Annual Report on Forest and Forestry in Japan

Fiscal Year 2015

(Summary)

Forestry Agency

Ministry of Agriculture, Forestry and Fisheries, Japan

The “Annual Report on Forest and Forestry” is a report which the Japanese Government submits to the Diet every year, in accordance with article X of the “Forest and Forestry Basic Act.” This document is a summary of the annual report for FY2015.

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Note: The maps of Japan included in this summary report do not necessarily represent the territory of Japan comprehensively.

Forest and Forestry Topics in FY2015

TOPIC 1. Self-Sufficiency Ratio of Wood Exceeded 30%

The self-sufficiency ratio of wood was 31.2% in 2014, exceeding 30% for the first time in 26 years.

The self-sufficiency ratio of wood hit the bottom of 18.8% in 2002, but, since then, the ratio has been rising, with the increase of wood supply in recent years as planted forests are getting mature and use of domestic wood for plywood becomes popular.

The volume of wood used at woody biomass power plants is also increasing. Such energy use of wood contributes to vitalization of rural economy, as well as mitigation of climate change.

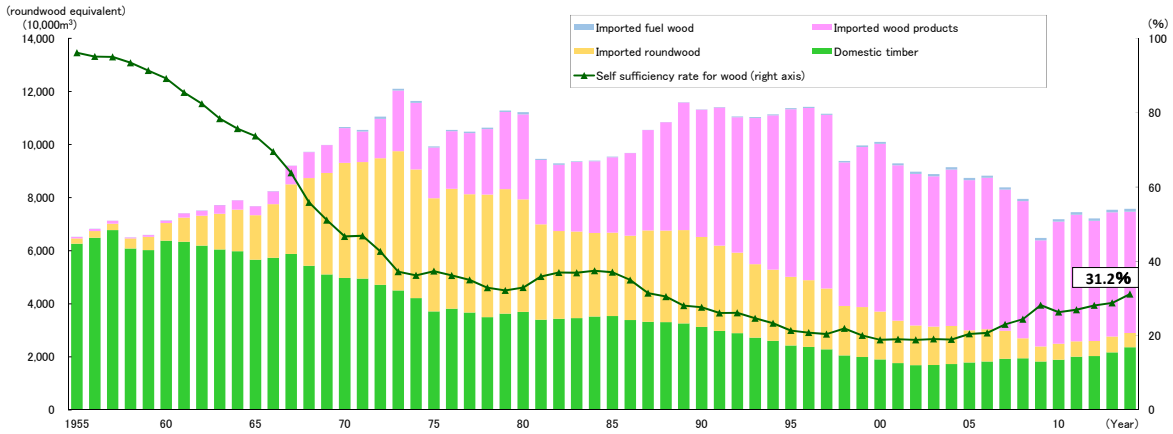


Fig. Self-sufficiency ratio of wood

TOPIC 2. Wood Use in the “Tokyo 2020 Olympic and Paralympic Games”

The Tokyo 2020 Olympic and Paralympic Games are to be held in 2020. Wood use in facilities for the Games would provide people with the opportunities to understand Japan’s technologies based on its traditional ‘wood culture’ as well as the importance of wood use .

The “Working Team on Wood Use”, composed of the national government, the Tokyo Metropolitan Government and the Tokyo Organizing Committee of the Olympic and Paralympic Games, are promoting wood use in the facilities associated with the Games.

The construction plan for the “New National Stadium Japan”, which will be the main stadium for the Olympic and Paralympic games, was decided in August 2015. The structure of the stadium’s roof will be a hybrid of iron and wood. . In addition, cross laminated timber (CLT) will be used for the interiors of the stadium.

