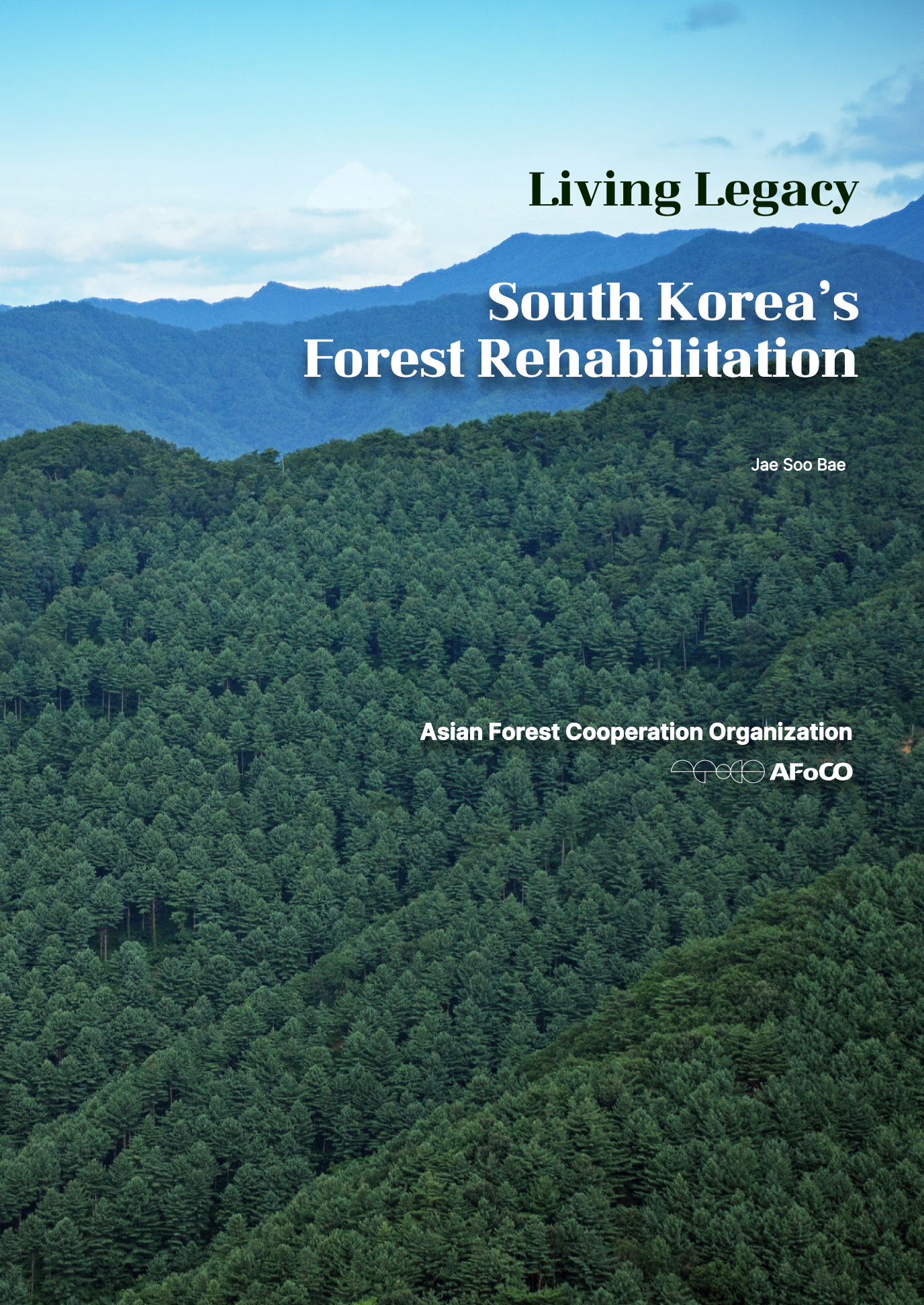




# **Living Legacy**

# **South Korea's Forest Rehabilitation**

Jae Soo Bae

**Asian Forest Cooperation Organization**





**Living Legacy**

# **South Korea's Forest Rehabilitation**

Jae Soo Bae

Asian Forest Cooperation Organization





## Foreword

Forests are a mirror that reflects both a nation's past and its future at once. In a barren mountain, one sees the hardship a society has endured; in a lush forest, one glimpses where that society intends to go. Such is precisely the path that the forests of the Republic of Korea have traveled.

In 2025, UNESCO inscribed the Korea Reforestation Archives: A reforestation model achieved through public-private governance. In doing so, the international community affirmed that Korea's experience of transforming barren hills into green mountains is not merely one nation's achievement, but a heritage that all of humanity should preserve and share.

The Asian Forest Cooperation Organization (AFoCO) was established to share this very experience of forest rehabilitation with the Asia countries. Proposed by the Republic of Korea at the 2009 ASEAN-Republic of Korea Commemorative Summit, AFoCO was the born of Asian nations joining hands to respond to climate change and to advance sustainable forest management. In our early days, our task was clear: to convey Korea's forest rehabilitation experience in ways suited to the realities on the ground in our Member Countries.

Since then, AFoCO has grown steadily. Together with our Member Countries, we have carried out afforestation and forest restoration projects, strengthened the capacity of forestry experts, and broadened our cooperation into forest disaster management and forest welfare. Today, we have reached the stage of designing forest carbon projects and mobilizing climate finance alongside our Member Countries. Becoming an Accredited Entity of the Green Climate Fund (GCF) in March 2026 stands as one milestone on that journey. From an organization that once passed on Korea's knowledge, we are advancing into a partner that creates resources and solutions together with our Member Countries.

Yet the more we grow, the more we return to our first question: What are the causes of forest degradation, and how do we resolve them? This book answers precisely that question. Its author, Professor Jae Soo Bae, meticulously traces how the Republic of Korea diagnosed and addressed both the underlying and the direct causes of forest degradation, drawing rigorously on historical records and statistics.

It is my hope that this book will serve as a living legacy for the policymakers and field practitioners of our Member Countries, and for all who reflect on the future of forests. I extend my deep gratitude to Professor Jae Soo Bae for bringing his invaluable research together in this volume.

May the green future we have envisioned together be realized for the mountains and peoples of Asia.

September 2026  
Chongho Park, Executive Director,  
Asian Forest Cooperation Organization

## Preface

For many years, I have studied changes in the forests of the Republic of Korea (South Korea) and their underlying causes from a sustainability perspective. Using forest area and growing stock as key indicators, I traced forest transitions on the Korean Peninsula since the seventeenth century, paying particular attention to changes in South Korea's forests following the division of the peninsula in 1945. Through this work, I became convinced that South Korea offers a compelling example of how human activity can shape forest change.

From the seventeenth century through the 1950s, forest sustainability in Korea steadily deteriorated as a result of population growth and the excessive use of fuelwood. By the 1950s, South Korea was among the world's poorest countries and remained trapped in a vicious cycle of forest degradation, in which trees planted in spring were often cut for fuel during the winter. Beginning in the 1960s, however, sustained economic growth enabled the country to address the underlying causes of forest degradation. As the nation gradually emerged from poverty, the government's administrative capacity to protect forests also strengthened.

As rural populations that had relied on forest-derived fuelwood migrated to cities throughout the 1970s, fuelwood consumption declined. With the increasing substitution of fossil fuels for fuelwood, a key driver of forest degradation that had persisted for centuries was substantially reduced. By 1979, shifting cultivation had virtually disappeared, while illegal logging had declined markedly. Alongside these changes, the government launched a nationwide forest rehabilitation program in 1973 to reforest denuded mountains across the country. Once the vicious cycle of forest degradation had been broken, the program succeeded in planting trees on an area equivalent to approximately 20 percent of the national territory over the following fifteen years. As a result, South Korea became a notable example of a developing country achieving a forest transition under strong government leadership despite limited economic resources.

This book was written in the hope that South Korea's successful experience in forest rehabilitation may offer valuable insights for countries that continue to face similar challenges today. Although circumstances vary from country to country, South Korea's approach—developed under conditions comparable to those of many nations—may still offer meaningful guidance for efforts to restore and sustainably manage forests.

Finally, I would like to express my sincere gratitude to the Secretariat of the Asian Forest Cooperation Organization (AFoCO) for initiating the publication of this book and for supporting the sharing of South Korea's forest rehabilitation experience with its member countries. I am also deeply grateful to the AFoCO staff members for their valuable comments and constructive suggestions on the manuscript draft.

I gratefully acknowledge the valuable advice and technical contributions provided by Dr. Jin-Hyun Jeong on forest soil surveys; Dr. Cheol-Min Kim on the National Forest Inventory; Dr. Kyungmi Lee on seed orchard establishment; Dr. Young-Bon Koo on forest tree breeding; Dr. Kyungha Kim on erosion control and watershed management; and Dr. Mahn-Jo Kim on chestnut cultivation in the preparation of this book on forest rehabilitation technologies.

I am especially grateful to Dr. Joowon Park of the Korea Development Institute (KDI) School of Public Policy and Management for her careful work in organizing the section on the role of village forestry cooperatives (*Sanrim-gye*), and to Dr. Eun-Sook Kim of the National Institute of Forest Science (NIFoS) for preparing the 1910 forest-cover map of Korea.

September 2026  
Jae Soo Bae



# CONTENTS

Living Legacy: South Korea's Forest Rehabilitation

## Contents

1. Introduction • 6

2. The Process and Causes of Forest Degradation • 9

- 2.1. Forests before Liberation (1945) • 10
- 2.2 Forests after Liberation (1945) • 12
- 2.3 Causes of Forest Degradation • 13
  - 2.3.1. Underlying Causes • 14
  - 2.3.2. Direct Causes • 18

3. National Forest Rehabilitation Program (1973-1987) • 23

- 3.1. Efforts before the Implementation of the NFRP • 24
  - 3.1.1. Forest Policy during the U.S. Military Government (1945–1948) • 24
  - 3.1.2. Forest Policy in the 1950s • 25
  - 3.1.3. Forest Policy in the 1960s • 26
  - 3.1.4. Enactment of Laws to Prevent Forest Degradation • 27
- 3.2 The First 10-Year National Forest Rehabilitation Plan • 30
  - 3.2.1. Background • 30
  - 3.2.2. Formulation Process and Objectives of the First Plan • 31
  - 3.2.3. Implementation Measures • 36
  - 3.2.4. Performance of the First Plan • 58
- 3.3. The Second Ten-Year National Forest Rehabilitation Plan • 60
  - 3.3.1. Objectives • 60
  - 3.3.2. Policy Instruments • 61
  - 3.3.3. Major Projects and Performance • 63

4. Success Factors of National Forest Rehabilitation Program • 68

- 4.1. Underlying Factors • 69
  - 4.1.1.Sustained Economic Growth • 69
  - 4.1.2.Strong Presidential Leadership and Comprehensive Planning • 70
  - 4.1.3.Rural-to-Urban Migration • 71
- 4.2. Direct Factors • 72
  - 4.2.1. Replacement of Household Fuelwood with Fossil Fuels • 72
  - 4.2.2.Slash-and-Burn Land Reorganization and Resettlement • 74
  - 4.2.3.Large-Scale National Reforestation • 76

5. Conclusion and Lessons • 79

6. Policy Recommendations • 85

7. References • 88

## Tables

- Table 1. Comparison between the Draft and Final Versions of the First Plan • 33
- Table 2. Central Government Budget for the Forestry Sector (1972–1978) • 39
- Table 3. Strategies for Guidance and Capacity Building by Types of Saemaul *Sanrim-gye* • 43
- Table 4. Development Trends of *Sanrim-gye* and *Saemaul* Villages (1972–1980) • 44
- Table 5. Selection of Tree Species for Reforestation • 49
- Table 6. Performance of the First National Forest Rehabilitation Plan • 59
- Table 7. Performance of the Second Forest Rehabilitation Plan • 64
- Table 8. Changes in the Population Composition by City and County (1960–1990) • 71
- Table 9. Performance of the Arrangement of Slash-and-Burn Program • 75

## Figures

- Figure 1. Forest Cover on the Korean Peninsula in 1910 • 11
- Figure 2. An Analytical Framework for NFRP and Forest Transition in South Korea • 13
- Figure 3. Forest Landscape around *Inwangsan* immediately after the Korean War • 15
- Figure 4. Young Men Carrying *Jige* on Their Way to Gather Fuelwood • 19
- Figure 5. Site of the 1964 *Jirisan* Illegal Logging Incident • 21
- Figure 6. A Slash-and-Burn Dwelling • 22
- Figure 7. National Forest Rehabilitation System within the Ministry of Home Affairs • 37
- Figure 8. Before and After the *Yeongil* Erosion Control Project • 54
- Figure 9. A public Billboard in *Gwanghwamun*, Seoul • 57
- Figure 10. Tree-Planting Ceremony on Arbor Day in 1972 • 58
- Figure 11. The National Greening Monument • 65
- Figure 12. Trends in Forest Area and GDP per Capita (1953-2007) • 69
- Figure 13. Trends in Primary Energy Consumption (1950-2000) • 73
- Figure 14. Migration of Slash-and-Burn Farmers • 74
- Figure 15. Trends in Forest Age-Class Structure (1970–2020) • 77
- Figure 16. Trends in Reforestation Performance by Ownership (1946–2007) • 78
- Figure 17. Forest Cover and Annual Rate of Forest-Area Change in AFoCO Member Countries • 87

## 1

## Introduction

**1. Introduction**

There is a Korean proverb: "Seeing once is better than hearing a hundred times." It conveys the idea that what one sees with one's own eyes is more reliable than what one merely hears. South Korea's forest transition aptly illustrates this saying. A visual comparison between the barren mountains of the 1950s and today's lush forests makes the scale of South Korea's forest transformation immediately apparent.

At the end of the Korean War in 1953, South Korea's forests were among the most severely degraded in the country's long history. Although forests covered approximately two-thirds of the national territory, nearly half of the forest land was denuded. Average growing stock stood at only 5.7 cubic meters per hectare. Seventy years later, by 2023, barren mountains had been transformed into green forests, and growing stock per hectare had increased more than thirtyfold.

South Korea's experience has attracted international attention. South Korea has been described as "in many ways a reforestation model for the rest of the world" (Brown, 2008, p. 157) and as "an example that shows what humanity is capable of achieving when it is determined to act" (Inger Andersen, Executive Director of the United Nations Environment Programme (UNEP), as cited in *The Hankook Ilbo*, September 2, 2023). Most notably, in April 2025, the United Nations Educational, Scientific and Cultural Organization (UNESCO) inscribed the South Korea Reforestation Archives on the Memory of the World Register. This inscription represents international recognition not only of the achievements of South Korea's forest rehabilitation, but also of the records documenting that process as documentary heritage worthy of preservation.

Why, then, has South Korea's forest rehabilitation attracted international attention? One reason may be that the country restored severely degraded forests within a relatively short period through a historically distinctive combination of state coordination, socioeconomic transformation, energy transition, and large-scale reforestation. In the early 1970s, South Korea was only beginning to emerge from deep poverty. Its experience in forest rehabilitation therefore holds particular relevance for developing countries facing similar challenges today. It conveys a hopeful message: if South Korea could restore its forests under such conditions, other countries may also be able to do so. Moreover, South Korea's subsequent economic growth, alongside the sustainable management of its forests, suggests that addressing environmental problems such as forest degradation at an early stage can contribute positively to economic development, including in developing countries.

South Korea's forest transition, built upon successful forest rehabilitation, challenges the conventional development paradigm of "pollute first, clean later" (Stern, 2004). Earlier study suggested that environmental quality improves only after national per capita income reaches USD 8,000–10,000 (Grossman & Krueger, 1995). In contrast, South Korea achieved a forest transition in which both forest area and growing stock increased simultaneously while per capita income remained below USD



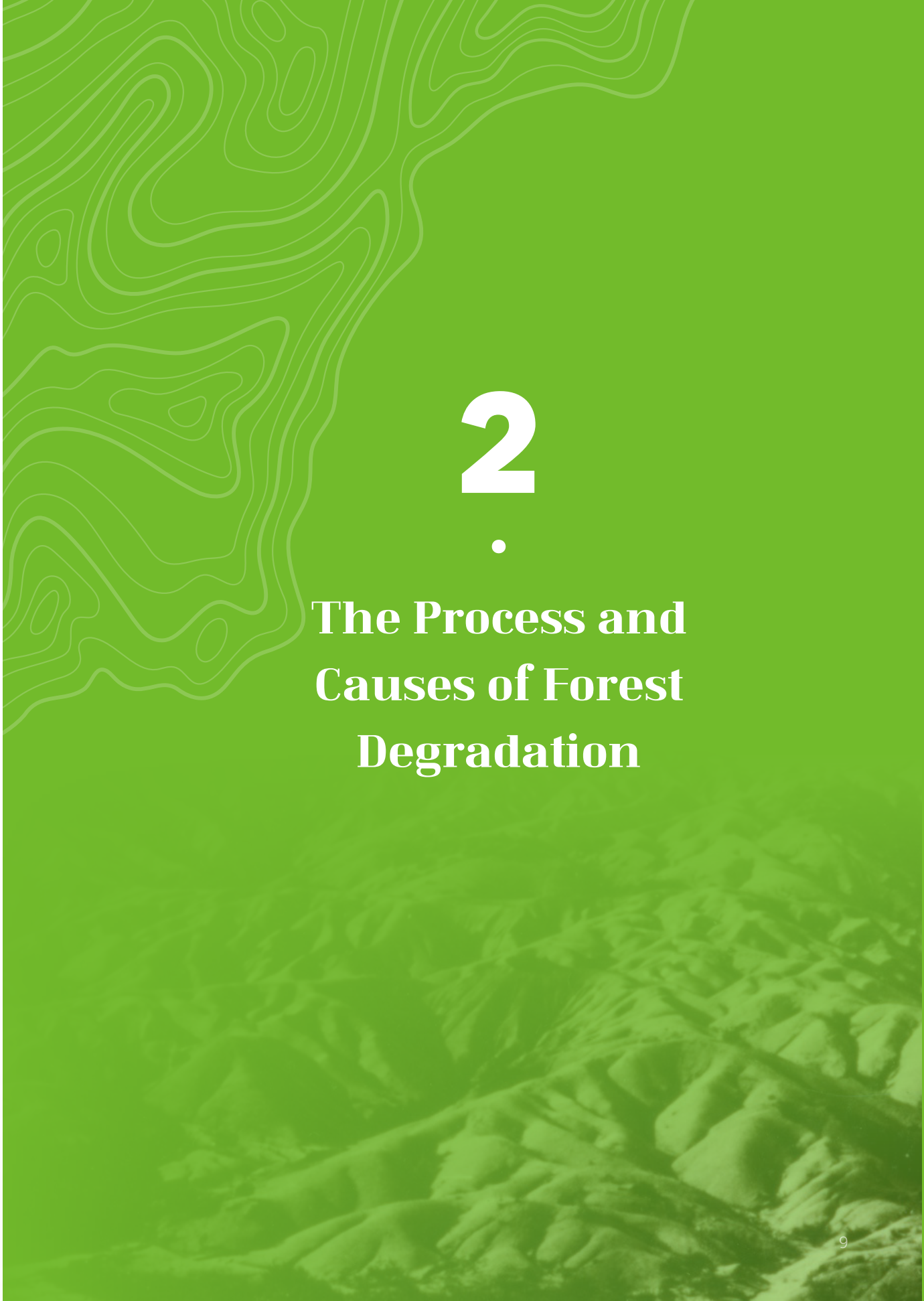
1,000. It thus represents an early case of government-led forest transition achieved under conditions of economic hardship (Mather, 2007; Bae et al., 2012). Since then, several developing countries, including China, India, and Vietnam, have followed broadly similar government-led pathways toward forest transition.

That said, South Korea's success should not be regarded as a universal solution applicable to all developing countries. Each country has its own history, and its socioeconomic conditions and institutional capacities differ. The forest-related challenges facing many developing countries today are not identical to those South Korea confronted in the 1970s; accordingly, the measures required to address them will also differ. Nevertheless, South Korea's experience of successful forest rehabilitation remains significant. It is not a distant success story of a developed country that may appear unattainable to developing countries, but an achievement realized by a country that once faced comparable developmental constraints and began from similarly difficult conditions.

This publication is a substantially revised and expanded version of An Overview of Forest Rehabilitation in South Korea, originally published on the Forest Rehabilitation Portal of the Korea Reforestation Archives in 2025. It examines South Korea's forest policies from 1945, following the division of the Korean Peninsula, to 1987. Particular attention is given to the government-led National Forest Rehabilitation Program (NFRP), implemented from 1973 to 1987, in order to distill achievements and lessons that may be shared with the member countries of the Asian Forest Cooperation Organization (AFoCO).

To this end, discussions were held with AFoCO Secretariat staff members and interns to identify the aspects of South Korea's forest rehabilitation experience and the lessons derived from it that might be most relevant to their respective national contexts. This process generated valuable insights through consideration of each country's forest conditions, national circumstances, and institutional capacities. I hope that South Korea's experience with the NFRP will serve as a practical living legacy, helping to address the forest-related challenges that many developing countries continue to face today.

1) <https://theme.archives.go.kr/next/forest/viewMain.do>



# 2

## The Process and Causes of Forest Degradation

## 2.1. Forests before Liberation (1945)

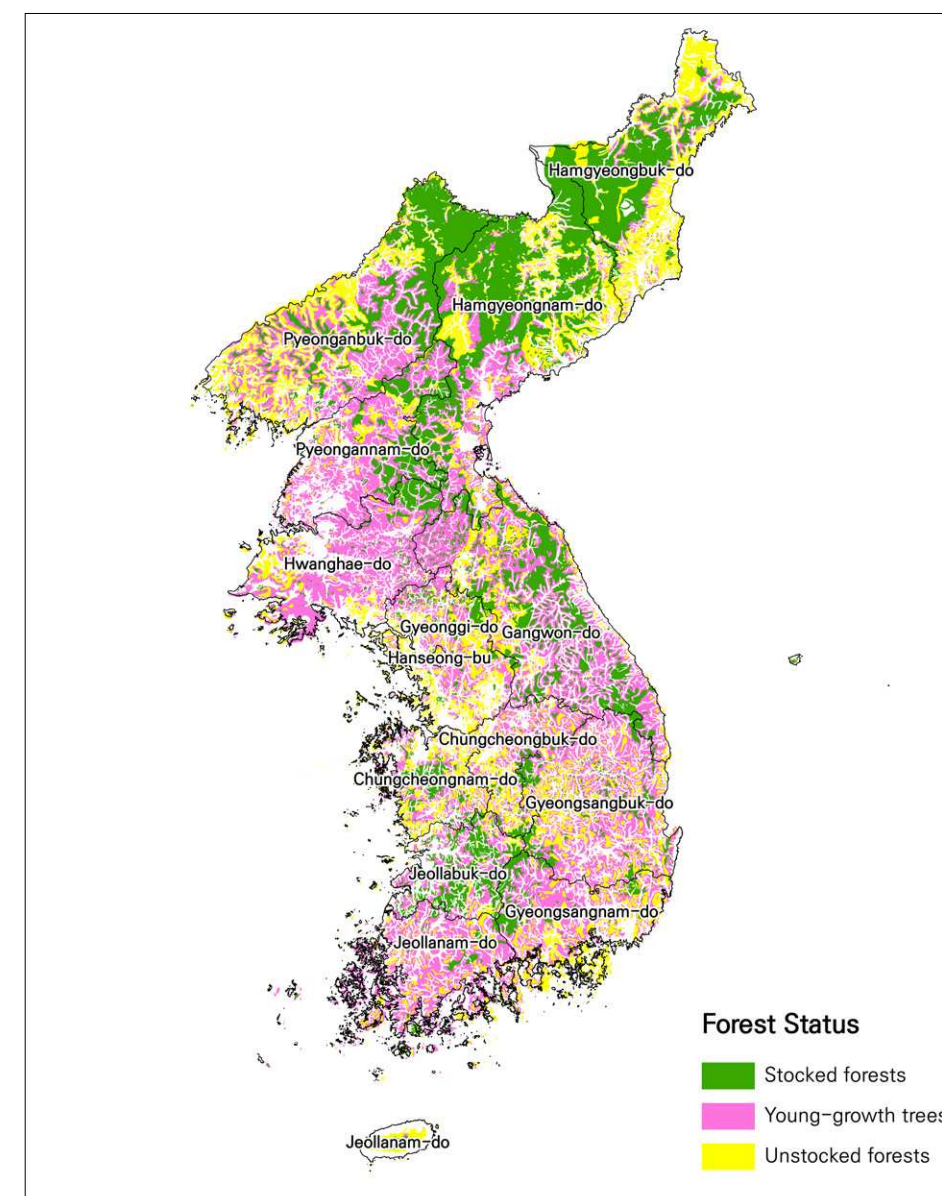
Forests are renewable resources. Unlike fossil fuels, timber can be used indefinitely if it is harvested wisely within the limits of annual growth. However, when trees are cut at a rate exceeding their growth, forest sustainability declines. If such practices continue over time, forests eventually become degraded. South Korea's forests began to recover from severe degradation less than 70 years ago and have since reached their present level of sustainability. However, from the late *Joseon* Dynasty through the 1950s, forests on the Korean Peninsula underwent a prolonged period of degradation marked by a steady decline in forest sustainability.

During the *Joseon* Dynasty (1392–1910), forests were highly valued by the monarch because they constituted an important source of tax revenue. At that time, the *Joseon* state collected taxes primarily in kind rather than in currency. Forests, which covered approximately three-quarters of the national territory, supplied timber and non-timber forest products that were essential to both the state and the common people. Nevertheless, from the late *Joseon* Dynasty, forests gradually became degraded. As colder climatic conditions persisted in the seventeenth century, the *ondol* system was increasingly installed in individual rooms, thereby expanding the use of this traditional underfloor heating system and increasing demand for firewood. Forests surrounding settlements were progressively stripped bare as firewood was continuously harvested (Bae & Kim, 2020). Despite the ongoing degradation of forests, the *Joseon* government failed to take effective action at the national level, such as reforestation denuded land and protecting the remaining forests. Instead, people were forced to travel farther each day to collect firewood.

The Forest Cover Map of Korea, produced by the Japanese Government-General of *Joseon* in 1910, reveals that the forests of the Korean Peninsula were far from dense or well-stocked (Figure 1). In the area corresponding to present-day South Korea, only 21% of the land was classified as forest, while the remaining 79% consisted of degraded forest land with sparse young trees or none at all (Bae & Kim, 2019).

During the Japanese colonial period, Korean forests were considered an important source of revenue for the Japanese Government-General of *Joseon*. As shown in the forest cover map, even the relatively well-forested northern regions—particularly along the *Amnok* (Yalu) and *Duman* (Tumen) River basins—were extensively logged to secure revenue for the colonial administration. Between 1927 and 1943, growing stock declined by 36% in Pyeonganbuk-do and Hamgyeongbuk-do, and by 51% in Hamgyeongnam-do, all of which contained forests along these river basins (Bae et al., 2021). Nationwide, growing stock per hectare decreased from 16.7 m<sup>3</sup> in 1927 to 13.2 m<sup>3</sup> in 1943, including the relatively better-forested northern regions. Considering that growing stock per hectare in South Korea reached 176 m<sup>3</sup> in 2023, the extent of forest degradation during that period becomes evident.

The Japanese Government-General of *Joseon* was well aware of the severely depleted condition of Korea's forests. However, after Japan entered a full wartime regime following the outbreak of the Sino-Japanese War in 1937, forests with immediate commercial value were prioritized for logging. During the colonial period, the Japanese Government-General extracted timber intensively from the Korean Peninsula despite its already limited forest resources. As a result, the sustainability of Korea's forests was further undermined (Bae & Kim, 2021).



**Figure 1. Forest Cover on the Korean Peninsula in 1910**

The Forest Cover Map of Korea was produced through the 1910 Forest Survey Project, which aimed to assess forest conditions across the Korean Peninsula. It provides spatial information on forest conditions, including stocked forests, areas with young-growth trees, and unstocked forests, as well as on forest composition, including pine, other coniferous species, and broadleaf species. This map was prepared by overlaying the provincial boundaries of 1910 onto the original Forest Cover Map of Korea.

