The 2nd Training Workshop
Forest transition to sustainable forestry management and rehabilitation

Country Report

General Profile of the Republic of Korea

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1. Background

- **Ecological Factors**
  - Geography
    - The Korean peninsula is located between 33° 7´ and 43° 1´ N Latitude, and 124° 11´ and 131° 53´ E longitude at the heart of the North Western Pacific.
    - It extends about 960 km southward and its width is about 170 km from east to west.
    - The Korean peninsula encompasses 221,000 km2, 45% of which makes up the Republic of Korea
  - Climate
    - Annual mean rainfall ranges from 600mm to 1,800mm with uneven seasonal distribution.
    - The rainy season begins in late June and lasts approximately 30 days, and two or three typhoons from the northern Pacific Ocean affect Korea between June and October every year. 50~60% of the annual rainfall is likely concentrated during summer causing great concerns for unstable water supply.

[Source] Korea Forest Service http://english.forest.go.kr

1. Background

- **Ecological Factors**
  - Flora

Forest zone	North latitude	Annual mean temperature	Forest cover type and tree species
Warm temperate forest	Below 35°	Above 14°C	broad-leaved deciduous forests, conifer and deciduous mixed forests, and pine forests : evergreen broad-leaved trees, Camellia japonica, etc.
Cool temperate forest	Between 35~43° except for alpine regions	5-14°C	mostly pine forests but a few broad-leaved deciduous forests: deciduous broad-leaved trees, oak trees, pine trees, bamboos, etc.
Sub-boreal forest	Uplands and alpine regions	Below 5°C	mixed forests : spruce trees, Korean pines, etc.

