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POLICY INTEGRATION FOR REFORESTATION IN THE REPUBLIC OF KOREA

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 - I. Theory on Policy Integration**
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International Comparative Study

Two-Year Collaborative Research Project Comparative Analyses of Transitions to Sustainable Forest Management and Rehabilitation in Asia-Pacific Region

November 2011 – October 2013

Grant provided by Asia-Pacific Network for Sustainable Forest Management and Rehabilitation
(2011P6/6-APAFRI)

- China: Renmin University of China
- Myanmar: Forestry Department
- Indonesia: Bogor Agricultural University
- Japan: University of Tsukuba
- **South Korea: Seoul National University**
- Laos: National University of Laos
- India: Forest Research Institute
- Malaysia: University Putra Malaysia
- Philippines: University of Philippines Los Baños




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Reforestation policy integration by the multiple sectors toward forest transition in the Republic of Korea.

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Reforestation policy integration by the multiple sectors toward forest transition in the Republic of Korea[☆]

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ABSTRACT

The Republic of Korea (ROK) started to experience forest transition in the 1960s in spite of severe deforestation and forest degradation by the mid 1950s. This ROK case followed the state policy pathway to forest transition. This study interpreted the reforestation policy of the multiple sectors in ROK with the theory of environmental policy integration. ROK has attempted an integrated policy program for reforestation, land management and social development as an innovative approach to solving the problem of flood and erosion due to deforestation while pursuing economic growth. This integrated approach to reforestation of ROK was implemented in three pillars of action: 1) coordinated national plans, 2) collaboration among the governmental branches, and 3) organizational reformation. The integrative approach helped the reforestation policy to be implemented successfully. The case of policy integration for reforestation in ROK is a good example demonstrating that policy integration should be a principle of forest policy design and implementation. The Korean experience could be informative to developing countries experiencing deforestation for design and implementation of forest policy to avoid deforestation and achieve forest transition.

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Conditions of Forest Transition in Asian Countries : A Qualitative Comparative Analysis.

Youn, Y. C., Choi, J., de Jong, W., Liu, J., Park, M., Camacho, L.D., Damayanti, E.D., Huu-dung, N., Tachibana, S., Bhojvaid, P.P., Wanneng, P., Mohd Shawahid, O. (2017) *Forest Policy and Economics* 76: 14-24.
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ABSTRACT

This study identifies the important factors that contribute to or inhibit forest transitions in nine Asian countries: China, India, Indonesia, Japan, Laos, Malaysia, Republic of Korea, Philippines, and Vietnam. A qualitative comparative analysis method was used to determine which conditions or combinations of conditions led to or prevented a forest transition. Under the condition of public ownership with no private forest tenure or ownership of forest land, there was no instance of forest transition among the nine countries studied. Under the condition of non-liberal timber trade policies, there was no instance of forest transition in the countries studied. The results of this analysis indicate that for a forest transition to occur, the countries should liberalize timber import and export for

Conditions of Forest Transition in Asia:

A comparative study of 9 countries

China, India, Indonesia, Japan, Laos, Malaysia, Korea,
Philippines, Vietnam

• Findings:

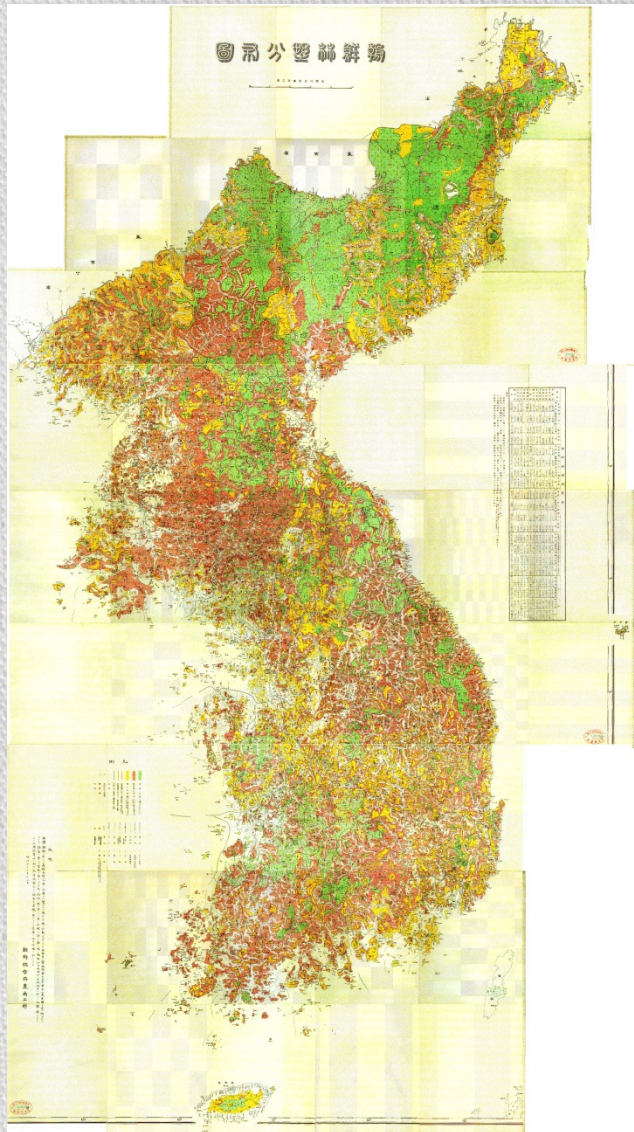
1. Under the condition of public ownership with no private forest tenure or ownership of forest land, there was no instance of forest transition.
2. Under the condition of non-liberal timber trade policies, there was no instance of forest transition.

