“Let’s sing the national anthem and go to the mountain.” This slogan will be remembered with pride by older generations of Koreans, recalling their dedication in reforesting the denuded Korean peninsula.

Korea is a mountainous nation, with forests covering more than 65 percent of the country’s total land area, amounting to approximately 8 million hectares. Historically, forests provided fuelwood for cooking and heating and served as a primary source of building materials. Forests were also a cornerstone for Korean philosophies that centred on a strong respect for nature and the environment. The important roles played by forests in Korean life and spirituality, allied with only moderate physical demands, resulted in forests remaining rich sources of biodiversity until the end of the Chosun Dynasty, the period of the last Korean emperors. Mountainous regions, for example, were habitats for the now long-extinct Korean tiger.

Since the end of the nineteenth century, however, forests have been subjected to long periods of devastation wrought by wars, social instability and colonial
exploitation. During these periods of turmoil, extensive areas of forest were cleared or heavily degraded. National forests, including the Anmyeon-do forests, which had been protected by the former royal dynasties for their unique natural values, were no exception. In modern times, degradation increased in the period following the Second World War. Illegal felling of timber was pervasive, with the worst peak lasting from 1955 until the early 1960s. Forests adjacent to rural villages were often totally denuded as a result of dramatic increases in shifting cultivation for subsistence, and demands for fuel. Korean families during this period utilized “On-dolls,” a unique wood-burning system for heating and cooking. Fuelwood was the prevalent energy source in rural areas until the late 1970s, eventually being replaced by oil, gas and electricity. A dramatic population increase also contributed to deforestation during this period. A national forest inventory carried out in 1955, immediately after the Korean War, found that the non-stocked forest area totalled 3.3 million hectares, accounting for approximately 50 percent of all forest land. The average growing stock was a mere 8.6 cubic metres per hectare. Effective forest management was demonstrably lacking.

Reforestation since the 1950s

Since the end of the 1950s, the Korean Government has made continuous efforts to improve forest management and to implement forest restoration projects, including reclamation of denuded areas, establishment of fuelwood forests, planting fast-growing trees and discouraging shifting cultivation.

The Korean Government took the lead in rehabilitation efforts with numerous reforestation projects, and encouraged villagers to re-establish community cooperatives (San-lim-gye). The government also introduced the Sae-ma-ul movement, which was a nationwide people’s association to eliminate poverty and improve living conditions. Such initiatives were designed to revitalize the traditional spirit of cooperation and unity and eventually became pivotal in the successful regreening of forests.

The Confucian ideals of Korean society also helped. A strong cooperative spirit, and community-based traditions of unity, invoked historical traditions of Doo-rae or Kil-sam — systems for cooperative assistance based on community-sharing of agricultural labour. Traditional cooperative systems were redeveloped, including several forest cooperatives, such as the Song-gye system, which involved partnerships between surrounding villages to manage and protect specific forests.

A potent driver of success was the late President Park Chung Hee’s strong political commitment to reforestation. President Park initiated the Sae-ma-ul movement, which cultivated a spirit of self-help and self-reliance. This movement encouraged rural villages to develop a community spirit centred around village leaders. It successfully focused national attention on reforestation and encouraged people to participate in various reforestation projects. Hundreds of thousands of
people dug trenches on barren mountains and carried soil to create terraces for supporting trees. The result was a seemingly miraculous rebirth of forests from barren land.

*Complete degraded forest in the 1960s (courtesy Korea Forest Research Institute).*

*The reforestation effort restored the forest area (courtesy Korea Forest Research Institute).*

**Forestry in Korea**

In recent years, visiting the old forests and mountains has become fashionable among Koreans, and there is a burgeoning appreciation of nature and ecology. Traditionally, Korea’s forests have constituted an integral part of the respect for the *Keum-Su-Gang-San* — the Korean homeland — that literally translates as “the land embroidered with mountains and rivers.” People are also flocking to the mountains because of the spectacular landscapes and to express and reinforce patriotism.

Oak (*Quercus* spp.) and pine (mainly *Pinus densiflora*) forests feature in many of Korea’s best-loved landscapes. National forests cover 1.43 million hectares and comprise 22 percent of the country’s forested area. Other public forests encompass an additional eight percent, but the majority of Korea’s forests (70 percent) are privately owned. National forests are mainly located in the mountainous areas in eastern Korea, with smaller blocks scattered throughout the country.

National forests are managed by five National Forest Offices, whose spheres of operation extend nationwide. The average stocking of national forests is 88 cubic metres per hectare, considerably higher than the national average of 63 cubic metres per hectare. The national forests are considered to be fundamental to the country’s efforts to conserve endemic oak and pine forests.
Within the national forest estate, 90 forests — including Anmyeon-do — have been designated as recreation forests, totalling 120,000 hectares. Many of these recreation forests comprise compartments of larger national forests. In general, they are the jewels of the country’s forest estate — selected for their outstanding scenic qualities, unique natural values and well-managed resources. In 2000, approximately 3.8 million people visited recreation forests across the country.