Source: <https://know.nifos.go.kr>.



2.2. Forests after Liberation (1945)

Following Korea's liberation in 1945, the Korean Peninsula was soon divided into South and North Korea. By 1953, at the end of the Korean War (1950–1953), South Korea's forests had reached their most devastated condition since forest statistics were first compiled in 1927. Approximately half of the forest land was barren, and average growing stock stood at a mere 5.7 cubic meters per hectare.

Against this backdrop, South Korea began to implement the National Forest Rehabilitation Program (NFRP) in earnest in the 1970s. As economic growth continued, it became more economical for households to purchase coal briquettes than to gather firewood from the mountains. This transition replaced fuelwood, which had been a primary driver of forest degradation, with coal briquettes for household energy use. Although the total population continued to increase after the 1970s, the migration of large segments of the rural population to urban areas led to a decline in fuelwood consumption. Slash-and-burn cultivation, which involved clearing and burning forest land for farming, disappeared from official statistics in 1979. Illegal logging also declined sharply as a result of strong government enforcement.

With these enabling conditions in place, large-scale national reforestation efforts began to yield tangible results. In times of severe poverty, trees planted in spring were often uprooted and burned for *ondol* heating in the harsh winter. Once household fuel shifted from firewood to coal briquettes, the vicious cycle of forest degradation was finally broken. From 1973 to 1978, trees were planted on 1.08 million hectares of denuded forest land, equivalent to approximately 17 percent of the nation's total forest area, over a period of just six years. These efforts continued through 1987. Over the fifteen-year duration of the NFRP, approximately 4.8 billion trees were planted across 2.05 million hectares. Building on the rehabilitation of degraded forest land, South Korea subsequently pursued policies aimed at sustainable forest management, while continuing to face challenges in private forest management, domestic timber production, and the viability of forestry livelihoods. As a result, previously barren mountains have been restored, and growing stock has increased rapidly.

The case of South Korea clearly demonstrates how a developing country can achieve a forest transition by addressing both the underlying and direct causes of forest degradation. Once underlying drivers such as poverty and weak administrative capacity had been addressed through broader national socioeconomic policies, the conditions for effective forest recovery were established. Measures targeting the direct causes of degradation—including the substitution of household fuelwood with alternative energy sources, measures against illegal logging and slash-and-burn cultivation, and large-scale national reforestation—were then able to produce the intended results. South Korea's forest transition offers an important lesson: forest problems cannot be resolved through forest policy alone; rather, addressing them requires the support of broader national social and economic policies.

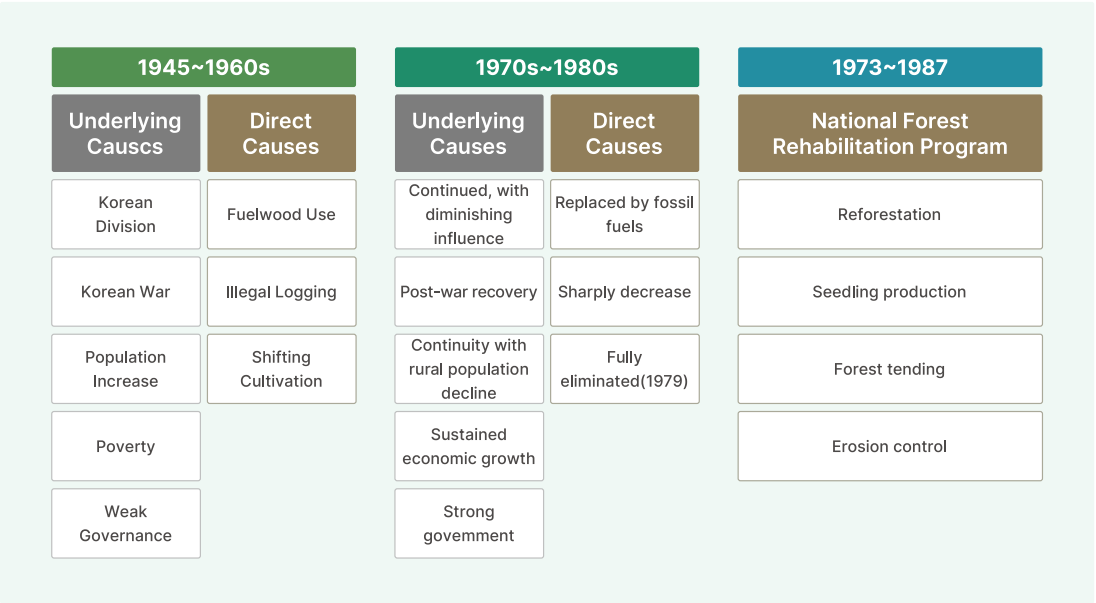


Figure 2. An Analytical Framework for NFRP and Forest Transition in South Korea

2.3. Causes of Forest Degradation

A proper diagnosis of the causes of forest degradation is the first step in planning and implementing an effective forest rehabilitation program. As used in this book, the term forest degradation encompasses both deforestation, which involves long-term changes in land use, and forest degradation in the narrower sense, which refers to the qualitative deterioration of forest conditions. For decades, particularly in the context of tropical forests, scholars have sought to identify the causes of deforestation. A representative analytical framework categorizes these causes into three hierarchical levels: underlying causes, immediate (or direct) causes, and sources (Angelsen & Kaimowitz, 1999).

Against this analytical background, this book classifies the causes of forest degradation in South Korea into underlying and direct causes. Following Korea's liberation in 1945, the underlying causes of forest degradation are identified as: (1) the division of the Korean Peninsula, (2) the Korean War, (3) population growth, (4) poverty, and (5) weak administrative capacity. The Korean War not only directly caused forest degradation in both South and North Korea but also exacerbated it by weakening government administration and undermining social and moral norms. In this sense, the indirect damage to forests caused by the war exceeded the direct physical destruction. Accordingly, the Korean War is treated here as an underlying cause of forest degradation.

The direct causes of forest degradation are identified as: (1) the use of fuelwood for household energy, (2) illegal logging, and (3) slash-and-burn cultivation. In this book, slash-and-burn cultivation is treated as

a form of illegal deforestation involving unauthorized forest conversion. However, legal forest conversion for purposes such as road construction, agricultural land development, pasture establishment, residential development, and industrial facilities is excluded from the analysis. South Korea has the highest population density among the 38 member countries of the OECD. Despite its large population and substantial differences in land values across alternative land uses, the country has maintained forest cover on approximately 63% of its national territory. This outcome reflects the effectiveness of strong regulatory measures aimed at preventing the conversion of forest land to competing land uses despite considerable economic incentives for such conversion.

### 2.3.1. Underlying Causes

#### ① Division of the Korean Peninsula

Forest resources on the Korean Peninsula were heavily concentrated in the northern region. According to the Forest Survey Project conducted in 1910, 81.4% of the peninsula's stocked forests were located in the northern region (Government-General of *Joseon*, 1910). In contrast, forests in the more densely populated southern region had long been degraded into barren hills as a result of the continuous harvesting of firewood for *ondol*-based household heating. When the first national forest resource statistics were published in 1927, 71.7% of total growing stock was concentrated in the northern region. Between 1930 and 1942, the northern region supplied an increasing share of total timber demand, rising from 68.4% in 1930 to 78.6% in 1942. This concentration of forest resources and timber production in the north significantly contributed to forest depletion in that region. Over the sixteen years from 1927 to 1943, growing stock in the northern region declined by 32.3%. In this regard, the Japanese Government-General of *Joseon*'s policy of expanding timber harvesting in northern national forests to strengthen fiscal revenues constituted a direct cause of forest degradation on the Korean Peninsula (Bae & Kim, 2021).

Before the division of the peninsula, although regional disparities in forest resources existed, timber supply and demand could be managed from a unified national perspective. Timber harvested from the *Amnok* (Yalu) and *Tuman* (Tumen) River basins in the north could be supplied to meet demand in the southern region. However, the division of the Korean Peninsula resulted in the loss of the economic complementarities that had previously existed between the two regions. Following the division in 1945, South Korea was required to support a significantly larger population with forests that were even more degraded than those during the colonial period. Timber supplies from the northern region were no longer accessible. Although South Korea's population was approximately 1.6 times that of North Korea, its forest area and growing stock were only 71% and 57% of those of North Korea, respectively. With a relatively larger population and fewer forest resources, South Korea's per capita growing stock stood at merely 36% of North Korea's level during the same period (Bae, 2011). The U.S. Army Military Government in Korea likewise regarded the "loss of major timber resources located in North Korea" as one of the causes of

forest degradation in the South (Kang, 2019). From this perspective, the division of the Korean Peninsula constitutes a key underlying cause of forest degradation in South Korea.

#### ② The Korean War

The Korean War, which broke out on June 25, 1950, and ended with the signing of the Armistice Agreement on July 27, 1953, lasted 37 months and involved not only South and North Korea but also sixteen United Nations (UN) member states and China. The human and material losses were immense. Military casualties alone totaled approximately 1.6 million personnel from both Koreas, while 990,000 South Korean civilians were killed or wounded. By the end of August 1951, 44% of manufacturing buildings and 42% of industrial facilities in South Korea had been damaged (KIDA, 1996). Because the entire national territory became a battlefield, direct war damage occurred throughout the country. In addition, forest resources deteriorated drastically as social disorder facilitated widespread illegal logging, overharvesting, and the expansion of slash-and-burn cultivation.

Although it is difficult to quantify the negative impact of the Korean War on forest resources, it is evident that the already limited forest capital inherited after the division of the Korean Peninsula was further devastated, resulting in the worst forest conditions in Korea's recorded history. Erosion control structures that had been painstakingly established to prevent forest degradation were destroyed during the war, and secondary damage caused by heavy summer rainfall was also substantial. In this respect, the Korean War constituted both a major direct cause and a key underlying cause of forest degradation in South Korea during the 1950s.

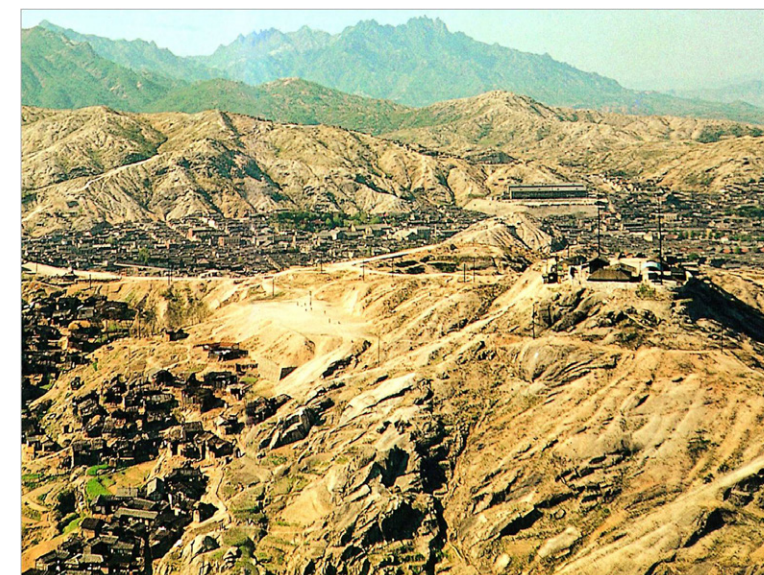


Figure 3. Forest Landscape around *Inwangsan* (*Inwang Mountain*) Immediately after the Korean War. Forests were so severely degraded that standing trees were difficult to find even in the mountains at the heart of Seoul, South Korea's capital.

Source: Photograph courtesy of the KFS.



### ③ Population Growth

In 1950, South Korea's population was 25.4% larger than in 1945. This surge was largely attributable to the inflow of migrants from North Korea and overseas. Rapid population growth during this period placed significant pressure on forest resources. Fuelwood and charcoal—the principal forms of household fuel—accounted for an overwhelming 90.5% of primary energy consumption in 1950 and still comprised 62.5% in 1960 (Korea Coal Corporation, 2001).

Between 1945 and 1950, the population increased by 4.53 million. Annual fuelwood and charcoal consumption by this additional population was estimated at 2.63 million cubic meters (Bae & Lee, 2006). Given that total growing stock in 1945 amounted to 74 million cubic meters, this estimate suggests that the additional annual fuelwood consumption alone approached the total annual increment of the forests at that time. In other words, population growth resulted in the removal of a volume of timber nearly equivalent to the forests' annual increment. In addition to increasing demand for fuelwood, population growth intensified demand for timber for housing construction and contributed to the expansion of illegal slash-and-burn cultivation and illegal logging.

Other conditions being equal, population growth increases timber demand and depletes forest resources. In the 1950s, when the national economy lacked the capacity to import essential goods and most timber demand had to be met domestically, population growth translated directly into forest depletion.

The adverse effects of rising fuelwood demand on forests during this period are vividly illustrated in the biography of Chung In-wook:

*"After liberation, nearly all household fuel depended on wood (firewood). Near Cheongnyangni Station in Seoul, a massive firewood collection yard was established to supply the city. To meet household needs, trucks were driven into virtually any mountain, where indiscriminate cutting took place before the timber was transported to major cities. As a result, forests began to deteriorate day by day. According to Forty Years of Korean Economic Policy, published by the Federation of Korean Industries, approximately 3.2 million overseas Koreans returned from Japan and Manchuria after liberation, and about 2.5 million refugees from the North migrated to the South from 1945 through the aftermath of the Korean War. This massive population movement further aggravated the fuel situation in South Korea. As large numbers of refugees from the North poured into major cities, demand for firewood continued to rise. However, with no alternative fuel available, there was no option other than to rely on firewood."*(Chung In-wook Biography Compilation Committee, 2000, pp. 120–121)

### ④ Poverty

From Korea's liberation in 1945 until the early 1960s, South Korea experienced a period of severe economic hardship and social instability. Although it was freed from Japanese colonial rule in 1945, the country faced severe economic disruption following the abrupt severance of economic ties with Japan. Political

turmoil and inconsistent economic policies in the immediate post-liberation period further compounded the crisis. The subsequent outbreak of the Korean War destroyed much of the remaining industrial capacity and transportation infrastructure, forcing most of the population into deep poverty. Immediately after liberation, the phrase "Let us burn icicles for firewood and drink cold water" became widely circulated (Seo, 2014, p. 91). The expression vividly conveyed the harsh conditions faced by rural households. Their circumstances were so desperate that, during the bitter winter months when fuel was exceedingly difficult to obtain, even the icicles hanging from the eaves seemed to resemble firewood. At the time, South Korea ranked among the poorest countries in the world.

Beginning in 1952, industrial production gradually recovered with the assistance of U.S. aid. However, throughout the 1950s, national efforts were largely devoted to postwar reconstruction. Although reconstruction was nearly complete by the end of the decade, declining U.S. aid constrained rapid economic improvement. In 1961, 39.2% of the national budget and 95.1% of national defense expenditures depended on U.S. assistance (Oh, 2010). Gross national income per capita was only USD 67 in 1953 and USD 80 in 1960 (Bank of Korea Economic Statistics System, National Accounts). For most citizens, daily life was defined by the struggle to secure sufficient food.

Economic conditions in rural areas were even more severe. Agricultural productivity stagnated throughout the 1960s. During the Second Five-Year Economic Development Plan (1967–1971), the national economy grew at an average annual rate of 11.4%. Over the same period, the secondary sector expanded by 20.9% and the tertiary sector by 13.2%, whereas the primary sector—including agriculture, forestry, and fisheries—grew by only 2% (Shin, 1975). Rural economies remained depressed, and the recurring "spring hunger season" (*borit-gogae*) persisted, leaving many farmers unable to secure sufficient food. Under such circumstances, the voluntary rehabilitation of degraded forest land was virtually impossible. On the contrary, illegal logging to secure household fuel continued, and forests were converted to agricultural land to secure food. Consequently, government policies aimed at reforesting degraded land and tending forest stands achieved limited success because of fragile public finances and pervasive poverty.

### ⑤ Weak Administrative Capacity

Following Korea's liberation in 1945, South Korea underwent a series of profound political and social upheavals, including the division of the Korean Peninsula, three years of U.S. military government (1945–1948), the Korean War (1950–1953), postwar reconstruction, the April 19 Revolution (1960), and the May 16 military coup (1961). In 1946, the U.S. military government organized nationwide tree-planting campaigns to promote public awareness of forest rehabilitation. During the Korean War, the Rhee Syngman administration enacted *the Temporary Forest Protection Act* (1951) to curb forest degradation. However, owing to insufficient public finances and weak administrative capacity, these measures had little practical effect.

In the immediate post-liberation period, the rigid regulatory framework and punitive enforcement previously imposed by the Japanese Government-General of Joseon had disappeared, while no effective authority had yet emerged to replace them. Under such conditions, it proved extremely difficult to prevent subsistence-driven illegal logging by ordinary people seeking household fuel. The principal driver of forest degradation was the harvesting of fuelwood for household energy use. Without viable alternative fuels, government proclamations that *"anyone cutting even a single piece of wood shall be severely punished"* (Chung In-wook Biography Compilation Committee, 2000, p. 205) were largely ineffective. Regulatory directives were not supported by sufficient enforcement capacity.

Moreover, excessive and illegal logging persisted until the 1960s, driven by collusion between public officials and timber merchants in the issuance of national forest harvesting permits (Lim, 2017; Kang, 2019). The extreme disorder following liberation, compounded by weak administrative control and postwar corruption, undermined the effective implementation of the government's forest protection policies.

### 2.3.2. Direct Causes

#### ① Household Fuelwood

The use of fuelwood for household energy in quantities exceeding annual forest growth was the most significant direct cause of forest degradation. From the seventeenth century onward, the widespread adoption of the *ondol* underfloor heating system in domestic architecture increased demand for fuelwood and, in turn, placed growing pressure on forest resources. Firewood and charcoal, the principal forms of household fuel, accounted for approximately 90.5% of the nation's primary energy consumption in 1950. It would not be an exaggeration to state that the overwhelming majority of energy consumed by the population was derived from timber harvested from forests.

In 1955, South Korea used approximately 10 million cubic meters of wood and branches as household fuel. The volume consumed for this purpose accounted for 17% of total growing stock in that year (Bae & Lee, 2006). Had this pattern of household fuel consumption continued unabated, South Korea's forests would have faced the prospect of complete denudation within a decade.

A contemporaneous article published in *The Dong-A Ilbo* vividly illustrates the extent to which rural fuelwood consumption contributed to forest degradation:

*"If we consider what factors have caused the devastation of our forests and why reforestation has failed to progress as it should, several causes may be identified: indiscriminate logging and the prevalence of illegal cutting, made possible by imprudent felling permits issued by the relevant authorities and by lax supervision and oversight; and, in addition, the absence of a viable fuel policy for rural communities. Among these, the lack of rural fuel measures must be acknowledged as the foremost cause of both forest devastation and the obstruction of reforestation efforts. This is by no*

*means a newly raised matter; it has been pointed out for many years. From this perspective, it becomes evident that resolving the rural fuel problem is not only the shortest path toward achieving reforestation but also the most fundamental task to be addressed."* (*The Dong-A Ilbo*, June 22, 1973; boldface added by the author)



Figure 4. Young Men Carrying Jige (A-Frame Backpack Frames) on Their Way to Gather Fuelwood.

From the seventeenth century through the 1960s, the household use of forest biomass was a primary cause of forest degradation. The expansion of the *ondol* system, accelerated by prolonged periods of unusually low temperatures beginning in the seventeenth century, extended nationwide by the nineteenth century, reaching even Jeju Island, a subtropical region.

Source: Photograph in the collection of the KFS (date and location unknown).

Policies designed to address household fuelwood use were closely intertwined with urban and rural development, as well as the energy and forestry sectors. Beginning in 1956, the government adopted a dual strategy: in urban areas, household fuelwood was to be replaced by coal briquettes, while in rural areas, fuelwood forests were to be established to ensure a stable supply of firewood.

In the energy sector, the Ministry of Commerce and Industry took the lead in increasing coal production and constructing railways to ensure the reliable transport of mined coal. In the forestry sector, the Ministry of Agriculture and Forestry spearheaded large-scale fuelwood forest establishment programs to curb indiscriminate harvesting of forest biomass and provide rural residents with a stable supply of firewood (KFS, 1997).

By 1970, urban areas had largely completed the transition to fossil fuels, with 94.8% of households having replaced fuelwood used for cooking with coal or other alternative fuels. In rural areas, however, reliance on forest biomass remained substantial: 38.5% of households in *eup* (town) areas and 85.6% of those in *myeon* (township) areas continued to use fuelwood for cooking (Bae & Lee, 2006). Whereas household fuelwood consumption had been a nationwide direct cause of forest degradation until the 1960s, from 1970 onward,



its impact was largely confined to rural areas.

## ② Illegal Logging

Illegal logging constituted a direct cause of forest degradation until the early 1970s. Its underlying drivers were closely associated with structural factors such as poverty, weak administrative capacity, and corruption, as well as with widespread reliance on fuelwood for household energy. People without forest land or financial means often engaged in subsistence-driven illegal logging in forests owned by others, whereas those seeking illicit profit carried out large-scale commercial logging in collusion with public officials (Lim, 2017).

Until the 1960s, some military personnel reportedly leased army trucks to logging operators under the guise of "welfare projects" and collected rental fees in return (National Institute of Korean History, 2014; Lim, 2017). From 1967 to 1972—immediately before the establishment of the Korea Forest Service (KFS) and the formulation of the First Ten-Year Forest Rehabilitation Plan—an annual average of approximately 3,000 cases of illegal logging were recorded, resulting in annual timber losses of 17,673 cubic meters. These figures, however, reflect only the incidents detected by supervisory authorities. Given the state's limited administrative capacity and the continued dependence on fuelwood before the 1970s, the actual scale of illegal logging was undoubtedly far greater than official statistics indicate. Indeed, the government itself acknowledged that, between 1953 and 1963, the estimated volume of unauthorized industrial timber production was 1.3 times greater than that of authorized logging (Cho, 1968).

In addition to subsistence-driven logging, a considerable number of organized offenders engaged in large-scale illegal logging for profit (Kang, 2020). In the summer of 1964, severe flooding struck the Suncheon area of Jeollanam-do. To secure timber for reconstruction, the government authorized the harvesting of 120 hectares of forest in the *Cheoneunsa* temple forest in *Jirisan*—an area heavily affected by pine caterpillar infestation—as well as in nearby infested areas (Shin, 2023). Exploiting this authorization, members of the National Assembly, forestry officials, and timber companies colluded in a large-scale illegal logging operation. Over two years, more than 3,000 truckloads of timber, exceeding 10,000 cubic meters, were removed from approximately 2,600 hectares of forest.

The scale of the so-called "*Jirisan* illegal logging incident" prompted the National Assembly to establish a special investigative committee. Public outrage was so intense that those implicated were derisively labeled "human pine caterpillars" (*The Kyunghyang Sinmun*, December 9, 1964). The incident served as a critical turning point, leading to the 1966 amendment of *the Act on the Control of Forest Products*, which strengthened penalties for illegal logging; *the enactment of the Act on the Arrangement and Resettlement of Slash-and-Burn Cultivators* in the same year; and, ultimately, the establishment of the KFS in 1967 (Lim, 2017).



Figure 5. Site of the 1964 *Jirisan* (Jiri Mountain) Illegal Logging Incident

The photograph on the left shows illegally harvested logs assembled after initial processing, while the photograph on the right shows a sawmill at the site producing boards and squared timber from the logs.

Source: The National Archives of Korea, archival footage (CEN0000410\_000000000004\_PF202205588860\_4k).

## ③ Slash-and-Burn Cultivation

Given that public policy is institutionalized through legislation, the early enactment of *the Act on the Arrangement and Resettlement of Slash-and-Burn Cultivators* (1966) suggests that slash-and-burn cultivation was recognized as a forest-related issue requiring national intervention. Under the Act, "slash-and-burn fields" were defined as "land used or previously used for agricultural cultivation after forests were set on fire or otherwise cleared without legal authorization."

When the NFRP was formulated in 1973, approximately 125,000 hectares of slash-and-burn fields remained, together with some 300,000 households engaged in such cultivation (KFS, 1980). Although this area represented only 1.3% of total forest area, slash-and-burn households accounted for an estimated 13–14% of all farm households. Slash-and-burn cultivation involved clearing forests by fire, burning all surface vegetation, including trees, and cultivating crops without fertilizer. If fires spread beyond control, they could easily develop into large-scale forest fires and cause extensive damage. Moreover, because cultivators frequently moved in search of new plots each year, the spatial extent of forest damage was difficult to predict. In this respect, slash-and-burn cultivation was a direct cause of forest degradation.

Although slash-and-burn practices contributed to forest degradation, slash-and-burn cultivators were generally perceived until the 1950s as impoverished farmers in need of government assistance (Shin, 2023). Because poverty was the root cause of slash-and-burn cultivation, few people chose this livelihood voluntarily. The shift toward viewing slash-and-burn cultivation as a "pressing issue" to be eradicated in the name of reforestation and anti-communism was closely linked to several events, including the 1964 *Jirisan* illegal logging incident, the 1968 infiltration of armed North Korean guerrillas into the Uljin–Samcheok region, and the completion of the *Gyeongbu* Expressway in 1970. Slash-and-burn cultivators were implicated in the large-scale illegal logging at *Jirisan* in 1964, and their isolated dwellings deep in mountainous areas raised concerns that they might serve as hideouts for North Korean guerrillas. With the opening of the *Gyeongbu* Expressway in 1970, slash-and-burn fields along the route became highly

visible. Consequently, slash-and-burn cultivation came to be regarded as a target for rapid elimination in the pursuit of national forest rehabilitation, modernization, and civilization (Shin, 2023).



**Figure 6. A Slash-and-Burn Dwelling.**  
Isolated dwellings in remote mountainous areas raised concerns that they might serve as hideouts for armed North Korean guerrillas.  
Source: Photograph in the collection of the KFS (date and location unknown).

3  
.

National Forest  
Rehabilitation  
Program  
(1973-1987)



Beginning in 1973, the government launched the long-term National Forest Rehabilitation Program (NFRP), which aimed to fully reforest 2.64 million hectares of degraded forest land—equivalent to 39% of the nation's total forest area—over a period of 20 years. Under the First Ten-Year Forest Rehabilitation Plan (First Plan), 1 million hectares were to be reforested, with the remaining area to be planted under the Second Ten-Year Forest Rehabilitation Plan (Second Plan).

The First Plan was originally designed as a ten-year program (1973–1982) but was completed in only six years after its reforestation targets were achieved ahead of schedule. The government also concluded the Second Plan (1979–1988) one year ahead of schedule, in 1987, and shifted the direction of forest policy in 1988 by launching the Forest Resource Development Plan (1988–1997). In this book, the First and Second Ten-Year Forest Rehabilitation Plans are collectively referred to as the NFRP.

## 3.1. Efforts before the Implementation of the NFRP

### 3.1.1. Forest Policy under the U.S. Military Government (1945–1948)

When U.S. forces arrived in September 1945 to disarm Japanese troops south of the 38th parallel, they found South Korea's forests severely degraded. Since the outbreak of the Sino-Japanese War in 1937, excessive logging in support of the war effort, together with widespread illegal logging and overharvesting during the chaotic period surrounding liberation, had accelerated forest degradation. In this context, the following assessment in a U.S. military government report was by no means an exaggeration: *"South Korea, south of the 38th parallel, does not produce sufficient timber and fuelwood to meet its basic needs. Unless integration with the North or large-scale import occurs, South Korea's timber resources will rapidly decline despite the reforestation efforts and controls"* (National Institute of Korean History, 2014).

Replacing the Japanese colonial administration following Japan's withdrawal from the Korean Peninsula, the U.S. military government assumed responsibility for forest policy in the southern region. It faced a series of urgent tasks: reorganizing the forest administration system left vacant by the collapse of the Japanese Government-General; filling administrative gaps left by departing Japanese officials; determining how to dispose of former Japanese public and private forest lands, or vested forest lands; controlling the indiscriminate exploitation of forest resources; and promoting reforestation and erosion control projects. However, the U.S. military government lacked sufficient translators and interpreters and was reportedly unable even to read reports submitted by local offices. Although it adopted various measures, including increasing the number of forestry officials and distributing coal briquettes and timber stocks, it later admitted that the "results were minimal" (National Institute of Korean History, 2014).