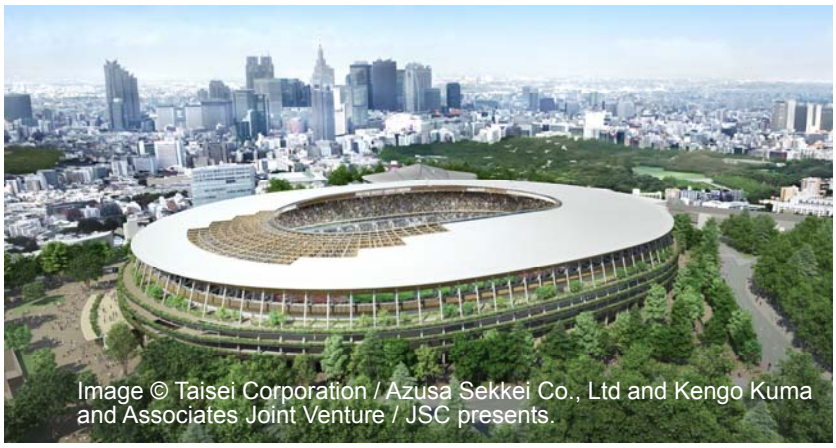


Image of New National Stadium Japan

TOPIC 3. Wood Use in 2015 Milan Universal Exposition

In 2015, the Universal Exposition was held in Milan, Italy, with the theme of *"Feeding the Planet, Energy for Life"*. The Japan Pavillion was built with a wooden exterior wall of Japanese larch (*karamatsu*). Japan's traditional wooden structure with seismic resistance was applied to this wooden exterior wall, and sliced veneer of Japanese cedar (*sugi*) was used for the interior wall of the V.I.P. room.

Wooden exterior wall of Japanese Pavilion


V.I.P. room inside

The 2015 Milan Universal Exposition provided a precious opportunity to disseminate Japan's tradition and the beauty of wood use to all over the world, which helps promote the export of Japan's forest products.

TOPIC 4. The Paris Agreement Adopted at COP21, recognizing the Importance of Forests

The twenty-first session of the Conference of the Parties (COP21) of the United Nations Framework Convention of Climate Change (UNFCCC), held in Paris in 2015, adopted the "Paris Agreement", which provides a legal framework for the global action against the threat of climate change beyond the year of 2020, in which all the Parties are to join.

This Agreement also provieds that Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases, including forests.

The Government of Japan, prior to COP21, submitted its "Intended Nationally Determined Contribution (INDC)" to the Secretariat of UNFCCC. This INDC sets Japan's greenhouse gas (GHG) emisions target at the level of a 26.0% reduction by the fiscal year (FY) 2030 relative to FY2013, 2.0% of which needs to be secured by forest carbon sinks measures.

TOPIC 5. The 100th Anniversary of the Protected Forests System in the National Forests

The year 2015 marked the 100th anniversary of the Protected Forests System in National Forests. The Forestry Agency has designated National Forests with highly valuable biodiversity as Protected Forests and strictly protected them. This system has also served as a protection mechanism for sites of World Natural Heritages and Biosphere Reserves in Japan, while presenting a forest management model to successfully strike a balance between forestry and nature conservation, and deepening people's understanding of zoning in forest management.

In September 2015, the Forestry Agency revised the Protected Forests System to reorganize the classification, introducing a new idea of restoration measures, and establishing an efficient management structure, based on accumulated scientific expertise.

Adoption of the Paris Agreement


Protected Forest in World Heritage *Shirakami*

Chapter I Stable Supply System of Wood

1. Matured Forest Resources and Trends of Demand/Supply of Timber

1.1 Matured Forest Resources and Transforming Forestry into a Growth Industry

In Japan, forest resources, especially those forests planted after World War II, have grown mature, fully ready for harvest (Fig.I-1).

Multi-functionality of matured forests can be secured through efforts for continuous utilization of forest resources on a cycle of planting, thinning, harvesting and re-planting.

On the other hand, forestry in Japan has been stagnant due to its low profitability. The productivity of forestry activities remains relatively low, due to structural characteristics of small-scaled forest ownership dominance, low level of coordination and consolidation of forestry practice, under-development of forestry road network and insufficient introduction of efficient log production systems.

