

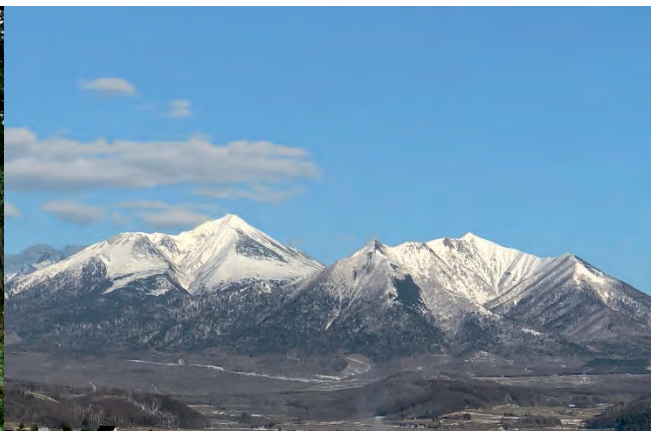
Annual Report on Forest and Forestry in Japan

Fiscal Year 2018

(Summary)

Forestry Agency

Ministry of Agriculture, Forestry and Fisheries, Japan



The “Annual Report on Forest and Forestry” is a report which the Government of Japan (GOJ) submits to the Diet every year, in accordance with Article 10 of the “Forest and Forestry Basic Act.” This document is a summary of the annual report for fiscal year (FY) 2018.

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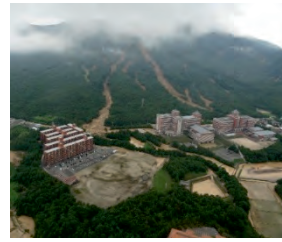
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Forests and Forestry Topics for FY2018

Topic 1. Occurrence of Damage Caused by Torrential Rains in July 2018 and the Hokkaido Eastern Iburi Earthquake and Recovery Efforts

The torrential rains in July 2018 and the Hokkaido Eastern Iburi Earthquake in September 2018 caused serious damage, which was estimated to about 165.9 billion yen and 47.5 billion yen, respectively.

The Forestry Agency conducted a joint helicopter survey, sent technical response staff immediately after the damage occurred, and made strenuous early recovery efforts through disaster restoration projects.



View of damage by torrential rains in July 2018
(Left: Hiroshima Pref., Right: Kochi Pref.)



View of damage by the 2018 Hokkaido Eastern Iburi Earthquake (Hokkaido)

Topic 2. The Twenty-fourth Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP24)

COP24 was held in Poland in December 2018; the Paris Agreement Work Programme was adopted, which enables the full implementation of the Paris Agreement from 2020 onwards.



COP24 attendees

Topic 3. Progress in Construction of Non-residential Mid-to-High-rise Buildings Using Wood and Woody material

Non-residential mid-to-high-rise buildings are being built in various regions using new wooden members including Cross Laminated Timber (CLT), which can be a model for the future.

Economic groups, etc. are undertaking initiatives to expand demand for wood by constructing wooden and woody buildings.

Beginning in 2018, the Prime Minister's Award was established in the Excellent Wood-Using Facility Contest. The Koto Municipal Ariake Nishi Gakuen Junior High School became the first winner of this award.



Koto Municipal Ariake Nishi Gakuen (Tokyo) Prime Ministers Award for the Excellent Wood-Using Facility Contest

Topic 4. Forests, Forestry, the Wood Product Industry, and Sustainable Development Goals (SDGs)

To achieve the Goal 15 in SDGs, it is necessary to strive to transform the forestry into a growth industry and to secure the multiple functional roles of forests.

Actions taken by various actors related to forests, forestry, and the wood product industry also contribute to the achievement of 14 SDGs, including Goal 15 and other Goals.



Topic 5. Sixty-ninth National Tree-planting Festival Held in Fukushima Prefecture

In June 2018, the Sixty-ninth National Tree-planting Festival, which was the final national tree-planting festival of the Heisei Era was held in Minamisoma City in Fukushima Prefecture with the Emperor and Empress in attendance.

The Emperor planted Japanese black pine (*Pinus thunbergii*) seedlings in order to restore coastal forests in this region which was severely damaged by the Great East Japan Earthquake.