**Anmyeon-do Recreation Forest**

One of the most popular tourist destinations in Korea is Anmyeon-do Recreation Forest. Anmyeon-do (do means “island”) is a small island located off the west coast of the Korean peninsula. In fact, Anmyeon-do was originally part of the mainland but, during the Chosun era, a canal was cut across the Anmyeon-do peninsula to allow passage for boats. Administratively, the island belongs to Tae-Ahn County of Chung-Nam Province. The island has a total land area of 11,907 hectares with approximately 13,000 inhabitants.

The Anmyeon-do forest is one of the best protected forests in western Korea. Forty-three percent of the island of Anmyeon-do, totalling 5,175 hectares, is covered with trees. Of this area, 75 percent (3,902 hectares) is provincial forest. Pine is the dominant tree species, particularly red pine (*Pinus densiflora*), also known as *Anmyeon-song* (song means “pine”). Along the coast, black pine (*Pinus thunbergii*) or *Hae-song* (*Hae* means “sea”) is common. Of special importance are 434 hectares of high-quality red pine forests, ranging in age from 80 to 120 years, and reaching up to 360 cubic metres of standing volume per hectare. The Anmyeon-do Recreation Forest was demarcated from this area and consists of 175 hectares of natural pine.

**The long history of Anmyeon-do forest**

The Anmyeon-do pine forest has been managed intensively and protected for more than 1,000 years — first by the old royal dynasties, then by central governments and, most recently, by the local government of Chung-Nam Province. In medieval times, the Anmyeon-do forest was protected for the exclusive use of the Crown, beginning with the 400 years of the Goryeo Dynasty (918–1392 A.D.). During the Chosun Dynasty (lasting until 1910), several areas in the Anmyeon-do forest were designated as *Geumsan* or *Bongsan*, which means “blockade forest”. These forest areas were demarcated with stone markers called *Bongpyo*, which indicated “Crown Forests reserved for timber supply.” Of the 282 Bongsan-designated areas throughout the country, 73 were located in Anmyeon-do. There are several reasons why the Anmyeon pine forest was favoured by royalty. Firstly, the high quality of the timber was appropriate for special royal purposes including the construction of palaces and castles, coffins for royal personages and ship
construction for royal fleets. A second reason was ease of transportation to the capital city, Hanyang (the former name for Seoul). The sea route from Anmyeon-do to the Han River, flowing through Seoul, enabled much easier transport of the timber compared with the very poor road network that existed then.

During imperial times, a supervisory management office was located at Anmyeon-do, and as many as 16 forest rangers watched over the Bongsan forests. The chief forestry officer for Anmyeon-do was required to report directly to the Crown authority on a regular basis, describing cut-over areas, areas planted, methods of regeneration and forest conditions. Procedures for timber harvesting were very strict. The local government authority reported the harvesting plan to the Naval Commander, the highest post in the province at that time. The Naval Commander had to receive permission for timber harvesting from the Minister of Finance in the royal palace, who specified the exact harvest volume required to build a particular ship. According to historical records, illegal logging in Bongsan was almost unthinkable at the time, because of the respect people held for the emperor and his orders.

One of the most famous castles constructed using trees harvested from Anmyeon-do is Suwon castle, about 50 kilometres south of Seoul. According to the archives of the Chosun Dynasty, 9,680 logs, 2,300 boards and 14,212 poles were required just to construct the castle roof. Pine trees for pillars and props used inside the main castle are at least nine metres in length and 67 centimetres in diameter, requiring 344 pine trees (each with a volume of 4 cubic metres). Anmyeon-do forests were managed carefully to produce giant trees for such construction work, up till the end of the nineteenth century.

At the beginning of the twentieth century, Japan occupied the Korean peninsula. In 1909, the Japanese authority surveyed forests on Anmyeon-do. This inventory showed a total forested area of 7,156 hectares, of which 4,864 hectares were primarily pine forests. Subsequent records show that 6,400 hectares of forests were sold to Ma-Saeng-Sang-Jeom, a private Japanese company, in 1927. A significant proportion of the forests was cleared during the Japanese occupation; documentation reveals that 4.5 million kilograms of turpentine oil were extracted from harvested pine trees.

“Following the Korean War, further severe damage was done to the forests during a period of social turmoil,” indicated Mr Bon-wook Ku, a forest officer at the local forestry station. “Illegal and careless logging was common. There was significant encroachment into the forest areas, and many trees were stolen for sale to sawmills or for use as woodfuel. This is why we have only 434 hectares of well-maintained pine forests remaining within the 3,902 hectares of provincial forests on Anmyeon-do.”