In addition, rural mountain communities, where people engaged in forestry are living, are still placed in serious situations like depopulation and the increase of elderly people. In order to promote forestry and forest products industry as well as development of the rural communities, it is vital to promote continuous utilization of forest resources and establish a stable supply system of wood with a view to transforming forestry into a growth industry.

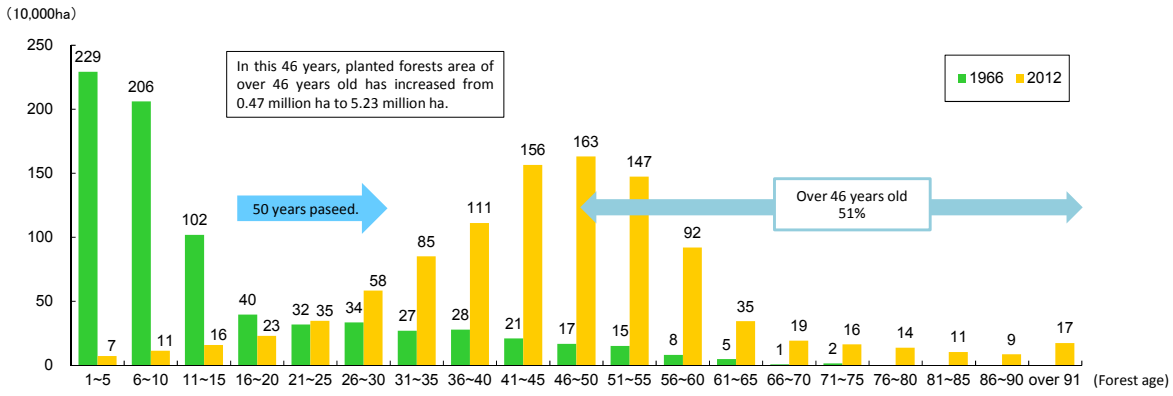


Fig.I-1: Change of forest age structure of planted forests

1.2 Trends of Wood Demand/Supply

The structure of wood demand is changing. With the changes of Japanese life styles, demand for high-grade timber, such as knot-free has decreased, while demand for regular timber, dried timber and laminated timber with stable quality and performance has increased.

The plywood industry uses domestic timber more than ever, with improved processing technology. Recently, large processing mills are constructed in inland areas, where forest resources are in their vicinities (Fig.I-2). Demand for wood chip is also increasing, due to the introduction of the “Feed-in-Tariff (FIT) Scheme for Renewable Energy” in 2012, which obliges electric power suppliers to buy electric power from renewable energy sources at fixed prices for a certain period of time.

Timber distribution is still conducted on a small scale and dispersed in Japan, making it difficult to distribute timber in a timely manner according to various demand. When demand for timber surged in late 2013 due to increase in housing starts and speculative purchase of timber by lumber mills before consumption tax hike from 5% to 8% in April 2014, timber prices of *sugi* (Japanese cedar) and *hinoki* (Japanese cypress) surged significantly (Fig.I-3).