Photo: Fukushima Prefecture

1. Need for Innovation in Forests, Forestry, and the Wood Products Industry

In Japan, more than half of planted forests are over 50 years old, the general harvesting period, and they are fully ready for harvest. It will be important to manage these planted forests appropriately in cycles of “harvesting, utilizing, re-planting, and treatment.” (Fig. I - 1)

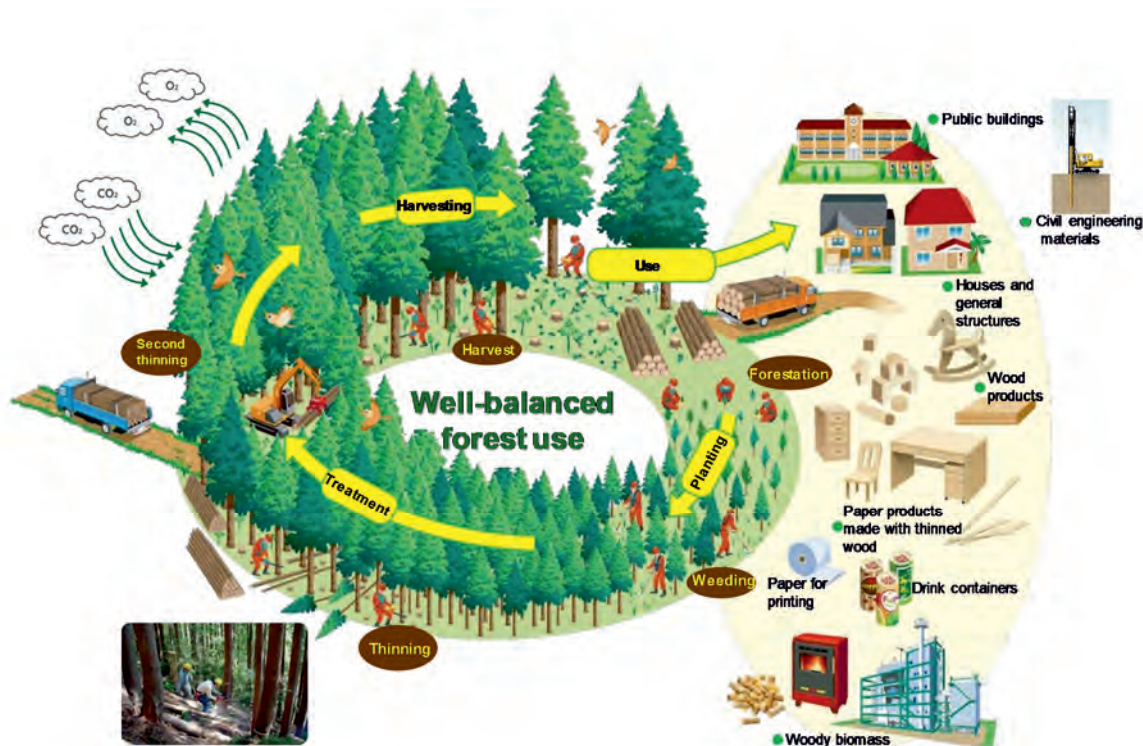


Fig. I – 1 Appropriate cycle of forest management

Therefore, it is necessary to ensure revitalization of forestry and appropriate forest management by promoting “smart” forestry and reforming the domestic wood production and distribution structures.

2. Trends in Forestry Management Entities

While the number of forestry management entities (such as Forest Owners Cooperatives, private forestry companies, forestry households) is declining, the forestry output increased from 422.4 billion yen in 2010 to 455 billion yen in 2015. Therefore, the management scale of the entities is increasing and the number of entities producing more than 10,000 m³ of roundwood also increased from 361 to 524.

(1) Current State of Forest Owners Cooperatives

The number of Forest Owners Cooperatives fell from 672 in 2011 to 624 in 2016, but the scale of their business increased as shown by the increase of their total business billing from 264.3 billion yen to 269.5 billion yen.

