# Korean experience on forest degradation & Evaluation of national status on forest soil using SFM indicators

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**2.** Key factors of the successful forest restoration

**3. National status on forest soil using SFM C&I** 



#### **Forest Ecosystem in Korea**



- Forest ecosystem as a key component of biodiversity in Korea
  - Total land base : 10Mha
  - Forest areas : 6.4Mha(64%)
- Agricultural lands : 2Mha(20%)
  - Urban areas : 1.6Mha(16%)



# Large-scale Forest Restoration



1960		2010
79 USD	GNI per capita	28,650 USD
26 million	Population	48 million
12 <sup>m³</sup> /ha	Forest stock volume	126 <sup>m³</sup> /ha



## **Challenges and Solutions**

Lack of governance

- Birth of the Korea Forest Service in 1967 and law enforcement
- Smuggling
- Narcotics
- Illegal timber harvesting(government's will for forest protection)
- Gangster
- Quasi-reporter

#### Lack of scientific data

- Set-up of the Forest Resource Inventory Institute in 1969
- The first National Forest Inventory Survey

on public and private forests started in 1972





**Challenges and Solutions** 

Lack of financial and human resources

- Financial support from international communities (UNDP, FAO, WFP, Germany etc.)
- Mobilization of human resources through the *Saemaul Undong* (New Village Movement)

Eliminating the main causes of deforestation and forest degradation

- Establishing fuel wood forests (208,000 ha) and use of alternative fuel sources
- 5-Year Readjustment Plan of Slash-and-Burn Fields (1973-1979)



# Young-il bay forest erosion control project



# No Machines Allowed



# Korea's experiences on forest degradation & restoration **Benefits of chestnut planting**

- Reforestation, food security & income generation
  - Three birds in one stone



# Key factors of the successful forest restoration

### **Factors of Successful restoration**

- Strong leadership & will of the President Park Chung-hee
- Connecting to people's movement: the "Saemaul Undong" for poverty eradication
- Mobilization of resources
- Forest rehabilitation as a core project in the 5-year Nation Economic Development Plan in 1962
- Initiation of the 10-Year National Reforestation Plan in 1973
  - Forest restoration
  - Fuel wood plantation and furnace improvement to save fuel
  - Erosion control project
  - Slash and burn regulation
  - Plantation of fruit bearing trees, especially chestnut trees



# Indicator 4-1 [MP 4.1.a] Designated area for forest soil protection

#### Disaster prevention reserves for soil protection

- ▷ landslide prevention reserves including mudslide and falling rock prevention, sand and coastline protection, and fish breeding shelter
- ▷ 367,000ha(1970) ⇒228,000ha(1980) ⇒16,000ha(1990) ⇒5,000ha(2012)

\* Successful implementation of the 1st 10-year National Reforestation Plan ended in 1978



# Indicator 4-2 [MP 4.2.a] Erosion control for forest soil protection

- $\triangleright$  Hillside erosion control
- (1970s) 5,000ha  $\Rightarrow$  (1990s) less than 100ha  $\Rightarrow$  (2000s) 86ha
- $\triangleright$  Preventive erosion control
  - Steadily increasing since its introduction in 1996



Year



- ▷ Forest fires, illegal forest activities & landslides
  - Per year average damaged area by forest fires 734ha (2003-2012)





- ▷ Forest fires, illegal forest activities & landslides
  - Per year average damaged area by illegal forest activities: 553ha (2003-2012)





- ▷ Forest fires, illegal forest activities & landslides
  - Damaged forest area & streams by landslides: 10,000ha 540km since 1997





- $\triangleright$  Forest soil acidification
  - Ratio of forest area with pH below 5.0 % : 35%(1994) ⇒46.4%(2010)





- ▷ Forest soil acidification from 1996 to 2010
  - Deciduous forests : pH 5.39  $\Rightarrow$  pH 5.16, Coniferous forests : pH 4.92  $\Rightarrow$  pH 4.75





대한이 감시합니다! Arigatou gozaimas! Thank You, Very much! Muchas Gracias! Merci beaucoup!

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