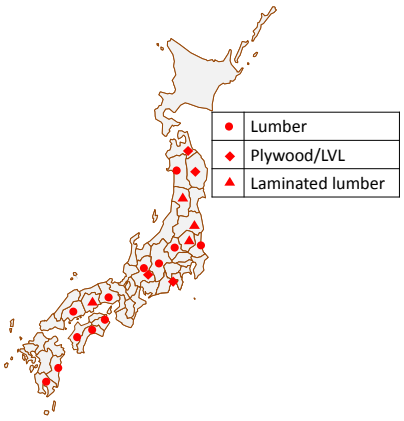


Fig.I-2: Major large mills newly constructed in recent years

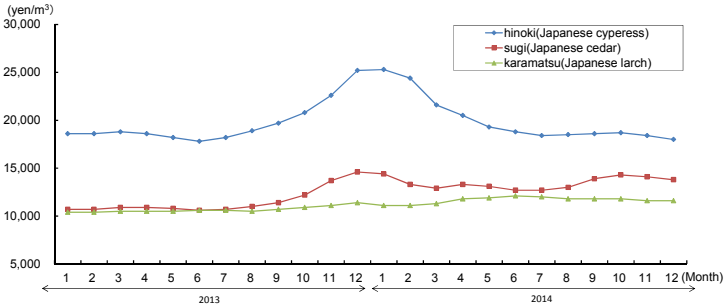


Fig.I-3: Wood prices in Japan (2013-2014)

2. Necessity of and Approaches to Stable Supply System of Wood

2.1 Necessity of Stable Supply System of Wood

A stable supply system of wood plays an important role for both demand side and supply side.

It provides lumber mills as demand side, with opportunities to procure timbers in a constant amount with required quality by specified date, contributing to optimized operation and cost reduction of those mills.

Such a system also helps forest owners and log producers as supply side to secure stable clients contributing to their stable management.

Building contractors and housing makers also benefit from procuring building materials, within a specified period and at a specified cost.

2.2 Approaches to a Stable Supply System of Wood

Demand for timber changes in response to economic conditions. A sustainable supply system is expected to coordinate timber supply in a required amount, responding to demand for lumber, plywood and chip.

For coordinating supply and demand, expansion of the capacity to supply timber as well as information sharing among stakeholders is essential.

Such a system, once established, can also contribute to mitigating fluctuations of timber prices to a certain extent.

Efforts for securing steady demand for timber for both housing materials and other uses is vitally important in order to establish a stable supply system of wood, particularly because population trend in Japan would not allow demand for lumber for housing materials to increase.

3. Current Condition and Future Challenges for Stable Supply System of Wood

3.1 Expanding Wood Supply Capacity

3.1.1 Harvesting and Regeneration of forests

In order to establish a stable supply system of wood, promotion of harvesting of matured planted forests in a sustainable manner is necessary, while continuing thinning of planted forests still at growth stage. Regeneration after harvesting, through re-planting or natural regeneration, is required for the sustainable use of forests resources.

In order to secure regeneration of forests, costs for replanting and treatment need to be reduced. The Forestry Agency has been developing and disseminating techniques for an integrated operation from felling to planting using forestry machine while promoting production of containerized seedlings (Fig.I-4).

Current challenges for regeneration are to supply seedlings of second-generation “elite trees,” and “low-pollen trees” and prevent forest damage by birds and mammals.

Developing technologies for simultaneous operation of harvesting and planting

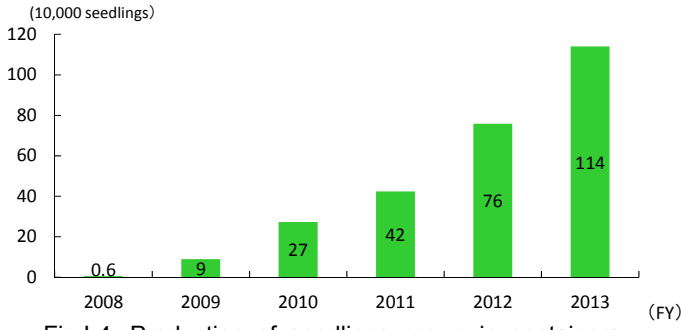


Fig.I-4: Production of seedlings grown in containers

3.1.2 Introduction of Efficient Log Production System

For improving productivity in log production, effective use of advanced forestry machines plays a key role (Fig.I-5).

Since the majority of forests in Japan are located in steep mountains, the Forestry Agency has been engaged in developing and introducing the second-generation cable-yarding forestry machines applicable in steep forest sites. The Forestry Agency is also engaged in developing human resources equipped with techniques to operate cable-yarding.

