFI (Central African Forest Initiative)
 - ❖ 2022. 5. 2.~ 6. 15th WFC (World Forestry Congress) in Seoul

❖ LDNW (Land Degradation Neutral World) !

| Focused on Economic/Social Infrastructure |

Source: OECD Statistics



2019

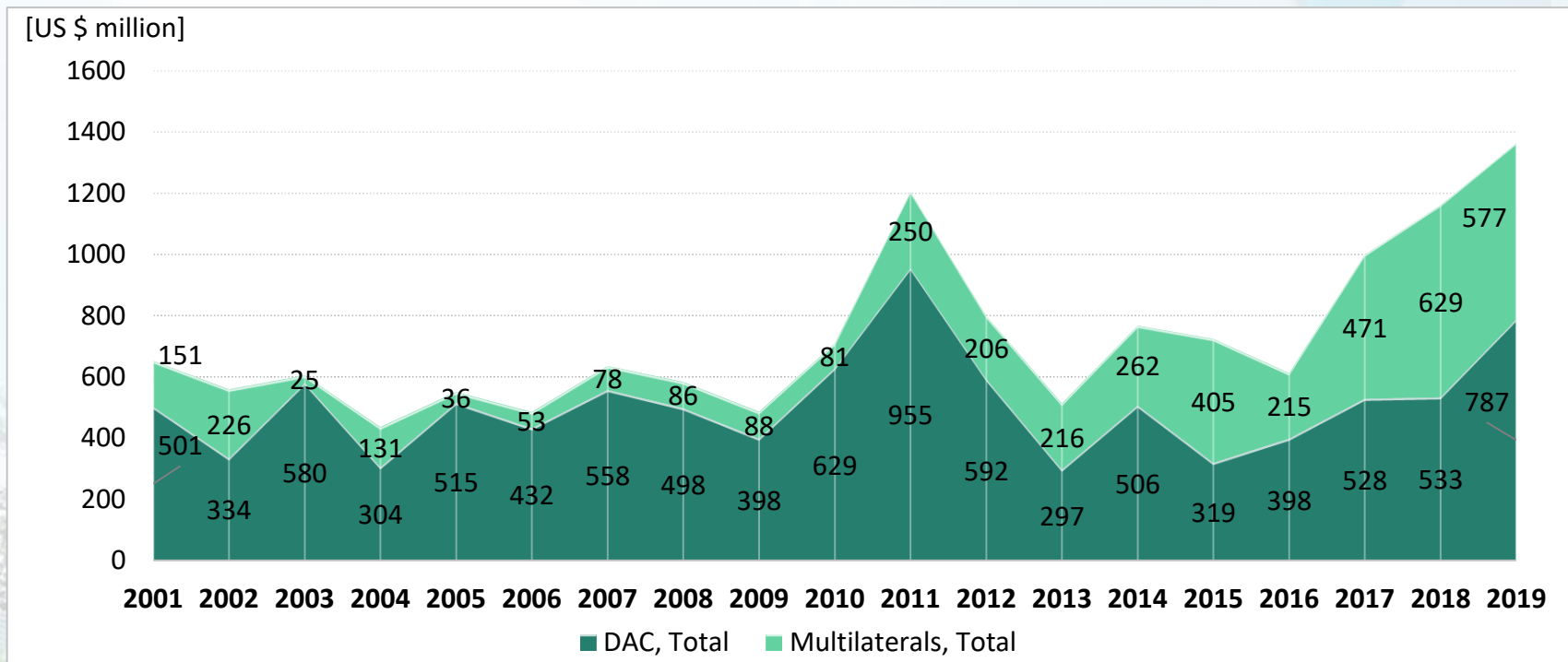
- Social Infrastructure & Services
- Economic Infrastructure & Services
- Production Sectors
- Multi-Sector / Cross-Cutting
- Commodity Aid / General Programme Assistance
- Humanitarian Aid
- Unallocated / Unspecified

What about in Forestry ODA ?