Among the forest policies implemented during the U.S. military government period, the 1946 tree-

planting event and the policy decisions concerning vested forest lands deserve particular attention. On April 1, 1946, senior officials of the U.S. Army Military Government in Korea, together with prominent Korean leaders, gathered in *the Donam-jeong* National Forest to hold a commemorative tree-planting ceremony celebrating Korea's liberation. On March 31, 1948, the Interim Government of South Korea enacted Law No. 10, designating April 5 as Arbor Day and declaring it a national holiday. Since then, commemorative tree-planting events marking Arbor Day have continued to be held to this day. In disposing of former Japanese public and private assets left behind after Korea's liberation in 1945, most vested forest lands were nationalized. At the time, the total area of vested forest lands amounted to 520,316 *jeongbo* (1 *jeongbo* = 0.99 ha), accounting for approximately 8% of South Korea's forest area. With the exception of forest land owned by the Oriental Development Company during the Japanese colonial period, vested forest lands were managed by the Forestry Division of the Bureau of Agriculture and Commerce under Ordinance No. 4 of March 8, 1946. The Korean War, which broke out in 1950, delayed the disposal of vested forest lands, and their nationalization was not officially decided until the forty-ninth State Council meeting in June 1953 (Bae et al., 2022). The nationalization of vested forest lands had the most significant impact on the ownership structure of South Korea's forests after liberation.

### 3.1.2. Forest Policy in the 1950s

Forest policy in the 1950s was profoundly shaped by Japan's colonial rule and the division of the Korean Peninsula. During the 35 years of colonial rule, the development of Korean forestry professionals, both in number and expertise, remained limited, resulting in a shortage of forestry capacity after liberation. Consequently, major forestry initiatives, including erosion control and reforestation, faced difficulties from the outset.

Amid a weak economy, the Rhee Syngman administration sought to promote forest rehabilitation by mobilizing members of *sanrim-gye* (village forestry associations), which consisted of local residents and forest owners. To this end, the government enacted *the Temporary Forest Protection Act* during the Korean War in 1951 and sought to strengthen the organizational and financial foundations of *sanrim-gye*. However, most *sanrim-gye* members were farmers with limited knowledge of forestry techniques. As a result, the outcomes of erosion control and reforestation efforts were poor (Bae et al., 2022). At the time, the country faced a severe shortage of forest science, forestry technology, and skilled personnel capable of applying them, all of which were essential to successful forest rehabilitation. One notable aspect of forest policy in the 1950s was the government's response to household fuelwood use. To address household fuelwood consumption—the primary cause of forest degradation—the government adopted two approaches. First, it prohibited the transport of fuelwood into the densely populated Seoul metropolitan area, where consumption was highest, and later

expanded the ban to 20 major cities between 1957 and 1958. The government also promoted a transition in urban household energy use from fuelwood to anthracite briquettes. Second, in rural areas, where replacing fuelwood with anthracite briquettes was difficult, the government established the Five-Year Plan for Fuelwood Forest Establishment in 1959 to ensure a stable supply of firewood. This policy direction continued until the fuelwood forest establishment program was abolished in 1977.

### 3.1.3. Forest Policy in the 1960s

It can be said that the government began to pursue forest rehabilitation systematically in 1962. *The Forest Ordinance* enacted by the Japanese colonial government in 1911 remained in force until it was repealed with the enactment of *the Forest Law* by the South Korean government in 1961. The government incorporated forest policy into the First Five-Year Economic Development Plan. In accordance with the objectives of *the Forest Law*, its goals were to: (1) protect and manage forests, (2) expand forest resources, (3) conserve national land, and (4) promote national economic development. Given forest conditions at the time, policy inevitably focused on the protection and management of forests. In particular, priority was given to establishing fuelwood forests to address rural fuel shortages and implementing erosion control projects to restore degraded land as fundamental measures for forest rehabilitation.

At the time, fuelwood shortages were extremely severe. Even azaleas and royal azaleas growing on barren hillsides were collected for household fuel. The government estimated that each of the 2.4 million farming households nationwide consumed five tons of firewood annually. To meet this demand, it planned to establish 1.2 million hectares of fuelwood forests, equivalent to 18% of the nation's total forest area. However, by 1965, only 237,000 hectares, approximately 20% of the target area, had been successfully established (KFS, 2006). The reasons for this shortfall included forest owners' preference for planting fruit trees rather than long-rotation timber species; the continued widespread collection of firewood, accompanied by limited public awareness of its illegality; and the indiscriminate planting of selected fast-growing species across all regions, regardless of local conditions.

In 1962, the government enacted *the Erosion Control Act* and launched an ambitious plan to rehabilitate 377,717 hectares of degraded forest land nationwide within one to two years, as part of broader efforts to expand food production and promote national land development. During this period, approximately 330,000 hectares underwent erosion control treatment. However, construction quality was often substandard, resulting in a need for substantial repairs later. Because most laborers, except technical specialists, were compensated with relief grain rather than wages, it was difficult to carry out the labor-intensive preparatory work properly. Erosion control projects were financed through the national budget, supplemented by aid funds and food assistance from the United Nations

Development Programme (UNDP) and the World Food Programme (WFP). Between 1967 and 1971, a total of KRW 4.8 billion was invested in erosion control projects in mountainous, coastal, and torrent-prone areas, accounting for approximately 20% of the total government forestry budget.

Economic development raised national income and enabled urban households to use anthracite coal for heating and cooking. In 1960, South Korea's energy supply consisted of 27.7% coal, 62.5% firewood and charcoal, 7.8% petroleum, and 2.0% hydropower and other sources. By 1970, the composition had shifted to 29.7% coal, 21.6% firewood and charcoal, 47.1% petroleum, and 1.6% hydropower and other sources (Korea Coal Corporation, 2001). At the national level, the share of petroleum increased substantially, while that of firewood and charcoal declined sharply. However, with respect to household fuel use, most residents in rural *myeon* (township) areas still relied heavily on firewood for cooking and heating. For this reason, in rural areas where an immediate transition to anthracite briquettes was difficult, the government continued to promote fuelwood forest establishment programs and implemented household energy-efficiency measures, such as improving traditional cooking stoves.

### 3.1.4. Enactment of Laws to Prevent Forest Degradation

Beginning with *the Temporary Forest Protection Act* of 1951, enacted in Busan when it served as the provisional capital during the Korean War, a series of laws was introduced, including *the Forest Products Control Act* (1961), *the Erosion Control Act* (1962), *the Temporary Act on the Promotion of National Greening* (1963), *the Act on the Appointment of Forest Protection Officers upon Petition* (1963), and *the Act on the Arrangement and Resettlement of Slash-and-Burn Cultivators* (1966). These laws were designed to address forest-related problems directly, including illegal logging, erosion, and slash-and-burn cultivation, and to secure the labor force and protection personnel needed for reforestation and forest conservation. At the time, forest degradation was diagnosed as being driven primarily by household fuelwood collection, illegal logging, and slash-and-burn cultivation. Accordingly, measures were introduced to strengthen enforcement by expanding the number of personnel and to promote erosion control and reforestation projects.

To protect and manage forests, the state could designate protected forest zones and restrict activities such as tree felling, the collection of forest products, mining, land reclamation, and grazing (Article 2 of *the Temporary Forest Protection Act*). The Minister of Agriculture and Forestry was also authorized to organize *sanrim-gye* (village forestry associations) comprising local residents and forest owners and to issue orders for reforestation and forest protection. Furthermore, *sanrim-gye* members could be assigned labor obligations for reforestation and forest protection (Article 4). These measures were temporary and regulation-centered, intended to protect forests that were rapidly deteriorating in the aftermath of the Korean War. By the end of 1959, 21,628 *sanrim-gye* had been organized, covering



86% of the nation's 25,020 *ri* (rural villages) and *dong* (urban neighborhoods) (Lee, 2025).

With the enactment of *the Forest Law* on December 27, 1961, *the Temporary Forest Protection Act* was repealed. The Park Chung-hee administration continued to grant legal status to *sanrim-gye* and exempted them from taxes and levies related to their operations and property. The stated purpose of establishing *sanrim-gye* was to achieve "*accurate and effective outcomes in national forest rehabilitation programs*" (Article 57), indicating that they were regarded as the primary implementing agents of forest rehabilitation programs. The jurisdiction of each *sanrim-gye* was limited to a single village or neighborhood, and no more than one *sanrim-gye* could be established within the same area. Their activities included: (1) autonomous forest protection and reforestation; (2) joint activities undertaken pursuant to legal orders and forest management plans; (3) tasks entrusted by members; and (4) other activities promoting members' common interests in forests. Membership consisted of forest owners within the jurisdiction and heads of households residing in the area, who were required to bear expenses or provide labor in accordance with the *sanrim-gye*'s bylaws. A *sanrim-gye* could be established with the consent of at least 30 promoters, the approval of forest owners holding at least half of the forest area within the jurisdiction, and the agreement of more than half of resident household heads, subject to authorization by the Mayor of Seoul or the relevant provincial governor.

When the KFS was transferred to the Ministry of Home Affairs in 1973, *sanrim-gye* served as the final implementing bodies for forest rehabilitation within the administrative system. At the beginning of the First Plan in 1973, there were 21,423 *sanrim-gye* with 2.35 million members (National Forestry Cooperative Federation, 2002). With the enactment of *the Forestry Cooperatives Act* in 1993, *sanrim-gye* ceased to have legal personality.

*The Forest Products Control Act* was likewise intended to prevent illegal logging by cracking down on illicit forest products. If illegal forest products were discovered during transport, not only the products themselves but also the vehicles, vessels, or equipment used to transport them—including portable sawmills used to process illicit timber—could be confiscated. Violations were punishable by imprisonment for up to three years or a fine of up to 300,000 *hwan*. The *hwan* was South Korea's monetary unit from 1953 to 1962. On June 10, 1962, under the government's Third Emergency Currency Reform, the currency unit was changed from the *hwan* to the won at an exchange rate of 10 *hwan* to 1 won. Given that a standard 80-kilogram sack of rice cost KRW (Korean Republic Won) 1,793 at the time (Moon, 1974), a fine of 300,000 *hwan* was equivalent to approximately 17 sacks of rice.

The government also introduced a logging permit system that limited annual harvesting to 10% of net annual increment; however, the policy proved largely ineffective. In September 1965, *the Enforcement Decree of the Act* was revised to raise the allowable annual harvest to 15% of annual growth. *The Erosion Control Act* and *the Act on the Arrangement and Resettlement of Slash-and-Burn Cultivators* reflected the state's efforts to lead the rehabilitation of degraded land and the elimination of slash-

and-burn cultivation.

*The Temporary Act on the Promotion of National Greening*, an emergency law reflecting the characteristics of an authoritarian government, was enacted to accelerate national reforestation and erosion control projects. It provided temporary measures in force from February 1, 1963, through the end of December 1964. Although the Act emphasized voluntary public participation in these projects, it also authorized the Mayor of Seoul, the Mayor of Busan, and provincial governors to mobilize labor through compulsory service. Those subject to mobilization included: (1) *sanrim-gye* members; (2) individuals born between January 1, 1930, and December 31, 1934, who were neither serving in nor had completed active military service; (3) public officials and students; (4) employees of public organizations; (5) employees of private enterprises; and (6) members of reconstruction committees at all levels. Although this was an extreme measure intended to address severe forest degradation in the 1960s, effective forest rehabilitation could not be achieved through orders for ostensibly "voluntary" compulsory labor alone.

Before the First Ten-Year National Forest Rehabilitation Plan (1973–1982), most forest rehabilitation-related laws and policies focused on specific problems, including illegal logging, slash-and-burn cultivation, and erosion. Although such measures could directly address individual problems, meaningful results were difficult to achieve unless the underlying causes of household reliance on fuelwood, illegal logging, and slash-and-burn cultivation were fundamentally addressed. The underlying causes of illegal logging and slash-and-burn cultivation lay in poverty: people could not endure the cold winter without cutting trees, nor could they sustain their livelihoods without slash-and-burn cultivation. It was therefore necessary not only to develop alternative household fuels to replace fuelwood but also to implement resettlement policies that would enable slash-and-burn cultivators to secure their livelihoods and relocate to other areas.

Moreover, the government's approach to forest rehabilitation relied heavily on command-and-control measures, with few incentives to encourage the participation of residents and forest owners. As a result, forest rehabilitation fell short of the anticipated outcomes. New policies were therefore needed to move beyond command-and-control approaches and to engage residents and forest owners effectively in the NFRP.

## 3.2. The First 10-Year National Forest Rehabilitation Plan

### 3.2.1. Background

A turning point in South Korea's post-liberation forest policy came with the formulation of the First Ten-Year National Forest Rehabilitation Plan (First Plan). Even before the First Plan, approximately 780,000 hectares of fuelwood forests had been established, and erosion control projects had been undertaken to rehabilitate denuded land. Efforts were also made to eliminate slash-and-burn fields scattered across the country. However, these initiatives did not produce significant results. A 1972 survey of fuelwood forests established between 1959 and 1967, covering 784,239 hectares, found that 47% of the plantations had failed (Korea Forest Policy Research Society, 1975).

Projects to rehabilitate degraded land also faced serious constraints. Limited budgets and shortages of rural fuelwood raised concerns that seedlings planted at erosion control sites might be harvested for household fuel (Korea Forest Policy Research Society, 1975). In 1966, *the Act on the Arrangement and Resettlement of Slash-and-Burn Cultivators* was enacted, and efforts were made, particularly in Gangwon-do, to eliminate slash-and-burn cultivation. However, even the extent and conditions of slash-and-burn cultivation had not been clearly identified (KFS, 1980).

By the early 1970s, rapid economic growth had accelerated the development of the secondary and tertiary sectors. In contrast, despite considerable efforts, denuded forests showed little improvement. An effective forest rehabilitation policy was urgently needed to resolve the rural fuelwood problem, which had been identified as a principal cause of forest degradation; to restore devastated forests rapidly; and to prevent further deterioration. The First Plan, formulated in 1973, emerged from these historical and socioeconomic conditions.

The years 1972 and 1973 were among the most turbulent periods not only in Korean political history but also in the history of forest policy. Following the presidential emergency declaration, known as the *Yushin* Declaration, on October 17, 1972, the National Assembly was dissolved and political party activities were suspended. Under this state of emergency, legislation was enacted by the Emergency State Council rather than the National Assembly for approximately five months, until March 11, 1973. On December 30, 1972, *the Forest Development Act* was enacted, providing the legal basis for establishing the Forest Development Corporation. In February 1973, *the Act on Standing Timber* was enacted, and *the Forest Law* was amended. On March 3 of the same year, an amendment to *the Government Organization Act* took effect, transferring the KFS from the Ministry of Agriculture and Forestry to the Ministry of Home Affairs. Just two days later, on March 5—less than three months after its enactment—*the Forest Development Act* was amended to remove all provisions concerning the establishment of the Forest Development Corporation. Once these institutional measures had been completed, the First Plan was announced on March 10. The plan was subsequently revised in accordance with a decision of the State Council on March 27, and the final version was completed on June 21.

### 3.2.2. Formulation Process and Objectives of the First Plan

#### ① Formulation Process

The outline of the First Plan was presented on January 12, 1973, at President Park Chung-hee's New Year press conference. In his address, he stated: "*In order to green the entire national territory, we will establish a ten-year plan so that, by the early 1980s, our country will be completely covered with green mountains and rivers. We must create a beautiful and livable land*" (National Archives of Korea, CEB0000207). Through these remarks, the public first learned that a ten-year national greening plan would be formulated.

During the two-hour-and-seventeen-minute press conference, President Park presented a blueprint for the Republic of Korea under the *Yushin* regime a decade later. In addition to economic goals, such as achieving USD 10 billion in exports and raising per capita income to USD 1,000 by the early 1980s, he proposed greening the entire national territory to create a beautiful and livable country. Forest rehabilitation within ten years thus became one of the *Yushin* regime's key national policy priorities.

On March 10, 1973, the Ministry of Home Affairs officially announced the draft First Plan in the Situation Room of the Public Security Bureau, a venue closely associated with police authority. Internally designated "Forestry No. 1" by the Ministry, the plan set out 31 major policy initiatives under the overarching objective of "Greening the Entire National Territory" (see Table 1). These initiatives ranged from measures directly related to forest rehabilitation—including rural fuelwood policies, the establishment of a "plant-first, cut-later" principle, strengthened compulsory reforestation, and erosion control and greening projects—to broader supporting measures, including nature conservation, forest pest control, forest fire prevention, restrictions on entry into mountainous areas, cemetery policies in mountain areas, timber supply and demand planning, the expansion of the Forestry Experiment Station (now the National Institute of Forest Science), and improvements in forest statistics.

On March 16, 1973, to advance the implementation of the First Plan, the Ministry convened mayors, county heads, and police chiefs from across the country for a nationwide training session for officials responsible for forest rehabilitation, chaired by the Minister of Home Affairs (Kim, 1973). However, at the State Council meeting on March 27, a decision was made to revise the draft First Plan. Controversy arose over several measures, including a proposed requirement that even forest owners obtain permits to enter their own forests; potential difficulties in using thinned timber as fuelwood; and culturally insensitive measures, such as encouraging temples to install Japanese-style straw-mat heated rooms. On the morning of March 28, the day after the State Council meeting, media reports described the draft First Plan as having been "scrapped," prompting the Vice Minister of Culture and Public Information to clarify that it was a "readjustment," not a cancellation (*The Chosun Ilbo*, March 29, 1973).



The principal reason for the State Council's intervention was that the draft First Plan lacked sufficient measures to address fuel shortages directly affecting the public's daily lives. Although the draft included various initiatives involving other ministries, it had been prepared without adequate prior consultation or coordination. Contemporary reporting noted that the initial plan had not undergone sufficient interministerial consultation and reflected the forceful administrative style associated with Minister Kim Hyun-ok. A contemporary report provides a vivid account of the State Council meeting: the Ministry of Commerce and Industry acknowledged that anthracite production was falling short of the five-year supply-and-demand plan established by the Ministry of Home Affairs and that mine-timber supplies were also disrupted; the Ministry of Transportation indicated that transporting coal would be difficult; the Economic Planning Board expressed concern that supply shortages would drive up briquette prices; the Ministry of Agriculture and Forestry worried that constraints on pasture development would lead to lower cattle prices; and the Ministry of Health and Social Affairs raised concerns that restrictions on mountain access and problems related to grave sites would increase the price of traditional medicines by disrupting the procurement of medicinal herbs (*The Chosun Ilbo*, March 29, 1973).

The First Plan was closely linked to energy supply and pricing, coal transportation, and mine-timber provision, while also carrying broader socioeconomic implications, such as potential declines in cattle prices arising from constraints on pasture development and rising prices of forest-gathered medicinal herbs resulting from restrictions on access to mountainous areas. Because the Ministry of Home Affairs had attempted to submit the Plan to the State Council without sufficient prior coordination, it was ultimately decided that the draft should be readjusted.

Nevertheless, the revised version announced on June 21, 1973, retained the overall framework of the original draft, with only limited modifications. This continuity reflected the prevailing perception that forest degradation was such a serious national problem that, aside from clearly problematic measures, a certain degree of regulation was unavoidable (*The Dong-A Ilbo*, June 22, 1973; *The Seoul Shinmun*, June 22, 1973).

President Park's commemorative address at the twenty-eighth Arbor Day ceremony on April 5, 1973, confirmed that the First Plan's basic direction would remain unchanged. Addressing farmers who wished to use thinned timber as fuelwood, he acknowledged that, in principle, some trees could be cut for that purpose. However, he explained that previous attempts to permit logging had resulted in collusion between villagers and forestry officials, leading to the felling of valuable trees rather than those suitable for thinning (*The Sanrim*, April 1973). He emphasized: *"There will be absolutely no change in the basic plan and policy to make the mountains of this country completely green, at least to the level of those in other countries, within the next ten years. This must be accomplished"* (*The Sanrim*, April 1973).

Table 1. Comparison between the Draft and Final Versions of the First Plan

| Draft Version (10 March 1973) |                                                                                       | Final Version (21 June 1973) |                                 |
|-------------------------------|---------------------------------------------------------------------------------------|------------------------------|---------------------------------|
| NO.                           | Key policy measures                                                                   | Remarks                      | Contents                        |
| 1                             | Nature conservation                                                                   | Maintained                   |                                 |
| 2                             | Forest pest and disease control measures                                              | Maintained                   |                                 |
| 3                             | Protection, propagation, and release of wildlife                                      | Maintained                   |                                 |
| 4                             | Soil fertility enhancement measures                                                   | Maintained                   |                                 |
| 5                             | Mountain entry restriction                                                            | Revised                      | Easing of restriction           |
| 6                             | Forest fire prevention and early warning system                                       | Maintained                   |                                 |
| 7                             | Rural fuel supply measures                                                            | Revised                      | Easing of restriction           |
| 8                             | Establishment of the “plant-first, cut-later” principle                               | Maintained                   |                                 |
| 9                             | Review of the timber supply and demand plan                                           | Maintained                   |                                 |
| 10                            | Review of the timber distribution structure                                           | Revised                      | Easing of restriction           |
| 11                            | Improvement of chestnut tree protection zones                                         | Deleted                      |                                 |
| 12                            | Seedling survival verification system                                                 | Maintained                   |                                 |
| 13                            | Allocation of forest management responsibility                                        | Maintained                   |                                 |
| 14                            | Measures on mountain burial sites                                                     | Maintained                   |                                 |
| 15                            | Implementation of the unified forest owner registration system and forest card system | Deleted                      |                                 |
| 16                            | Strengthening of mandatory reforestation                                              | Maintained                   |                                 |
| 17                            | Improvement of the forest financing system                                            | Maintained                   |                                 |
| 18                            | Promotion of forest policies directly linked to local income                          | Revised                      | Village reforestation           |
| 19                            | Development of new tree varieties                                                     | Maintained                   |                                 |
| 20                            | Erosion control and reforestation                                                     | Maintained                   |                                 |
| 21                            | Propagation and development of bird species                                           | Maintained                   |                                 |
| 22                            | Economic planning for forestland                                                      | Maintained                   |                                 |
| 23                            | Distribution of site-species matching assessment devices                              | Maintained                   |                                 |
| 24                            | Preparation of tree inventory records                                                 | Maintained                   |                                 |
| 25                            | Nationwide public education on the “Green Yushin” initiative                          | Revised                      | Removal of the “Green Yushin”   |
| 26                            | Expansion of the functions of the Forestry Experiment Station                         | Maintained                   |                                 |
| 27                            | Improvement of the operation of forest district offices                               | Maintained                   |                                 |
| 28                            | Recruitment and utilization of reforestation technicians                              | Maintained                   |                                 |
| 29                            | Strengthening of the frontline forest administrative                                  | Maintained                   |                                 |
| 30                            | Improvement of forest statistics                                                      | Maintained                   |                                 |
| 31                            | Strict enforcement of forest-related regulatory laws                                  | Maintained                   |                                 |
| 32                            |                                                                                       | Added                        | National tree-planting campaign |

Source: Ministry of Home Affairs (1973b; 1973c).

The revised First Plan incorporated the State Council's recommendations by: (1) completely

prohibiting the collection of fallen leaves to improve soil fertility; (2) replacing the originally proposed blanket ban on entry into mountainous areas with the administrative designation of restricted areas by mayors and county heads; (3) permitting thinning in reforested areas; and (4) postponing the timber-substitution plan for two years while revising the fuel-substitution plan. Of the 31 initiatives, the proposal to designate chestnut tree protection zones was deleted; responsibility for mountain cemetery policies was transferred to the Ministry of Health and Social Affairs; and measures such as improvements to fuel facilities and the installation of straw-mat rooms in temples were downgraded to administrative guidance (*The Seoul Shinmun*, June 22, 1973).

In this process, it is worth noting that the government explored two fundamental approaches to addressing the urgent forest problem in 1972. The first regarded reforestation as part of long-term forest management and sought to promote forest rehabilitation through the application of forestry expertise. Exemplified by the proposed Forest Development Corporation, this approach reflected a management-oriented forestry policy. The second regarded reforestation as a means of restoring denuded forests and sought to achieve rapid forest rehabilitation through the use of administrative authority and mass mobilization. This approach reflected an administratively driven forestry policy.

Although both approaches sought to place public institutions at the center of forest resource development, they differed in their objectives and implementation mechanisms. The former envisioned separating forest ownership from management rights in designated development areas, with ownership retained by forest owners and management rights entrusted to the Forest Development Corporation. The latter emphasized rapid nationwide greening through a state-led mass mobilization campaign. Although the government initially pursued both approaches, the political upheaval of the *Yushin* regime, combined with fiscal and time constraints, ultimately led to the selection of the latter. In this shift, President Park's strong determination to achieve rapid forest rehabilitation played a decisive role (Bae, 2007, 2026).

## ② Objectives of the First Plan

The First Plan presented its direction, objectives, and implementation measures in four main points. First, to transform forest resources—covering 67% of the national territory—into income-generating assets, it sought to mobilize the entire nation to participate in forest rehabilitation and greening efforts as an expression of patriotic commitment. Second, of the 2.64 million hectares of forest land requiring reforestation, equivalent to 39% of the total forest area, one million hectares were to be reforested during the First Plan, with the remainder to be completed under the Second Plan to achieve rapid nationwide greening. Third, by using forests as a source of income, the plan aimed to make forest-based income a major source of livelihood in every village and to establish

new economic zones in mountainous areas. Fourth, it called for the unified mobilization of all resident organizations, local administrative bodies, police organizations, forestry personnel, and forestry schools for mountain-area development.

A closer examination of the second objective shows that the plan clearly established a quantitative target of reforesting one million hectares during the First Plan period, dividing the 2.64 million hectares requiring reforestation into first- and second-stage targets. To achieve this goal, it proposed a nationwide tree-planting movement and the mobilization of available administrative, police, and technical capacities. In addition, it set out a strategic direction to increase incomes in rural and mountain villages by establishing mountain-based economic zones. Among these four points, the core of the First Plan lay in setting a concrete target of reforesting one million hectares and adopting nationwide tree planting and the mobilization of administrative resources as its principal implementation strategies. The establishment of mountain economic zones clarified that the ultimate objective of the NFRP was to contribute to the national economy, a goal that would later become central to the Second Plan.

Whereas the draft version listed 31 policy measures in parallel, the final First Plan reorganized them into five categories: (1) absolute forest protection policies (10 items); (2) timber-saving measures (5 items); (3) mountain economic plans (4 items); (4) national reforestation policies (5 items); and (5) forest administration reform (7 items).

Under the final plan, the entry permit system for access to mountainous areas, which had been included in the draft, was abolished. Instead, administrative control was strengthened over legally restricted forests, including protected forests, seed stands, experimental forests, school forests, and land within five years of reforestation or erosion control projects, while other areas were placed under a system of voluntary access control. Rural fuel policy was also revised. The previously limited twice-yearly collection of household fuelwood was relaxed to allow the use of by-products from forestry operations, including regeneration cutting, pruning, thinning, and brush clearing. In addition, responsibility for supplying fossil fuels to rural areas was entrusted to the Ministry of Commerce and Industry, thereby expanding alternative fuel sources beyond forest biomass.

One particularly noteworthy development was the introduction of the "National Tree-Planting Movement," which had not been included in the earlier draft of the First Plan. This initiative was based on the recognition that restoring denuded forests required participation not only from the government and forest owners but also from society as a whole, including villages, workplaces, households, organizations, institutions, and schools.

In principle, community reforestation projects were to be carried out within a two-kilometer radius of each village, while institutions were assigned responsibility for reforestation. Schools and forest owners were required to reforest their own land. Companies that owned forests were obligated to undertake reforestation, whereas those without forest ownership were encouraged to participate. This nationwide tree-planting policy reflected the government's determination to mobilize both central and local



administrative capacities to restore degraded forests within a short period.