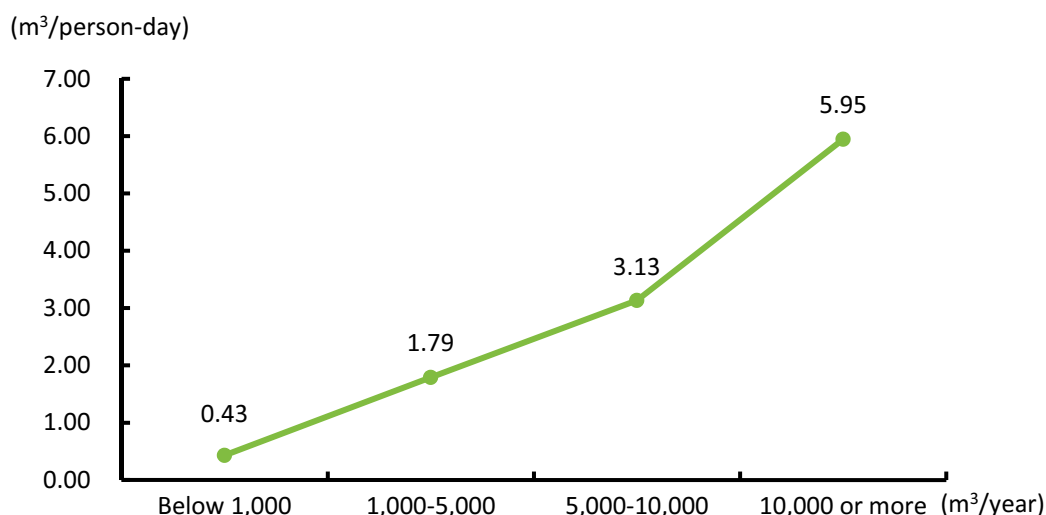
On the other hand, there are still many problems. For example, about 20% of forest owners cooperatives gain less than 100 million yen, which is below 1/4 of the average.

(2) Current State of Private Forestry Companies

The number of private forestry companies reached 2,456 in 2015, showing lively growth of the scale of their production. Total production of roundwood by private forestry companies increased from 6.4 million m³ in 2010 to 8.26 million m³ in 2015.

The labor productivity of forestry entities that produce roundwood has increased by 18% during the past five years. If private forestry companies produce more roundwood per year, the productivity is higher (Fig. I – 2).

In order to further increase productivity, it is important to spread efficient work systems with advanced forestry machines, etc.



Source: Ministry of Agriculture, Forestry and Fisheries (MAFF): 2015 Census of Agriculture Forestry (rearranged totals)

Fig. I - 2 Labor productivity of private forestry entities

(3) Efforts to Innovate Forestry Organizations

Regarding costs of producing roundwood, the current stumpage price is too low to cover costs including re-planting and weeding (Fig. I – 3).

Therefore, it is necessary to lower costs through smart forestry and revolutionary change in the production and distribution structures, and to increase the price of logs by pioneering new wood demand.

Some forestry entities have achieved innovations such as the use of ICT, and these successes must be expanded throughout Japan.