[Source] Korea Forest Service http://english.forest.go.kr

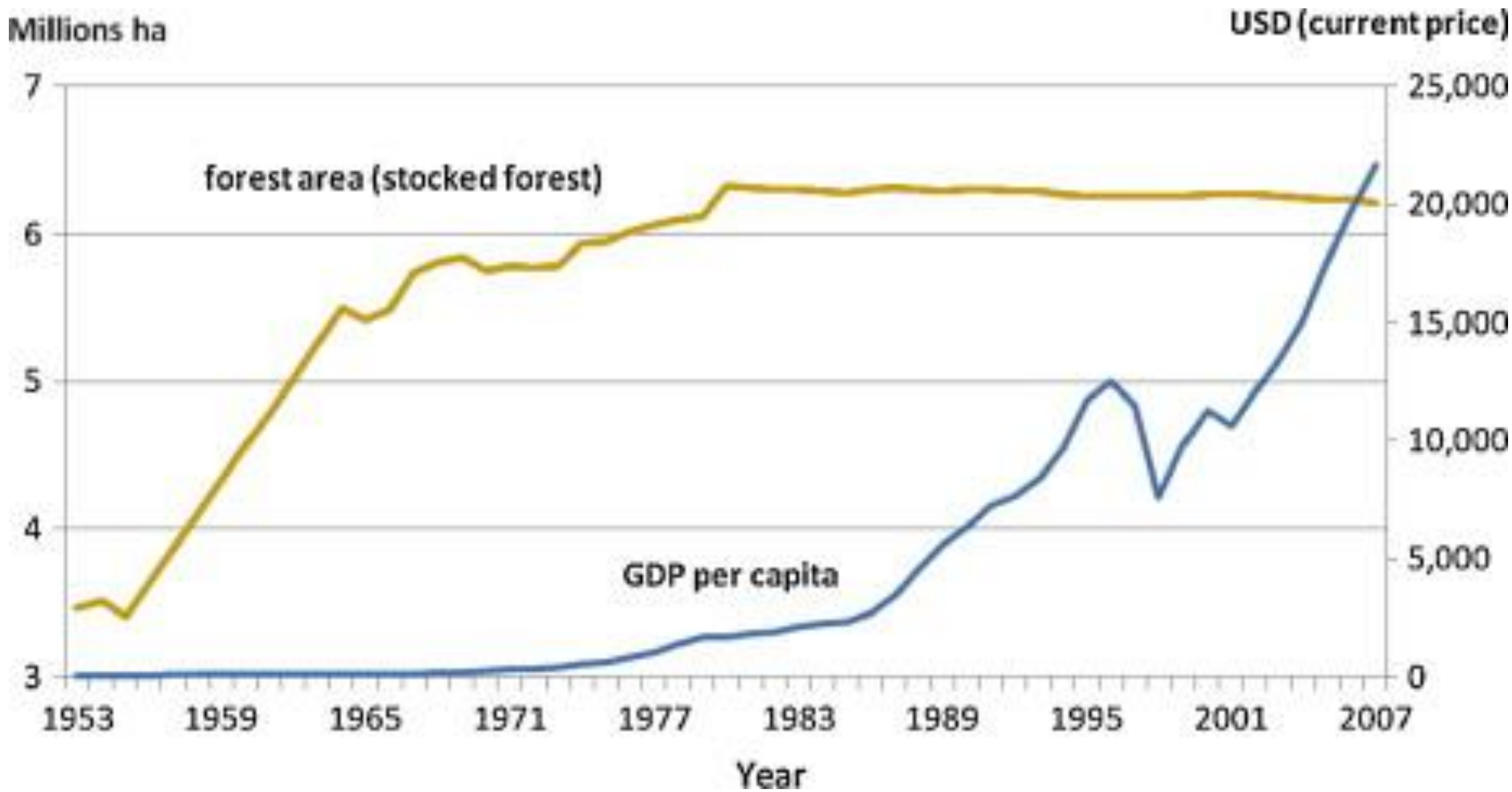
1. Background

- **Ecological Factors**
  - Fauna
    - South Korea also has several indigenous species of *deer*, including the roe deer and the Siberian musk deer. Wild boars have been growing more common in recent years, thanks to reduced hunting pressure.
    - Large mammals such as tigers, bears, and lynx were once abundant throughout the Korean peninsula. However, many have disappeared due to human settlement, loss of forest habitat and over-hunting.
  - **Land Use**
    - About 20% of the total land area in the ROK is used for agriculture while forests cover 64%.

[Source] Korea Forest Service http://english.forest.go.kr

1. Background

- **Economic Factors**
  - GDP: 9 US$ Billion (1970) → 844 US$ Billion (2005)
  - OECD member country since 12 December 1996



[Source] Bae et al. (2012: 204)

1. Background

- **Economic Factors**
  - GDP: 9 US$ Billion (1970) → 844 US$ Billion (2005)
  - OECD member country since 12 December 1996

- **Social Factors**
  - *Population: 49.8 million (http://www.index.go.kr)*
  - *Population density: 497 persons/km2 (2011) (http://www.index.go.kr)*
  - Urban population

    : 4 million (21%) in 1950 → 38.7 million (81%) in 2005 (United Nations, 2010)

1. Forests and Forestry

2.1. Extent of forests

2.2. Social, environmental and economic value of forests

2.3. Forestry regulation

2.4. Forestry administration

2.5. Forestry ownership

2.6. Forestry utilization and management

2.7. Forestry product marketing and process

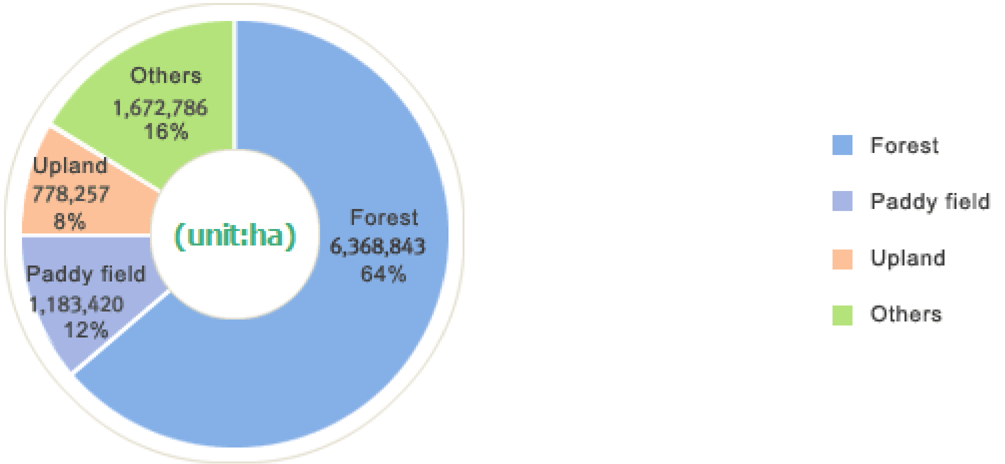
1. Forests and Forestry

2.1. Extent of forests

- forest area: 6,368,843ha (64% of the total landmass, 10,003,306ha)