3.2.3. Implementation Measures

① Transfer of the KFS to the Ministry of Home Affairs

On March 3, 1973, the government enacted an amendment to *the Government Organization Act*, transferring the Korea Forest Service (KFS) from the Ministry of Agriculture and Forestry to the Ministry of Home Affairs. As stated in the rationale for the amendment, the purpose of this transfer was to "carry out forest administration **more efficiently**" (emphasis added). In practice, this "efficient implementation" entailed mobilizing the Ministry of Home Affairs' strong administrative and police capacity. In other words, the government intended to use central and local administrative organizations at the provincial and municipal and county levels, as well as police forces, to achieve rapid forest rehabilitation within a short period.

Regarding the immediate reason for transferring the KFS to the Ministry of Home Affairs, the then Administrator of the KFS later recalled:

*"In order to vigorously and efficiently promote complex and diverse forest policies and achieve rapid national reforestation, [the KFS] was transferred as an external agency under the Minister of Home Affairs, who oversaw the Saemaul Undong (New Village Movement), local administration, and police, thereby concentrating all local administrative and public security capacities on forest rehabilitation. A trinity system was established in which provincial governors and mayors and county heads were responsible for comprehensive forest protection and management, police chiefs for enforcement and crackdowns, and forestry officials for technical guidance."* (Son, 1999)

Based on the President's strong commitment to forest rehabilitation, the administrative capacity of the Ministry of Home Affairs provided an effective means of pursuing the clear quantitative target of reforesting one million hectares during the First Plan period. By transferring the KFS to the Ministry of Home Affairs, the government secured the support of local administrations and police forces and formulated the First Plan to institutionalize this support.

From this perspective, the legal basis for establishing the Forest Development Corporation under *the Forest Development Act* effectively ceased to have practical relevance. By grouping all denuded forests into administrative units without distinguishing between general and special development areas and assigning national and local governments the roles originally intended for the Corporation, the First Plan rendered the proposed Corporation largely nominal.

As illustrated in Figure 7, responsibility for forest rehabilitation was vertically integrated from the central government, specifically the Ministry of Home Affairs, through provinces and counties

to townships. Forest protection responsibilities were assigned hierarchically along the chain of command, from the national police bureau under the Ministry of Home Affairs to provincial police bureaus, county police stations, and township police substations. Technical responsibilities followed a similar structure, with roles distributed from the central level—including the KFS and the Central Forestry Experiment Station under the KFS—to provincial forestry bureaus and county forestry divisions.

In addition, an administrative system was established in which central and local governments, including provinces, counties, and townships, were responsible for the management, protection, and technical oversight of forests within their jurisdictions. To support this structure, the KFS was transferred to the Ministry of Home Affairs, and frontline forestry administrative bodies were newly established or strengthened, including provincial forestry bureaus, provincial forestry experiment stations, provincial erosion control offices, and county forestry divisions. Particular emphasis was placed on the role of village-level *sanrim-gye*, where forest rehabilitation was actually carried out. These *sanrim-gye* served as the principal implementing agents of the NFRP. This issue is discussed in greater detail in section (3).

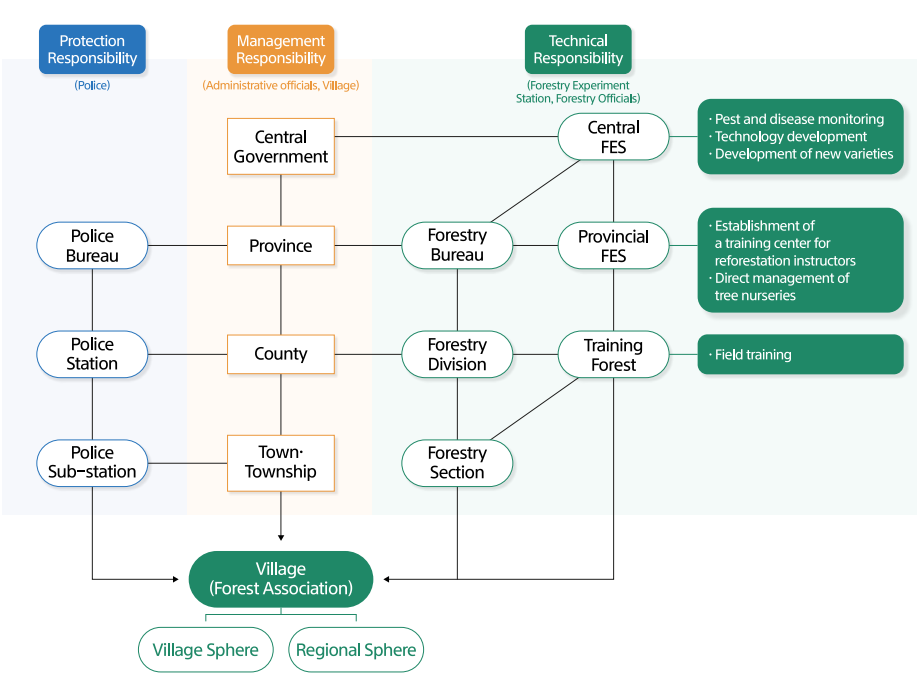


Figure 7. National Forest Rehabilitation System within the Ministry of Home Affairs

Source: Ministry of Home Affairs (1973).

The transfer of the KFS to the Ministry of Home Affairs had two important implications. First, it elevated forest rehabilitation to a top national policy priority. President Park Chung-hee regarded the *Saemaul Undong* as a central national agenda, and the KFS's affiliation with the Ministry, which oversaw the movement, increased the likelihood that forest rehabilitation would be addressed at meetings presided over by the President. As a result, the NFRP gained a more favorable position in the allocation of financial resources and access to a broader range of policy instruments. Crucially, the successful implementation of the First Plan required its integration into the Five-Year Economic Development Plan, together with adequate budgetary support. In practice, the First Plan was incorporated into the Five-Year Economic Development Plan and secured the necessary funding (Korean Association for Public Administration, 2009).

Second, the transfer significantly enhanced policy implementation by aligning the planning and execution of forest policy. After the KFS was transferred to the Ministry of Home Affairs, forest protection was strengthened through the mobilization of local administrative organizations and police forces. In practice, provincial governors and county heads bore overall responsibility for forest protection and management; police chiefs were responsible for enforcement and crackdowns; and forestry officials provided technical guidance. As a result, compared with its previous placement under the Ministry of Agriculture and Forestry, the KFS was able to exercise more effective and substantive administrative authority.

② Sustained Public Investment in Forestry

From a fiscal perspective, the most significant factor behind the success of the First Plan was the substantial growth in the government budget allocated to the forestry sector during its implementation. The KFS budget, which stood at KRW 6.3 billion in 1972, surpassed KRW 10 billion in 1973 and increased further to KRW 27.3 billion by 1978.

In particular, the general account budget, which had been KRW 742 million in 1972, increased nearly thirtyfold to KRW 22.6 billion in 1978. Expenditures under the Special Account for National Forest Management also rose from KRW 1.3 billion in 1972 to KRW 4.3 billion in 1978. Loan support through the Fiscal Investment and Loan Special Account continued until 1973, when the Forest Development Fund was established, but was discontinued from 1974 onward. Meanwhile, support from the Special Account for Economic Development increased from KRW 3.7 billion in 1972 to KRW 9.7 billion in 1976 before being terminated in 1977 (Korean Association for Public Administration, 2009).

The government consistently invested public funds in the NFRP. When the KFS was established in 1967, the forestry budget amounted to KRW 2.1 billion, accounting for 0.7% of the total government budget. By 1973, when the First Plan began, the forestry budget had exceeded KRW 10 billion and represented more than 1% of total government expenditure. During the First Plan period (1973–1978), the forestry budget increased 2.7-fold. However, because the overall government budget grew by 5.3

times during the same period (MSF & KDI, 2011), the increase in forestry spending was not exceptional and largely reflected the overall expansion of public expenditure associated with rapid economic growth.

However, after the KFS was transferred to the Ministry of Home Affairs and linked to the *Saemaul Undong*, it was able to secure additional financial resources. When the budgets allocated under the *Saemaul Undong* to reforestation, post-reforestation management, erosion control, nursery operations, traditional stove improvement, household fuelwood supply, and pest control are included, the forest-related budget increased 7.5-fold between 1973 and 1978, exceeding the 5.3-fold growth in the overall government budget. In other words, by transferring the KFS to the Ministry of Home Affairs and integrating reforestation into the *Saemaul Undong*, one of the government's highest national priorities, the government was able to expand available funding. The continued allocation of public funds during this period provided the financial basis needed to implement planned programs, including seedling production, reforestation, forest tending, and erosion control.

The independently managed Special Account for National Forest Management operated on a self-supporting basis. By selling high-value state forest land near urban areas and purchasing larger tracts of lower-cost forest land in remote areas, it helped secure forestry finances and expand the area of state forests. However, this approach also had the unintended effect of reducing state forests near cities, thereby weakening the foundation for urban forest policies that have gained importance in recent years. In 1993, in an effort to improve fiscal efficiency, the Special Account for National Forest Management was integrated into the Special Account for National Property Management and subsequently abolished (Lee et al., 1993).

Table 2. Central Government Budget for the Forestry Sector (1972–1978) (Unit: million won)

| Year | Korea Forest Service (A) |                 |                                                |                                          |                                          | Saemaul Undong (B) | Total (A+B) |
|------|--------------------------|-----------------|------------------------------------------------|------------------------------------------|------------------------------------------|--------------------|-------------|
|      | Sub-total                | General Account | Special Account for National Forest Management | Fiscal Investment & Loan Special Account | Special Account for Economic Development |                    |             |
| 1972 | 6,275                    | 742             | 1,556                                          | 300                                      | 3,677                                    | -                  | 6,275       |
| 1973 | 10,231                   | 4,595           | 1,527                                          | 151                                      | 3,958                                    | 1,429              | 11,660      |
| 1974 | 13,745                   | 5,932           | 2,612                                          | -                                        | 5,201                                    | 7,731              | 21,476      |
| 1975 | 19,031                   | 7,640           | 4,642                                          | -                                        | 6,749                                    | 36,014             | 55,045      |
| 1976 | 25,088                   | 11,001          | 4,388                                          | -                                        | 9,699                                    | 14,741             | 39,829      |
| 1977 | 24,353                   | 20,232          | 4,121                                          | -                                        | -                                        | 18,450             | 42,803      |
| 1978 | 27,319                   | 22,596          | 4,723                                          | -                                        | -                                        | 60,431             | 87,750      |

Source: KFS budget data from the Korean Association for Public Administration (2009) and *Saemaul Undong* budget data from Lee (2013).



### ③ Public-Private Collaboration between the Government and *Sanrim-gye*

The "village forestry cooperative" (*sanrim-gye*)—the lowest-level implementing entity in the forest rehabilitation system—was a cooperative organization established at the *ri* and *dong* levels and composed of forest owners and local residents (Figure 7). Established nationwide under the *Temporary Forest Protection Act* of 1951, these cooperatives later formed part of the forestry cooperative system, together with forestry cooperatives and the Federation of Forestry Cooperatives—now the National Forestry Cooperative Federation—following the enactment of the *Forest Law* in 1961.

To accomplish nationwide forest rehabilitation, the government required private-sector participation. In 1951, national forests in South Korea accounted for only 19.2% of total forest area, while non-national forests—including municipal forests owned by local governments and private forests—accounted for 80.8%. Growing stock per hectare in non-national forests was only 3.5 m<sup>3</sup> in 1952, equivalent to merely 30% of that in national forests. By the end of 1973, this figure had increased to 6.5 m<sup>3</sup> per hectare, but it remained far below the 28.7 m<sup>3</sup> recorded in national forests. One major reason was that approximately 60% of private forest land was owned by small-scale forest owners holding less than 10 hectares (Korea Forest Policy Research Society, 1975). Many of these owners had acquired forest land for agricultural use, burial sites, or through inheritance and lacked the economic capacity, technical expertise, and motivation to establish and manage forests on degraded land.

For these reasons, the government found it difficult to expect voluntary forest rehabilitation by private forest owners and instead selected *sanrim-gye* as the primary agents of reforestation. This was possible because cooperative organizations for forest management already existed at the village level. Although *sanrim-gye* were institutionalized in 1951, rural communities in South Korea had a history of voluntary village-level forest management organizations, including *songgye* (pine associations), which emerged during the late *Joseon* period, as well as *aerimgye* (forest protection associations), *sillimgye* (afforestation associations), and associations of state forest leaseholders organized under Japanese colonial forest policies (Choi, 2025; Bae et al., 2021). Nevertheless, the establishment of *sanrim-gye* alone did not immediately produce successful forest rehabilitation outcomes.

Some cooperatives, led by local leaders with a strong conservation ethic, used government-supported erosion control projects and national forest afforestation lease programs to restore degraded village forests. They also met village fuel needs through thinning operations and fuelwood plantations. However, such cases were relatively rare. In the 1960s, for example, nearly 70% of *sanrim-gye* in Gyeongsangnam-do were nominal or inactive, and the government was widely criticized for imposing membership obligations and cooperative fees on rural households already struggling to meet their basic needs (Kang, 2020).

Since the 1950s, the government had consistently sought to mobilize *sanrim-gye* as key actors in forest rehabilitation. Given its limited fiscal capacity, it adopted policies intended to encourage participation by granting rights to legally use forest products for fuel and agricultural purposes or by transferring national forest land. The share-contract system, stipulated in the *Temporary Forest Protection Act* of 1951, required forest owners to fulfill afforestation and forest protection obligations or comply with silvicultural orders. If an owner failed to do so, the *sanrim-gye* undertook afforestation on the owner's behalf, providing the necessary seedlings and fuel free of charge. Upon completion, the cooperative could claim the associated costs from the owner. If the owner was unable to pay, a compulsory share contract was established to divide future forest revenues between the owner and the cooperative, thereby compensating the cooperative for its labor.

The forest owner's share of revenues, set at 40% in the 1950s, gradually declined to 20% under the *1962 Enforcement Rules of the Forest Law* and to 10% by 1973, thereby increasing the share allocated to *sanrim-gye*. A significant proportion of these profit-sharing contracts was used to establish fuelwood forests.

Furthermore, when *sanrim-gye* successfully afforested degraded national forest land within their villages under afforestation lease permits, they were granted not only exclusive use rights to the planted trees but also ownership of the afforested land itself. These policies stimulated local interest and participation, leading to numerous cases in which *sanrim-gye* were newly established, reorganized, or revitalized through afforestation lease projects (Park, 2026).

By the end of 1967, the total area of national forest land leased to *sanrim-gye* for afforestation had reached 132,551 hectares. This figure excludes areas in which leases were not renewed upon expiration or were revoked because of poor management. Beginning in 1967, the KFS began to transfer successfully afforested leased land free of charge. By November 1973, a total of 5,032 hectares had been transferred to 63 *sanrim-gye* (National Forestry Cooperative Federation, 1982). However, as national forest management policy shifted, new afforestation leases were prohibited from 1970 onward, and the transfer of leased land was discontinued in 1980. Individuals and cooperatives that had obtained leases in anticipation of eventual ownership subsequently objected to these changes. In 1972, however, the Supreme Court ruled that decisions regarding free transfers fell within the discretionary authority of the Administrator of the KFS. In 1980, a policy was introduced to convert afforestation leases into profit-sharing contracts, granting those who had obtained leases before 1970 the right to receive the full share of revenues generated from the afforested land (Bae et al., 2001).

Within this broader context, the integration of *sanrim-gye* with the *Saemaul Undong* in 1972 helped secure political attention for forest rehabilitation and facilitated administrative and budgetary support. At the village level, forest-related projects were adopted as key agenda items

for improving living conditions and increasing income, enabling more comprehensive discussion and planning. The heads of *sanrim-gye* were also required to serve on village development committees and, in many cases, concurrently served as *Saemaul* leaders or village heads. Activities such as village nurseries, seed collection, and village-level erosion control projects were supported as combined income-generating projects, contributing to increased household income. At the same time, these projects helped establish independent financial resources to sustain village-level forestry activities. Moreover, revenues generated through collective labor by *sanrim-gye* members were accumulated as village funds and used to finance *Saemaul* projects (Park, 2026).

In line with this institutional integration, forestry cooperative programs to foster *sanrim-gye* were also reoriented to strengthen extension systems and concentrate advisory capacity on exemplary *Saemaul* villages, thereby achieving closer alignment with the *Saemaul Undong* (*The Sanrim*, March 1972). In addition, the evaluation and grading system for *sanrim-gye* was reorganized into three stages—basic, self-help, and self-reliant—mirroring the *Saemaul* framework. This tiered system enabled the more efficient allocation of limited extension resources through differentiated support.

Table 3 outlines qualitative criteria for assessing the capacity of *sanrim-gye*, together with examples of appropriate guidance activities for each stage (National Forestry Cooperative Federation, 1982). This approach aligns with the "stepwise approach," widely recognized as a key success factor of the *Saemaul Undong* (FAO, 1982). At the basic stage, emphasis was placed on building organizational foundations through technical and awareness training, leadership development, forest protection, and the management of profit-share forests and leased state forests. At the self-help stage, cooperatives were encouraged to establish fuelwood forests, produce forest by-products, accumulate funds through collective labor contributions, and develop cooperative forests, thereby laying the foundation for operational self-sufficiency. At the self-reliant stage, the focus shifted to advanced technical training and income-generating activities, including the expansion of forest-product processing facilities, the acquisition of forestry equipment, and the implementation of *Saemaul* nursery projects.

Table 3. Strategies for Guidance and Capacity Building by Types of *Saemaul Sanrim-gye*

| Type                              | Diagnosis and Development Approach                                                                                                                                                  | Examples of Guidance Activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic<br><i>Sanrim-gye</i>        | Cooperatives at an early stage of organizational formation, with weak motivation and low levels of activity, require basic awareness-raising guidance and enabling conditions       | <ul style="list-style-type: none"><li>• Guidance for organizing off-season training and discussion meetings</li><li>• Circulating forestry technical manuals among members</li><li>• Guidance on appointing capable leaders</li><li>• Establishing voluntary forest protection systems through rotational patrols</li><li>• Installation of equipment, signboards, and project site markers</li><li>• Conclusion and management of profit-share contracts</li><li>• Management of leased state forests</li><li>• Documentation and record maintenance</li></ul>                                   |
| Self-help<br><i>Sanrim-gye</i>    | Cooperatives with basic organizational structures and conditions in place, but still requiring continuous awareness-raising and the establishment of a foundation for self-reliance | <ul style="list-style-type: none"><li>• Training of cooperative members at project sites</li><li>• Distribution of forestry technical manuals</li><li>• Fundraising through collective labor contributions</li><li>• Establishment of cooperative forests</li><li>• Creation of fuelwood forests and development of idle land</li><li>• Development of shared-use facilities</li><li>• Production of forest by-products</li><li>• Improvement of traditional stoves and chimneys</li></ul>                                                                                                        |
| Self-reliant<br><i>Sanrim-gye</i> | Cooperatives with strong development motivation that have already reached the stage of self-reliant operation require advanced technical training and income-generating projects    | <ul style="list-style-type: none"><li>• Practical training in forestry techniques and study visits to advanced sites</li><li>• Implementation of vicarious execution and cooperative forest management</li><li>• Establishment of forest product processing facilities</li><li>• <i>Saemaul</i> nursery projects</li><li>• Development of scenic and tourism facilities</li><li>• Collective purchase of forestry equipment</li><li>• Organized marketing and auctioning of forest products</li><li>• Development of pavilions, children's parks, village groves, and landscaping trees</li></ul> |

Source: Reconstructed based on data from the National Forestry Cooperative Federation (1982)



During this period, both *sanrim-gye* and the *Saemaul Undong* showed clear and gradual development, although their trajectories differed. As shown in Table 4, the proportion of self-reliant *sanrim-gye* rose to 41% by 1980, while the proportion of basic-level cooperatives declined to 16%. In contrast, within the *Saemaul Undong*, villages at the basic stage had disappeared by 1976, and by 1979 all villages had reached the self-reliant stage (Ministry of Home Affairs, 1980).

This gap suggests that village communities faced structural constraints in building a foundation for self-reliance through forest- and forestry-related activities. Nevertheless, during this period, *sanrim-gye* contributed to forest rehabilitation as the underlying and direct causes of forest degradation were gradually addressed. In particular, they played an important role in restoring degraded land, undertaking reforestation, and protecting forests from illegal logging and overharvesting (Park, 2026).

Table 4. Development Trends of *Sanrim-gye* and *Saemaul* Villages (1972–1980)

| Year | Category  | Sanrim-gye |              |           |       | Saemaul Villages |              |           |        |
|------|-----------|------------|--------------|-----------|-------|------------------|--------------|-----------|--------|
|      |           | Total      | Self-reliant | Self-help | Basic | Total            | Self-reliant | Self-help | Basic  |
| 1972 | Number    |            |              |           |       | 34,665           | 2,307        | 13,943    | 18,415 |
|      | Share (%) |            |              |           |       | 100              | 7            | 40        | 53     |
| 1974 | Number    | 21,295     | 6,589        | 8,116     | 6,590 | 34,665           | 7,000        | 21,500    | 6,165  |
|      | Share (%) | 100        | 31           | 38        | 31    | 100              | 20           | 62        | 18     |
| 1978 | Number    | 20,846     | 7,516        | 9,119     | 4,211 | 34,815           | 28,701       | 6,114     | 0      |
|      | Share (%) | 100        | 36           | 44        | 20    | 100              | 82           | 18        | -      |
| 1979 | Number    | 20,453     | 7,877        | 8,969     | 3,607 | 34,871           | 33,895       | 976       | 0      |
|      | Share (%) | 100        | 38           | 44        | 18    | 100              | 97           | 3         | -      |
| 1980 | Number    | 20,475     | 8,318        | 8,821     | 3,336 |                  |              |           |        |
|      | Share (%) | 100        | 41           | 43        | 16    |                  |              |           |        |

Source: Village Forestry Cooperative data for 1974 from Korea Forest Administration Research Society (1975); data for 1978–1980 from the National Forestry Cooperative Federation (1982); *Saemaul* village data from the Ministry of Home Affairs (1980).

A *Saemaul* nursery project provides a representative example of cooperation between the government and *sanrim-gye* in pursuing forest rehabilitation. Before the project began, the government consulted with *sanrim-gye* to determine the species and quantities of seedlings to be produced and then designated the production targets accordingly. With the assistance of nursery extension agents, the cooperatives produced the seedlings and supplied them to the government. By purchasing the entire designated output, the government enabled *sanrim-gye* to accumulate collective assets.

The box below presents a case of a *Saemaul* nursery project in a particular village. This example illustrates the conditions and motivations that enabled the project to begin, the challenges encountered during implementation, and the forms of government support provided.

Box. A Successful Case of a *Saemaul* Nursery Project (Rewritten based on *The Forest*, December 1974)

*Shinpung* Village, located in Goesan County, Chungcheongbuk-do, was a poor mountainous village with barren conditions. Forest land accounted for 61% of its total area, and due to its cold climate, there were few income sources other than farming. As a result, many residents began to leave their hometown; in 1969 alone, 19 of 138 households migrated elsewhere. At this time, Ms. Jeong Tae-hee lamented that while neighboring villages were becoming revitalized through the *Saemaul Undong*, only *Shinpung* Village remained stagnant. Despite being a woman, she approached the village head and the *Saemaul* leader to propose initiating *Saemaul* projects and expressed her determination that women would take the lead in these efforts.

In the early stages of the project, they faced a major barrier in the form of a conservative social atmosphere. Women’s participation drew verbal abuse and humiliating criticism from their husbands. Nevertheless, Ms. Jeong Tae-hee did not give up. Together with like-minded members of the women’s association, she persistently persuaded the villagers. As a result, on October 18, 1972, the village assembly finally passed a resolution to undertake the *Saemaul* project. Thereafter, the village achieved remarkable environmental improvements, including the widening of village roads, installation of drainage systems, and roof improvements. In recognition of these achievements, the village was selected as an outstanding *Saemaul* village nationwide and received a presidential grant of 2 million won. While considering how to utilize the secured grant and the women’s association’s collective earnings of 2.22 million won, Ms. Jeong Tae-hee happened to visit a nursery in Soi-myeon, Goesan County, where she discovered a new opportunity. Upon confirming that nursery operations could yield high returns with relatively little labor and guaranteed sales, she proposed launching a village nursery project. Although some opposition arose due to concerns about a lack of technical expertise, she once again persuaded the residents by arguing that success would be achievable through cooperation between the government and the community, particularly because county forestry officials would provide regular technical guidance. Ultimately, through a village assembly, it was decided to purchase a 3,860-pyeong nursery site (1.28 hectares) for 4.34 million won, with the shortfall financed through contributions from each household, thereby initiating the nursery project.

Ms. Jeong Tae-hee first visited the county forestry office to discuss the scale of nursery operations and overall technical matters, and received the designation of species and quantities to be supplied. She was assigned fast-growing species with relatively quick returns, including 40,000 black locust trees, 600,000 desert false indigo (*Amorpha fruticosa*) seedlings, and 15,000 chestnut trees, and obtained seeds and materials through government facilitation. The following spring, sowing was completed under the technical guidance of county officials. However, a major crisis arose in early June during the weeding period. Because this coincided with the peak agricultural season, many residents failed to participate in the collective work, putting the project at risk of collapse. Nevertheless, Ms. Jeong Tae-hee visited each household to encourage participation, and by the end of the first year, the village successfully raised 15,000 chestnut seedlings and 610,000 desert false indigo seedlings. These quantities were expected to generate approximately 2.1 million won in actual income when supplied to the county the following year. This case clearly illustrates how residents of a poor mountain village improved their living environment and created income-generating opportunities through the spirit of self-help and cooperation embodied in the *Saemaul Undong*. The government supported these efforts by providing technical extension services and a designated production system, enabling villagers with limited forestry knowledge to adopt nursery production as a new source of income. In particular, the perseverance of a female leader—who overcame apathy among village leaders and residents during the forest rehabilitation and *Saemaul Undong* processes, as well as deeply rooted patriarchal biases—can be regarded as a key driving force behind the village’s economic self-reliance.

④ Integration of Forest Rehabilitation with the *Saemaul Undong*

Launched in 1970, the *Saemaul Undong* was both a spiritual reform campaign grounded in the values of diligence, self-help, and cooperation and a regional development initiative aimed at improving rural living conditions and agricultural environments. Among *Saemaul* projects related to

forest rehabilitation, the fuelwood forest establishment project was the most urgent and became a flagship initiative driven by the collective efforts of rural residents. The project operated under a *sanrim-gye* rule stipulating that households could collect firewood only if they participated in establishing fuelwood forests, thereby reflecting the principles of diligence, self-help, and cooperation. *Saemaul* organizations were formed by building on existing village-level *sanrim-gye* structures.

The government provided seedlings and fertilizer free of charge through the *Saemaul* budget, local governments covered transportation costs, and residents contributed land and labor without compensation. In return, *sanrim-gye* members who planted trees were granted legal rights to use the fuelwood forests regardless of land ownership. For rural communities with limited forest resources, securing a stable supply of household fuelwood was critically important. Accordingly, from 1973 to 1977, the fuelwood forest establishment project, implemented as part of the *Saemaul* program with loans from the International Bank for Reconstruction and Development (IBRD), played a major role in achieving the target of establishing 200,000 hectares of fuelwood forests (Lee, 2013).

A key factor enabling the successful integration of reforestation with the *Saemaul Undong* was the income-generating *Saemaul* village nursery project. In 1973, the government launched the First Plan, which aimed to plant 2.1 billion trees across 1 million hectares within ten years. To meet sharply increasing demand for seedlings, the KFS developed an effective village-based nursery system. A stable supply of seedlings was essential for reforestation, but neither state-run nor private nurseries alone could meet the target. To address this shortage, the government introduced a market-based support system that guaranteed the purchase of properly grown seedlings based on production performance. Because the success of reforestation depended on voluntary participation by villagers, the government provided a tangible incentive by enabling residents to earn income according to their production results. Linking participation to income proved more effective than administrative commands and regulations.