However Mr Jae-noh Jo, Director of the Anmyeon Recreation Forest Management Office, emphasized the importance of public forests, and added: “If these forests were private, then they would likely be in worse shape. The
governmental authority has helped to save large portions of the forests by closely monitoring illegal harvesting activities by local people.”

In 1965, the central government transferred the ownership of the Anmyeon-do forests to the Chung-Nam provincial government, and management responsibility was initially assigned to the Chung-Nam Provincial Forest Management Station in Dae-Chon, about a three-hour drive from Anmyeon-do. The Anmyeon Provincial Forest Field Station — a branch office assigned with direct management responsibilities for the forests — was established in 1966. To preserve the genetic values of the Anmyeon pine trees, the Provincial Forest Field Station designated 115 hectares as genetic conservation forest in 1988. There are only 2,128 hectares of forests designated for genetic conservation — at five locations — in all of Korea. A research station, under the control of the Korea Forest Research Institute, was also established in Anmyeon-do. Its main objective is to manage the pine seed orchard for breeding and cultivation of *Pinus densiflora*.

In 1992, the Anmyeon-do Recreation Forest Management Office was established by the Chung-Nam provincial government. The Anmyeon Provincial Forest Field Station merged with the management office to strengthen capacity for managing the area. Among the main functions of the management office are:

- proper control of stand densities in the forest;
- prevention of damage by forest pests and diseases;
- restricting timber harvesting to salvage and sanitation operations;
- ensuring regeneration, using both natural seeding and planting seedlings, to preserve the genetic characteristics of Anmyeon-do pine forests; and
- developing and expanding ecotourism.

**Features of Anmyeon-do Recreation Forest**

Facilities at Anmyeon-do Recreation Forest include a Forest Exhibition House (a forest museum and interactive centre), an arboretum, oriental gardens, play grounds and walking trails. On-site accommodation facilities include 18 log houses and a number of camp sites covering an area of 18 hectares. Three traditional Korean-style houses have also been constructed for guest accommodation. These various facilities were constructed between 1989 and 1992, at a cost of US$2.7 million.

The Forest Exhibition House displays 570 items covering the history, environment and multiple uses of the Anmyeon-do forests. The arboretum houses 555 species of trees and 260 species of wild flowers, occupying about 11 hectares. The Anmyeon-do Recreation Forest Management Office operates all of these facilities.
During the past decade, more than one million people have visited Anmyeon-do Recreation Forest generating earnings (from user fees) of more than US$1.9 million. These funds are contributed to the Chung-Nam Provincial Revenue Office, while the operational budget for the recreation forest is assigned separately from the provincial revenue office.

“The area is popular due to its scenic values,” said Ms Hyo-soon Ahn, a forest guide. “The forest is easily accessible by a bridge connecting the island to the mainland.”

“Anmyeon-do also gained a lot of publicity from the International Flower Expo held in 2002,” she added. The arboretum was used as a part of the exhibition areas for this event. The island also contains an important stand of Golden-rain Tree (*Koelreuteria paniculata*).

The island has 14 beaches, with Tae-Ahn Seashore National Park — located on the northeastern part of the island — attracting many visitors, especially during summer.

“The major reason why people visit the area is absolutely the Anmyeon pine forests, which people really want to see. The second most important attraction is the beautiful beaches,” Mr Jae-noh Jo noted.

Mr Sung-whan Kim from the Management Office added: “The local people of Anmyeon-do are extremely proud of their island and the pine forests.” He cited a significant new publication, *Book of Anmyeon-do*, compiled and printed in 1990 by local people. The huge volume is a monograph detailing all aspects of Anmyeon-do life, including its history, culture, people and natural resources. This pride is a major reason why forests on the island are less degraded than in many other areas, and why Anmyeon-do forest, in particular, has been a conservation success story.

**Forest management**

Currently, the Anmyeon-do Recreation Forest Management Office employs 20 administrative staff. The Office also hires local people to carry out silvicultural work and other types of labour. The office has an overall objective to have Anmyeon-do recognized as one of the best conserved pine forests in Korea. It also aims to develop more opportunities for recreation and education in the natural pine forest area, and through the forest exhibition house and arboretum.

To support the rational management of the forest, the Management Office has developed a Decision Support System that includes attribute data for producing thematic maps showing forest cover, forest-use zones, topography, soil types and access roads. In addition, the Management Office uses a Digital Elevation Model (DEM) to determine elevations, slopes and directions of forest areas. The engines for the Decision Support System are ARC/Info® and MapObject® and MS-Visual
Basic, which facilitate data management, data queries and reporting. These systems utilize the results of a study conducted by Korea University and the Korea Tree Protection Association in 2000, which aimed at better understanding and management of the Anmyeon pine forests. The Chung-nam provincial government provided US$86 000 for this project.