❖ In 2019, 0.32% of total ODA are invested in Forestry ODA !

| From \$0.6 billion to more than \$1.3 billion |

Source: OECD Statistics



❖ Focused on Bilateral, but also on Multilateral Cooperation !

| Seed sources & Nursery development Project |

Indonesia, 2005 ~ 2010; US\$ 4 million

- Construction of greenhouse & nursery, Capacity building -

* Reforestation Technology

- Proposal from Indonesia (2003) : *Korea-Indonesia forestry cooperative committee*
- Stage 1 (2005~2007) : *Construction of nursery, Creation of experimental forest*
- Stage 2 (2008~2010) : *Management of Seed for a tropical rain forest, Training*



Training in Indonesia



Lumpin Nursery(1)



Lumpin Nursery(2)

| Dryland Restoration |

Central Myanmar, 1998 ~ 2010; US\$ 1.98 million
- Plantation & tending, **Public Relations (Governance)** -

- Stage 1 (1998~2000) : *Construction of nursery and irrigation facility*
- Stage 2 (2004~2005) : *Reforestation, Capacity-building, Technology transfer*
- Stage 3 (2008~2010) : *Management of project site, Technical advice*



Project site



Nursery



Planting tree

| Sand-dust Prevention Project |

China (3,000ha), 2007 ~ 2026; US\$ 10 million

- Access roads, power supply, nursery, irrigation system, warehouse -

- Tree planting in Gwangsu (2001~2005) : 8,000 ha, 22 million trees, US\$ 5 million
- Develop greenbelt in Kubuqi desert (2007~2021) : 3,000 ha, US\$ 5 million



Planting trees



Project site in Kubuqi desert



※ Cooperation with Chinese government (site selection & monitoring)

| Green-belt Plantation Project |

Mongolia (3,000ha), 2007 ~ 2026; US\$ 27 million

- Access roads, power supply, nursery, irrigation system, warehouse -

- Stage 1 (2007~2016) : Reforestation, *Joint Research, Capacity-building*
- Stage 2 (2017~2021) : *Management of project site, Creation of Urban forest*
- Stage 3 (2022~2026) : *Restoration of forest damaged by wildfire*



Project map



Project site



Management

| Community-based Peatland Restoration Project |

Indonesia, 2021 ~ 2030; US\$ 2.45 million

- nursery, **public relations (governance)**, **agro-silvo-fishery**, monitoring & evaluation -

- Stage 1 (2021~2022) : *Reforestation(10ha), Joint Research, Capacity-building*
- Stage 2 (2023~2027) : *Development of community-based income models*
- Stage 3 (2028~2030) : *Technology transfer & sustainable management of income models*



Project site



Peatland (Nyamplung)



Agro-silvo-fishery

| Various Fields of Cooperation including R & D |



Restoration project, Tajikistan (2021)



Capacity-building Program, Vietnam (2019)



Seed Orchard Project, Cambodia (2020)



Sentul Eco Tourism Forest, Indonesia (2021)

| Asian Forest Cooperation Organization, AFoCO |

- Vision : Greener Asia with resilient forests, landscape and communities
- Mission : Promote **Action-oriented** forest cooperation program and project
- 5 Strategic Priorities (2019 ~ 2023)
 - 1) Initiating customized restoration and reforestation models
 - 2) Supporting research and development in climate change adaptation approaches
 - 3) Introducing systematic management on forest-related disasters
 - 4) Local livelihood improvement and community-based small enterprise development
 - 5) Strengthening institutional capabilities, diversifying resources, and promoting regional actions



| Central African Forest Initiative, CAFE |



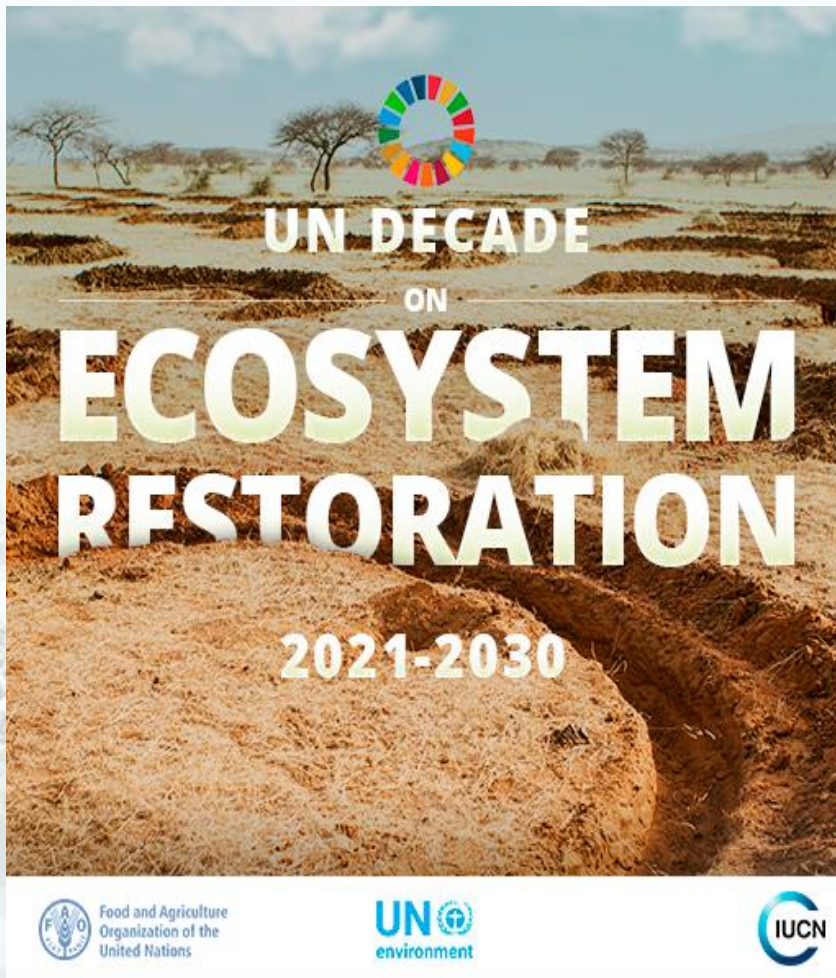
❖ Central African Forest Initiative (CAFI)