The policy guaranteed the sale of seedlings by announcing purchase prices in advance and issuing pre-purchase certificates guaranteeing the purchase of designated quantities. For seedlings requiring cultivation periods of more than two years, advance payments were made on the basis of early-stage production results, enabling villagers to earn income sooner. This approach fostered villagers' sense of ownership and encouraged them to care for the seedlings they raised, thereby promoting successful transplanting and establishment. It also sought to overcome the entrenched perception that reforestation was solely a government-led activity in which villagers merely supplied labor. Instead, it promoted the understanding that reforestation was directly linked to income growth and, ultimately, to national development (Son, 1973).

One major reason for the success of the village nursery project was its effective application of the PDCA (Plan–Do–Check–Act) approach. After the First Plan was established, annual progress reports

were presented to the President at the Blue House *Saemaul* Cabinet Meetings held every March. Ko Geon, then Director General of Local Administration at the Ministry of Home Affairs, delivered two such reports. In reviewing the first year of the village nursery project in 1973, he identified several shortcomings: villagers lacked technical skills and experience; administrative guidance was insufficient; operations were dispersed and small in scale; too many species were cultivated; and site selection was inappropriate (Ko, 1974).

As an improvement measure, the number of participating villages was drastically reduced from 14,225 in 1973 to 3,019 in 1974 in order to professionalize the program. Technically demanding early-stage seedling production was assigned to specialized institutions, while villages focused on raising seedlings to a more mature stage. The species were standardized to poplar, black locust, chestnut, and shrubby legumes, and each village was encouraged to concentrate on one or two species (Ko, 1975). As a result, seedling production in 1974 was 2.8 times greater than in 1973. On average, each village nursery, covering approximately 2,744 m<sup>2</sup>, produced 79,000 seedlings and generated expected gross income of KRW 570,000 and net income of KRW 336,000 per village (Ko, 1975). Through systematic planning, implementation, monitoring, and improvement, the government concentrated its administrative and technical capacity to achieve planned outcomes.

The village nursery project was closely linked to *Saemaul* nurseries more broadly. During the First Plan period from 1973 to 1978, *Saemaul* nurseries produced 940 million seedlings, accounting for 34.8% of the national total of 2.7 billion seedlings. Between 1973 and 1979, the project generated total income of KRW 12.3 billion, with average annual income per village reaching KRW 375,000. Not all income was distributed, as a portion was reserved to finance future village projects (Lee, 2013).

*Saemaul* reforestation referred to village-area tree-planting projects led by the *Saemaul Undong* headquarters. During the First Plan period, *Saemaul* reforestation covered 473,000 hectares, accounting for approximately 44% of the national total of 1.08 million hectares. During the Second Plan period, it covered 374,000 hectares, or 38.7% of the total reforested area (Lee, 2013).

The *Saemaul* erosion control project treated 16,238 hectares, accounting for 70.7% of the total 22,976 hectares treated between 1973 and 1975. During the Second Plan period, its share declined substantially, accounting for 4,885 hectares, or 19.5%, of the total 25,061 hectares (Lee, 2013).

Between 1971 and 1978, 7.0% of total investment in the *Saemaul Undong* was allocated to forest rehabilitation projects. Over the 17 years leading to the end of the Second Plan in 1987, KRW 10.47 trillion was invested in *Saemaul* projects, of which 4.1%—KRW 426.9 billion—was devoted to forest rehabilitation programs (Lee, 2013). By integrating forest rehabilitation with the *Saemaul Undong*, one of the government's highest national priorities, and framing it as a rural development initiative that generated local income, the government was able to secure stable and sustained financial support for reforestation efforts.



⑤ Development and Dissemination of Forest Rehabilitation Technologies

Forest rehabilitation depends on forestry research and development. Trees cannot be successfully established unless they are suited to local site conditions. For a plan to reforest degraded land covering approximately 20% of the national territory to succeed within a short period, the necessary institutional and technical foundations had to be established in advance. These included institutional capacity for research and surveys essential to reforestation, soil surveys to identify suitable tree species for particular sites, and forest resource surveys to assess actual forest and site conditions. On this basis, it was necessary to select high-quality seed sources and develop key forest establishment technologies, including nursery and planting techniques; breeding methods for fast-growing tree species; erosion control measures to restore degraded land; and cultivation practices for non-timber forest products that could both support reforestation and generate local income. In addition, an effective extension system for applying these technologies in the field was essential to successful forest rehabilitation.

• Building the Foundation for Forest Rehabilitation

At the time, the government clearly recognized the importance of the timely development and dissemination of forestry technologies. Accordingly, the expansion of the Forestry Experiment Station was included among the 31 priority policy measures of the First Plan. Despite difficult fiscal conditions, the government strengthened the functions of the Forestry Experiment Station and the Forest Tree Breeding Research Institute under the KFS at the central level and established the Forest Inventory Research Institute to conduct nationwide soil and forest resources surveys.

At the provincial level, following the transfer of the KFS to the Ministry of Home Affairs, new affiliated institutions were established, including provincial forestry experiment stations, provincial forest management offices, and provincial erosion control offices (Kim, 2006). Together, these institutions formed the organizational foundation for nationwide forest resources rehabilitation.

For large-scale reforestation on degraded land to succeed, tree species suited to local soil conditions had to be planted. In 1972, the government established the Forest Inventory Research Institute and, beginning in 1974, conducted simplified forest soil surveys to assess the productive potential of forest land. Between 1974 and 1976, surveys were conducted across 6.6 million hectares of forest land, assessing soil depth, topography, slope, moisture, erosion, fertility, and soil type. Based on composite scores for these soil factors, forest land productivity was classified into five grades (Jeong, 1978).

The survey found that approximately 2 million hectares, accounting for about 30% of the nation's forest area, were classified as Grade IV or lower, indicating low productivity (KFS, 2022). Based on the results of the simplified forest soil survey, the KFS selected tree species suited to each site's productivity level and climatic zone (Table 5).

Table 5. Selection of Tree Species for Reforestation

| Site Productivity Class | Climatic Zone                                                 |                                                               |                                               |
|-------------------------|---------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------|
|                         | Central Temperate Zone                                        | Southern Temperate Zone                                       | Subtropical Zone                              |
| I                       | Larch, Italian Poplar, Chestnut Tree                          | Japanese Cedar, Paulownia, Chestnut Tree                      | Japanese Cedar, Paulownia, Chestnut Tree      |
| II                      | Larch, Italian Poplar, Chestnut Tree, Hyun Aspen, Korean Pine | Italian Poplar, Hinoki Cypress, Hyun Aspen, Chestnut Tree     | Hinoki Cypress, Paulownia, Japanese Cedar     |
| III                     | Hyun Aspen, Korean Pine, Japanese Black Pine, Black Locust    | Hyun Aspen, Japanese Black Pine, Hinoki Cypress, Black Locust | Japanese Black Pine, Hinoki Cypress           |
| IV                      | Pitch Pine, Japanese Black Pine, Black Locust                 | Pitch Pine, Japanese Black Pine, Black Locust                 | Pitch Pine, Japanese Black Pine, Black Locust |
| Below V                 | Alder, Pitch Pine                                             | Alder, Pitch Pine                                             | Alder, Pitch Pine                             |

Source: KFS (2022).

For example, nutrient-demanding species such as larch, Italian poplar, and chestnut would be unlikely to establish successfully on poor Grade V soils. Therefore, on low-productivity Grade IV and V soils, the government planted hardy, soil-improving species such as pitch pine (*Pinus rigida*), black locust, and alder.

The results of the simplified forest soil survey clearly demonstrated the severity of forest degradation in South Korea at the time. Furthermore, the climate-based selection of tree species informed by these surveys provided a scientific basis for implementing the national forest rehabilitation policy.

A nationwide forest resources survey was also required to implement and evaluate the First Plan systematically. In 1974, the year after the Plan was launched, the government recognized the need for accurate data on the country's forest conditions. The Forest Inventory Research Institute and the Forestry Experiment Station, which were responsible for forest surveys at the time, proposed the use of aerial photography, forest type mapping, and statistically designed sample surveys (Han, 2007).

For the first time since liberation, aerial photograph interpretation and sample survey methods played a key role in producing reliable national forest statistics. In particular, aerial photograph interpretation technology—introduced to South Korea in the 1960s with support from the United Nations Development Programme (UNDP) and the Food and Agriculture Organization of the United Nations (FAO)—was applied in the National Forest Resources Survey.

The First National Forest Resources Survey (NFRS), conducted from 1971 to 1974, made a substantial contribution to laying the foundation for the systematic implementation of the First Plan, launched in 1973, and to producing the baseline data needed for forest management planning. For the NFRS, forestry aerial photographs were taken by domestic technicians for the first time, covering 8.4 million hectares nationwide, excluding no-fly zones and some island areas. Using statistical sampling methods, national forest statistics were compiled by city, province, and regional national forest office

by the end of 1974. In addition, 783 forest type maps at a scale of 1:25,000 were produced nationwide for the first time.

The survey results showed that, as of the end of 1974, South Korea's total forest area was 6,640,839 hectares, with an average growing stock of 15.4 cubic meters per hectare. Unstocked forest land, referring to areas without tree cover, totaled 702,633 hectares. This included 20,083 hectares of degraded land, 52,565 hectares of shifting-cultivation or slash-and-burn fields, and 192,858 hectares of reclaimed land (Forest Inventory Research Institute, 1975).

According to the Second NFRS, conducted in 1980, unstocked forest land had decreased by 66% compared with 1974, reaching 241,825 hectares. This reduction demonstrates the achievements of the First Plan. Degraded land had decreased to 7,136 hectares, reclaimed land to 45,731 hectares, and slash-and-burn fields had virtually disappeared (NIFoS, 1981).

The forest resource statistics and forest type maps produced through these surveys not only provided a basis for the systematic implementation of the First Plan but also supported subsequent national forest management and forestry policy development. The NFRS was later renamed the National Forest Inventory (NFI), and methodological advances enabled the production of more accurate and diverse forest resource data.

#### • Forest Establishment Technology

The First Plan set a target of planting trees on one million hectares of degraded land over a ten-year period. Although species that could be readily propagated through cuttings, such as Italian poplar and willow, did not require specialized seed collection, timber species such as pitch pine (*Pinus rigida*), Korean pine, and larch required a reliable supply of seed. Assuming an average planting density of 3,000 trees per hectare, approximately 300 million seedlings were needed annually. Large-scale reforestation therefore required careful planning to select appropriate tree species according to site conditions. Equally important was the effective implementation of this plan, including the timely supply of seed for nursery production and the delivery of seedlings during the scheduled planting season.

The government identified suitable reforestation sites through the National Forest Resources Survey and selected tree species appropriate to local site conditions based on simplified forest soil surveys. However, securing planting sites and selecting suitable species alone were not sufficient to ensure the success of the NFRP. Achieving the program's objectives required a well-functioning system capable of securing high-quality seed, producing seedlings, and delivering them to planting sites at the appropriate time. Without such a system, the planned reforestation targets could not have been met. This remains one of the earliest and most critical challenges facing many developing countries seeking to restore degraded forests today.

To address this challenge, the Korea Forest Tree Breeding Institute—now the Forest Bioresources Research Department of the National Institute of Forest Science—launched a five-year seed orchard

development plan in 1968. Under this plan, superior trees exhibiting rapid growth and desirable stem form were selected and propagated to establish seed orchards dedicated to seed production. These orchards were established by densely planting grafts or rooted cuttings derived from selected plus trees in major forest regions across the country, thereby preserving their desirable genetic characteristics. The principal species included seven major reforestation species used in the NFRP at the time: pitch pine (*Pinus rigida*), Korean red pine (*Pinus densiflora*), Japanese larch (*Larix kaempferi*), Korean pine (*Pinus koraiensis*), hinoki cypress (*Chamaecyparis obtusa*), Japanese cedar (*Cryptomeria japonica*), and rigitaeda pine, a hybrid species cultivated in hybrid seed orchards.

The government initially designed the seed orchard program to secure sufficient seed for the annual reforestation of 75,000 hectares. However, the plan underwent four revisions by 1983 in response to factors such as site suitability and changing reforestation demand, ultimately resulting in the establishment of 710 hectares of seed orchards (NIFoS, 2006).

Seed orchards constitute long-term infrastructure for the continuous supply of genetically superior seed for reforestation. Recognizing their strategic importance, the KFS established an organizational system that both differentiated and linked research and field-production functions. At that time, the Korea Forest Tree Breeding Institute was responsible for selecting superior trees, tree breeding, and developing seed orchard technologies, while the Regional Forest Offices and state-operated forest nurseries under the KFS were responsible for producing seedlings from seed obtained from seed orchards. This institutional arrangement made it possible to maintain consistent seed quality for reforestation and to produce the large quantities of seed required for nationwide planting programs in a systematic and planned manner. Stands established from seed-orchard seed showed significant productivity gains, with timber growth increasing by approximately 14–32% compared with conventional stands after 10–15 years of growth (NIFoS, 2006).

However, the establishment of seed orchards did not immediately enable the large-scale supply of genetically improved seed. Although seed orchards began to be established in 1968, the first seed harvests were not available until 1976. During the NFRP period (1973–1987), trees in the seed orchards had not yet matured sufficiently to produce the quantities of seed originally anticipated. As a result, the planned supply of genetically improved seed from seed orchards fell short of demand during the implementation period. Nevertheless, as the seed-orchard trees gradually matured, seed production increased substantially. This eventually enabled the establishment of a stable and reliable supply system for genetically superior seed, which continues to support reforestation efforts today.

Another important measure was the introduction of the designated nursery system and the development of nursery technologies to ensure a stable supply of seedlings for reforestation. Because seedlings for large-scale reforestation programs had to be planned and produced one to three years before planting, considerable effort was devoted to establishing an effective nursery production system from the early stages of the NFRP. Large-scale reforestation would not have been possible without a reliable supply of seedlings.



In particular, the designated nursery system integrated reforestation planning and seedling production into a single coordinated framework by enabling seedling production to be planned in advance according to projected planting demand. Under this system, the KFS determined the species and quantities of seedlings required for its reforestation program and designated qualified private nursery operators as official producers. These designated nurseries produced seedlings in accordance with government plans, and the government inspected and purchased the seedlings for use in reforestation projects. Similar to the village nursery program, under which the government purchased seedlings at market prices, the designated nursery system provided private nursery operators with a guaranteed market for their products. This arrangement enabled the stable and continuous production of seedlings needed for large-scale reforestation.

At the same time, a range of nursery technologies was developed and disseminated, including techniques to improve seed germination, optimize seedling density, apply fertilizers effectively, and conduct root pruning. These advances made it possible to produce standardized, high-quality seedlings with high survival rates after planting and to supply them reliably for reforestation programs. Finally, post-planting management was strengthened to ensure the success of reforestation efforts. At the time, forests had been severely degraded by excessive exploitation, including the collection of fuelwood and other forest products. Under such conditions, simply planting seedlings was insufficient to achieve successful forest restoration. Following planting, continuous maintenance activities were undertaken, including weeding, vine removal, supplementary planting to replace dead seedlings, and the tending of young stands. In particular, the management of newly established plantations during the first three to five years after planting was recognized as a critical determinant of seedling survival and growth. To support these efforts, a collaborative management system was established in which local residents and local administrative organizations jointly participated in the maintenance and protection of reforestation sites.

In summary, the NFRP achieved its reforestation targets by establishing an integrated seedling production and management system. This system combined the production of genetically improved seed in seed orchards, the large-scale production of seedlings through the designated nursery system, the timely delivery of planting stock to reforestation sites, and intensive post-planting management during the first three to five years after planting. By institutionalizing this coordinated framework, the system effectively ensured the survival and long-term sustainability of newly established forests.

#### • Forest Tree Breeding Technology

Under the First Plan, the ratio of fast-growing to long-rotation species was set at 7:3. Given the extent of forest degradation at the time, rapid reforestation was prioritized over long-term forestry. Among the ten major species selected under the First Plan, poplar was the principal fast-growing species.

The selection of poplar as one of the ten major species was largely attributable to Dr. Hyun Shin-gyu's development of improved fast-growing varieties—improved poplar (Italian poplar) and Hyun aspen, a hybrid poplar—through forest tree breeding.

In Europe, Italian poplar emerged as a natural hybrid between American cottonwood and native European poplar and exhibited remarkably rapid growth. Beginning in 1955, Dr. Hyun introduced more than 330 poplar clones from around the world and tested them at riverine sites. Based on these trials, he selected two clones with superior growth as the best-performing varieties in 1958 (Hyun & Cho, 1963). These varieties showed vigorous growth on nutrient- and moisture-rich sites along rivers and were distributed nationwide under the name "improved poplar."

Improved poplar could yield 213 cubic meters of timber per hectare after 15 years, growing ten times faster than pine and eight times faster than larch (Koo, 2020). In addition, Dr. Hyun developed Hyun aspen by hybridizing native Suwon aspen with naturalized white poplar introduced to South Korea.

Improved poplar began to be distributed in 1962 and had been planted on approximately 719,000 hectares by 1988. Hyun aspen began to be distributed in 1973 and had been planted on 180,000 hectares by 1988 (Koo & Yeo, 2003). Through the mass distribution of these two fast-growing species, the government rapidly rehabilitated degraded land and, until the 1980s, used them as major species in village nurseries, thereby supporting rural livelihoods.

#### • Erosion Control Technology

If steep mountainous areas remain without tree cover, even small amounts of rainfall can wash away nutrient-rich topsoil, thereby reducing soil productivity. Erosion control projects were implemented to prevent soil erosion and further degradation on deforested mountains. In 1956, severely degraded forest land requiring erosion control covered approximately 686,000 hectares, accounting for about 10% of the nation's forest area (Lee, 2025).

Without proper erosion control, flooding and soil loss could occur, adversely affecting agricultural productivity. Following liberation, the government designated Erosion Control Day as a national holiday in 1960 and enacted *the Erosion Control Act* in 1962, making significant efforts to restore degraded land. Nevertheless, when the First Plan was launched in 1973, substantial areas of degraded land remained.

During the First Plan period, erosion control contributed to forest rehabilitation in three major ways. First, special erosion control projects were implemented in severely degraded areas, including the *Yeongil* District in Gyeongsangbuk-do. These projects employed civil engineering techniques, such as retaining-wall construction and slope stabilization, where conventional erosion control methods proved inadequate because of extreme degradation or challenging topographical and geological conditions. The First Plan designated 23 districts encompassing a total of 84,220 hectares for special erosion control. Among these, the Yeongil erosion control project, which restored 4,538 hectares, was particularly significant because it demonstrated that land long considered beyond recovery could, in fact, be successfully rehabilitated.

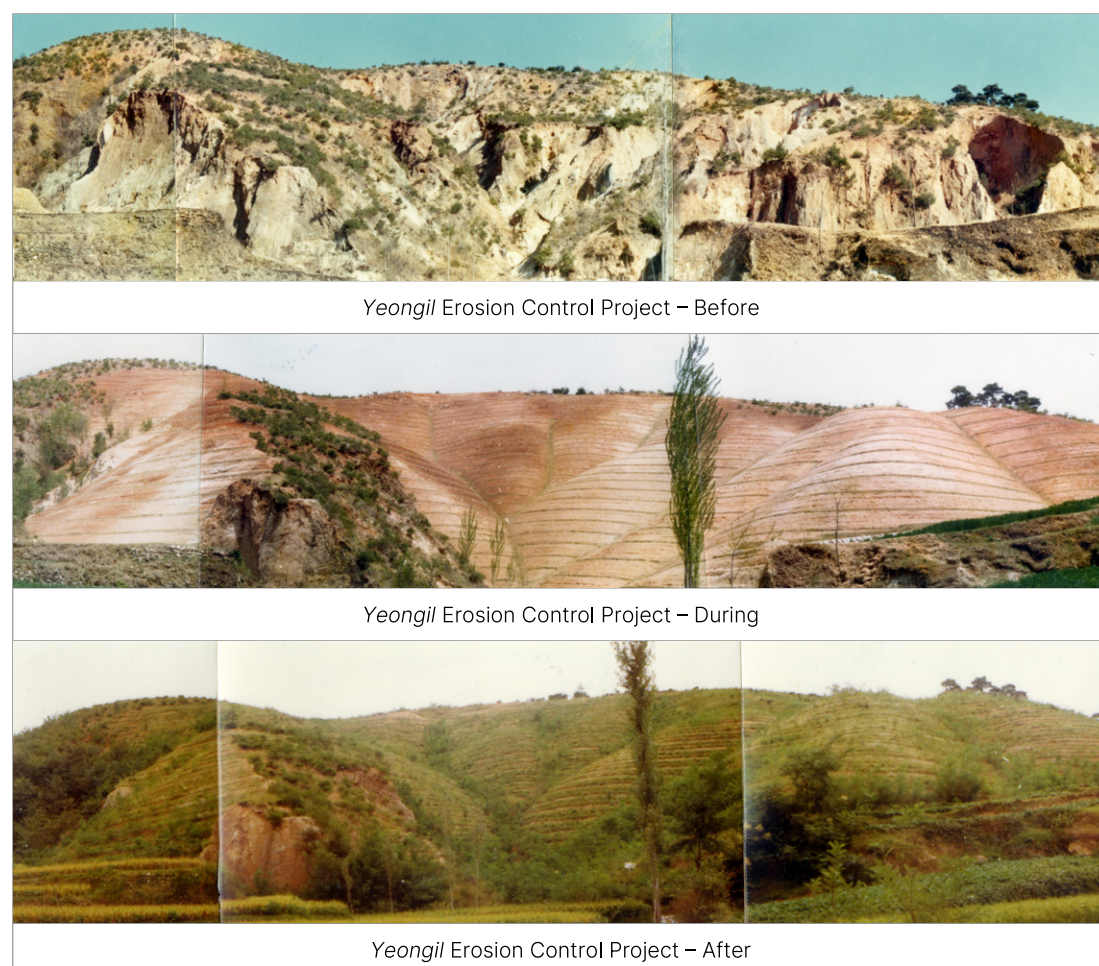


Figure 8. Before and After the Yeongil Erosion Control Project

Second, a systematic and comprehensive approach was adopted through watershed-based and complete erosion control. This approach integrated general, special, and gully erosion control methods across entire degraded watersheds, from mountaintops and mid-slopes to valleys and small streams. Complete erosion control linked newly treated areas with previously treated sites to ensure full coverage of the target areas. Although only 50% of the planned erosion control target was achieved under the First Plan, this output was accomplished within six years rather than the originally planned ten years. Moreover, this integrated approach maximized the overall effectiveness of the projects.

Third, appropriate technologies were developed to enhance field applicability and reduce costs. The rice-straw mat covering method, jointly developed by Seoul National University and the Suwon Erosion Control Management Office, replaced difficult-to-obtain turf materials with readily available

rice straw and successfully prevented slope erosion. Furthermore, bare-land revegetation techniques, including grass seeding and the planting of black locust and shrubby legumes, contributed to the rapid greening of forest clearings and gentle slopes.

In 1973, the KFS published the Erosion Control Technology Manual, which systematically organized erosion control techniques and was distributed to provincial erosion control offices. This effort contributed to the standardization and systematization of erosion control practices for field application (KFS, 2006).

#### • Chestnut Cultivation Technology

Chestnut cultivation, which contributed to forest rehabilitation, food security, and income generation, was included in the First Plan with a target of establishing 300,000 hectares of chestnut plantations. Compared with other non-timber forest products, such as jujube, walnut, and mushrooms, chestnut cultivation played a particularly significant role in the First Plan. During the Plan period, 154,000 hectares of chestnut plantations were established, achieving 51% of the target. A total of 61 million grafted seedlings, including superior domestic varieties and varieties introduced from Japan, were planted (Korea Forestry Research Association, 1975).

Until the 1950s, South Korea had no established concept of improved varieties in chestnut cultivation. Trees were commonly known by regional names, such as Pyeongyang chestnut and Gapyeong chestnut, and were grown from seed without varietal selection. However, in 1958, the occurrence of chestnut gall wasp, an insect that caused severe damage to native chestnut trees, was first identified in Jecheon, Chungcheongbuk-do. This outbreak prompted research at the Forestry Experiment Station and the Forest Tree Breeding Research Institute on the development of pest-resistant chestnut varieties and improved cultivation techniques (NIFoS, 2006).

Beginning in 1960, breeding research focused on selecting and improving native chestnut varieties that were resistant to chestnut gall wasp and exhibited superior yield and fruit quality. As a result, improved varieties such as *Okgwang*, *Sandae*, *Sunseong*, and *Daap* were developed. From 1966 onward, introduction breeding was undertaken using varieties from Japan, whose climate is similar to that of South Korea. Varieties such as *Tanzawa*, *Yuma*, *Rihei*, and *Tsukuba*, known for pest resistance, desirable fruit characteristics, and adaptability, were selected as recommended cultivars and widely distributed.

Between 1965 and 1970, 190 hectares of scion orchards were established to ensure a stable supply of superior grafting material. Grafting techniques were developed, enabling the large-scale distribution of grafted seedlings (Kim et al., 2003). A chestnut cultivation manual was published, and forestry cooperatives provided technical guidance to disseminate these methods to field practitioners.

Chestnut cultivation directly contributed to rural household income. In 1975, net profit per unit area from chestnut cultivation was 1.6 times higher than that from rice production. In village chestnut



plantations, average annual income per village, based on five hectares, reached KRW 1,445,000. Given that South Korea's per capita GNI in 1975 was KRW 290,000 and average farm household income was approximately KRW 870,000, chestnut cultivation made a substantial contribution to raising rural household income.

Chestnuts also contributed significantly to exports. They accounted for only 1% of non-timber forest product exports in 1970, but their share rose dramatically to 30%, reaching USD 37 million by 1980.

#### ⑥ Sharing the Vision of Forest Rehabilitation and Strengthening Public Outreach

To encourage public participation in the NFRP, the government strengthened its public outreach efforts. Even before the First Plan was implemented, regulation and public outreach had been key instruments of forest policy. However, limited financial resources and weak enforcement capacity prevented the government from implementing these measures effectively. As a result, commands, directives, and public awareness campaigns were less effective than intended.

After the Park Chung-hee administration came to power, government outreach efforts began to produce tangible results, supported by strong presidential leadership and administrative capacity. During this period, public outreach focused on communicating the President's commitment to national greening through multiple channels. By presenting a clear vision and appealing to a sense of collective responsibility, the government built a nationwide consensus that forest rehabilitation was an urgent national priority requiring immediate action.

The establishment of the KFS in 1967 further strengthened public outreach and administrative guidance for erosion control and reforestation. Forestry cooperatives, *Saemaul Undong* organizations, and related groups played a key role in disseminating information and mobilizing local participation.

At the same time, strict enforcement—supported by strong administrative authority, including the detection and punishment of violations—was combined with nationwide tree-planting campaigns. This combination of enforcement and public engagement proved effective. As a result, forest degradation declined, reforestation accelerated, and tangible outcomes were achieved (Korean Association for Public Administration, 2009). The role of government outreach and information provision in forest rehabilitation can be summarized as follows.

First, as the household fuelwood problem was gradually resolved, government directives aimed at preventing forest degradation became increasingly effective. At the same time, as underlying causes of forest degradation, such as poverty and weak law enforcement, were progressively addressed, public acceptance of government-led forest rehabilitation initiatives also increased.

Second, presidential public communication and persuasion through Arbor Day reached their peak. Beginning in 1975, the period from March 21 to April 20 each year was designated as National Tree-Planting Month, during which tree-planting campaigns involving households, villages, workplaces, and schools were carried out nationwide. During the First Plan period alone, 175,000 organizations

and 16 million people participated in Arbor Day activities (Kim, 1979). Beyond those who directly participated in these events, the entire population was repeatedly exposed to the President's vision and commitment to national greening, conveyed through the message that planting trees was an act of patriotism and that abundant forests were a hallmark of an advanced nation.



Figure 9. A public billboard in Gwanghwamun, Seoul (1977).

Source: Photograph in the collection of the KFS.