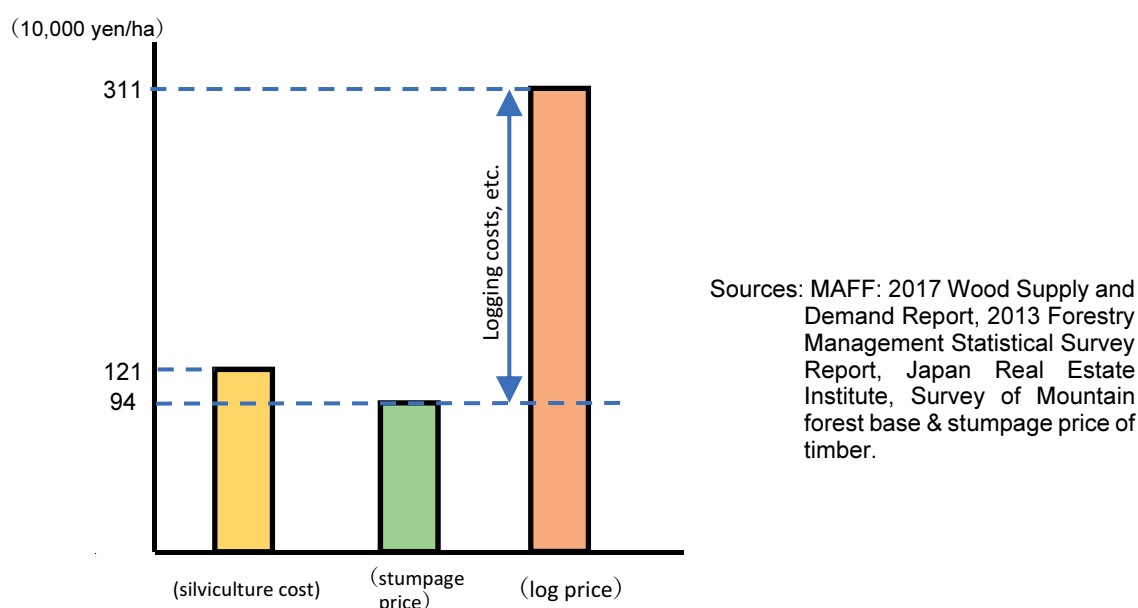


Fig. I - 3 Image of present cost of producing wood

3. Trends in Forestry Workers

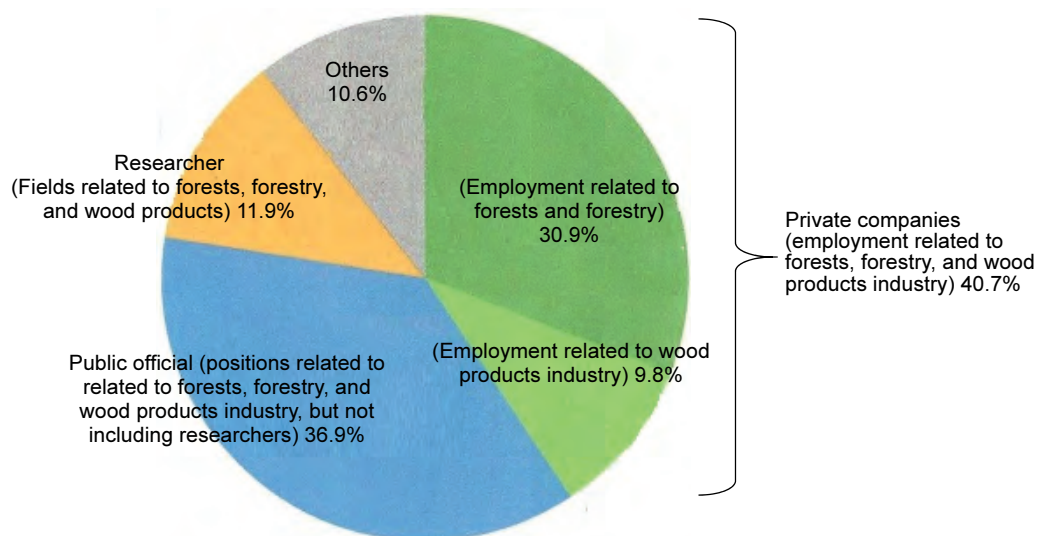
(1) Trends in Forestry Workers

The number of forestry workers is falling continuously, reaching about 45,000 in 2015. While those engaged in cutting, processing, yarding and shipping have increased in recent years, those engaged in planting and weeding have continuously declined.

(2) Questionnaire Survey of Students and Forestry Workers

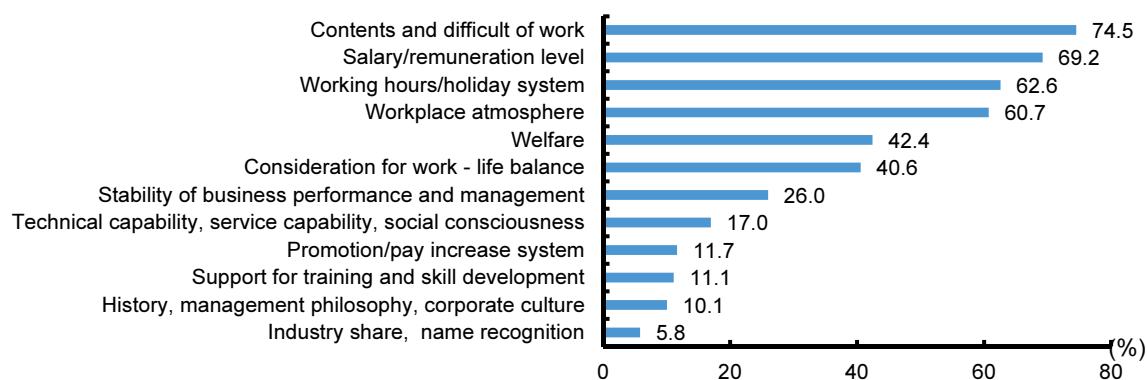
The Forestry Agency conducted a questionnaire survey of students who study forests, forestry, and the wood products industry in December 2018. Among university students, about 40% wished to work for private companies related to forests, forestry, and the wood products industry, while 40% wished to become public officers (Fig. I – 4a). When students considered future work places, the most important point is “contents of work and whether or not it seems worthwhile,” followed by level of salary and remuneration (Fig. I – 4b).