Five forest transition pathways

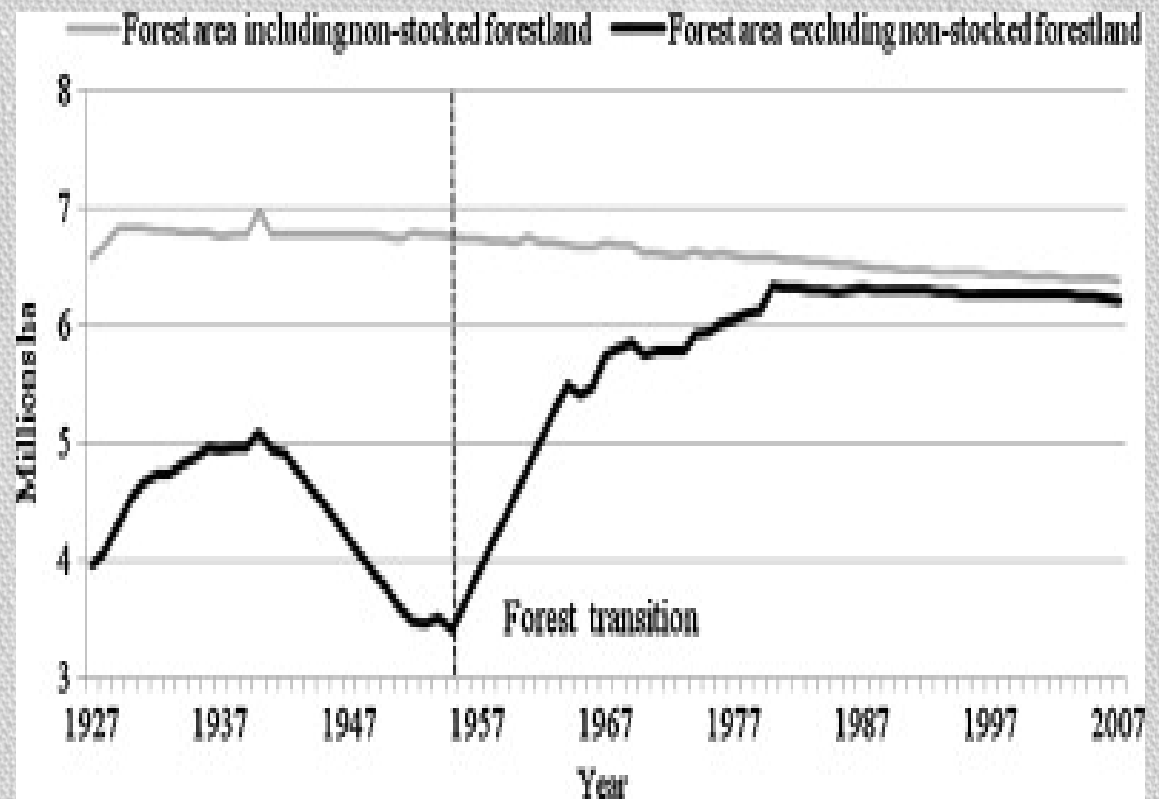
(Lambin and Meyfroidt, 2010)

- Forest scarcity
- Economic development
- **State forest policy -- South Korea**
- Globalization
- Smallholder tree-based land use intensification

Korean Forest Transition started in the early 1960s



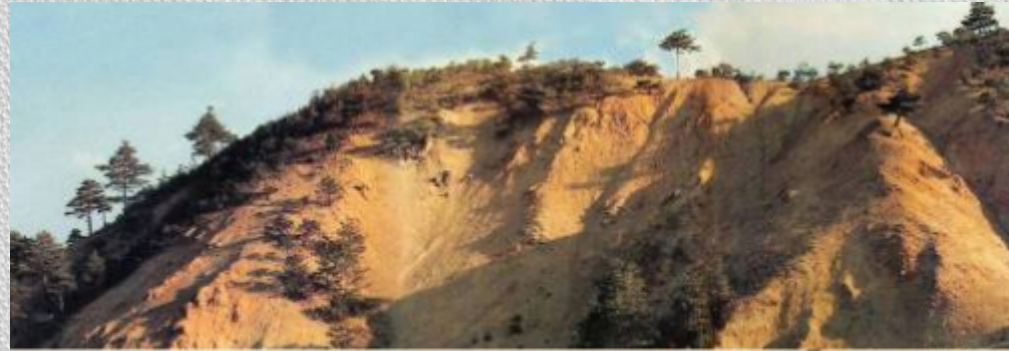
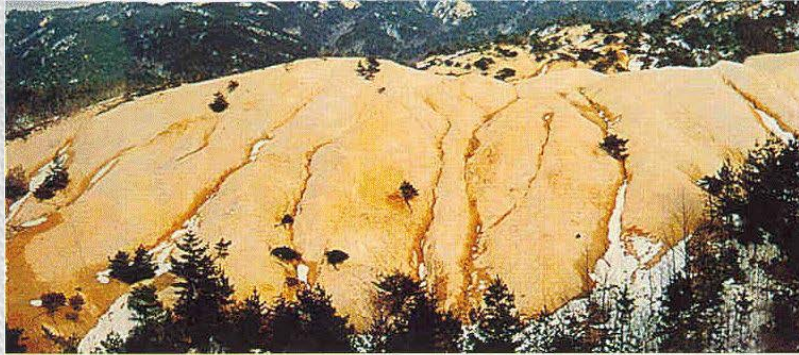
Forest area change in South Korea from 1927 to 2007



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

Forest Landscape in Korea

Before and After Reforestation Program (1973~1987)



Drivers of Deforestation and Forest Degradation

1) Over exploitation of forest resources

- Firewood and charcoal accounted for 62.5% of primary energy in 1960s.
- Illegal logging widely occurred.