Third, forest administrative agencies intensified education and guidance through administrative instruction to achieve forest rehabilitation goals. Intermediary organizations, including forestry cooperatives at various levels and *Saemaul* leaders, acted on behalf of the government by issuing directives, conveying instructions, and mobilizing residents to achieve the objectives of the NFRP. The government also substantially expanded its provision of information and incentives to promote reforestation. These measures included introducing model reforestation areas, providing food and wages to residents participating in tree-planting activities, conducting comparisons and evaluations among cooperatives, offering differentiated support based on performance, and implementing various slogans and campaigns (Korean Association for Public Administration, 2009).

To reforest extensive areas of degraded forest land across the country within a short period despite limited public finances, residents' participation was essential. Under economic conditions in which the government was unable to provide sufficient financial compensation, its principal policy option was to concentrate administrative authority and public outreach efforts to mobilize the nation's collective

capacity. The government relied on moral persuasion, emphasizing that participation in erosion control and reforestation was both a national responsibility and an act of patriotism, while consistently exercising administrative authority to put this message into practice.



**Figure 10. Tree-Planting Ceremony on Arbor Day in 1972.**  
Kang Bong-su, Administrator of the KFS, briefs President Park Chung-hee on plans for the Arbor Day event. At the time, the government invited private forest owners to the ceremony to share the achievements of reforestation efforts. The names of several prominent private forest owners of the period appear on the right side of the photograph.

Source: Photograph in the collection of the KFS.

3.2.4. Performance of the First Plan

As shown in Table 6, although there were some discrepancies between the quantitative targets and actual performance, most targets were achieved within six years. In the case of reforestation, the emphasis shifted from fruit tree planting to fast-growing and long-rotation species; nevertheless, total reforestation performance exceeded the original target of one million hectares. Correspondingly, nursery production of fast-growing and long-rotation species also exceeded that of fruit trees.

In contrast, erosion control projects covered only 42,000 hectares—approximately half of the originally planned 84,000 hectares. Mountainside, coastal, and torrent control projects each achieved roughly 50–60% of their respective targets. However, these outputs should be interpreted with caution, as the program was completed four years ahead of schedule and prioritized comprehensive erosion control to prevent renewed degradation. In some cases, such as the rehabilitation of the *Yeongil* erosion control district, investment levels were several dozen times higher than those of typical projects (Kim & Bae, 1978).

**Table 6. Performance of the First National Forest Rehabilitation Plan**

| Activity                   | Plan (A)<br>1,000ha (million trees) | Results (B)<br>1,000ha (million trees) | % (B/A) |
|----------------------------|-------------------------------------|----------------------------------------|---------|
| o Reforestation            | 1,000 (2,132)                       | 1,080 (2,960)                          | 108     |
| - Fruit trees              | 300 (120)                           | 154 (61)                               | 51      |
| - Fast-growing species     | 300 (607)                           | 360 (756)                              | 120     |
| - Long-rotation species    | 195 (585)                           | 358 (1,106)                            | 183     |
| - Fuelwood forests         | 205 (820)                           | 208 (1,037)                            | 101     |
| o Forest tending           | 3,799                               | 4,177                                  | 110     |
| - Weeding                  | 1,735                               | 2,258                                  | 130     |
| - Young stand tending      | 1,675                               | 1,035                                  | 62      |
| - Top dressing             | 389                                 | 884                                    | 227     |
| o Erosion control          | 84                                  | 42                                     | 50      |
| - Mountain erosion control | 83                                  | 41                                     | 50      |
| - Coastal erosion control  | 1                                   | 0.6                                    | 60      |
| - Torrent control (km)     | 500                                 | 142                                    | 28      |
| o Nursery (million trees)  | 2,132                               | 3,054                                  | 143     |
| - Fruit trees              | 120                                 | 70                                     | 58      |
| - Fast-growing species     | 1,426                               | 1,559                                  | 109     |
| - Long-rotation species    | 586                                 | 1,425                                  | 243     |

Source: KFS. 1979. The Second Ten-Year NFRP (Summary). p. 35.

Despite these achievements, the First Plan faced substantial criticism, particularly regarding the quantitative emphasis of nursery production and reforestation. The First Plan Evaluation Committee therefore called for a shift in emphasis from quantity to quality in both areas. Specifically, it recommended redirecting reforestation efforts from village-level greening toward the establishment of timber forests and prioritizing the production of healthy seedlings over sheer output in nursery operations. The Committee also urged reconsideration of the plan to establish 300,000 hectares of chestnut plantations, discouraged labor-mobilization-style reforestation, and advocated a transition toward a system in which forest owners would take the lead in planting (First-Year Project Evaluation Committee of the Ten-Year National Forest Rehabilitation Plan, 1975).

However, the Committee's recommendations were not conveyed to the President, as mid-level officials at the Blue House chose not to forward them (Kim, 2007). At the time, neither the President,



the public, nor forestry professionals opposed the imperative of restoring the country's denuded forests. However, regarding how this goal should be achieved, the President's strong preference for rapid forest greening was largely reflected in policy decisions. As the government-led forest rehabilitation process unfolded, forestry technology-based forest management centered on private forest owners was consistently given lower priority, resulting in unintended consequences.

### 3.3. The Second Ten-Year National Forest Rehabilitation Plan

#### 3.3.1. Objectives

The ultimate objective of the NFRP was to transform forest land into income-generating resources and establish forest-based economic zones. President Park Chung-hee pursued the NFRP in two phases. The first phase focused on completing the foundational task of reforestation, while the second phase aimed to realize these broader objectives.

The primary goal of the Second Plan was forest resource development. A more specific objective, first articulated in the First Plan, was to create new economic zones in mountainous areas by making forest-based income a major source of livelihood in all villages. This objective was subsequently elevated to the central goal of the Second Plan.

In the preface to the Second Plan, the Administrator of the KFS attributed this shift in focus to a statement by President Park Chung-hee:

*"From now on, the place to which our rural communities must turn their attention is the mountains. We must intensify research on the resource development of forest lands and vigorously promote the development of mountainous areas, which account for more than 70 percent of the nation's territory."*  
(Preface to the Second Plan)

In simple terms, the objective of the First Plan may be summarized as "complete greening" or "absolute forest rehabilitation." Building on the confidence that a substantial degree of forest recovery had already been achieved, the Second Plan introduced forest resource development as its new objective.

As the basic policy directions of the Second Plan, the government proposed nationwide tree-planting campaigns, economic reforestation, and completion planting. In pursuit of forest resource development, economic reforestation—particularly the expansion of large-scale plantations—became the core strategy. The policy orientation of the Plan also shifted in several respects: from the absolute greening pursued under the First Plan to the establishment of economic forests; from moral mobilization to technical dissemination; from compliance-based participation to nationwide mobilization; and from regulatory control to development support (KFS, 1979).

The key policy initiatives of the Second Plan were as follows: (1) establishing a long-term forest land-use plan, (2) creating large-scale economic forest zones, (3) developing native tree species, (4) rehabilitating unstocked forest land and designated erosion control sites, and (5) expanding overseas forest resources (KFS, 1979).

The long-term forest land-use plan, which formed the core of the Second Plan, envisioned converting 593,000 hectares of forest land over ten years and 993,000 hectares by 2030 to other uses (KFS, 1979). To this end, forests were divided into conservation forests and semi-conservation forests, with plans to convert semi-conservation forests—excluding those designated for agricultural and forestry use—into farmland, grassland, and industrial land. However, this policy was not realized because of President Park's death in 1979 and the growing societal emphasis on the public functions of forests.

On January 1, 1987, the KFS was transferred from the Ministry of Home Affairs back to the Ministry of Agriculture and Fisheries to strengthen coordination between agricultural and forestry administration. This reorganization reflected the view that the ultimate objective of forest rehabilitation had largely been achieved and restored the KFS to its original position within an economic ministry.

In parallel with this institutional restructuring, the Second Plan was completed one year ahead of schedule, and the National Forest Rehabilitation Plan was renamed the Forest Resource Development Plan.

#### 3.3.2. Policy Instruments

##### ① Regulation

Regulatory instruments included measures to promote the establishment of large-scale economic forest zones, as well as forest resource protection policies. To facilitate reforestation, designated planting areas were classified as development zones, and reforestation orders were issued. If forest owners failed to comply, the government carried out planting on their behalf and recovered the associated costs. When these costs were not reimbursed, a compulsory profit-sharing arrangement was imposed, allocating 10% of future forest revenues to the forest owner and 90% to the implementing party.

Despite strong criticism, this system served as a stringent regulatory tool, reinforcing forest owners' responsibility and active participation in restoring degraded forests. While these policies contributed to the rapid reforestation of degraded forest land, they also had unintended consequences by discouraging forest owners from engaging in voluntary forest management after planting.

Forest resource protection policies similarly sought to establish a nationwide, community-based protection system involving both forest owners and village residents to prevent human-induced forest damage. During the Second Plan period, 22,730 cases of illegal logging and unauthorized cutting were detected. This figure represented a reduction to 21% of the cases recorded between 1967 and 1972 and 49% of those recorded during the First Plan period.

In addition, efforts to prevent and rapidly suppress forest fires helped minimize overall damage.

Building on the policies introduced during the First Plan, a range of measures was further developed, including the establishment of village-based firefighting units, the expansion of firebreaks, and the installation of watchtowers. Together, these measures contributed to a substantial reduction in forest fire damage. As a result, the number of forest fires during the Second Plan decreased by 38% compared with the First Plan period, while the affected area declined by 50%.

## ② Strengthening Public Outreach

During this period, the government's continued efforts to promote reforestation led to the consolidation of the National Tree-Planting Campaign. Throughout the National Tree-Planting Period, from March 21 to April 20, tree-planting responsibilities were assigned to central ministries, government agencies, state-owned enterprises, local administrative bodies, and village communities. To further encourage forest tending as a regular practice, the first Saturday of November was designated as Forest Tending Day. On this day, tending activities were carried out by villages, workplaces, households, organizations, institutions, and schools. This initiative helped renew public awareness of the importance of post-planting management and encouraged its active implementation.

First, the government's approach to information provision changed significantly. In particular, voluntary participation and persuasion gradually replaced directive approaches based on prohibitions and compulsory mobilization. As national income rose and civic consciousness expanded alongside economic development, government-led forced mobilization and prohibition-centered directives increasingly faced public resistance.

Second, the content of public outreach also changed. Rather than focusing primarily on tree planting and reforestation, it expanded to include nature conservation, public health and recreation, wildlife protection, and information on the public benefits provided by forests. In particular, messages emphasizing the spiritual, cultural, and experiential values of forests became more widespread.

Third, presidential Arbor Day addresses disappeared, and overall attention to the event diminished. Although Arbor Day continued to be observed as an important event in the early 1980s, mass media outlets no longer gave prominent coverage to presidential speeches, and related reporting declined markedly.

Fourth, the mode of information delivery shifted from direct administrative guidance—often implemented through forestry cooperatives and affiliated organizations—to a more decentralized approach based on self-directed planting plans and voluntary participation by administrative bodies, workplaces, households, and civic groups.

## 3.3.3. Major Projects and Performance

### ① Reforestation

Following the First Plan, which emphasized large-scale reforestation for national greening, the Second Plan likewise prioritized reforestation as a key strategy for continued forest rehabilitation. However, implementation faced several challenges, including rural labor shortages, rising wages, and a reduction in available planting areas as socioeconomic conditions changed.

As a result, the reforestation targets were revised twice. The final target was reduced to 997,000 hectares, equivalent to 64.7% of the original target, while actual reforestation reached 966,000 hectares, achieving 97% of the revised target.

In addition, the revised plan introduced a new component—natural forest tending over 109,000 hectares—which had not been included in the original plan. This component achieved 94% of its target. As the reforestation target was substantially reduced, nursery production reached only 61.7% of the original target. Despite the substantial reduction in one of the Second Plan's core objectives and the fact that its revised target was not fully achieved, the government concluded the Plan one year early, in 1987. This early completion coincided with the transfer of the KFS from the Ministry of Home Affairs to the Ministry of Agriculture and Fisheries in the same year, reflecting a shift in forest policy emphasis from rehabilitation to resource development.

The most significant change in reforestation policy during the Second Plan was the shift from a quantitative to a qualitative approach. Rather than relying on dispersed and fragmented planting, the government promoted the establishment of large-scale economic forest zones to support forest resource development. To this end, it planned to create 80 zones, each covering approximately 5,000 hectares and focusing on selected commercial tree species. By 1986, 334,000 hectares had been established, accounting for 83.5% of the original target (KFS, 1997). Furthermore, beginning in 1981, simplified soil surveys were conducted in designated economic forest areas. Based on analyses of site conditions, soil profiles, and soil samples, suitable tree species were selected and planted.

### ② Forest Tending

Under the Second Plan, forest tending operations were initially planned for 10.11 million hectares, but the target was later revised downward to 6.91 million hectares. In response, planting and post-planting management were more systematically integrated, and tending operations were implemented accordingly. At the same time, the government sought to shift the focus of forest rehabilitation from government-led initiatives toward greater private-sector participation, while strengthening its support role through indirect measures, such as the dissemination of forest tending technologies. This shift marked a broader transition from a government-driven model to one led by private actors.

Fertilization was applied intensively for three years after planting. In addition, new techniques



were developed and disseminated, including aerial fertilization using improved technologies and equipment. Overall, forest tending performance reached approximately 90% of the revised target. Specifically, weeding achieved 97% of its target, while fertilization and young-stand tending reached 84% and 86%, respectively (KFS, 1997).

③ Erosion Control Projects

Under the Second Plan, erosion control projects aimed to fully rehabilitate the remaining degraded areas that had not been addressed during the First Plan. During this period, a total of 74,650 participants took part in these efforts. As a result, 34,000 hectares of mountainside erosion control, 372 hectares of coastal erosion control, and 223 kilometers of torrent control were completed. In addition, 54 check dams were constructed.

In particular, the development and application of new construction methods reduced the planned budget by 25%. This was achieved largely by integrating check-dam construction with torrent control works. As a result, the projects not only improved overall completion rates and project effectiveness but also laid the foundation for preventive erosion control (KFS, 1997).

Table 7. Performance of the Second Forest Rehabilitation Plan

| Activities                            | Sub-activities           | Original plan (1979) | Revised plan (1983) (A) | Results (B) | B/A (%) |
|---------------------------------------|--------------------------|----------------------|-------------------------|-------------|---------|
| Reforestation (1,000 ha)              |                          | 1,500                | 997                     | 965.5       | 96.9    |
| Tending of natural forests (1,000 ha) |                          |                      | 116                     | 109         | 94.0    |
| Nursery (million trees)               |                          | 3,064                | 3,000                   | 1,851       | 61.7    |
| Forest tending (1,000 ha)             | Weeding                  | 2,500                | 2,129                   | 3,139       | 147.4   |
|                                       | Young stand tending      | 3,500                | 2,841                   | 2,611       | 91.9    |
|                                       | Additional fertilization | 4,000                | 1,942                   | 1,776       | 91.5    |
|                                       | Thinning                 | 110                  |                         |             |         |
| Erosion control                       | Mountain (ha)            | 78,000               | 33,181                  | 36,077      | 108.7   |
|                                       | Coastal (ha)             | 400                  | 157                     | 327         | 208.2   |
|                                       | Torrent (km)             | 3,300                | 1,414                   | 223         | 15.8    |
|                                       | Check dam (No.)          |                      | 1,373                   | 1,373       | 100.0   |

Source: Reconstructed based on data from the KFS (1996) and Lee (2020).

Between 1973 and 1987, the NFRP successfully reforested approximately 2.05 million hectares of denuded mountain land—an area equivalent to about 20% of the country's total land area. To commemorate the completion of this large-scale reforestation effort, the National Greening Monument was erected in 1992 in the *Gwangneung* Experimental Forest.



Figure 11. The National Greening Monument.  
It was unveiled on April 5, 1992, at the forty-sixth Arbor Day ceremony. At the ceremony, President Roh Tae-woo explained the purpose of the monument as follows: "We have erected this monument to commemorate the achievement of forest rehabilitation and to acknowledge the cooperation and support of all our people. Forests are the homeland of our nation and a precious heritage to be passed on to future generations. Building on this valuable achievement in greening, we pledge, together with the entire nation, to cultivate our forests so that they may become even more abundant and beneficial."

Source: Photograph in the collection of Yoon Young-Gyoon.

Despite the reduced institutional status of the authority responsible for the Second Plan, frequent revisions, and notable shortfalls in performance, the Plan was concluded one year early in 1987, following the transfer of the KFS to the Ministry of Agriculture and Fisheries. Compared with the First Plan, implementation during the Second Plan period was noticeably less stringent, while both government leadership and public attention declined. At a time when forest rehabilitation had only just begun to take hold, the government advanced the ambitious goal of forest resource development—an objective difficult to achieve within a decade. However, the Second Plan's goal of establishing a forestry sector that would contribute to the national economy and generate income from well-established and well-managed forests remained unfulfilled.

Above all, from a forest management perspective, while the forest rehabilitation program succeeded in rapidly reforesting degraded land, it fell short of fostering capable forest management entities. The *sanrim-gye*, which had served as the primary implementing agents of reforestation, lost their functional role after planting was completed and rapidly declined. Although the government designated large-scale economic forest zones and promoted extensive planting, it failed to foster entities capable of managing them effectively, thereby limiting the benefits of scale.

The Second Plan was implemented during a period of economic growth under the Fourth (1977–1981) and Fifth (1982–1986) Five-Year Economic Development Plans. This period was also marked by considerable political and social upheaval, including the 1979 oil shock, the assassination of President Park Chung-hee, the military coup and subsequent seizure of power, and intensifying demands for democratization.

Sustained economic growth raised living standards and, in turn, generated diverse social and cultural demands on forests, particularly for environmental protection and outdoor recreation. At the same time, rapid housing construction increased demand for timber. In contrast, large-scale rural-to-urban migration reduced the rural labor force, while labor shortages and rising wages further worsened conditions in the agriculture and forestry sectors.

Under these circumstances, the Second Plan was formulated to fully rehabilitate the remaining 1.5 million hectares of degraded forest land, building on the achievements of the First Plan. However, unlike its predecessor, the Second Plan was institutionally scaled down—from a plan led by the Ministry of Home Affairs to one administered by the KFS. Moreover, it underwent two rounds of revision, in 1981 and 1983, during which its original quantitative targets were substantially reduced (KFS, 1997).

These changes reflected both the conditions prevailing when the Second Plan was formulated and the socioeconomic changes of the 1980s. First, they were influenced by the perception that forest rehabilitation had already been largely achieved through the First Plan, as well as by the death of President Park Chung-hee in 1979, who had led forest rehabilitation from the highest level of political authority.

Second, industrialization and the declining share of agriculture, forestry, and fisheries significantly reshaped the policy environment. Since the 1960s, South Korea had achieved sustained economic growth through the successful implementation of economic development plans. From the mid-1970s onward, as

heavy and chemical industries were actively promoted, the share of the primary sector declined rapidly, marking a transition from an agrarian to an industrial society.

Rapid urbanization reduced the share of the economically active population living in rural areas from approximately 40% to around 20%. At the same time, the contraction of the agricultural and forestry labor force, combined with declining labor quality and rising wages, increased the costs of forestry management. Between 1973 and 1979, overall prices rose by approximately 2.9 times, whereas the rural wage index increased by about 10.2 times, sharply undermining the financial viability of forestry management in rural areas (Jung, 2008).

Third, while public interest in forestry declined, demand for environmental conservation and recognition of the diverse public functions of forests increased. As the manufacturing and service sectors expanded, the relative importance of forestry gradually diminished. In contrast, rising national income generated growing demands to improve quality of life through environmental conservation rather than to increase forestry income through reforestation.

Ultimately, as South Korea underwent rapid socioeconomic development in the 1980s and public perceptions of forests and forestry changed, the government-led reforestation policies that had achieved significant success in the 1970s began to reach their limits. Above all, there was a growing need for new forest policies suited to an industrializing and democratizing society, moving beyond authoritarian approaches.

In this respect, South Korea's forest policy since 1988 can be understood as a process of both building on the achievements of the authoritarian era and attempting to overcome its limitations. Although this book does not examine this issue in detail, the contemporary challenges facing South Korea's forests and forestry sector are more complex than those of the 1970s and involve conflicts among diverse stakeholders.

Accordingly, approaches to addressing forest-related issues must also change, as the top-down, government-led approaches of the past are no longer effective in securing public acceptance or producing meaningful outcomes. South Korea remains in the process of seeking effective alternatives to address these emerging forest challenges.



## 4

# Success Factors of the National Forest Rehabilitation Program

## 4.1. Underlying Factors

### 4.1.1. Sustained Economic Growth

Since 1962, South Korea has experienced sustained and rapid economic growth, driven by successful economic policies, including the Five-Year Economic Development Plans (SaKong & Koh, 2011). As a result, South Korea's gross domestic product (GDP), which stood at USD 1.1 billion in 1953, had increased nearly elevenfold by 1973, when the NFRP was launched, and 108-fold by 1987, when the program was completed.

One of the major direct causes of forest degradation at the time was the extensive use of forest biomass for household fuel. This practice declined as fossil fuels replaced traditional forest-based energy sources. The shift was driven by improved economic conditions, which made it far more advantageous to earn wages and purchase briquettes or petroleum products than to spend time collecting firewood from the mountains (Oh, 1993).

The implementation of the NFRP and the slash-and-burn land reorganization and resettlement program was made possible by sustained economic growth, which enabled long-term public investment. Moreover, growing domestic timber demand could be met through imports, supported by timber trade liberalization and continued economic growth, thereby reducing pressure on domestic forests. In this sense, sustained economic growth provided a reliable buffer against forest degradation (Figure 12).

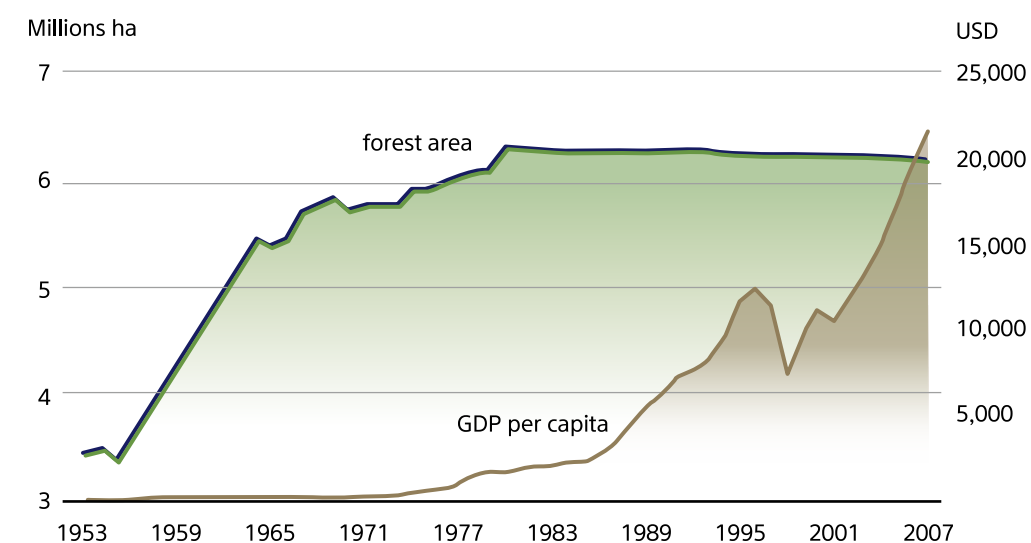


Figure 12. Trends in Forest Area and GDP per Capita (1953-2007).

The increase in stocked forest area began at least two decades before South Korea's dramatic economic expansion. Although South Korea achieved remarkable economic growth between 1960 and 1970, its level of industrialization and urbanization remained far below that of developed countries.

Source: Bae et al. (2012).

4.1.2. Strong Presidential Leadership and Comprehensive Planning

Strong presidential leadership, exercised from the apex of state power, together with the systematic formulation and implementation of the First Plan, constituted a critical success factor (Ko, 2010). President Park Chung-hee, the country's highest political authority at the time, directly set the quantitative goal of fully reforesting denuded mountains within 20 years and elevated forest rehabilitation to a top national policy priority. The government further sought to enhance policy effectiveness by aligning this objective with major national initiatives, including the Five-Year Economic Development Plans, the *Saemaul Undong*, and the Comprehensive National Land Development Plan.

Moreover, the government moved beyond a fragmented approach focused solely on tree planting and forest protection by formulating a comprehensive First Plan that integrated seedling production, reforestation, erosion control, fuel and energy supply, and income generation. In 1974, the slash-and-burn land reorganization and resettlement program was incorporated into the First Plan. Notably, to encourage voluntary participation by village residents, key initiatives—including seedling production, reforestation, erosion control, and the establishment of fuelwood forests—were implemented as community development projects linked to *the Saemaul Undong*, thereby contributing to local income generation.

The President consistently delivered public addresses emphasizing both the necessity of forest rehabilitation and his personal commitment to it. Through education and public campaigns, the government strengthened moral persuasion and raised national awareness by promoting the message that "planting trees is an act of patriotism." As these promotional and persuasive efforts intensified, particularly around Arbor Day on April 5, planting trees in degraded forests came to be regarded not only as a responsibility of forest owners but also as a shared responsibility of all citizens.

Another key role of the President was to coordinate responsibilities among ministries in areas where interests overlapped or cooperation was required. The First Plan was implemented with comprehensive support from nationwide civic mobilization, administrative authority, police capacity, and technical expertise. To improve implementation efficiency, the KFS was transferred in 1973 from the Ministry of Agriculture and Forestry to the Ministry of Home Affairs, thereby combining the latter's administrative and police authority with the former's technical expertise. Under the Ministry of Home Affairs, provincial governors and county heads became directly responsible for implementing forest rehabilitation policies in the field.

From the highest level of state authority, the President integrated the diverse cross-sectoral tasks involved in forest rehabilitation and mediated conflicts among ministries. The program involved multiple government agencies: rural fuelwood policy was linked to the Ministry of Commerce and Industry; hillside cemetery policy to the Ministry of Health and Social Affairs; and the slash-and-burn

land reorganization and resettlement program to the Ministry of Agriculture and Fisheries and the Ministry of Culture and Public Information. As a cross-sectoral program connected to multiple national plans and ministries, its success depended on strong coordination capacity and effective interministerial cooperation.

In March 1973, while presiding over a State Council meeting, the President finalized the annual forest rehabilitation plan and issued directives to coordinate activities across ministries. For example, under the National Tree-Planting Movement, responsibilities were clearly assigned: the Ministry of Education mobilized student participation; the Ministry of Agriculture and Fisheries ensured the timely supply of fertilizer; the Ministry of National Defense supported tree planting by military units; and the Ministry of Culture and Public Information led public outreach efforts. The KFS coordinated the supply of planting materials, arranged planting sites, and provided technical guidance.

To implement the First Plan, the government mobilized a coherent administrative structure extending from the central government to provinces, counties, eup (towns) and myeon (townships), and villages. At the local level, forestry cooperatives and *sanrim-gye* supported government policies both directly and indirectly through contracted reforestation and technical training for forest owners. The KFS and its affiliated institutions, including the Forestry Experiment Station and the Forest Tree Breeding Institute, supported forest rehabilitation by developing and disseminating tree species for reforestation,

developing erosion control technologies, and promoting non-timber forest products to increase rural incomes. In addition, police forces were mobilized to enforce regulations against illegal logging, slashand- burn cultivation, and unauthorized access to forest areas.

While strong presidential leadership accelerated implementation, it also reinforced a centralized and target-driven approach that left limited space for autonomous private forest management.

4.1.3. Rural-to-Urban Migration

The migration of rural residents, who had relied on fuelwood as a primary household energy source, to urban areas also contributed to the recovery of degraded forests. A decadal comparison of urban and rural population trends shows a steady decline in the rural population's share of the total national population, from 72.0% in 1960 to 58.8% in 1970, 42.7% in 1980, and 25.6% in 1990 (Kim, 1996).

Table 8. Changes in the Population Composition by City and County (1960–1990) Unit: %

| Region         | 1960  | 1970  | 1980  | 1990  |
|----------------|-------|-------|-------|-------|
| Urban (City)   | 28.0  | 41.2  | 57.3  | 74.4  |
| Rural (County) | 72.0  | 58.8  | 42.7  | 25.6  |
| Total          | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Kim (1996)



After 1980, many rural households replaced forest-based fuels with briquettes and gas. In this context, rural-to-urban migration between 1960 and 1980—when forest biomass was still widely used as a primary energy source—had a particularly significant effect on forest rehabilitation. Although agricultural productivity increased during the 1970s and rural living conditions improved under the Saemaul Undong, migration to cities in search of new opportunities continued.