(source : 2010 Statistical Yearbook of Forestry)

[Status of national land use]

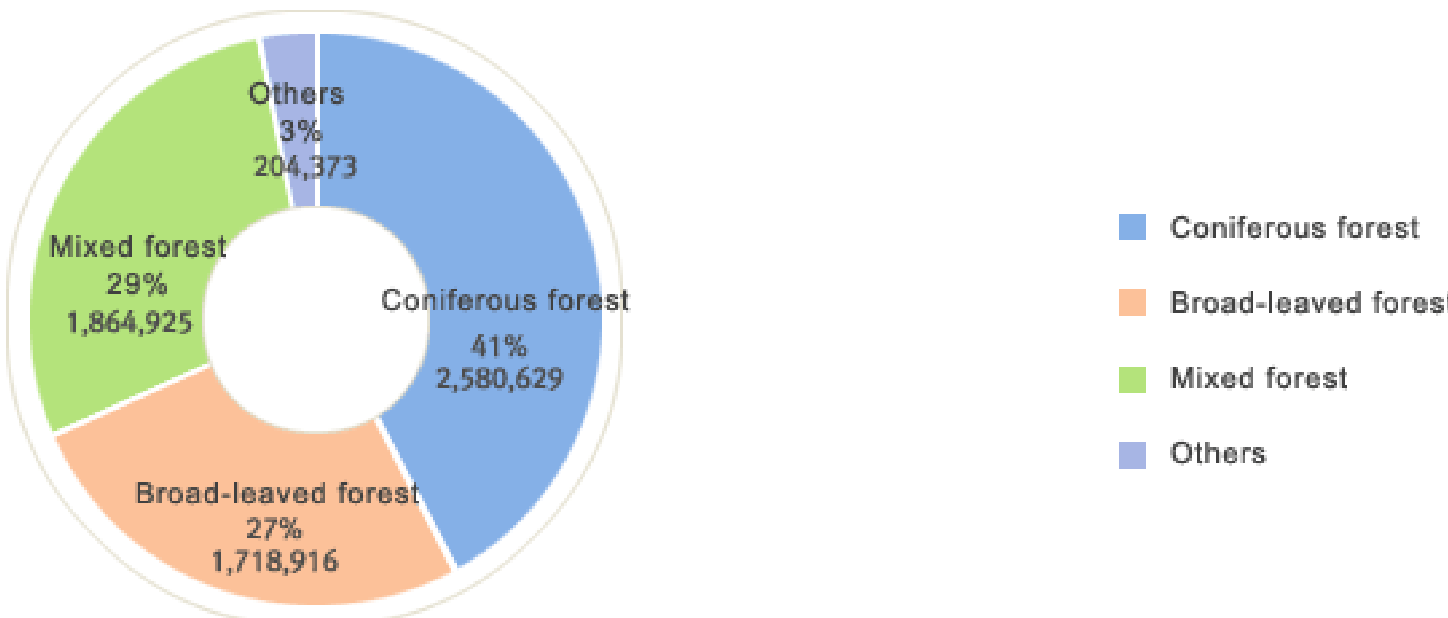


[Source] Korea Forest Service http://english.forest.go.kr

1. Forests and Forestry

2.1. Extent of forests

[Forest area by forest types]



[Source] Korea Forest Service http://english.forest.go.kr

1. Forests and Forestry

2.2. Social, environmental and economic value of forests

[Source] Korea Forest Service http://english.forest.go.kr

1. Forests and Forestry

2.3. Forestry regulation

The Forest Law was enacted in 1961 to promote forest protection and forest development as well as to enhance forest productive and public functions. The Forest Law was abolished and replaced by newly established Acts. Aside from the primary Acts, the KFS has enacted other forest laws since then. There are 14 laws relating to forests and forestry currently in effect.