Special management attention is paid to the pine forests, including the area allocated as genetic conservation forest. Fences have been erected around the genetic conservation forest to prevent encroachment.

Throughout the 1970s and 1980s, pine-leaf gall midge and gall diseases were the most severe threats to pine forests in Korea. The Anmyeon pines were no exception. “At that time we covered the ground under the pine trees with vinyl, to prevent gall midges coming in. This helped to save the pines in this area from infestation,” reported Mr Jae-noh Jo. Protecting against the pine gall midge and controlling gall diseases — which have not been completely eradicated in Korea — are still high priorities for management.

The management office has spent more than US$660 000 on forest health activities since 1998, to carry out stem injections on individual trees, sanitary thinning and aerial spraying of 1 700 hectares. It also applied fertilizer and nutrient supplements to maintain forest health. Tree surgery to remedy external injuries is another important activity within Anmyeon-do Recreation Forest. The focus is intense, with the effort aimed at rescuing and maintaining individual trees. These technical activities are carried out under a contract with the Korea Tree Protection Association. To develop a method of ensuring successive forests, experiments have been conducted to investigate methods to assist natural regeneration by direct seeding and transplanting of seedlings in a five-hectare test site.

Forest management concentrates on optimizing forest density by thinning — especially in the oldest stands, many of which are heavily overstocked — and tending of young stands. Efforts are being made to replace about 460 hectares of pitch pine forests with native pines.

“The government made a mistake during the reforestation period in replanting the cut-over areas with pitch pine (Pinus rigida), an introduced species from North America,” explained Mr Bon-wook Ku. “The pitch pine grew poorly so we are working to replace those areas with native pine species.” The native pine trees are cultivated in a nursery from seeds collected from superior mother trees. By 2000, some 2.2 kilograms of seeds had been collected and about 15 000 seedlings are being grown from these seeds. A tree improvement programme for native pines is being implemented at the several nurseries operated by the Management Office.
Promoting tourism is an important way to ensure that the recreational benefits of the Anmyeon-do Recreation Forest are widely enjoyed. For example, the Management Office recently organized a traditional fingernail-tinting event (using the leaves of “touch-me-not,” a garden balsam). About 6,500 people participated in this revival of an old custom.

“The Office does not presently run formal programmes for ecotourism and environmental education. However, when people arrive here, they go through trails in the arboretum and recreation forest observing trees, plants and wildlife,” indicated Mr Bon-wook Ku, a local forest officer.

The Anmyeon-do Recreation Forest is administered solely by the provincial government, which collects revenues and assigns management responsibilities through the Anmyeon-do Recreation Forest Management Office. However, the indirect benefits of the forest contribute enormously to the local economy. Local people note that the attractions and surroundings at Anmyeon-do offer significant potential for ecotourism development.

One local person remarked: “In a sense, the forest is about recreation and eco-education, while at the same time continuing the tradition of people ‘going to the mountain.’”

**Bibliography**


**About the author**

Dr Se-kyung Chong was born in the small town of Cheongju-si in Republic of Korea in 1957. He is married with three children. He has a doctoral degree in timber supply modelling from the University of Alberta, Canada. He currently works as a researcher at the Korea Forest Research Institute.
Acacia mangium planted on degraded grasslands in Mindanao, Philippines (courtesy Masakazu Kashio).
Anmyeondo in Taean is home to a 100 year old pine tree forest that is special in Korea. The natural forest was managed by the royal family during the Goryeo Dynasty and since 1965 has been managed by the province of Chungcheongnam-do. The Forest Exhibition Hall in Anmyeondo Recreational Forest displays the producing process of wood, the uses of wood, the forest's worth, and more in an easy to comprehend manner. The Forest Cabin and Forest Recreation Center have a gas stove, cooking utensils, and shower facilities.

Restaurants near Anmyeondo Island Recreational Forest.

- **Ddandduk Log House**: #4 of 73 Restaurants in Taean-gun. 10 reviews. 23-22, Jounmakteo-Gil. 1 miles from Anmyeondo Island Recreational Forest.
- **Indefinite Ri Feel Handmade Pork Cutlet**: #54 of 73 Restaurants in Taean-gun. 3 reviews. 3012, Anmyeon-Daero. 1.1 miles from Anmyeondo Island Recreational Forest.
- **Countryside Table**: #70 of 73 Restaurants in Taean-gun. 2 reviews. 3022, Anmyeon-Daero. 1.1 miles from Anmyeondo Island Recreational Forest.