In questionnaires for workers in the “Green Employment Program,” a little less than 40% mentioned that it is difficult to match conditions related to treatment when they wanted to work in forestry (Fig. I – 4c).



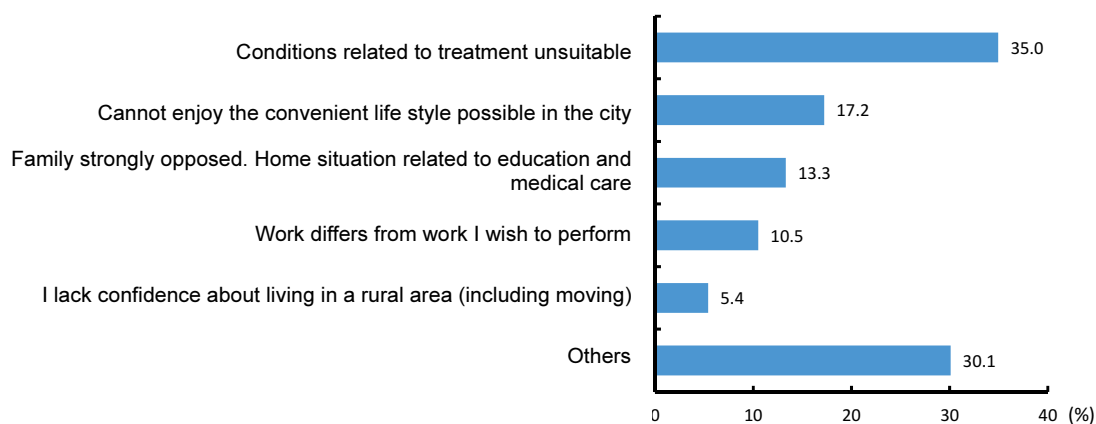
Source: Questionnaire survey conducted by Forestry Agency

Fig. I – 4a Employment goals of students, etc.



Source: Questionnaire survey conducted by Forestry Agency

Fig. I – 4b Information prioritized when selecting future work



Source: Green Employment Program questionnaire survey

Fig. I – 4c Obstacles to employment

(3) Improvement of Working Conditions in Forestry

Wage levels of forestry are not necessarily high in comparison with the average for all industries. The forestry work accident rate (annual deaths or injuries/1,000 workers) is 32.9, which is higher than 2.2 for all industries.

In recent years new training has been introduced to improve worker safety such as tree felling training using a variety of training devices, and training using simulators that let trainees experience forestry work accidents.

A visiting instructor from the Forestry Agency gave high-school students a lecture using a simulator of forestry work accidents and forestry machine operation. A chain-saw shaped controller simulates forestry work accidents, while a harvester operation simulator gives students a simulated experience of felling, cross-cutting trees, etc. with virtual reality. These two simulators are gradually being introduced to safety education given by College of forestry and Forest Owners Cooperatives etc.



Harvester simulator



VR experience simulator



(4) State of Training of Women

It is important to increase more female workers by realizing diverse forms of working at forestry work sites. While the number of female workers engaged in forestry is falling, the number working as fellers, wood processors, and tree logging workers has begun to rise again during the past 5 years as a result of progress in mechanization.

4. Trends in Human Resources at Administrative, Research, and Educational Organizations

(1) Administrative Staff

In the past 10 years, the number of public officers in charge of forestry has fallen slightly in municipal governments and more than 10% in prefectural governments. In order to promote appropriate management of forests mainly by municipalities, the Forestry Agency promotes training of “Foresters” who support technically the municipalities’ design visions and implementation of their forest management.

(2) Researchers at Research Institutes

In addition to the Forestry and Forest Products Research Institute of the Forest Research and Management Organization (FFPRI), there are research organizations dealing with forests, forestry, and the wood products industry operated by prefectures. They conduct research and development concerning forests, forestry, and the wood products industry.

(3) Training of Human Resources at Educational Institutions

Educational institutions where students can study forests and forestry have increased, particularly in recent years. In April 2018, there were 28 universities with a forests and forestry department, 17 colleges of forestry, and 72 high schools that offer courses or classes related to forests and forestry.

5. Human Resources Involved in Forests, Forestry, Wood Products Industry and Wood Use

To build a supply chain to produce and supply wood products in response to their demand, coordinators are necessary in the field of wood distribution.