[Source] Korea Forest Service http://english.forest.go.kr

1. Forests and Forestry

2.3. Forestry regulation

Law	Enactment Date
Act on the Management and Improvement of Carbon Sink	Fed.22,2012
Framework Act on Forest	Mar. 24, 2001 (revised in 2009)
Act on Promotion and Management of Forest Resources	Aug. 4, 2005 (revised in 2010)
Act on Promotion of Forestry and Mountain Villages	Apr. 10, 1997 (revised in 2010)
Act on National Forestry Cooperatives Federation	Jan. 4, 1980 (revised in 2007)
Act on Structural Improvement of National Forest Cooperatives Federation	Aug. 3, 2008 (revised in 2010)
Forest Land Management Act	Dec. 30,2002 (revised in 2009)
Act on National Forest Management	Aug. 4, 2005 (revised in 2010)
Act on Forest Culture and Recreation	Aug. 4, 2005 (revised in 2007)
Act on Protection of BaekduDaegan Mountains System	Dec. 31, 2003 (revised in 2009)
Act on Establishment and Promotion of Forest Arboretum	Mar. 28, 2001 (revised in 2009)
Erosion Control Act	Jan. 15 1962 (revised in 2008)
Act on Pine Wilt Disease Prevention	May 31, 2005 (revised in 2010)
Act on Distribution of Special Employees for Forest Protection	Feb. 9, 1963 (revised in 2006)
Act on Forest Protection	Jun. 9, 2009

[Source] Korea Forest Service http://english.forest.go.kr

1. Forests and Forestry

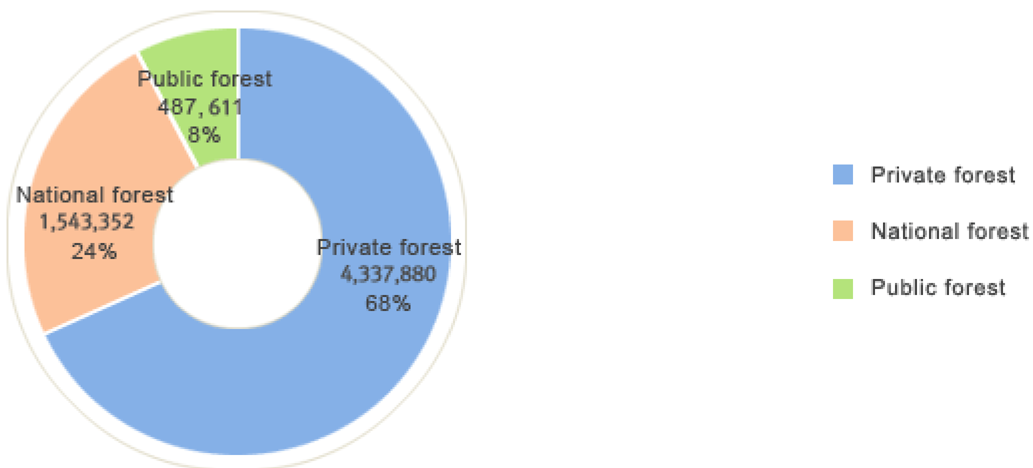
2.4. Forestry administration

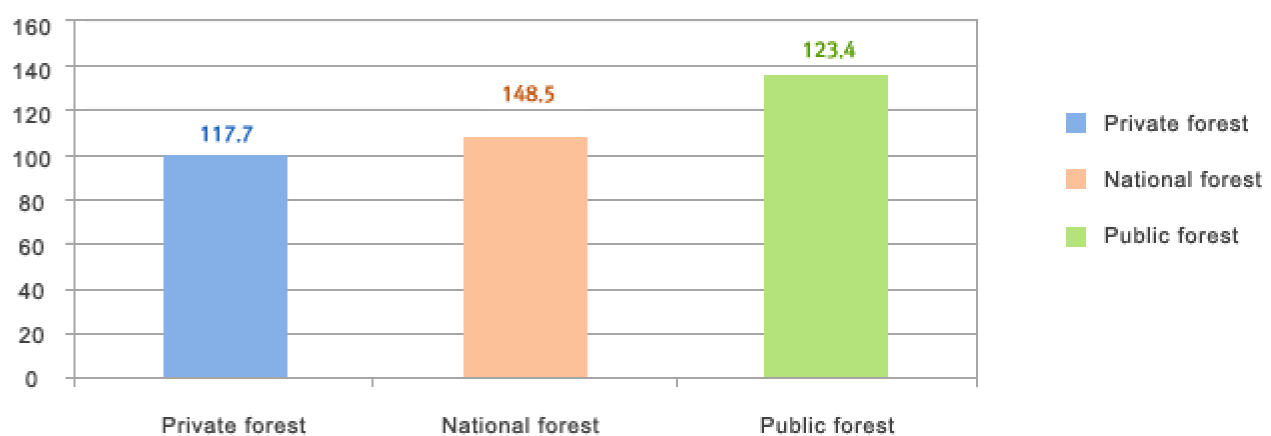
- Establishment of **Korea Forest Service (KFS)** (1961)
- Major roles of KFS
  - support for forest managers
  - Forest technology improvement
  - Construction of infrastructure for forest management (e.g. forest roads)