❖ Mainly due to increase of population (and poverty)

- Population increased 80 % for 20 years (1945 -1965)

2) Expansion of agricultural lands

- agricultural lands 19 % increased for 1952 – 1968
- The area of slash-and-burn increased 2.7 times for 1967 -1979.

3) Korean War (1950-1953) destroyed forests

- Forest growing stock reduced by 33% for 1945-1955.

Drivers for reforestation

- **Government-led efforts**
 - Law enforcement
 - Technical and information support (Training & Education)
- **Economic development**
 - Increased agricultural productivity
 - Incentives for participation in forestation
 - Rural-urban migration
- **Social capital of community self-reliance and cooperation**
 - Political will
 - Public support for government's efforts

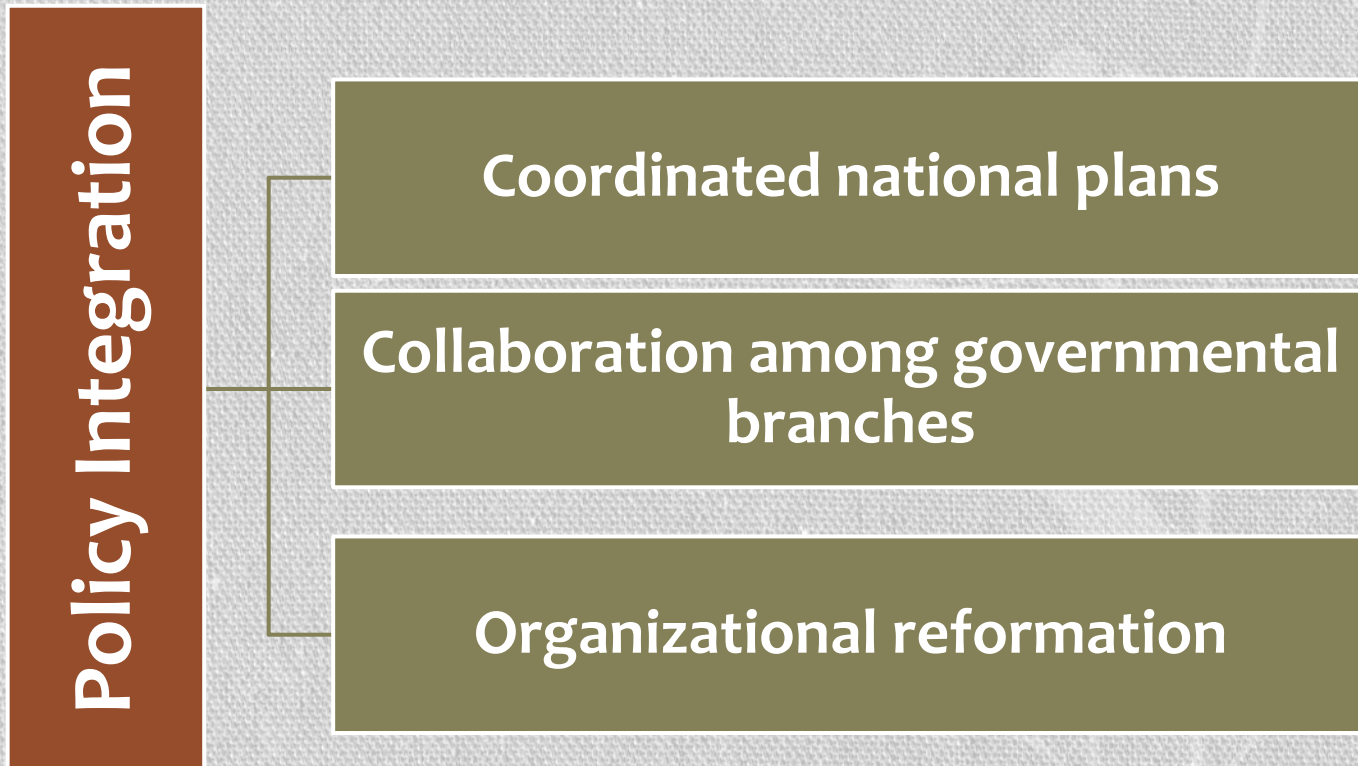
Policy Integration

is defined as

‘a process of incorporating certain concerns (e.g. environmental, social, economic) into an extant policy to **produce an integrated policy**’

(Briassoulis, 2005, p. 50)

Framework of analysis



Results 1_Coordinated national plans

		<i>1st NFDP</i> <i>(1973-1978)</i>	<i>2nd NFDP</i> <i>(1979-)</i>
		1st CNTDP (1972-1981)	
1st NEDP (1962-1966)	2nd NEDP (1967-1971)	3rd NEDP (1972-1976)	4th NEDP (1977-1981)