Development of methods to collect and transport branches and stumps in an efficient manner is also becoming important, since demand for wood chip for energy use continues to increase. In this regard, “whole tree yarding system” has advantages in that branches and stumps are taken away with the tree’s trunk and site preparation before planting can be omitted. In addition, “fast-growing tree species”, such as *Melia azedarach*, are becoming popular with its excellent strength and possible use for furniture materials and wood chip.

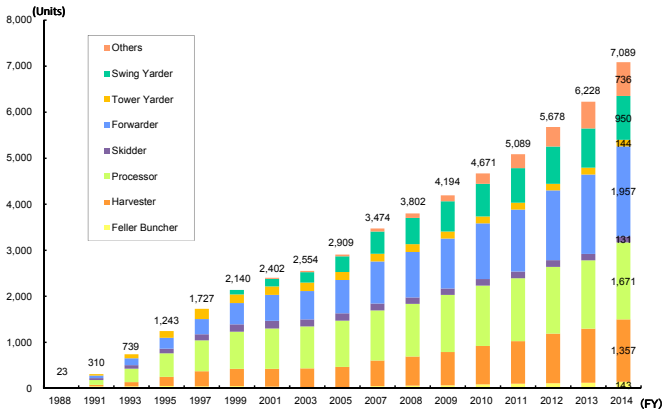


Fig.I-5: Number of advanced forestry machines

3.1.3 Rationalization of Timber Distribution

Costs for timber distribution can be reduced, through rationalizing the distribution system from log production sites to lumber mills. To this end, the Forestry Agency has been supporting construction of intermediate timber stockyards, which classifies logs brought in by forest owners' cooperatives, log producers etc.

A measurement system using digital camera is also under development.

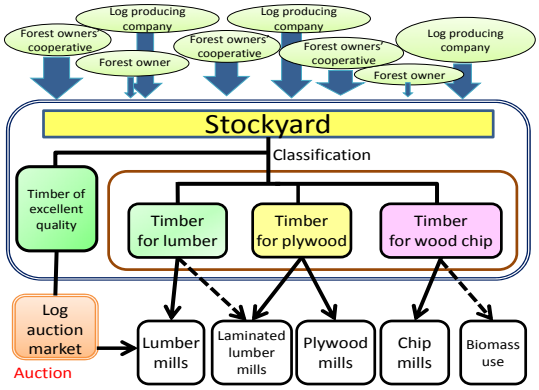


Fig.I-6: Stockyard for timber (Image)

3.1.4 Forestry Contractors

In Japan, forestry practices or operations such as logging and planting are carried out by forest owners themselves, forest owners' cooperatives and private (or independent) forestry contractors. The last two categories are called 'forestry contractors.'

In order to expand timber supply capacity, it is necessary to develop forestry contractors equipped with advanced management skills. To this end, it is important to promote introduction of production management and cost accounting to operation of forestry contractors.

It is also necessary to develop human resources to choose appropriate log production systems according to site conditions.

3.1.5 Coordination and Consolidation of Forestry Practices

In Japan, ownership of private forests is characterized by small forest size. The Forestry Agency is promoting "coordination and consolidation of forestry practices" among small-scale forest owners, through providing training programme called "Forest Management Planner" who coordinates forest owners and consolidate forestry practices.

In 2012, "Forest Act" was revised to introduce the new "Forest Management Planning System", with a view to promoting coordination and consolidation of forestry practices among small forest owners. The Forestry Agency is supporting field surveys and activities for consensus-building for this purpose. In some cases, communal forest leads coordination and consolidation efforts in the area, or forest owners' cooperatives and/or lumber mills purchase forests for consolidated forest practices.

The Forestry Agency is promoting designation of "Cooperative Forest Management Area" between private forests and National Forests, which can contribute to consolidation of forestry practices and construction of efficient forestry road network.