[Source] Korea Forest Service http://english.forest.go.kr

1. Forests and Forestry

2.5. Forestry ownership





[Source] Korea Forest Service http://english.forest.go.kr

1. Forests and Forestry

2.6. Forest utilization and management

Sustainable forest management

the primary objective of the Fourth National Forest Plan (1998-2007)

: to build a foundation for sustainable forest management

Recreation forests

National natural recreation forests: recreation facilities like hike trails and log cabins built in thick forests and valleys

School forests

Total 869 school forests were created until 2010 (KFS, 2011: 371).

1. Forests and Forestry

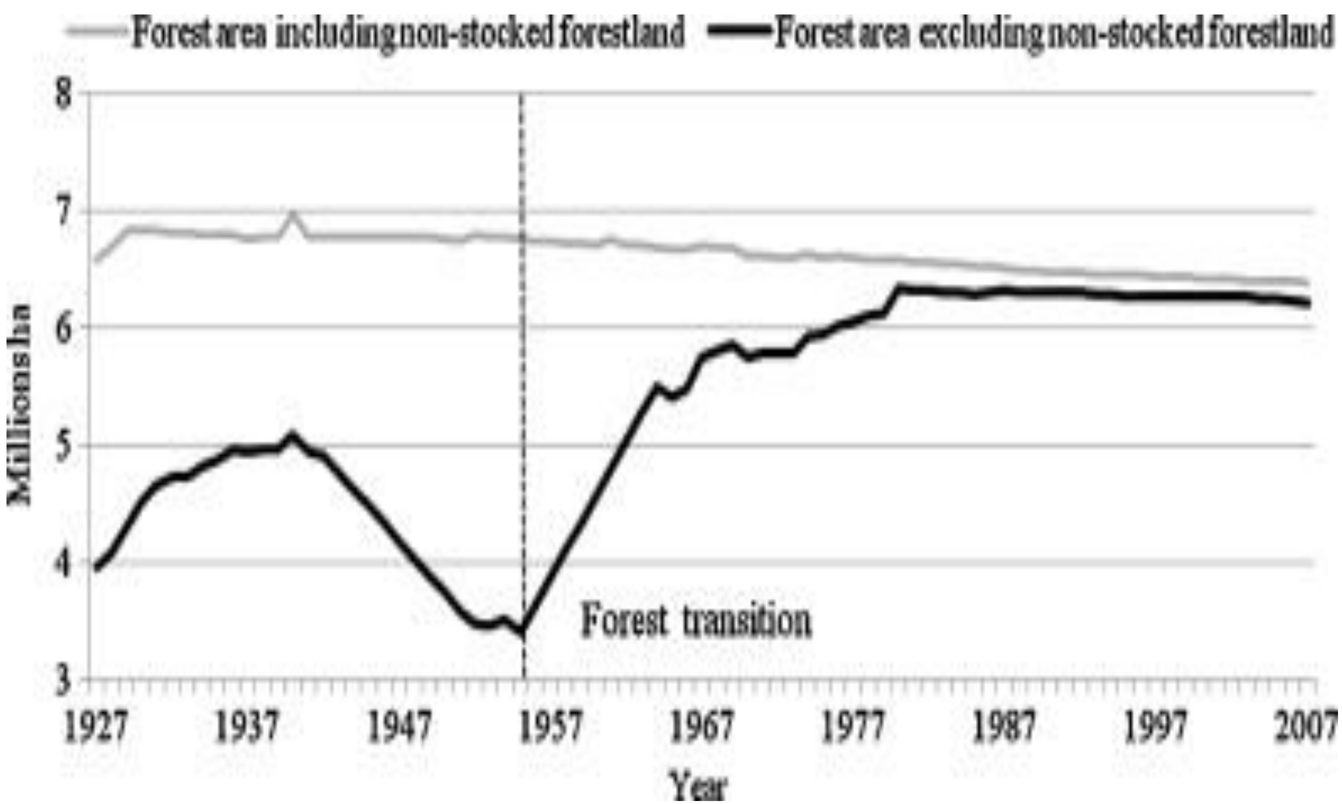
2.7. Forest product marketing and process