NEDP: National Economic Development Plan

CNTDP: Comprehensive National Territorial Development Plan

NFDP: National Forest Development Plan

Results 1_Coordinated national plans

- **National Economic Development Plan(1967-1976)**
 - investment plan for forestry sector including afforestation, protection and erosion control
- **National Territorial Development Plan 1972-1981**
 - resource development and environmental conservation
- **1st & 2nd National Forest Development Plan 1973-1987**
 - All deforested/degraded forestlands were restored.
 - **Saemaul Undong (SU)**
 - led by President Park JH in 1970s
 - mobilized citizens for erosion control works

National budget for forest management in South Korea

Year	NEDP*	General Account	Special Account			Total	Proportion of Total National Account (%)
			Management of National Forests	Finance Management	Economic Development		
1967	2 nd	193	581	50	1,256	2,080	0.54
1968		310	863	100	1,986	3,259	0.64
1969		473	942	192	3,055	4,662	0.64
1970		667	921	273	3,030	4,891	0.53
1971		683	1,445	282	3,452	5,862	0.56
1972	3 rd	742	1,556	300	3,677	6,275	0.49
1973		4,595	1,527	151	3,958	10,231	0.72
1974		5,932	2,612	-	5,201	13,745	0.79
1975		7,640	4,642	-	6,749	19,031	0.76
1976		11,001	4,388	-	9,699	25,088	0.64

*NEDP: National Economic Development Plan

Unit: million Korean won, Source: Kim et al. (2009), National Assembly (2013)

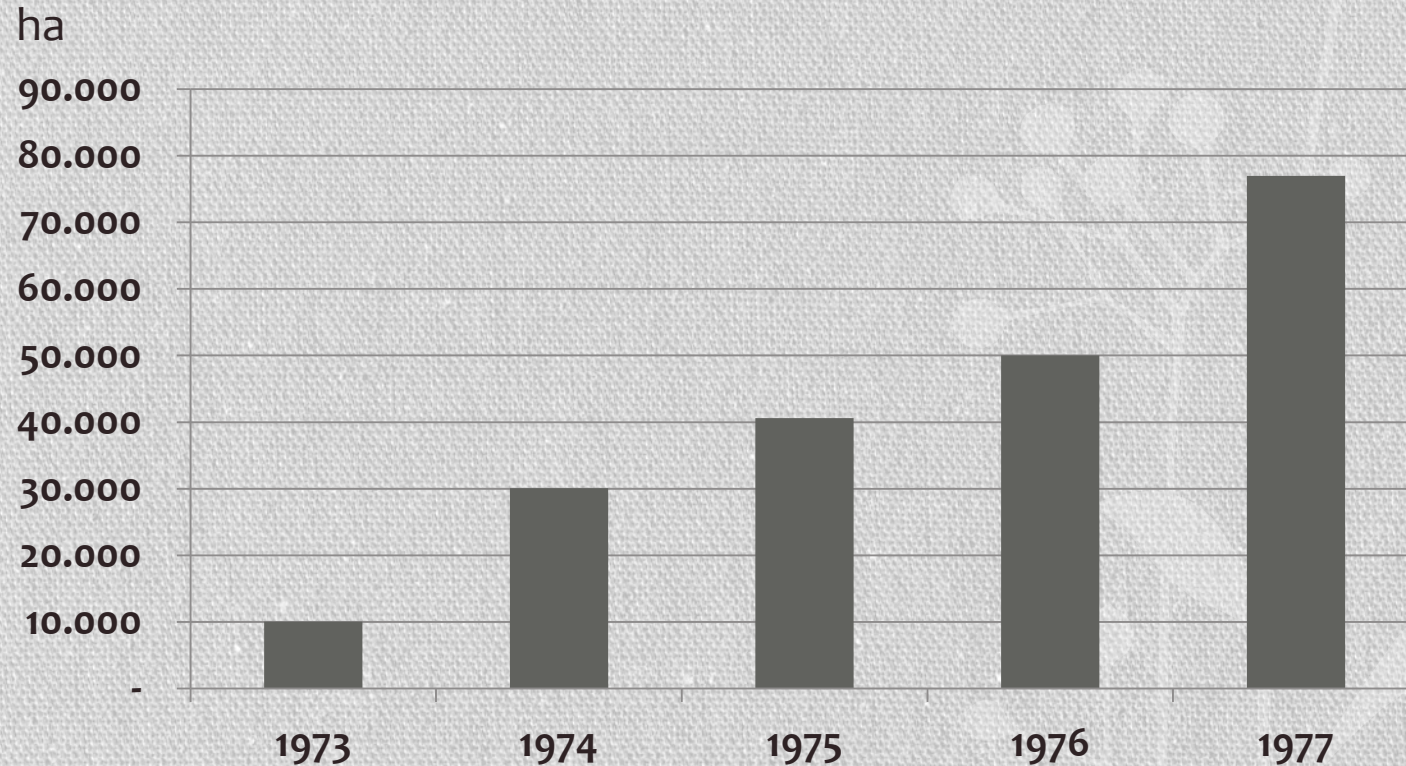
Results 2.