Among the various drivers of rural-to-urban migration, a key economic factor was the widening wage gap between urban and rural workers. From 1970 to 1990, the absolute wage gap continued to widen and, except in 1980, rural wages remained below 50% of urban wages for most of this period. This disparity ultimately encouraged rural residents to migrate to cities.

As briquettes became more widely available in rural areas and the number of residents dependent on forest-based fuels declined, forest conditions gradually improved. Consequently, the need to establish dedicated fuelwood forests diminished, and the fuelwood forest establishment program—implemented since the 1950s—was terminated in 1977.

4.2. Direct Factors

4.2.1. Replacement of Household Fuelwood with Fossil Fuels

Economic growth and the government's strong administrative capacity were undoubtedly key factors in the success of South Korea's forest rehabilitation. Building on this foundation, two direct interventions were undertaken to eliminate the principal direct drivers of forest degradation: replacing household fuelwood with fossil fuels and implementing the Slash-and-Burn Land Reorganization and Resettlement Program.

The most significant cause of forest degradation at the time was the extensive use of forest biomass for household fuel, as trees were cut from mountains and burned in traditional hearths in both urban and rural areas. Even in 1960, forest biomass, including fuelwood and charcoal, accounted for 62.5% of the country's total primary energy supply, underscoring its importance as a national energy source. Had the level of forest biomass consumption observed in 1955 remained unchanged, most of South Korea's forests would likely have been degraded within a decade.

From this perspective, intersectoral cooperation between the energy policy of the Ministry of Commerce and Industry and the forest rehabilitation policy of the Ministry of Agriculture and Forestry in the mid-1950s was an effective policy approach. In 1956, the Ministry of Commerce and Industry strongly promoted a policy to increase anthracite production—the country's only domestically available energy resource—to replace fuelwood with fossil fuels. In 1958, the government prohibited the transport of fuelwood into urban areas and pursued a policy of establishing fuelwood forests in rural and mountainous areas, where pressure on forest resources was relatively lower.

With the expansion of coal railways, including the *Yeongam* and *Taebaek* Lines, anthracite production increased rapidly. As a result, fuelwood was first replaced in urban areas, where transportation

infrastructure was more developed and populations were concentrated. In particular, during the 1960s, anthracite played a decisive role in replacing forest biomass as a household fuel in cities. By 1970, only 7% of urban households still relied on fuelwood for heating and cooking. Moreover, during the 1970s, briquettes gradually replaced fuelwood in rural areas as well (Bae & Lee, 2006).

The situation regarding household fuel use in the *sanrim-gye* of *Jeongnim-dong*, Daejeon, which was promoting a fuelwood forest establishment project in 1972, illustrates the extent to which briquettes had already replaced forest-based fuels in some rural areas:

*"At present, out of a total of 126 households in the village, 96 use briquettes, while only around 30 households still rely on forest-based fuels. 'There is absolutely no concern that the planted trees will be depleted,' explained Mr. Song, the head of the sanrim-gye. He added, 'Although the members of the Jeongnim-dong sanrim-gye have carefully planted and managed trees over the years, even when they are notified to gather firewood as part of thinning operations in the densely stocked forest stands within the area, those who actually show up for the work are only children or women.' He attributed this to the fact that men could earn several times more by working in urban areas of Daejeon for a single day than by collecting firewood, and that the need for forest-based fuel was no longer perceived as particularly urgent."* (The Sanrim, May 1972)

As policies promoting the replacement of forest biomass with fossil fuels took effect, forest resource development and forest protection measures also became more effective. As one historical assessment noted, *"As briquettes spread to large cities and, by the early 1970s, to rural areas as well, the mountains gradually turned green"* (Seo, 2006, p. 204). In this sense, the substitution of fossil fuels for household fuelwood during the 1970s played a decisive role in eliminating the principal driver of forest degradation at the time.

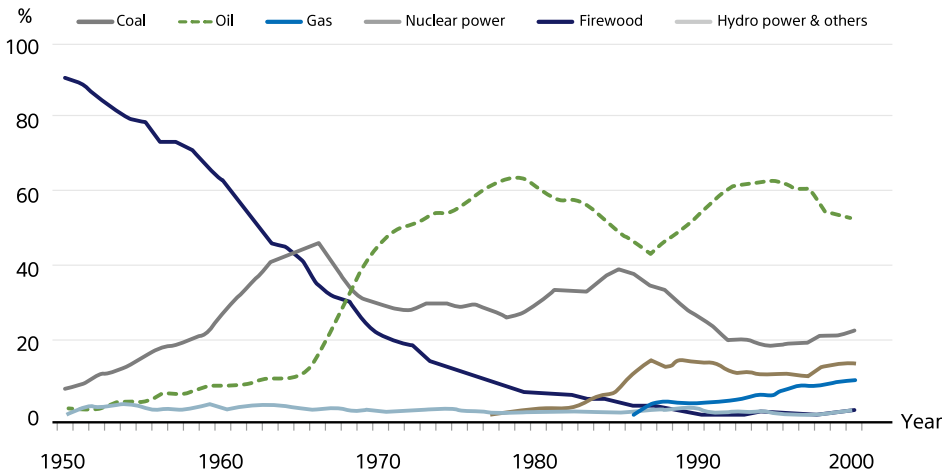


Figure 13. Trends in primary energy consumption (1950–2000). production increased sharply in urban areas during the 1960s. As a result, by 1970, only 7% of urban households still used fuelwood for heating and cooking. During the 1970s, rural villages also began to adopt coal briquettes as household fuel. By the 1980s, gas and coal were increasingly used for both cooking and heating.

Source: Bae et al. (2012).

4.2.2. Slash-and-Burn Land Reorganization and Resettlement

Slash-and-burn cultivation, once a major driver of forest degradation, had been virtually eliminated by 1980 following the successful implementation of the Slash-and-Burn Land Reorganization and Resettlement Program (1974–1978). This initiative was implemented separately from the First Plan. Of the total 107,216 hectares of slash-and-burn fields, 74,171 hectares on slopes steeper than 20 degrees were restored to forest, while 30,045 hectares on slopes of less than 20 degrees were converted to agricultural land. Cultivation was permitted on slash-and-burn fields with slopes of less than 20 degrees. In national forests, cultivators were granted ownership of the land upon payment in annual installments. Slash-and-burn farmers were resettled through three measures: on-site settlement, relocation, and migration. On-site settlement was permitted when the farm size after reorganization exceeded 3,000 pyeong, or approximately one hectare. Relocation involved moving households living on slopes steeper than 20 degrees to nearby villages, with the government providing a subsidy of KRW 200,000 to support resettlement. Migration entailed relocating slash-and-burn households to other cities and counties, in which case the government provided KRW 400,000 along with additional assistance.



Figure 14. Migration of Slash-and-Burn Farmers.  
Slash-and-burn cultivation, one of the direct causes of forest degradation, was officially eliminated in 1979.

Source: Photograph in the collection of the KFS.

Between 1974 and 1979, a total of 267,301 slash-and-burn households were resettled under the program. The vast majority (93.4%) settled in situ, while 5.7% relocated to nearby villages and 0.9% migrated to other regions. The total budget allocated to the program amounted to KRW 18.9 billion. In terms of forest ownership, private forests accounted for the largest share of the 124,643 hectares of identified slash-and-burn areas (73.0%), followed by national forests at 15.8% and local government forests at 11.2% (KFS, 1980). The 107,216 hectares refer to the area reorganized under the program, whereas the larger figure of 124,643 hectares refers to the total area identified in the ownership-based inventory, including areas not incorporated into the reorganization statistics. The success of the Slash-and-Burn Land Reorganization and Resettlement Program was made possible by careful planning and the government's strong implementation capacity. However, even the most carefully designed national program would likely have struggled to succeed if the underlying socioeconomic conditions that had given rise to slash-and-burn cultivation had not been addressed.

Table 9. Performance of the Arrangement of Slash-and-Burn Program

| Category                                          | Measure                         | Year   |        |        |        |       |      |         |
|---------------------------------------------------|---------------------------------|--------|--------|--------|--------|-------|------|---------|
|                                                   |                                 | 1974   | 1975   | 1976   | 1977   | 1978  | 1979 | Total   |
| Reclaimed slash-and-burn areas (ha)               | Forest rehabilitation           | 7,772  | 18,680 | 28,395 | 10,968 | 7,547 | 819  | 74,171  |
|                                                   | Conversion to farmland          | 2,583  | 5,750  | 18,065 | 3,393  | 218   |      | 30,009  |
|                                                   | Collective farmland development | 409    | 3      | 654    | 1,806  | 164   |      | 3,036   |
|                                                   | Total                           | 10,764 | 24,433 | 47,104 | 16,167 | 7,929 | 819  | 107,216 |
| Resettlement of Slash-and-burn (No. of household) | Migration                       | 3,173  | 3,869  | 3,876  | 2,273  | 2,103 |      | 15,294  |
|                                                   | Relocation                      | 332    | 668    | 630    | 523    | 196   |      | 2,349   |
|                                                   | On-site settlement              | 34,121 | 87,354 | 84,630 | 38,882 | 4,671 |      | 249,658 |
|                                                   | Total                           | 37,626 | 91,891 | 89,136 | 41,678 | 6,970 |      | 267,301 |

Source: KFS (1980), KFS (1989).  
  
Note: The reorganized slash-and-burn area excludes 8,291 ha of cadastral farmland converted to forest land, 7,025 ha of boundary-line reforestation on slopes steeper than 20 degrees, and 3,392 ha of remaining upper mulberry forests.

Beginning in the 1970s, pressure on agricultural land in rural areas—a primary driver of slash-and-burn cultivation—gradually eased. Structural changes in the socioeconomic system during this period, including the expansion of labor markets and transformations in agricultural markets, facilitated the migration of slash-and-burn farmers (Shin, 2011). Rapid rural-to-urban migration during the 1970s



reduced farmers' dependence on forest biomass and limited the emergence of new slash-and-burn cultivators, thereby contributing to forest rehabilitation.

In addition, unlike during the Japanese colonial period, the dissolution of landlord–tenant relations and rising farm household incomes were essential preconditions for the program's success. On this foundation of fundamental socioeconomic transformation, the government's strong slash-and-burn land reorganization initiative was able to achieve its full effect. In particular, the allocation of public financial resources to support the stable relocation and migration of slash-and-burn households was a crucial factor in the program's success.

Furthermore, advances in aerial survey technology and the expansion of road networks into rural areas reduced the geographic isolation and concealment that had previously allowed slash-and-burn cultivation to persist (Lee & Bae, 2007).

The environmental effectiveness of slash-and-burn land reorganization should not obscure its social and livelihood consequences for affected households. Any contemporary effort to adapt this experience must place livelihood security, tenure rights, informed participation, and fair compensation at the center of policy design.

### 4.2.3. Large-Scale National Reforestation

Only after the foundations for forest rehabilitation had been established did large-scale reforestation policies begin to produce tangible effects. Reforestation was a necessary condition for successful forest rehabilitation. Broadly speaking, forests can regenerate either through natural regeneration or through deliberate human intervention, such as artificial reforestation. Given the severe forest degradation South Korea faced in the 1960s, artificial reforestation, which could rapidly restore forest cover, inevitably became the primary strategy rather than relying on natural regeneration alone.

In 1960, unstocked forest land accounted for approximately 42% of the country's total forest area, or 2.8 million hectares. Of this total, 520,000 hectares, representing 19% of unstocked forest land, consisted of severely degraded areas requiring urgent reforestation.

Figure 16 shows trends in reforestation performance from 1946 to 2000. Over these 55 years, an average of 97,000 hectares was reforested annually, resulting in a cumulative total of 5.32 million hectares by 2000—equivalent to approximately 83% of the nation's forest area. Notably, 94% of reforestation occurred in private and local government forests, collectively referred to as non-national forests, where forest degradation had been more severe. This indicates that reforestation efforts were concentrated primarily in non-state forest land.

Until the 1960s, however, some planted trees were again cut for fuelwood, reflecting a vicious cycle of degradation. In addition, supplementary planting was often required because of natural disasters, low

survival rates, and inadequate post-planting management. Consequently, the area of newly afforested barren land was likely smaller than indicated by gross planting figures. Furthermore, reforestation statistics included areas replanted after harvesting. Nevertheless, artificial reforestation during this period is generally regarded as having played a decisive role in shaping the forests that exist in South Korea today. Forest age-class statistics as of 2020 clearly reflect this pattern: forests aged 31–50 years accounted for 75.4% of the nation's total forest area (Figure 15).

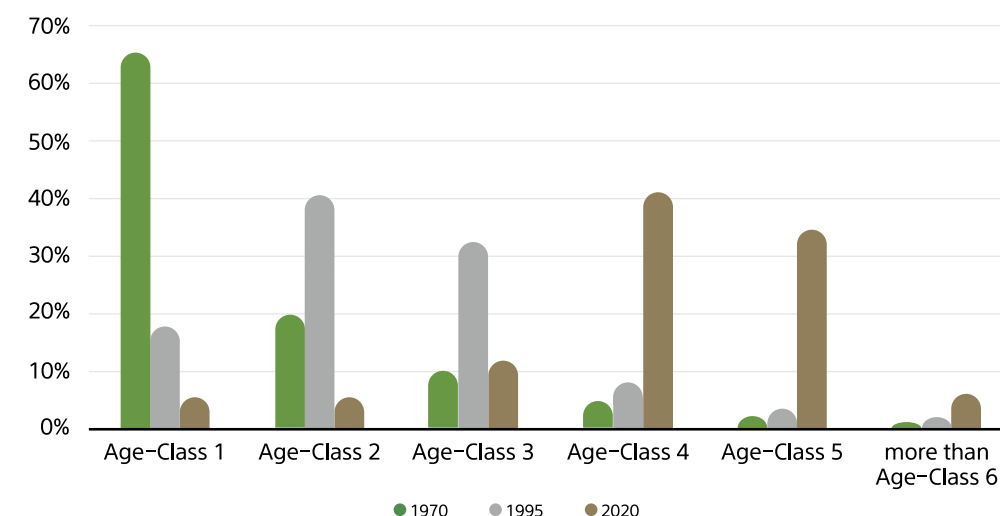


Figure 15. Trends in Forest Age-Class Structure (1970–2020)

Source: KFS (1971, 1996, 2021).

When examined in five-year intervals, the effectiveness of the NFRP becomes more apparent (Figure 16). With the exception of 1967, when 450,000 hectares were reforested in a single year—including 360,000 hectares of previously unimplemented fuelwood forest areas following the establishment of the KFS—the highest level of performance was recorded during 1976–1980. This period, spanning the First and Second Plans, saw an annual average of 200,000 hectares reforested. The second-highest level of performance occurred during 1966–1970, with an annual average of 190,000 hectares, largely owing to the exceptional scale of reforestation in 1967.

Between 1961 and 1980, reforestation accounted for 59% of the total area reforested over the entire study period. The decade from 1971 to 1980, which included the First Plan period, accounted for 31% of the total, slightly exceeding the share recorded between 1961 and 1970. After the 1980s, as the substitution of fossil fuels for fuelwood and the slash-and-burn land reorganization and resettlement program took effect, and as reforestation continued steadily, the scale of new reforestation gradually declined. Beginning in 1983, when annual reforestation fell below 100,000 hectares, the area declined rapidly, reaching approximately 20,000 hectares per year after 2010. In this respect, reforestation

undertaken during the core implementation period of the NFRP (1973–1987) can be regarded as the cornerstone of South Korea's forest rehabilitation.

In addition, the success of erosion control efforts in the *Yeongil* District—often regarded as a symbol of national land conservation—demonstrated that even severely denuded and seemingly irrecoverable land could be restored. Although only 42,000 hectares, representing 50% of the First Plan's erosion control target of 84,000 hectares, were completed during the Plan period, the significance of the *Yeongil* District project extended beyond quantitative targets. It provided compelling evidence that large-scale land rehabilitation was feasible.

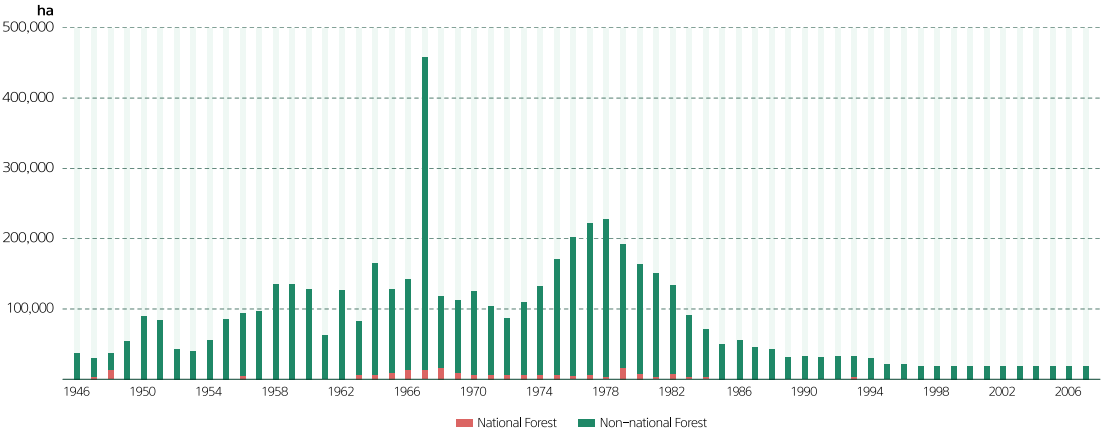
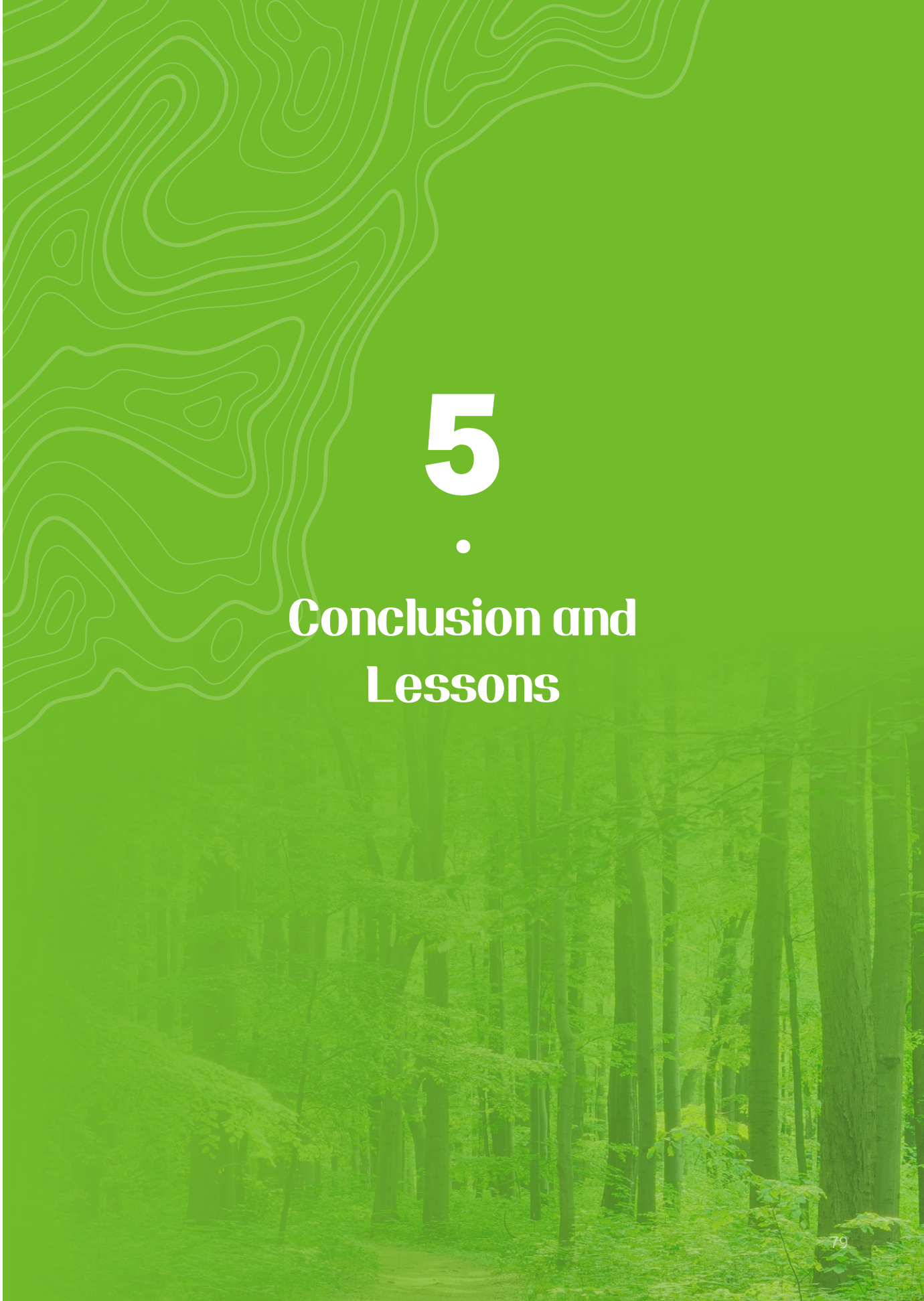


Figure 16. Trends in Reforestation Performance by Ownership (1946–2007)

Source: Bae et al. (2012).





South Korea's National Forest Rehabilitation Program, implemented from 1973 to 1987, successfully reforested approximately 2.05 million hectares of denuded forest land—an area equivalent to about 20% of the country's total land area. Over this period, unstocked forest area declined by 77%, total forest area increased by 9%, and growing stock increased 2.7-fold. The transition from large-scale reforestation to sustained forest management has generated substantial public benefits. As of 2020, the public value of forest ecosystem services was estimated at KRW 259 trillion (NIFoS, 2023), equivalent to approximately KRW 5 million per capita. This valuation illustrates the scale of ecosystem services currently attributed to South Korea's forests, although it should not be interpreted as a direct causal estimate of the effects of the NFRP alone.

The impacts of reforestation span multiple sectors, including soil rehabilitation, flood prevention, biodiversity recovery, enhanced water-resource functions, and expanded recreational services. Forests now cover 63% of the national territory and constitute the dominant component of South Korea's terrestrial ecosystems. Sustainable economic growth and improvements in quality of life would have been difficult to achieve with a severely degraded land base. In this regard, reforestation represents not only ecological restoration but also a critical foundation for long-term economic development and human well-being.

Building on these achievements, South Korea experienced a long-term forest transition from net forest loss to net forest gain. After forest cover declined to approximately 35% in the mid-1950s, it steadily increased and has remained relatively high, in contrast to historical European cases and contemporary examples such as China and India (Bae et al., 2012). South Korea's experience is comparable to that of the United States and New Zealand but contrasts with countries such as Scotland, Denmark, and China, where forest cover once fell below 10% (Rudel et al., 2005). Notably, South Korea achieved a forest transition while forest cover remained relatively high, with both forest area and growing stock increasing consistently since the 1970s.

Moreover, South Korea represents one of the earliest cases among developing countries in which strong government leadership played a decisive role in reversing forest degradation. Its experience served as an early example of the government-led forest transitions later observed between 1990 and 2005 in countries such as China and Vietnam.

The success of reforestation also laid the foundation for sustainable forest management. Forest ecosystem rehabilitation entails not only an increase in forest resources but also improvements in biodiversity, water regulation, and human well-being. Forests provide timber and non-timber forest products, support livelihoods, and offer recreational and cultural benefits. As industrialization progresses and living standards improve, forests evolve from mere resource bases into vital cultural and ecological assets. All of these functions ultimately depend on the existence of healthy, well-managed forests. In this sense, successful reforestation established the basis for sustaining the ecological, economic, social, and cultural functions of forests over the long term.

Several key lessons emerge from South Korea's experience. Although its model cannot be universally applied to all developing countries facing forest degradation, it offers valuable insights. The pathway forged under challenging socioeconomic conditions may serve as a useful reference for countries currently confronting severe deforestation and forest degradation, providing both practical guidance and strategic direction.

First, sustained commitment from the highest level of political leadership and the mainstreaming of forest rehabilitation within the national policy agenda were critical. In South Korea's case, the President directly oversaw the planning, implementation, and coordination of the NFRP ensuring strong political backing at the highest level. Institutional arrangements were also adjusted to enhance effectiveness: the KFS was transferred from the Ministry of Agriculture and Forestry to the Ministry of Home Affairs, thereby aligning policy planning and implementation and enabling the concentration of administrative and financial resources. Forest rehabilitation was further embedded within major national initiatives, including the Five-Year Economic Development Plans and the *Saemaul Undong*, which elevated it to a central state priority. Once positioned as a top national agenda item, forest rehabilitation benefited from sustained financial investment, coordinated administrative support across central and local governments, and strengthened enforcement for forest protection. The Korean case suggests the importance of durable political commitment and cross-sectoral coordination. In contemporary settings, these capacities should be combined with accountable institutions, secure tenure arrangements, inclusive participation, and safeguards for affected communities.

Second, a strong sense of government ownership was reflected in the proactive diagnosis of the causes of forest degradation and the formulation of comprehensive measures to address them. The South Korean government identified the direct causes of forest degradation as the use of forest biomass for household energy, illegal logging, and slash-and-burn cultivation, while recognizing poverty and limited administrative capacity as underlying structural factors. In response, it pursued broad-based economic development beginning in the early 1960s, which facilitated fuel substitution and accelerated rural-to-urban migration, thereby alleviating pressure on forest resources. At the same time, forestry-specific challenges—including illegal logging, slash-and-burn cultivation, and degraded forest land—were addressed through an integrated reforestation strategy linking seedling production, forest restoration, energy substitution, and rural income generation. Crucially, policy effectiveness depended not only on policy design but also on implementation. Measures were supported by strong administrative capacity, strict accountability, and performance-based management, ensuring that policy goals translated into tangible outcomes. South Korea's experience demonstrates that even at relatively low levels of economic development, forest degradation can be effectively addressed through coherent policy design combined with decisive and sustained government action.

Third, setting clear goals and sharing a national vision were essential for mobilizing public participation. At the time, South Korea faced not only widespread forest degradation but also recurrent natural disasters, such as droughts, floods, and soil erosion, linked to degraded forests. The stark contrast between rapid industrial growth and barren mountains reinforced the perception that forest rehabilitation was a national imperative for achieving advanced-country status. In response, the government articulated a clear and measurable objective: to restore 2.64 million hectares of degraded forest land over 20 years, beginning with the reforestation of 1 million hectares within the first decade. This clear policy direction fostered a broad public consensus. To translate this consensus into action, the government launched nationwide tree-planting campaigns and promoted the message that planting trees was an act of patriotism. Reforestation sites were designated early each year, followed by coordinated efforts beginning in March, including presidential addresses, administrative guidance from central ministries, local outreach by forestry officials, and mass media campaigns emphasizing forest rehabilitation and protection. These efforts culminated annually on Arbor Day, April 5. South Korea's experience demonstrates that successful long-term reforestation requires clearly defined goals and systematic communication strategies that effectively share a national vision with the public.

Fourth, cross-sectoral cooperation was crucial for addressing the underlying drivers of forest degradation. At the time, one of the primary causes of forest degradation was heavy reliance on forest biomass for household heating and cooking. Reforestation alone could not provide a fundamental solution; viable alternative energy sources were required. Until the 1950s, when South Korea lacked the economic capacity to import energy, anthracite coal was the only feasible domestic substitute. The Ministry of Commerce and Industry expanded coal production and promoted the distribution of coal briquettes for household use. By the late 1950s, the transport of forest biomass into the Seoul metropolitan area had been restricted, prompting urban households to shift toward coal. As economic growth accelerated and rural road infrastructure improved, this transition extended to farming and mountainous areas, where forest biomass was gradually replaced by coal. In this context, energy policies led by the Ministry of Commerce and Industry, combined with fuelwood forest establishment programs implemented by the KFS, proved highly effective. By 1978, when the First Plan was completed, the share of fuelwood in primary energy consumption had declined to 8%. South Korea's experience highlights that forest degradation cannot be addressed through forestry measures alone but requires coordinated cross-sectoral policy approaches.