- Korea is the only non-European country.
(\$2 million, 2020~2024)

❖ REDD+ in DR Congo

- Korea also plans to promote REDD+ in DR Congo
from 2021 by providing financial support.
(\$9 million, 2021~2026)

| with Various International Organizations |



A collection of logos for international organizations and initiatives. From top to bottom, left to right: CFI (Central African Forest Initiative) with a tree logo; CIFOR with a tree and brush logo; ITTO (International Tropical Timber Organization) with a world map logo; United Nations Convention to Combat Desertification with a globe logo; THE CHANGWON INITIATIVE with a plant logo; P4G (Partnering for Green Growth and the Global Goals 2030) with a colorful spiral logo; Peace Forest Initiative (PFI) with a tree logo; Peace Forest Initiative. with a tree and birds logo; Forest Ecosystem Restoration Initiative (FERI) with a tree logo; Convention on Biological Diversity with a plant logo; Forest Landscape Restoration Mechanism (FLRM) with the FAO logo; Global Green Growth Institute with a green cube logo. Text on the right side reads: "ITTO INTERNATIONAL TROPICAL TIMBER ORGANIZATION", "United Nations Convention to Combat Desertification", "THE CHANGWON INITIATIVE", "Peace Forest Initiative (PFI)", "Forest Ecosystem Restoration Initiative (FERI)", "Forest Landscape Restoration Mechanism (FLRM)", and "'Peace Forest Initiative 2021~2030' vision & strategy under preparation in 2020 (with GGGI)".



IV. Cooperation in the future - New paradigm -



| Era of Fusion · Cooperation |

- Upgrade of Forestry ODA (FODA)
 - ❖ Quantity : make FODA to 1% of total ODA, with Private sectors
 - ❖ **Quality** : Efficiency, Effectiveness, & Relevance (impact evaluation)
- Cooperation with other sectors
 - ❖ Avoid fragmentation : not just for forest restoration
 - ※ Need to connect with Sustainable Development Goals (SDGs)
 - ❖ Nexus with rural development, climate change, humanitarian aid, *etc.*
- Looking for the ways to use other funds
 - ❖ Program-based approach including forest management
 - ❖ Not just by Korean Fund, but also with GEF, GCF, World Bank *etc.*

Comprehensive & Scientific approach is essential !

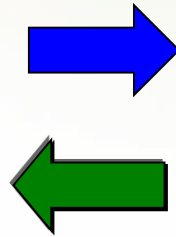
| Local to Global ... |

- For ODA - Practical Consulting
 - : not the dream of success, but the practical way of overcome
 - ❖ Transformation of Chemical Experience (**capacity building of donor**)
 - ※ Specialist with fundamentals and application capability
 - ❖ Make a small successful story ⇒ priming water (for pumping out)
 - ※ Inducement of voluntary participation
- ODA Consultant ⇒ Missionary to preach the role of forest
 - ❖ Forest management is the basis of economic development !
 - ※ Water management for environment & food security
 - ❖ **Ecosystem service of forest** : Various benefits of forest & forestry
 - ❖ Keep green for livelihood (you) and your future (children)

FLR was the key component of economic development in Korea !



SAVE OUR FORESTS



Forest is the Source of Life!