**Collaboration among the governmental branches:
for substitution of wood with fossil fuel
for saving forests from consumption as energy**

FACT

- **17% of the total volume of growing stock used for domestic fuel (Firewood for heating and cooking) in 1955**
- **Firewood and charcoal accounted for 62.5% of the total primary energy source in 1960.**

Area of firewood forests established in the first NFDP period



Source: KFS (1997: 408)

Remodeling house heating system through SU

Stove in Korean kitchen using firewood



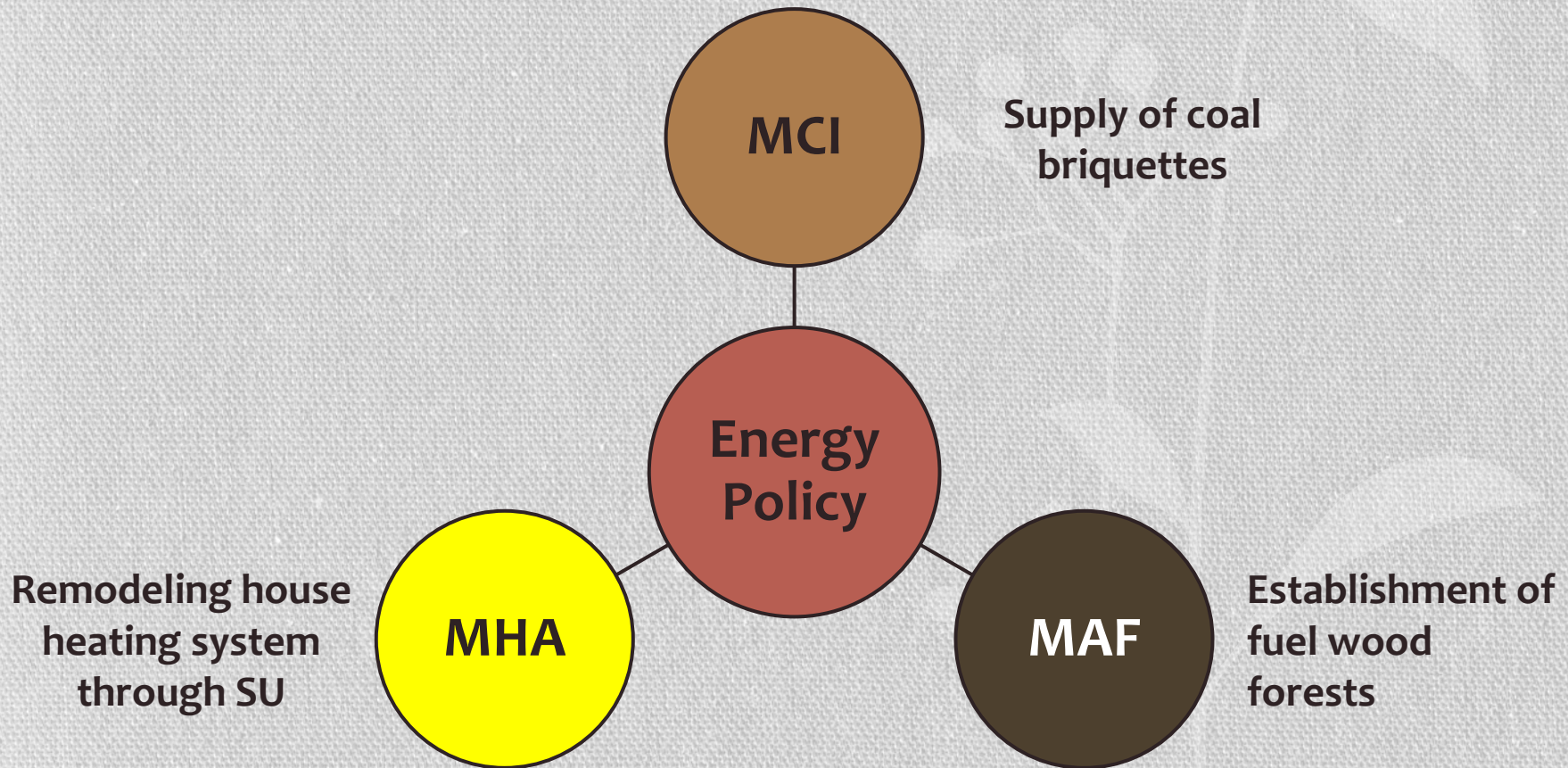
Stove in Korean kitchen using coal briquettes



Results 2.

Collaboration among the governmental branches

- Collaboration among governmental agencies for substitution of firewood with coal briquettes