"Forest Management Planner" utilizing a tablet to explore consolidation of forestry practices

Consolidated forestry practice in communal forest and its adjacent forests

3.1.6 Securing Forestry Workforce

For expansion of timber supply, forestry workforce needs to be developed and maintained. The Forestry Agency is implementing the “Green Employment Programme” to help forestry workers cultivate proper techniques and skills. Improvement of employment conditions, especially through year-round employment contracts, is still a challenge.

3.1.7 Development of Forestry Road Network

Road network is the most important infrastructure which enables efficient forestry practices as well as stable wood production and distribution. The Forestry Agency is accelerating development of forestry road network, with the best applicable combination of three forest road types: mainline “forest road” for general vehicles, “forestry-exclusive road” for trucks and “forestry operation road” for forestry machines.

The Forestry Agency is conducting training programmes to give technical experts planning and construction skills in forestry road network.

3.2 Information Sharing of Wood Supply and Demand and Coordination of Wood Supply

3.2.1 Information Sharing on Supply and Demand in Timber and Seedlings

With a geographical broadening of timber distribution, along the construction of large-scale mills of lumber, laminated lumber and plywood, information sharing of wood supply and demand is becoming difficult.

In order to establish a stable supply system of timber and ensure replanting after regeneration felling, seven “Supply and Demand Information Exchange Meetings” have been held since 2015, with the aim to share information on supply and demand for timber and seedlings among all stakeholders including private sectors, local governments and national forest offices. Some prefectural governments are publishing periodical reports on a predicted monthly amount of log production by regeneration felling and thinning respectively.

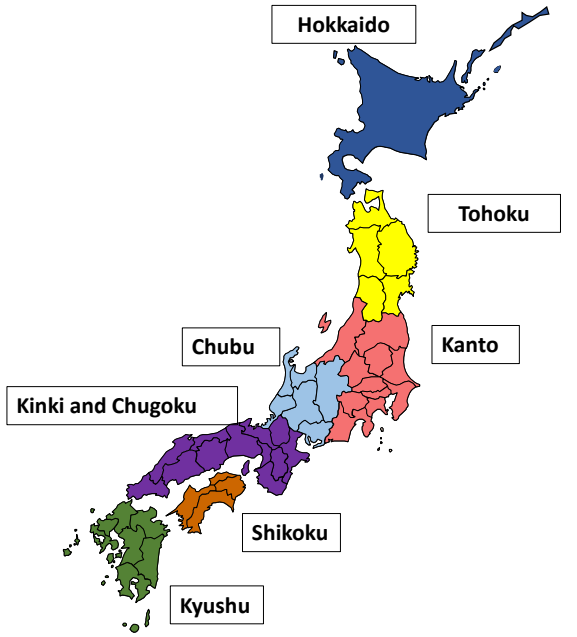


Fig.I-7: Seven “Supply and Demand Information Exchange Meeting” (Image)
Footnote: This map of Japan does not necessarily represent the territory of Japan comprehensively.

3.2.2 Coordination of Log Supply

It is necessary to establish mechanisms to coordinate production and shipping of logs, responding to changes of demand for timber. Some initiatives by a single competent entity or group of entities are underway to coordinate production and/or shipping of logs, taking into account local circumstances of forestry and wood product industry.

