POLICY INTEGRATION FOR REFORESTATION IN THE REPUBLIC OF KOREA

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Contents

I. Forest Transition scholarship
II. A case of Forest Transition - South Korean
III. Reforestation Policy integration
   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
Park, M., Youn, Y. (2017) Reforestation policy integration by the multiple sectors toward forest transition in the Republic of Korea.

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

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

Policy Integration

- Coordinated national plans
- Collaboration among governmental branches
- Organizational reformation
Results 1. Coordinated national plans

<table>
<thead>
<tr>
<th></th>
<th>1st NEDP</th>
<th>2nd NEDP</th>
<th>3rd NEDP</th>
<th>4th NEDP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st NFDP</strong></td>
<td></td>
<td></td>
<td>1st CNTDP</td>
<td></td>
</tr>
<tr>
<td><strong>2nd NFDP</strong></td>
<td></td>
<td></td>
<td></td>
<td>2nd CNTDP</td>
</tr>
<tr>
<td>(1979-)</td>
<td></td>
<td></td>
<td></td>
<td>(1982-)</td>
</tr>
<tr>
<td><strong>1st CNTDP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1972-1981)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Year</th>
<th>NEDP*</th>
<th>General Account</th>
<th>Special Account</th>
<th>Total</th>
<th>Proportion of Total National Account (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Management of National Forests</td>
<td>Finance Management</td>
<td>Economic Development</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>193</td>
<td>581</td>
<td>50</td>
<td>1,256</td>
</tr>
<tr>
<td></td>
<td></td>
<td>310</td>
<td>863</td>
<td>100</td>
<td>1,986</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
<td>473</td>
<td>942</td>
<td>192</td>
<td>3,055</td>
</tr>
<tr>
<td></td>
<td></td>
<td>667</td>
<td>921</td>
<td>273</td>
<td>3,030</td>
</tr>
<tr>
<td></td>
<td></td>
<td>683</td>
<td>1,445</td>
<td>282</td>
<td>3,452</td>
</tr>
<tr>
<td></td>
<td></td>
<td>742</td>
<td>1,556</td>
<td>300</td>
<td>3,677</td>
</tr>
<tr>
<td></td>
<td>3rd</td>
<td>4,595</td>
<td>1,527</td>
<td>151</td>
<td>3,958</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5,932</td>
<td>2,612</td>
<td>-</td>
<td>5,201</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7,640</td>
<td>4,642</td>
<td>-</td>
<td>6,749</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11,001</td>
<td>4,388</td>
<td>-</td>
<td>9,699</td>
</tr>
</tbody>
</table>

*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

Remodeling house heating system through SU
Establishment of fuel wood forests
Supply of coal briquettes

MCI: Ministry of Commerce and Industry
MAF: Ministry of Agriculture and Forestry
MHA: Ministry of Home Affairs
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic timber (1,000 m³)</th>
<th>Foreign timber (1,000 m³)</th>
<th>Total (1,000 m³)</th>
<th>Self-sufficiency ratio (domestic/total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1962</td>
<td>348</td>
<td>590</td>
<td>938</td>
<td>37%</td>
</tr>
<tr>
<td>1963</td>
<td>473</td>
<td>423</td>
<td>896</td>
<td>53%</td>
</tr>
<tr>
<td>1964</td>
<td>494</td>
<td>564</td>
<td>1,058</td>
<td>47%</td>
</tr>
<tr>
<td>1965</td>
<td>503</td>
<td>756</td>
<td>1,259</td>
<td>40%</td>
</tr>
<tr>
<td>1966</td>
<td>779</td>
<td>1,098</td>
<td>1,877</td>
<td>42%</td>
</tr>
<tr>
<td>1967</td>
<td>791</td>
<td>1,529</td>
<td>2,320</td>
<td>34%</td>
</tr>
<tr>
<td>1968</td>
<td>800</td>
<td>2,010</td>
<td>2,810</td>
<td>28%</td>
</tr>
<tr>
<td>1969</td>
<td>884</td>
<td>2,650</td>
<td>3,534</td>
<td>25%</td>
</tr>
<tr>
<td>1970</td>
<td>845</td>
<td>3,155</td>
<td>4,000</td>
<td>21%</td>
</tr>
<tr>
<td>1971</td>
<td>1,034</td>
<td>4,026</td>
<td>5,060</td>
<td>20%</td>
</tr>
<tr>
<td>1972</td>
<td>795</td>
<td>4,553</td>
<td>5,348</td>
<td>15%</td>
</tr>
<tr>
<td>1973</td>
<td>959</td>
<td>5,453</td>
<td>6,412</td>
<td>15%</td>
</tr>
<tr>
<td>1974</td>
<td>1,000</td>
<td>5,356</td>
<td>6,356</td>
<td>16%</td>
</tr>
<tr>
<td>1975</td>
<td>908</td>
<td>5,557</td>
<td>6,465</td>
<td>14%</td>
</tr>
<tr>
<td>1976</td>
<td>959</td>
<td>6,866</td>
<td>7,825</td>
<td>12%</td>
</tr>
<tr>
<td>1977</td>
<td>1,047</td>
<td>8,770</td>
<td>9,817</td>
<td>11%</td>
</tr>
</tbody>
</table>

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
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.

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Frequency</th>
<th>Average Volume (m³/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967-1972</td>
<td>17.923</td>
<td>17.673</td>
</tr>
<tr>
<td>1973-1978</td>
<td>7.583</td>
<td>3.589</td>
</tr>
<tr>
<td>1979-1987</td>
<td>2.526</td>
<td>2.211</td>
</tr>
</tbody>
</table>

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.

Thank You for Your Attention!
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