- the supply rate of domestic timber: approximately as much as 10%

3. Historic review of forest cover change

Forest Cover

< Forest area change in South Korea from 1927 to 2007 >



[Source] Bae et al. (2012: 200)

3. Historic review of forest cover change

Growing Stock

<Average annual rate of changes in growing stock volume in three stages>

	Forest degradation (1927-1952)	Forest stagnation (1953-1972)	Forest growth (1973-2007)
Per-capita volume of growing stock (%)	-2.9	0.0	14.4
Per-hectare volume of growing stock (%)	-1.9	0.3	20.0

Source: Bae et al. (2012: 201)

4. Major forces to drive the forest transition

4.1. Drivers to deforestation and forest degradation

4.1.1. Logging and harvesting

Illegal logging

Fuel woods

4.1.2. Other land use

Agriculture

slash-and-burn fields

4.1.3. Forest fire and disease

4.1.4. Natural calamities

Frequent droughts and floods until 1960s

4.1.5. Others

4. Major forces to drive the forest transition

4.2. Drivers to afforestation and forest rehabilitation

4.2.1. Plantation

- Forestation Project: 440,000 ha fuelwood forests in 1972
- Erosion Control Project
  - for increasing agriculture productivity and reforestation
  - Budget 4.8 Billion won from 1967-1971 (20% of total forest projects)

The 1st 10-year National Greening Project

- In 1978, the 100ha afforestation was achieved four years earlier than planned
- Nation-wide greening program as a key project of New Village Movement
- Project for decreasing slash-and-burn fields (1974-1978)

*NFP: National Forest Plan

4. Major forces to drive the forest transition

4.2. Drivers to afforestation and forest rehabilitation

4.2.1. Plantation

- **The 2nd 10-year National Greening Project (1979-1987) – 2nd NFP**
  - Establishing large-scale commercial forest that could develop into sustainable timber resources for domestic demands on timber products
  - Developing a foundation of forest resource management

4.2.2. Forest management action

- **The 3rd National Forest Plan (1988-2997)**

  - Establishing foundation and infrastructure of forest management
    - forest road construction
    - forest mechanization
    - education for foresters and forestry workers

4. Major forces to drive the forest transition

4.3. Understanding causes to drive forest transition

4.3.1. Social-demographic issues

Rural-urban migration (Bae et al., 2012: 201)

- During the 1970s, the urban population rose from 3.5 million to 17.8 million.
- The rural population decreased from 44.7% of total population in 1970 to 15.4% in 1990.

Year	Total Population (1000)	Rural Population (1000)	Rural Population (% of total population)
1970	32,240	14,421	44.7
1980	38,123	10,826	28.4
1990	42,869	6,661	15.4

KNSO (2010), Bae et al. (2012)