Fifth, public–private cooperation played a critical role in the success of forest rehabilitation efforts. In 1973, approximately 73% of South Korea's forests were privately owned, with an average holding size of only 2.6 hectares. Most degraded land was located in private forests, and many forest owners

lacked the capacity to undertake reforestation independently. Although the government demonstrated strong policy commitment, it lacked sufficient financial resources to implement the program on its own. As a result, it actively collaborated with private actors, including forestry cooperatives and *sanrim-gye*, to leverage limited public funds.

To encourage participation, the government provided both economic and non-monetary incentives to residents involved in reforestation activities, including wages, access to fuelwood plantations, and various forms of public recognition. These measures fostered voluntary engagement and stimulated inter-village competition. At the same time, village communities—often organized through *sanrim-gye*—were encouraged to participate in both the *Saemaul Undong* and NFRP through sustained outreach and mobilization efforts. This approach effectively combined administrative coordination with voluntary community participation. Under these conditions, a government-led, cooperation-based model proved highly effective. Core forest rehabilitation activities—including seedling production, tree planting, erosion control, and the establishment of fuelwood forests—achieved tangible results through the active involvement of local organizations and cooperatives. South Korea's experience suggests that addressing forest degradation requires not only government leadership but also meaningful collaboration with local communities. Such collaboration must be supported by programs that create jobs and income opportunities and foster shared ownership of program goals. Ultimately, the sustainability of these efforts depends on aligning local incentives with national objectives and reinforcing them through consistent administrative support and implementation capacity.

Sixth, strengthening research and development and promoting the development and dissemination of appropriate technologies were essential to the success of reforestation (Park et al., 2026). Effective reforestation requires a solid foundation in forest science and forestry technology. Despite limited financial resources, the government invested in building and strengthening forestry research capacity while conducting nationwide soil and forest surveys to establish a scientific basis for reforestation. At the central level, the functions of the Forestry Experiment Station under the KFS were expanded, and the Forest Inventory Research Institute was established in 1972 to oversee soil and forest surveys. At the provincial level, forestry experiment stations, forest management offices, and erosion control units were newly created to support field-level implementation.

The major technical challenges included identifying suitable tree species for specific site conditions, restoring severely degraded and infertile areas, and developing income-generating forest products for local communities. Addressing these challenges required applying the principle of "the right tree for the right place," which in turn depended on a detailed understanding of soil properties, local environmental conditions, and forest ecology. Based on nationwide surveys and sustained research on seedling production and reforestation practices, the government identified ten priority species for reforestation and continuously improved nursery and planting techniques. In particular, advances in tree breeding, such as the development of fast-growing varieties, played a key role in accelerating forest recovery.



Innovations were also introduced in erosion control. On steep, geologically unstable slopes, conventional methods were supplemented or replaced with specialized engineering techniques adapted from civil engineering, enabling successful revegetation. In parallel, the development and field-level dissemination of cultivation and pest-management technologies for non-timber forest products—including chestnuts, walnuts, jujubes, and mushrooms—significantly increased rural incomes. Reflecting these achievements, the Food and Agriculture Organization of the United Nations (FAO, 1982) identified the development of appropriate technologies and their effective dissemination as a key success factor in South Korea's village forestry model (FAO, 1982).

Despite the remarkable achievements of South Korea's NFRP, its implementation was not without limitations. The reforestation policy of the 1970s may be characterized as one of "absolute forest greening," reflecting a strong emphasis on rapid tree planting and the achievement of national targets through centralized control and mass mobilization. Under this approach, reforestation was driven primarily by the government, with limited consideration for the autonomous decision-making of private forest owners. Given the government's limited confidence in the capacity and willingness of these owners, a top-down strategy was adopted, and most forest owners—who collectively held the majority of forest land—followed government directives rather than managing their forests independently.

This legacy has had lasting implications. Even today, the number of professional forest managers who depend primarily on forestry for their livelihoods remains limited, and the economic contribution of the forestry sector to the national economy has continued to decline. These outcomes highlight the structural constraints associated with a highly government-led approach, particularly in terms of fostering long-term private-sector engagement and economic vitality in forestry.

Following the achievement of forest rehabilitation, South Korea is now promoting sustainable forest management that seeks to harmonize the public and economic functions of forests. The task ahead is to maintain the sustainability of forest resources while enhancing the contribution of the forestry sector to the national economy. While drawing on the successful experience of forest rehabilitation in the 1970s, more innovative and adaptive approaches must be developed to address these emerging challenges effectively.

In this sense, South Korea's forest rehabilitation constitutes a living legacy in three interrelated dimensions: an ecological legacy of restored degraded land, accumulated forest capital, and expanded ecosystem services; an institutional legacy of state coordination, long-term planning, science-based knowledge and technology dissemination, and cross-sectoral collaboration; and a critical legacy that reminds us of the limits of centralized mobilization, the fragility of autonomous private forest management, the unfinished task of building a viable forestry economy, and the continuing need to incorporate social considerations in forest policy.



# 6 • Policy Recommendations

AFoCO member and observer countries encompass highly diverse historical, social, and cultural contexts. Their forest conditions also vary considerably, as reflected in forest cover in 2025 and rates of forest-area change over the 1990–2025 period (FAO, 2025). Globally, forests cover approximately 32 percent of total land area, while the average annual rate of forest-area change over the same period was approximately –0.13 percent.

Against this global benchmark, substantial variation is evident across the AFoCO member and observer countries. Timor-Leste and Bhutan retain very high levels of forest cover, approaching 70 percent, while experiencing relatively low rates of forest loss. Myanmar and Cambodia, by contrast, combine high forest cover with relatively rapid forest loss. The Philippines and Singapore have comparatively low forest cover, ranging from approximately 20 to 24 percent, but have also recorded relatively low rates of forest loss. Vietnam provides a notable example of forest transition. After its forest cover declined to approximately 28 percent in 1990, sustained government-led reforestation efforts contributed to an increase to 44.6 percent by 2025 (Mather, 2007; FAO, 2025). Mongolia and the three Central Asian member countries, meanwhile, have forest cover of less than 10 percent (Figure 17).

Differences are also apparent in forest ownership structures. In South Korea, the Philippines, and Vietnam, private forests account for more than 30 percent of total forest area. In many other countries, however, public or communal forests predominate, often accounting for 90–100 percent of forest ownership (FAO, 2025). Moreover, member countries differ not only in climatic and ecological conditions but also in demographic characteristics, political institutions, levels of economic development, religious traditions, and land-tenure arrangements. It is therefore reasonable to expect that both the proximate and underlying drivers of deforestation and forest degradation, as well as the policy responses required to address them, will differ substantially across countries.

Given this diversity, South Korea's experience of forest rehabilitation should not be regarded as a universal model to be replicated uncritically. Rather, it should be understood as a source of lessons and perspectives that may inform approaches tailored to individual national circumstances. From this perspective, two recommendations are proposed for future cooperation among AFoCO member countries.

The first recommendation is to apply relevant lessons from South Korea's forest rehabilitation experience in ways that are adapted to national contexts. Although the circumstances currently faced by AFoCO member countries differ markedly from those experienced by South Korea, several key lessons remain relevant. Chapter 5 identified six lessons that may be particularly useful for developing countries confronting deforestation and forest degradation. When addressing forest-related challenges, policymakers may benefit from considering the following questions: (1) Has the forest issue been mainstreamed as a national development priority? (2) Is there a strong sense of national ownership in addressing the problem? (3) Have a clear vision and policy objectives been established and effectively communicated to the public? (4) Have cross-sectoral partnerships been mobilized to address the root causes of deforestation and forest degradation? (5) Have effective mechanisms for cooperation between government and civil society been developed? and (6) Has research

and development been strengthened to support science-based decision-making? Together, these questions may offer a useful framework for designing policy responses suited to national circumstances.

The second recommendation is to strengthen comparative research among member countries. A recurring observation in AFoCO's review of this manuscript was the need for comparative research that takes national contexts seriously. Such research could help identify both the proximate and underlying causes of deforestation and forest degradation, while also exploring opportunities for collective learning and collaborative action.

One possible approach would be to classify countries into four broad categories: Type 1, countries with high forest cover and low rates of forest loss; Type 2, countries with high forest cover and high rates of forest loss; Type 3, countries with very low forest cover; and Type 4, countries that have undergone, or are undergoing, forest transition. Drawing on forest transition theory, this framework could enable countries facing similar forest conditions to identify common challenges and develop shared policy responses.

Comparative research of this kind could also support the adaptation of lessons from South Korea's forest rehabilitation program to the diverse circumstances of member countries. Potential areas for collaboration include community forestry and its relationship to South Korea's traditional village forestry associations (*sanrim-gye*), reforestation technologies, land-tenure arrangements, decentralization, and governance issues such as public participation and stakeholder engagement.

In closing, it is hoped that South Korea's experience of forest rehabilitation will serve as a living legacy for developing countries confronting similar challenges. More importantly, the diverse experiences, knowledge, and institutional innovations of AFoCO member countries can foster practical cooperation and inspire context-sensitive approaches to forest degradation and sustainable forest management throughout the region.

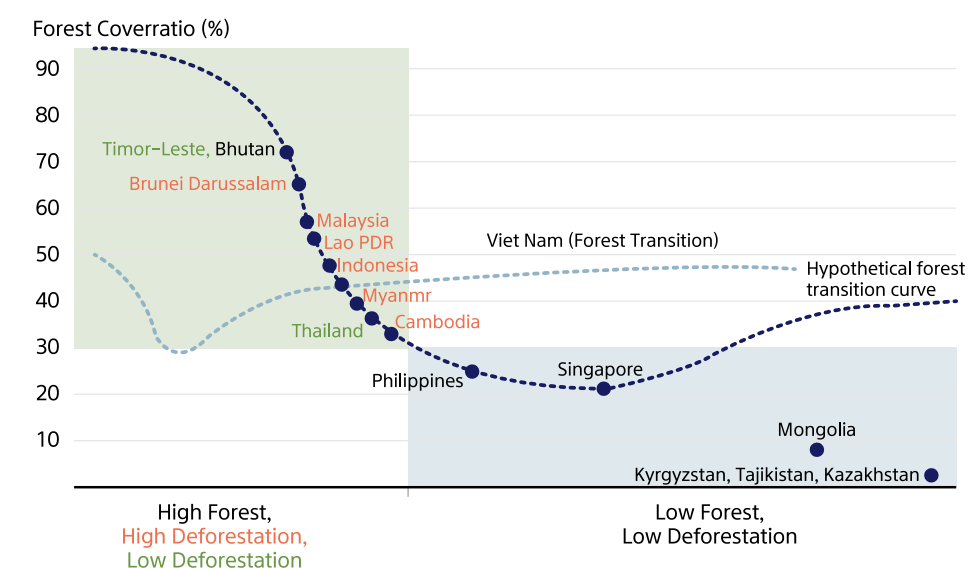


Figure 17. Forest Cover and Annual Rate of Forest-Area Change in AFoCO Member Countries

Source: Adapted from FAO (2025).



References

[Newspaper, Magazine, Statistics]

Bank of Korea. Economic Statistics System (ECOS). Accessed <http://ecos.bok.or.kr>.

Digital Archive of the National Forestry Cooperative Federation. *The Sanrim* (The Forest Magazine). Accessed <https://archive.nfcf.or.kr/main>.

Korea Forest Service (KFS). Statistical Yearbook of Forestry / Forestry Statistics Annual. Accessed <https://kfss.forest.go.kr/stat>.

Korea Legislation Research Institute. National Law Information Center. Accessed <http://www.law.go.kr>.

Korean Statistical Information Service (KOSIS). National Statistical Portal. Accessed <https://kosis.kr>.

National Archives of Korea. Accessed <https://www.archives.go.kr/next/viewMainNew.do>.

National Institute of Forest Science (NIFoS). Forest Science Knowledge Service. Accessed <https://know.nifos.go.kr>.

*The Chosun Ilbo*.

*The Dong-A Ilbo*.

*The Hankook Ilbo*.

*The Seoul Shinmun Daily*.

UNESCO. Accessed February 16, 2026. <https://www.unesco.org>.

[Korean sources]

Bae, J.S. (2007). Establishing process of the 1st ten-year national greening project: At the turning point between the management-oriented approach and administration-oriented approach. *Journal of Korean Forest Society*, 96(3), 269–282.<https://doi.org/10.14578/jkfs.2007.96.3.269>

Bae, J.S. (2011). From barren hills to green mountains. In *The Korean economy: Six decades of growth and development*(Land and Environment Volume, pp. 266–271). The Committee for the Sixty-Year History of the Korean Economy.

Bae, J.S. (2026). Change in forest policy under the Park Chung-hee government: From the establishment of the Forest Management Corporation to the transfer of the Korea Forest Service to the Ministry of Home Affairs. *Journal of Korean Forest Society*, 115(1), 70–80.<https://doi.org/10.14578/jkfs.2026.115.1.70>

Bae, J.S., Chang, C. Y., Noh, S.R., & Kim, T.H. (2022). Changes in forest resources and forest policy after liberation: Success of reforestation and new challenges(Research Series No. 125). National Institute of Forest Science.

Bae, J.S., & Kim, E.S. (2019). Understanding forest status of the Korean Peninsula in 1910: A focus on digitization of Joseonimyabunpodo(The Korean Peninsula Forest Distribution Map).*Journal of Korean Forest Science*, 108(3), 416–426.<https://doi.org/10.14578/jkfs.2019.108.3.416>

Bae, J.S., & Kim, T.H. (2021). Changes in timber supply and demand, and forest resources of Joseon in the Japanese colonial period: Poor forest resources and excessive timber production. *The Journal of Asiatic Studies*, 64(1), 113–152.<https://doi.org/10.31930/JAS.2021.03.64.1.75>

Bae, J.S., & Lee, K.B. (2006). Impacts of the substitution of firewood for home use on the forest greening after 1945 liberation of Korea. *Journal of Korean Forest Society*, 95(1), 60–72.<https://doi.org/10.14578/jkfs.2006.95.1.60>

Bae, J.S., Noh, S.R., & Kim, T.H. (2021). Forest policy and forest resource changes during the Japanese colonial period: Poor forest resources and excessive timber production(Research Series No. 122). National Institute of Forest Science.

Bae, J.S., Kang, Y.S., Rho, B.W., & Joo, R.W. (2001). A history of forest ownership change in modern and contemporary Korea(Research Report No. 182). Forestry Research Institute.

Bae, J.S., Kim, E.S., Chang, C. Y., Seol, A., Noh, S.R., & Lim, J.-H. (2020). Forests and *ondol* in late Joseon: Forest degradation caused by the expansion of *ondol* heating(Research Series No. 119). National Institute of Forest Science.

Bae, S., Park, M. S., & Lee, K. J. (2021). A study on the success factors and significance of forest rehabilitation from the perspective of common-pool-resource management theory(Policy Research Project Report). Korea Forest Service.

Chisan-Nokhwa [Forest Rehabilitation and Reforestation] Ten-Year Plan First-Year Evaluation Committee. (1975). First-year evaluation report of the Ten-Year Forest Rehabilitation Plan. Chisan-Nokhwa Evaluation Committee.

Choi, B. T. (2025, November 5). Changes in the role of village forestry cooperatives (VFCs) and forest rehabilitation from the Japanese colonial period to the 1970s. In *Proceedings of the symposium on revisiting Korea's forest rehabilitation and the role of village forestry cooperatives*(pp. 73–85).

Chung In-uk Biography Compilation Committee. (2000). Pioneer Chung In-uk. Chunchugak.

Goh, K. (1974). Blue House Saemaul Cabinet Meeting Report (March 1974). Executive Office of the President.

Goh, K. (1975). Blue House Saemaul Cabinet Meeting Report (March 1975). Executive Office of the President.

Goh, K. (2010). Korea's forest rehabilitation and North Korea's reforestation [Keynote address]. Joint Academic Conference of the Korean Forest Society and the Korean Society of Wood Engineering.

Han, K. (2007). The first aerial photography for forest survey in Korea and its application. In Korean mountains: Called a miracle by the world (pp. 544–551). Korea Forest Service.

Hyun, S.G., & Cho, R.M. (1963). Introduction of poplar varieties: I. Growth performance of introduced poplar varieties. Annual Report of Forest Tree Breeding, 3, 125–156.

Jung, J. (2008). Korea's forest rehabilitation policy. In Ministry of Strategy and Finance & KDI School (Eds.), Korea Knowledge Sharing Program (p. 126). KDI.

Kang, J.-W. (2019). The reform discussions and consequences on forest problems after liberation. Korean Studies of History, 136, 155–192. <https://doi.org/10.31218/TRKH.2019.12.136.155>

Kang, J.-W. (2020). Enactment of the Forest Law and greening project by the Park Chung-hee regime in the 1960s. Journal of Korean Modern and Contemporary History, 92, 141–173. <https://doi.org/10.22992/kcmh.2020..92.005>

Kim, C.Y. (2006). From the poorest nation to the threshold of an advanced country. Random House Joongang.

Kim, H.O. (1973). Green Yushin and forest rehabilitation. Local Administration, 22(233), 26–41.

Kim, J.S., & Bae, J.S. (1978). Performance analysis of the first ten-year forest rehabilitation plan and policy direction of the second plan. Korean Forestry Administration Research Association Report, 1978(I), 1–96.

Kim, S.C., Kim, M.J., Hwang, M.S., & Lee, M.H. (2003). Background and achievements of chestnut variety breeding. Forest Science Papers, 66, 146–158.

Kim, T.H. (1996). The characteristics of rural population, Korea, 1960–1995: Population composition and internal migration. Korea Journal of Population Studies, 19(2), 77–105.

Kim, Y.J. (2019). Achievements of the first ten-year forest rehabilitation plan and direction of the second plan. Local Administration, 28(304), 122–131.

Kim, Y.-P. (1999). The transfer of the Korea Forest Service to the Ministry of Home Affairs and its

subsequent rehabilitation. In Fifty years of Korean agricultural policy: Testimonies (pp. 415–431). Ministry of Agriculture.

Kim, Y.-P. (2007). The context and background of implementing the Ten-Year Forest Rehabilitation Plan. In Korean mountains: Called a miracle by the world (pp. 467–478). Korea Forest Service.

Koo, Y.B., & Yeo, J.G. (2003). Current status and prospects of poplar research. Forest Energy, 22(2), 1–17. Korea Coal Corporation. (2001). Fifty-year history of the Korea Coal Corporation: 1950–2000. Korea Forest Service. (1979). Second Ten-Year Forest Rehabilitation Plan (Summary).

Korea Forest Service. (1980). History of slash-and-burn field resettlement.

Korea Forest Service. (1989). Twenty years of forest administration: A historical record.

Korea Forest Service. (1997). Fifty years of Korean forest administration.

Korea Forest Service. (2006). One hundred years of erosion control in Korea. Utgo Munhwasa.

Korea Forest Service. (2022). Forest site and soil map.

Korea Forest Tree Breeding Institute. (1996). 40 years of forest tree breeding.

Korea Institute for Defense Analyses (KIDA). (1996). Statistical compendium of Korean War damages.

Korean Association for Public Administration. (2009). Analysis of Korea's successful forest rehabilitation case.

Korean Forestry Administration Research Association. (1975). Thirty-year history of forest rehabilitation.

Lee, K.B., & Bae, J.S. (2007). Factors of success of the clearance policy for slash-and-burn fields in the 1970s. Journal of Korean Forest Society, 96(3), 325–337. <https://doi.org/10.14578/jkfs.2007.96.3.325>

Lee, K. J. (2013). 2012 modularization of Korea's development experience: Saemaul Undong and forest rehabilitation in Korea: Saemaul income boosting project and the role of the village forestry cooperative. In Ministry of Strategy and Finance & KDI School (Eds.), Knowledge Sharing Program (pp. 234–361). KDI.

Lee, K. J. (2020). Forest rehabilitation policy in Korea (1960s–1980s). Collected Works on Forest Culture, 13, 359–415.

Lee, K. J. (2025). Behind the story of forest rehabilitation. Seoul National University Press.

Lee, K.W., Jang, W.H., & Jang, C.S. (1993). Special account for national forest management and improvement measures (Research Report No. 295). Korea Rural Economic Institute.



Lim, S. (2017). A timber theft scandal in Jiri Mountain and its impact on forest policy. *Journal of Humanities*, 64, 109–151.<https://doi.org/10.31310/HUM.064.04>

Ministry of Home Affairs. (1973a). Ten-Year National Forest Rehabilitation Plan (Basic Plan)(National Archives Management No. CM00008853).

Ministry of Home Affairs. (1973b). First Ten-Year National Forest Rehabilitation Plan.

Ministry of Home Affairs. (1973c). Detailed implementation guidelines for the First Ten-Year National Forest Rehabilitation Plan.

Ministry of Home Affairs. (1980). Ten-year history of the Saemaul Undong.

Moon, M. (2010). The dual green revolution in South Korea: Reforestation and agricultural revolution under the authoritarian regime. *Jeonbuk Historical Journal*, 36, 155–184.

National Institute of Forest Science. (1975). National Forest Resources Survey Report.

National Institute of Forest Science. (1981). National Forest Resources Survey Report.

National Institute of Forest Science. (2006). Fifty years of forest tree breeding.

National Institute of Forest Science. (2023, March 29). A gift of fifty years of national reforestation: Forest public benefit valued at 259 trillion won in 2020[Press release].

National Institute of Korean History. (2014). History of the United States forces in Korea (Vol. 4). In *Collected Historical Sources of Korea*(Vol. 2).<http://db.history.go.kr>

Oh, H.S. (1993). The transformation of Korea's forest policy and future forest resources. In *Mountains and the life of Koreans*(pp. 456–473). Nanam.

Shin, D.-I. (2023). From protection to elimination: The peripheral image of fire-field farmers and the fire-field clearance project during the Park Chung-hee government. *DAEGUSAHAK*, 152, 101–136. <https://doi.org/10.17783/dghs.2023.152.101>

Shin, M. J. (2011). A study on the process of clearance project for Hwajeon in the South Korea government and Hwajeon-farmers' realities (from 1965 to 1979): The case of study Kangwon-do. *Review of Economic History*, 50, 69–103.<https://doi.org/10.17828/kesr.2011.50..69>

Shin, M.C. (1975). A study on the new heating method and its structure for improvement of rural houses. *Journal of the Architectural Institute of Korea*, 19(62), 13–20.

Son, S.I. (1973). The direction of the nationwide tree-planting movement. *Local Administration*, 22(234), 20–31.

Son, S.I. (1999). Forest rehabilitation: National land development and reforestation [Unpublished manuscript].

## [English sources]

Angelsen, A. (2009). Introduction. In A. Angelsen (Ed.), *Realizing REDD+: National strategy and policy options*(pp. 1–9). Center for International Forestry Research.<https://doi.org/10.17528/cifor/002867>

Angelsen, A., & Kaimowitz, D. (1999). Rethinking the causes of deforestation: Lessons from economic models. *The World Bank Research Observer*, 14(1), 73–98.<https://doi.org/10.1093/wbro/14.1.73>

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.<https://doi.org/10.1016/j.landusepol.2011.06.007>

Bae, J.S., & Kim, Y.-S. (2020). History lessons from the late Joseon Dynasty period of Korea: Human technology (*ondol*), its impacts on forests and people, and the role of the government. *Forests*, 11(12), Article 1314.<https://doi.org/10.3390/f11121314>

Brown, L. R. (2008). *Plan B 3.0: Rescuing a planet under stress and a civilization in trouble*. W. W. Norton.

Food and Agriculture Organization of the United Nations. (1982). *Village forestry development in the Republic of Korea: A case study*(Forestry for Local Community Development Programme No.GCP/INT/347/SWE).

Food and Agriculture Organization of the United Nations. (2025). *Global Forest Resources Assessment 2025*

Grossman, G. M., & Krueger, A. B. (1995). Economic growth and the environment. *The Quarterly Journal of Economics*, 110(2), 353–377.<https://doi.org/10.2307/2118443>

Mather, A. S. (1992). The forest transition. *Area*, 24(4), 367–379.

Mather, A. S. (2007). Recent Asian forest transition in relation to forest transition theory. *International Forestry Review*, 9(1), 491–502.<https://doi.org/10.1505/ifor.9.1.491>

Meyfroidt, P., & Lambin, E. F. (2008). Forest transition in Vietnam and its environmental impacts. *Global Change Biology*, 14(6), 1317–1330.<https://doi.org/10.1111/j.1365-2486.2008.01575.x>

Ministry of Strategy and Finance, & Korea Development Institute. (2011). *2010 modularization of Korea's development experience: Expansion of educational provision*(Knowledge Sharing Program). Moon, P. Y. (1975). The evolution of rice policy in Korea. *Food Research Institute Studies*, 14(4), 1–22.

Park, H., Han, H., Kim, D., & Kim, S. (2026). Reexamining Korea's successful forest restoration through the revised PDCA framework. *Environmental Management*, 76, Article 81.<https://doi.org/10.1007/s00267-025-02369-x>

Park, J. W. (2026). Creation and fading-out of the policy-enabled community-based forest management institutions in Korea from the 1950s to the 1990s[Unpublished doctoral dissertation]. KDI School of Public Policy and Management.

Rudel, T. K., Coomes, O. T., Moran, E., Achard, F., Angelsen, A., Xu, J., & Lambin, E. F. (2005). Forest transitions: Toward a global understanding of land-use change. *Global Environmental Change*, 15(1), 23–31.<https://doi.org/10.1016/j.gloenvcha.2004.11.001>

SaKong, I., & Koh, Y.-C. (Eds.). (2011). *The Korean economy: Six decades of growth and development*. Korea Development Institute Press.

Stern, D. I. (2004). The rise and fall of the environmental Kuznets curve. *World Development*, 32(8), 1419–1439.<https://doi.org/10.1016/j.worlddev.2004.03.004>

**[Japanese source]**

Government-General of Joseon. (1910–1942). *Statistical yearbook of the Government-General of Joseon*.

Government-General of Joseon. (1927–1942). *Forestry statistics of the Government-General of Joseon*.

Jeong, I.-G. (1978). Quantitative investigation of forest site productivity and its results. *Journal of the Japanese Forest Society*, 19(2), 31–35.[https://doi.org/10.18944/nikkinkai.19.2\\_31](https://doi.org/10.18944/nikkinkai.19.2_31)

**About the Author**

**Jae Soo Bae** received his Ph.D. from Seoul National University in 1997. His research has focused on the history of forest use and conservation in South Korea, with particular attention to sustainability. From 2005 to 2010, he participated in forestry negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) as a government representative. From 2010 to 2012, he was seconded to the Center for International Forestry Research (CIFOR), where he conducted research on REDD+. He also served as the principal investigator for a REDD feasibility study in Lombok, Indonesia, from 2011 to 2016. His recent research has examined policy alternatives for simultaneously advancing the sustainability of forests and forestry in the post-forest-transition context of South Korea. He served as President of the National Institute of Forest Science (NIFoS) from 2023 to 2025 and is currently a Visiting Professor in the Department of Forest and Bioresources, College of Agriculture and Life Sciences, Seoul National University.



# Living Legacy

## South Korea's Forest Rehabilitation

### Cover Photo

Forest in Hongcheon, Gangwon Province, rehabilitated during the 1970s–80s (Photo Courtesy of Korea Forest Service)

All rights reserved. AFoCO welcomes and encourages the use and dissemination of the material in this knowledge product. Except where otherwise indicated, material may be copied, downloaded and printed for private study, research and teaching purposes, or for use in non-commercial products or services, provided that full acknowledgement of AFoCO as the source and copyright holder is given and that AFoCO's endorsement of users' views, products or services is not implied in any way. All requests for translation and adaptation of rights, and for resale and other commercial use rights should be addressed to [contact@afocosec.org](mailto:contact@afocosec.org)

ISBN: 979-11-92009-65-0

© AFoCO, 2026