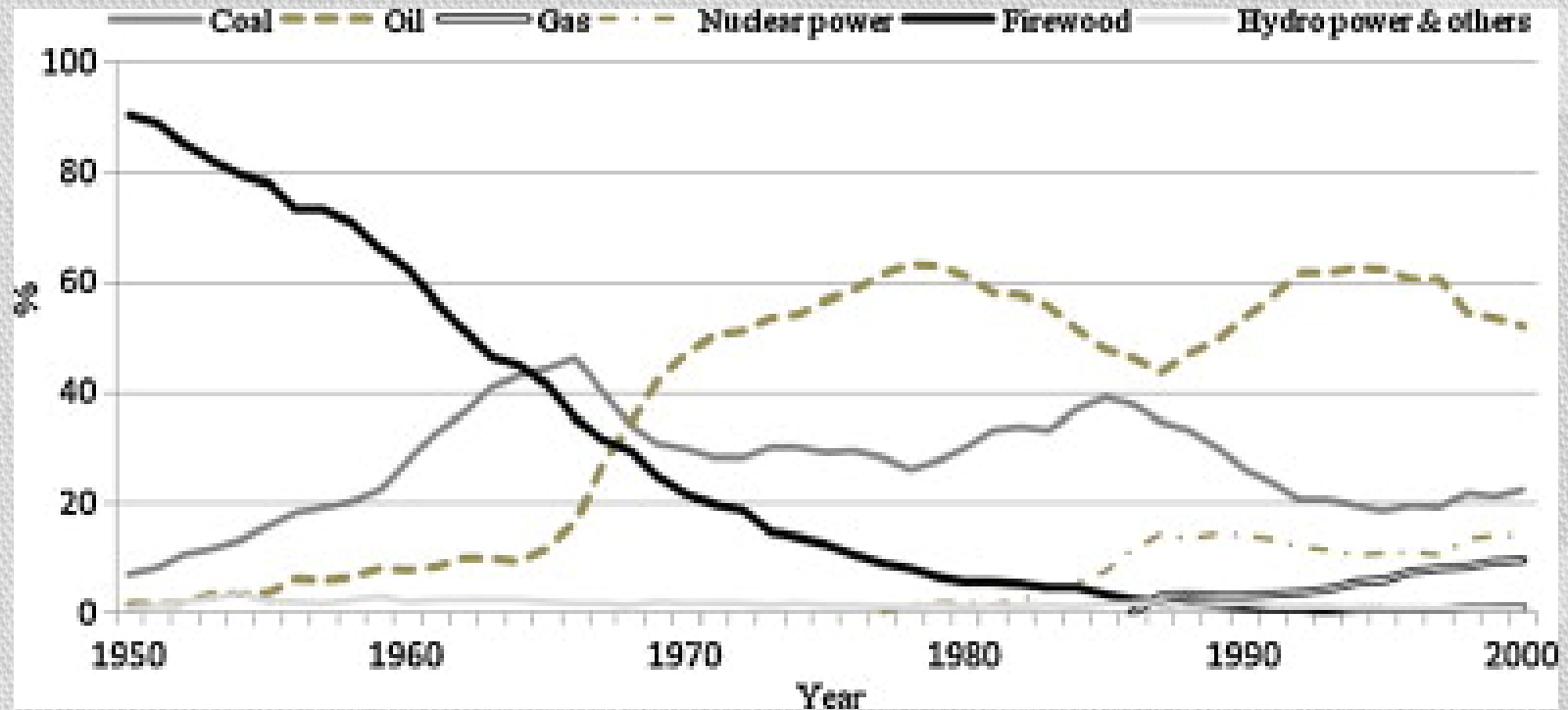
MCI: Ministry of Commerce and Industry

MAF: Ministry of Agriculture and Forestry

MHA: Ministry of Home Affairs

SU: Saemaul Undong

Trends in primary energy consumption



Source: Korea Coal Corporation (2001), cited from Bae et al. (2012)

Collaboration for reducing demand for timber: Controlling timber harvesting and timber demand

Ministry of Agriculture and Forestry

- Prohibiting the use of timber for domestic uses
 - Notification No. 1,795 of the MAF (25 April 1968)
 - Notification No. 58 of the KFS concerning Limit of timber utilization (7 December 1973)
- Limiting permits for timber harvesting from private forests
 - Notification No. 5 of the Korea Forest Service concerning controlling timber demand and supply (20 April 1987)

Ministry of Construction

- Limiting housing construction permits for controlling demand for timber

Ministry of Commerce and Industry

- Liberalized timber import for supply timber demanded by wood industry
- Increasing production and distribution of cement as a substitute of timber for construction

Control of timber demand and supply

Year	Domestic timber (1,000 m ³)	Foreign timber (1,000 m ³)	Total (1,000 m ³)	Self-sufficiency ratio (domestic/total)
1962	348	590	938	37%
1963	473	423	896	53%
1964	494	564	1,058	47%
1965	503	756	1,259	40%
1966	779	1,098	1,877	42%
1967	791	1,529	2,320	34%
1968	800	2,010	2,810	28%
1969	884	2,650	3,534	25%
1970	845	3,155	4,000	21%
1971	1,034	4,026	5,060	20%
1972	795	4,553	5,348	15%
1973	959	5,453	6,412	15%
1974	1,000	5,356	6,356	16%
1975	908	5,557	6,465	14%
1976	959	6,866	7,825	12%
1977	1,047	8,770	9,817	11%

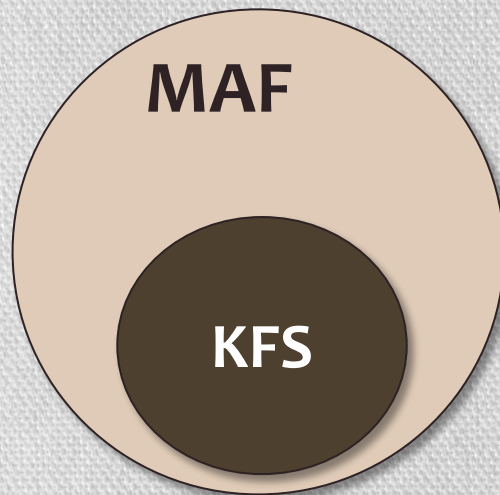
Source: The Korean Society of Wood Science Technology, 1977: 9)