As qualifications for technical experts who support forests, forestry and wood production, there are qualifications including Professional Engineer Japan (“Forest” is one of 21 technical disciplines), Forest Instructors and Tree Doctors. These experts play important roles in improving and expanding relevant technologies in each region.

Chapter II Forest Management and Conservation

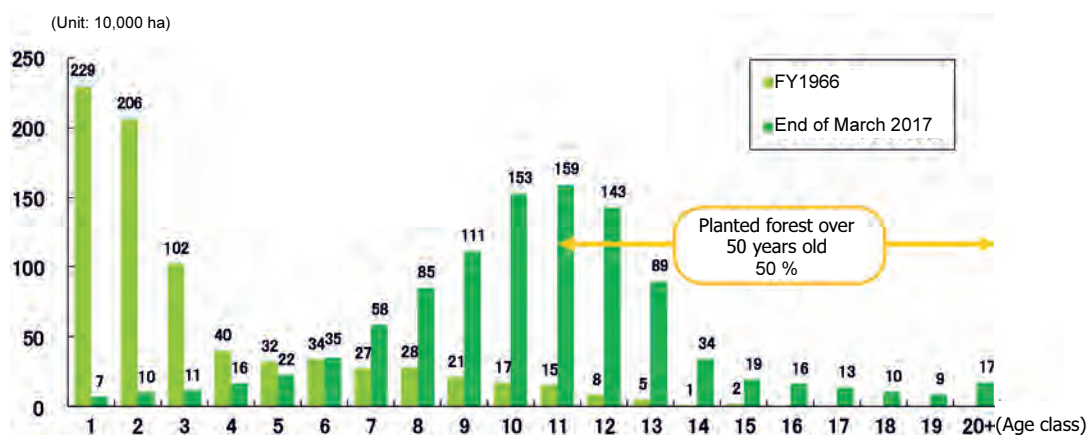
1. Promoting Appropriate Management and Conservation of Forests

(1) Current State of Forests and Multiple Functions

Forests contribute to the people's lives and economies through their multiple functions including land conservation, water resource conservation, and preventing global warming.

Forests cover about 25 million hectares, which accounts for 2/3 of the national land. About 40% of forests are planted forests. Half of the planted forests are more than 50 years old and entering their period of use (Fig. II – 1).

The growing stock is steadily expanding mainly on planted forests, reaching about 5.2 billion m³ by the end of March 2017.



Sources: Forestry Agency: State of Forest Resources (March 31, 2017), Forestry Agency: Forest Resources of Japan (April 1968)

Notes: Age-classes are divided by 5 year-period steps. "Age-class 1" includes the 1st to 5th year after plantation with the year of plantation counted as the 1st year.

Fig. II – 1 Changing forest age class configuration of planted forests

(2) Fundamental Policies for Appropriate Management and Conservation of Forests

To make sure forests perform their multiple functions sustainably, the GOJ formulated the Forest and "Forestry Basic Plan" (revised in May 2016) in accordance with the "Forest and Forestry Basic Act" as well as the "National Forest Plan" formulated under the "Forest Act."

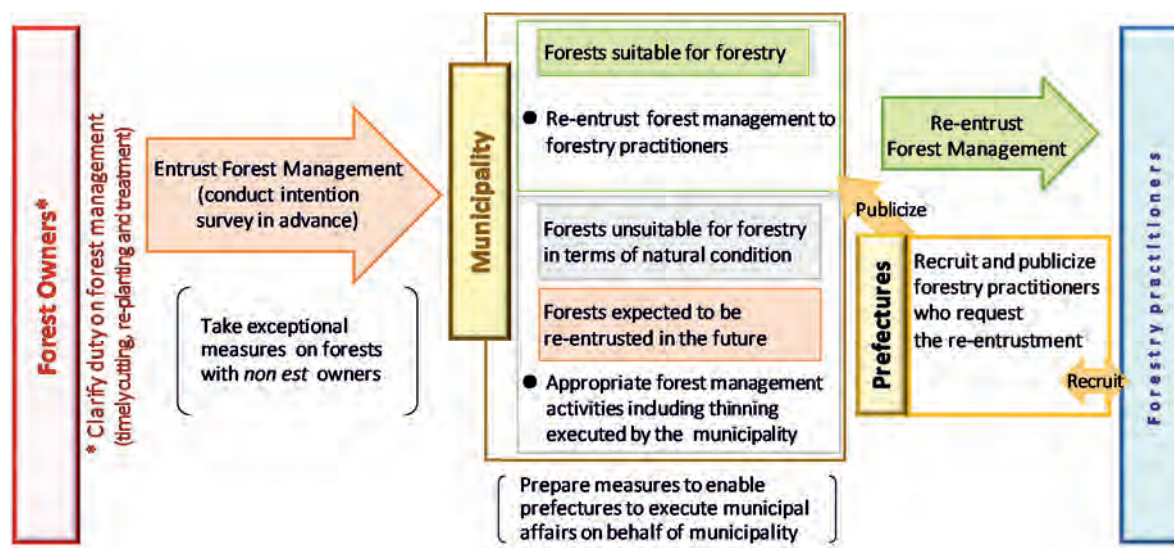
In October 2018, a new "National Forest Plan" was formulated including plans to promote the "Forest Management System" and to control damage by flood wood.