4. Major forces to drive the forest transition

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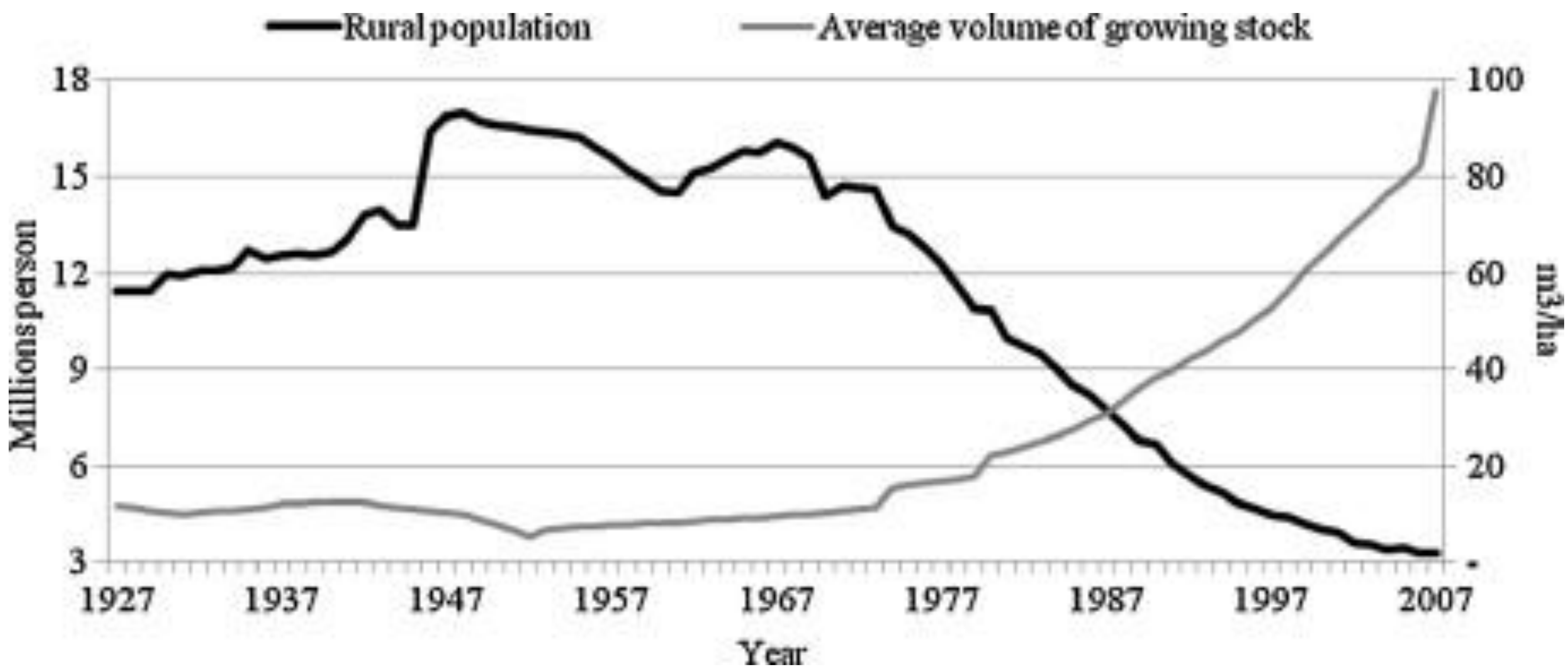
4.3.1. Social-demographic issues



Bae et al. (2012)

4. Major forces to drive the forest transition

4.3. Understanding causes to drive forest transition

4.3.2. Forest governance issues

Forest institution

- Establishment of Korea Forest Service (1961)
- Forestry Cooperatives
  - Transfer of professional knowledge on forestry
  - Promoting citizens' participation
  - PR of national greening policies
- Local Forest Associations
  - Forest Gye as small communities: practical actors in planting trees
- New Village Movement (Diligence, Self-help and Cooperation)

4. Major forces to drive the forest transition

4.3. Understanding causes to drive forest transition

4.3.2. Forest governance issues

Law enforcement

- Law on control of forest products (1961)
- Forest Law (1961)
- Law on arranging forest protection officers (1963)
- Law on facilitating land-greening (1963-1964)
- Law on prohibition of slash and burn agriculture (1966)

4. Major forces to drive the forest transition

4.3. Understanding causes to drive forest transition

4.3.2. Forest governance issues

Multi-sectoral coordination

Cooperation among Ministries:

The Ministry of Commerce, the Ministry of Home and the Korea Forest Service

Energy sector

- Replacing conventional firewood with anthracite coal by remodeling kitchen fire holes in rural homes
- Importing alternative fuels

Economic sector

- Linking between economic development plan and forest rehabilitation plan

4. Major forces to drive the forest transition

4.3. Understanding causes to drive forest transition

4.3.2. Forest governance issues

Education

– Official training program for forest officials since 1962

4. Major forces to drive the forest transition

4.3. Understanding causes to drive forest transition

4.3.3. Forest policy issues

Forest finance: government accounting

Unit: Million Korean Won

Year	General	Special Accounting			Total
		National Forest Management	Finance Management	**Economic Development**	
1972	742	1,556	300	3,677	6,275
1971	683	1,445	282	3,452	5,862
1970	667	921	273	3,030	4,891
1969	473	942	192	3,055	4,662
1968	310	863	100	1,986	3,241
1967	193	581	50	1,256	2,080
1961	1,516			3,995	5,511
1960	1,221			3,726	1,221
1959	1,106			-	1,106
1958	1,167			4,969	1,167
1957	1,104			1,803	1,104