Results 3. Organizational reformation

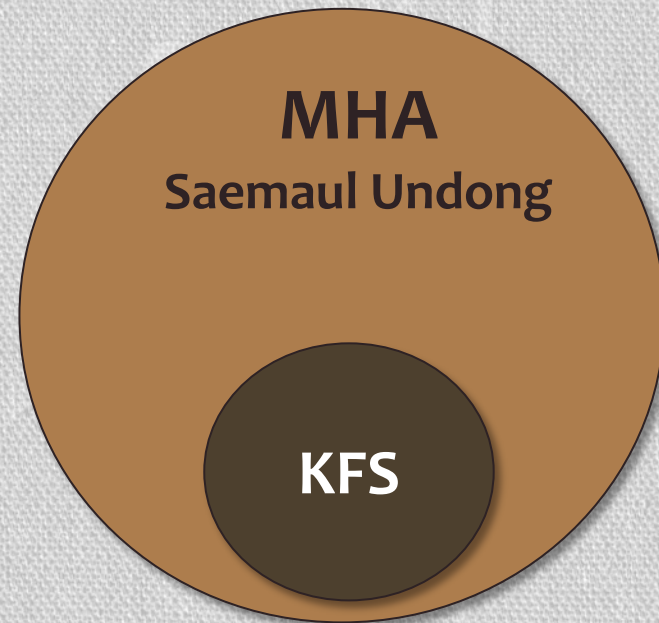
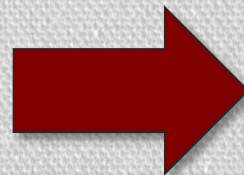
- KFS under the MAF was moved to the MHA in 1973
- KFS was under control of MHA from 1973 to 1987