(3) Forest Management System

The “Forest Management System,” based on the “Forest Management Act” enacted in 2018, will be enforced in April 2019.

The Forest Management System is a new scheme that differs from any past systems in Japan. In this scheme, municipalities are entrusted with the management of forests which their owner are not able to manage appropriately. Then the municipalities re-entrust the forests suitable for forestry to highly-motivated forestry practitioners who manage forests sustainably through certain proceedings. The municipality is able to take exceptional measures if necessary to manage the forests whose ownership is not clear (Fig. II – 2).

And in 2019, the “Forest Environment Tax” and “Forest Environment Transfer Tax” were created with the idea that all citizens equally support Japan’s forests. As “Forest Environment Tax,” additional 1,000 yen per capita per year will be imposed as part of the individual inhabitant tax from FY2024.



Source: Prepared by Forestry Agency

Fig. II – 2 Outline of Forest Management System

(4) Research and Development

The GOJ, prefectural governments, the Forestry and Forest Products Research Institute (FFPRI), universities and private sectors jointly conduct research and technology development in order to secure the fulfillment of the multiple functions of forests and to develop forestry, to ensure the supply and use of forest products, and to lower the cost of re-planting. The achievements of research and technology development are spread by forestry extension agents.

2. Forest Management

(1) Promotion of Forest Management

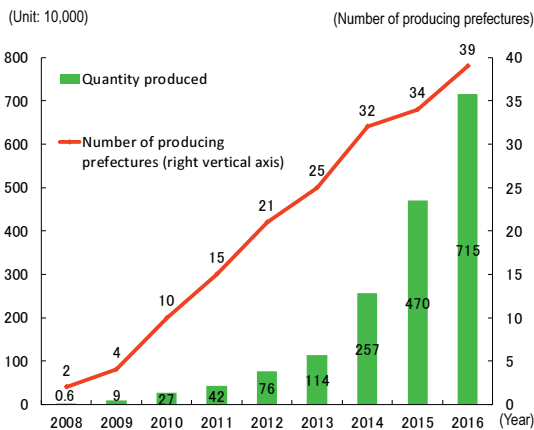
In order to sustainably secure the fulfillment of the multiple functions of forests, it is

necessary to appropriately use forest resources and work steadily on thinning and re-planting after harvesting. It is also necessary to lead the way to diverse and sound forests by promoting the creation of multi-layered forests, long-term management, creating mixed forests of conifers and broadleaf trees, and forming broad-leaved forests, depending on natural conditions. For those reasons, the GOJ promotes systematic and appropriate forest management based on the Forest Planning System under the Forest Act.

(2) Promotion of Re-planting

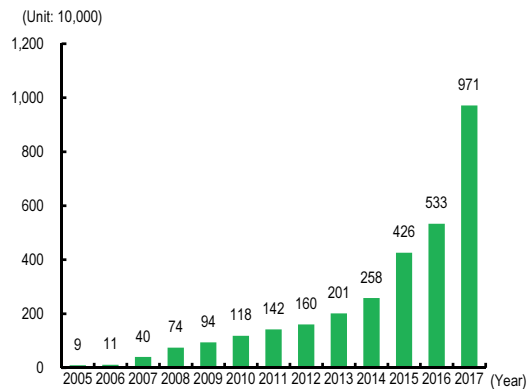
To encourage re-planting after harvesting, it is increasingly important to reduce re-planting costs and to stably supply seedlings. About 60 million seedlings for re-planting were produced in FY2016, and about 10% was for seedlings raised in the container (Fig. II – 3).