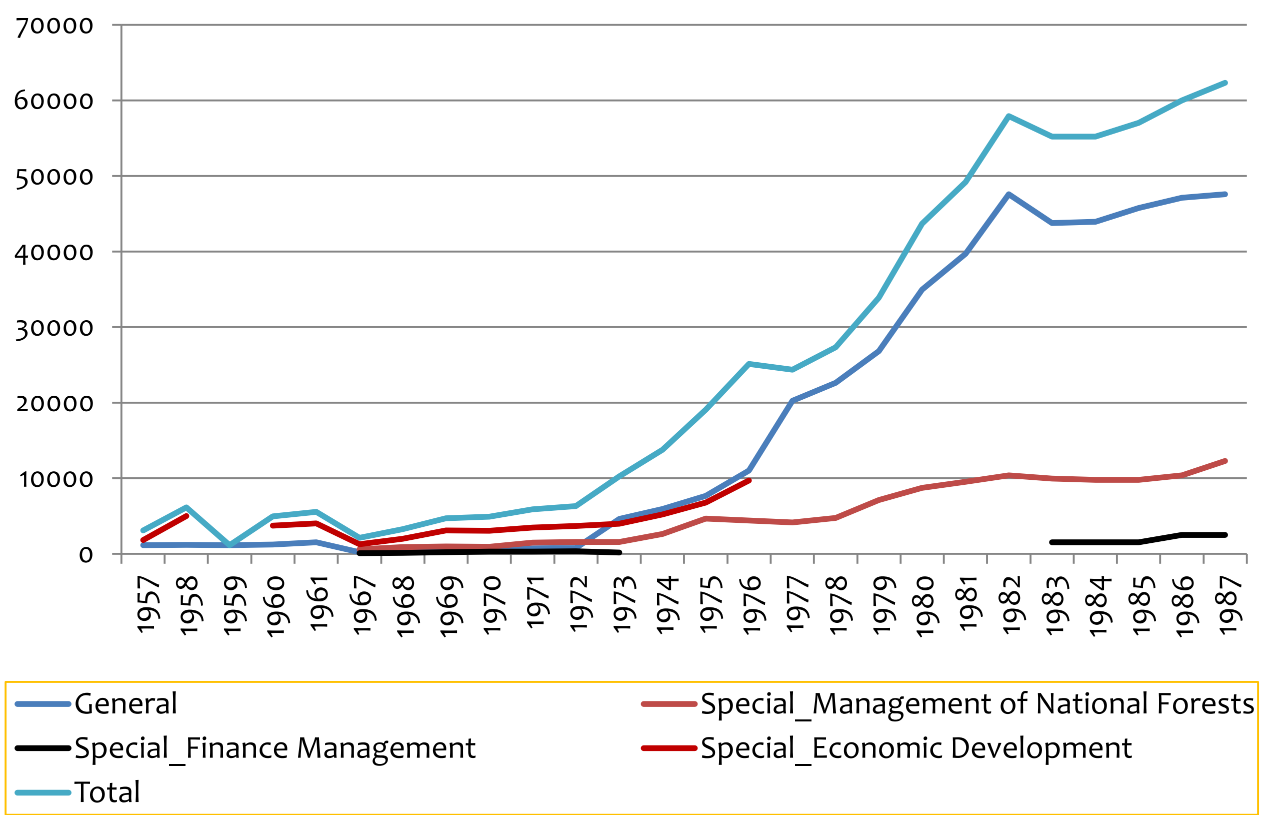
4. Major forces to drive the forest transition

4.3. Understanding causes to drive forest transition

4.3.3. Forest policy issues

Forest finance: government accounting

Unit: Million Korean Won



4. Major forces to drive the forest transition

4.3. Understanding causes to drive forest transition

4.3.4. Industry and globalization

Import of timbers

: degree of self-sufficiency 34%→ 16%

5. Forests and Forest Transition in the Future

- Global forest governance
  - Forest certification
  - Climate change regime – carbon markets

- Corporate Social Responsibility

6. Conclusion

Forest Transition in the Republic of Korea

- Social factors
  - Rural-urban immigration

- Political factors (case study)

  policy instruments, policy integration, public participation

- External support
  - Aids e.g. UNKRA

References

Bae, J.S., Joo, R.W., Kim, Y.-S., 2012. Forest transition in South Korea: reality, path and drivers. Land Use Policy 29(1), 198-207.

KFS, 1997. 50 year History of Korean Forest Policies.

KFS, 2011. Statistical yearbook of forestry Vol. 41. Daejeon.

United Nations, 2010. World Urbanization Prospects, the 2009 Revision: Highlights. New York. http://esa.un.org/unpd/wup/doc_highlights.htm.

Thank You!

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