From 1973 To 1987

Since 1967



FOREST
ADMINISTRATION



FOREST
ADMINISTRATION

+

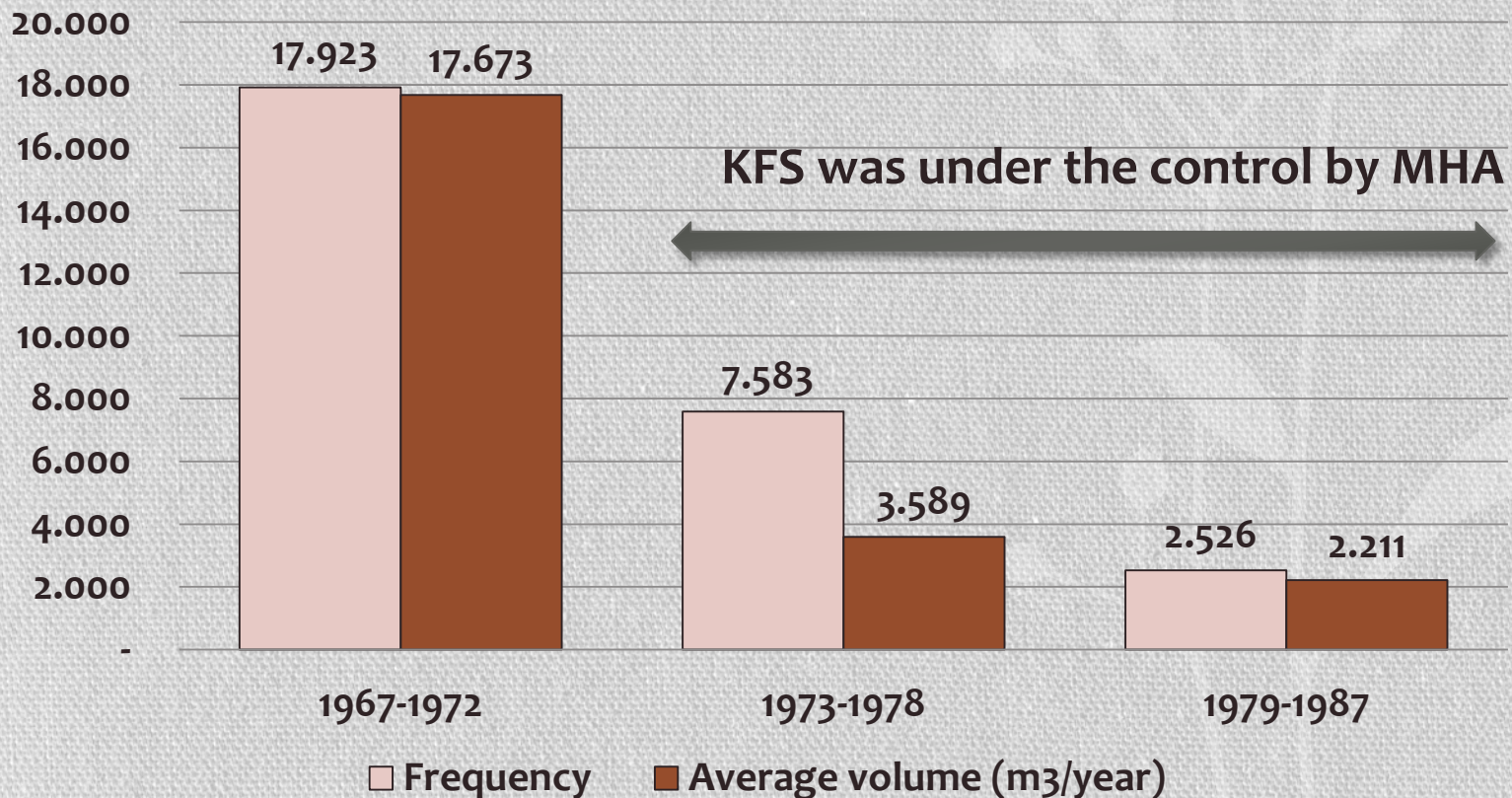
LOCAL & POLICE
ADMINISTRATION

Results 3. Organizational reformation

- **Law enforcement for forest protection was implemented by administration power of local governments in alignment with SU**
- **Administrative support for SU**
 - MHA was in charge of SU
 - The other government branches including MAF, MCI and Ministry of Education established a division supporting SU
 - Local governments at every level including provinces, cities and counties established a division supporting SU

Results 3. Organizational reformation

- **Law Enforcement with Police Power under MHA**
made the number of illegal logging & volume of illegally logged timber decreased substantially.



Source: Kim et al. (2009)

Conclusion:

Policy for forest landscape restoration should be integrated with policies of other sectors

- ❖ **Policy integration with other sectors can be only possible with strong political support.**
- ❖ **However, integrated policy program is just one of factors for successful reforestation in S. Korea.**

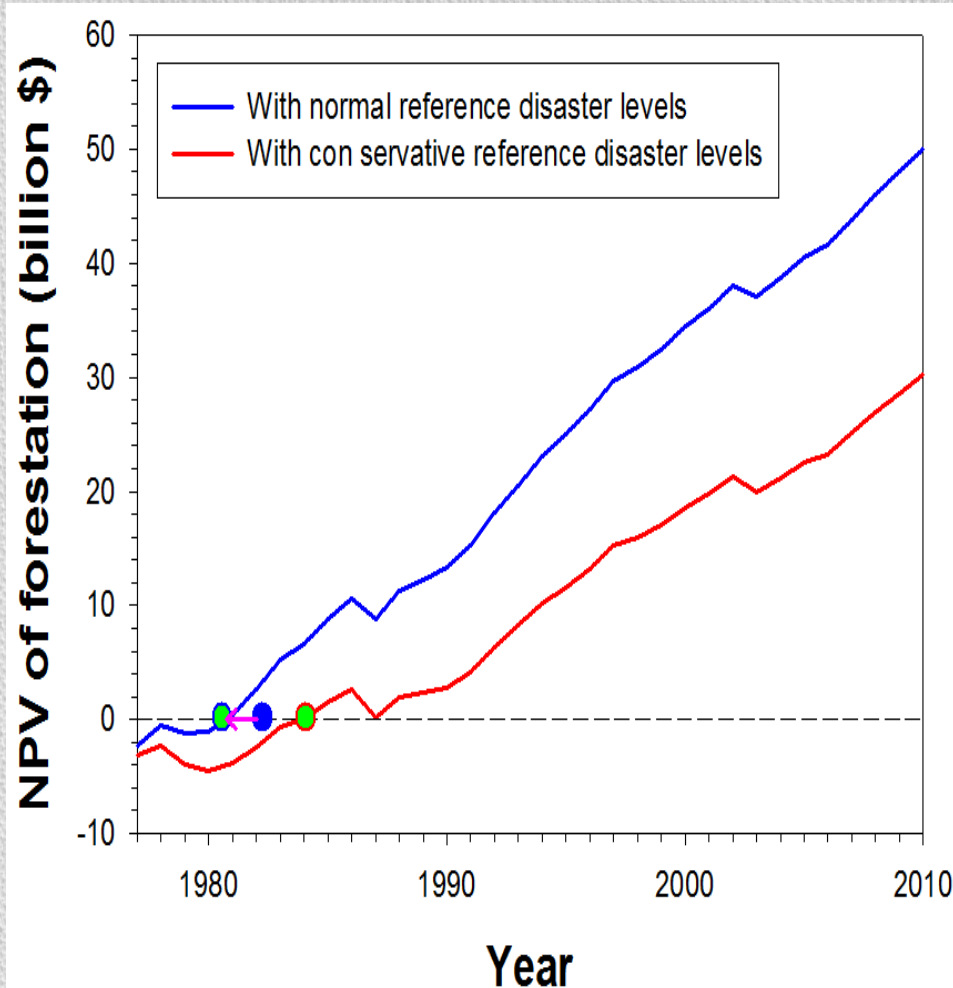
Other factors include:

- 1. Positive attitude of the people in favour of reforestation program**
 - Rooted in the traditional knowledge of forest ecosystem services and social capital of community self-reliance spirits
 - Re-enforced by governmental new village movement initiatives providing economic incentives for income generation from community forestry.

- 2. Economic growth**
 - The government was able to invest in forest restoration and
 - To provide forest owners and local communities for them to participate in reforestation programs.

Reforestation of S. Korea paid off

Total cumulative Net Present Value (NPV) of forestation in South Korea



- The NPV level shown each year is the accumulated sum of PV annual returns until that year.
- The annual benefits were converted to present values (PV) in 2010.

Source: Markandya A., Son Y., and Lee W. 2017. Valuation of Reforestation in Terms of Disaster Risk Reduction: A Technical Study from the Republic of Korea. Sustainable Development Goals. Policy Brief Series NO. 1. UNDP Seoul Research Center

Thank You for Your Attention!
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