In April 2018, the Forest Agency revised “Guidelines for the Cedar Pollen Source” to actively promote countermeasures against pollen source such as increasing the production of seedlings of low-pollen or pollen-free varieties (Fig. II – 4).



Source: Investigation by Forestry Agency

Fig. II – 3 Annual production of containerized seedlings



Source: Investigation by Forestry Agency

Fig. II – 4 Annual production of Sugi seedlings of low-pollen or pollen-free varieties

(3) People’s Participation in Forest Management

Forest management activities by NPOs and companies, etc. are expanding. About three-thousand groups were conducting forest-creation activities in 2015, which is about 5 times as many as those in 2000. In recent years, the business sector shows growing interests to stimulate local economies through transforming the forestry into a growth industry.

3. Forest Conservation

(1) Management and Conservation of Protection Forests

“Protection forest” are designated in accordance with the Forest Act when it is considered particularly necessary that they provide important public benefits. Felling and forest development are regulated in them. At the end of FY2017, 12.2 million ha of forests were designated as protection forests. Additionally, even when a forest, except a protection forest, is diverted, the Forest Land Development Permission System secures public benefits.

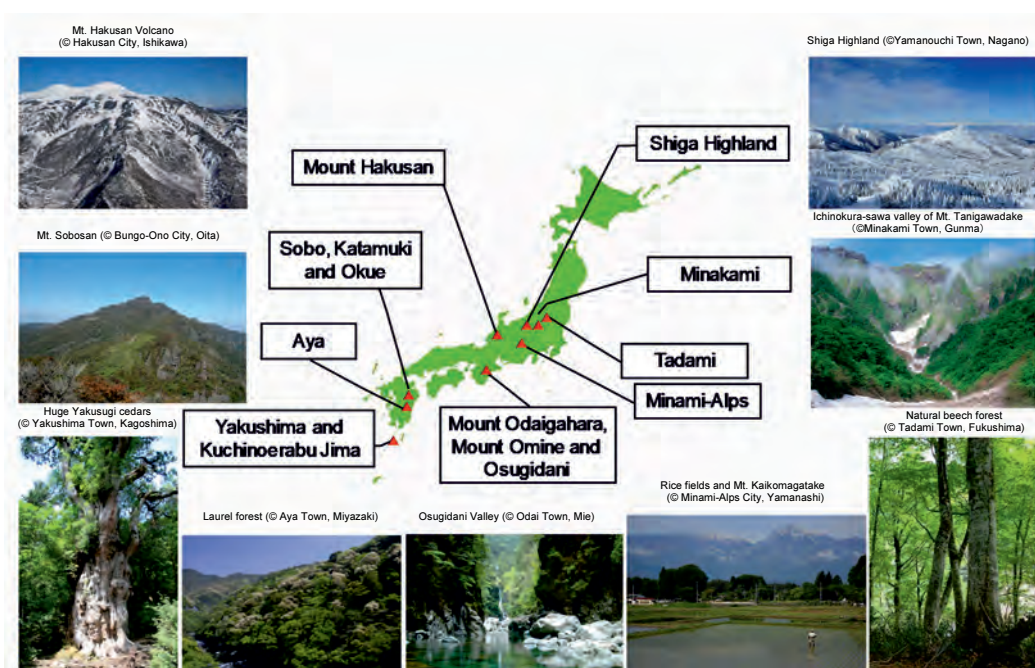
(2) Disaster Control

The GOJ promotes integrated forest conservation projects including accurately clarifying mountain disaster hazard regions, restoration of devastated forests, and development of coastal forests. When natural disasters occur in mountainous areas, the Forestry Agency conducts immediate surveys and elaborates recovery works.

(3) Conservation of Forest Biodiversity

Based on the National Biodiversity Strategy of Japan 2012 – 2020 (adopted in September 2012), the Forestry Agency promotes appropriate thinning and diverse forest creation and the protection and management of primeval forest ecosystems.

The Forestry Agency promotes the strict protection and management of forests in World Heritage sites and Biosphere Reserve sites (Fig. II – 5). The GOJ also resubmitted the nomination of Amami-Oshima Island, Tokunoshima Island, Northern part of Okinawa Island, and Iriomote Island to the UNESCO World Heritage Center in February 2019.



Source: Prepared by Forestry Agency based on Ministry of Education, Culture, Sports, Science and Technology' Figures.

Fig. II – 5 Biosphere Reserve sites in Japan