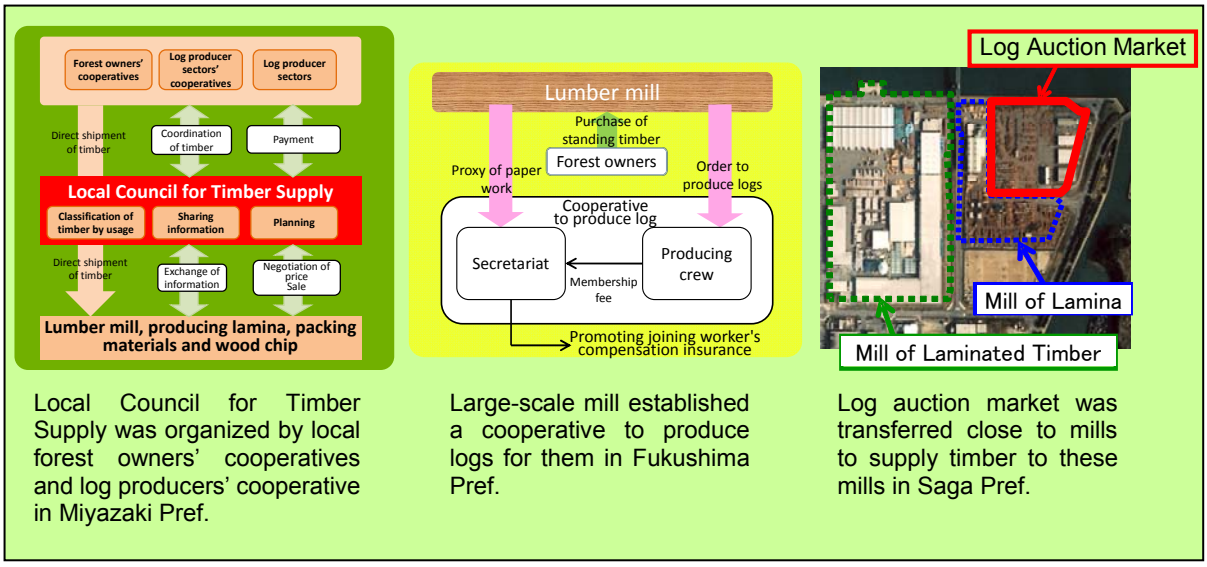
3.2.3 Initiatives for Stable Transaction

Recently, log producers and wood manufacturers have concluded agreements on stable supply of timber and this kind of movement has widely spread. Forestry contractors, large-scale timber mills, and log auction markets play key roles of coordinating stable timber transactions.

Where forest owners' cooperatives or log producers' cooperatives play a key role in timber distribution, these cooperatives lead the coordination among stakeholders. In many cases, these cooperatives provide individual producers with information or guidance on usage and length of timber needed by local wood processing sector.

Where log producers are rather slow in forming cooperative, large-scale mills of lumber, laminated lumber, and plywood lead the coordination among stakeholders. In some cases, such large-scale mills organize logging cooperatives to produce and supply logs for them.

Where log auction markets play a key role in timber distribution, such log auction markets lead the coordination. In such cases, log auction markets collect timbers from log producers and send them directly to wood processing mills. Log auction markets can also select and sell by auction logs with excellent quality, utilizing their conventional function as log auction market.



Local Council for Timber Supply was organized by local forest owners' cooperatives and log producers' cooperative in Miyazaki Pref.

Large-scale mill established a cooperative to produce logs for them in Fukushima Pref.

Log auction market was transferred close to mills to supply timber to these mills in Saga Pref.

3.3 Towards Stable Supply System of Wood

As described in this chapter, in order to establish a stable supply system of wood, it is crucial for all the stakeholders, including forest owners, forest owners' cooperatives, national forest offices, log producing sectors, mills of lumber, plywood and wood chip, and power plant using woody biomass, to advance their own efforts and facilitate cooperation and coordination among them.

It is also crucial to raise people's awareness of the importance of forests, forestry, wood products industry and wood use, which contributes to establishing a stable supply system of wood. Such awareness-raising should be implemented by all stakeholders related to forestry and wood products industry, as well as national and local governments in a coordinated manner so that promotion of wood use and establishment of a stable timber supply system will be achieved together with the understanding and support from the people.

Chapter II Forest Management and Conservation

1. Current State of Forests and Basic Policy for Forest Management and Conservation

1.1 Forest Resources and Multiple Functions

Two-thirds of Japan's land area is covered with forests, with a total forested area of 25 million hectares. Approximately 40% of these forests are artificially planted forests. The total growing stock is increasing by around 100 million m^3 annually, and has now reached approximately 4.9 billion m^3 (Fig.II-1).

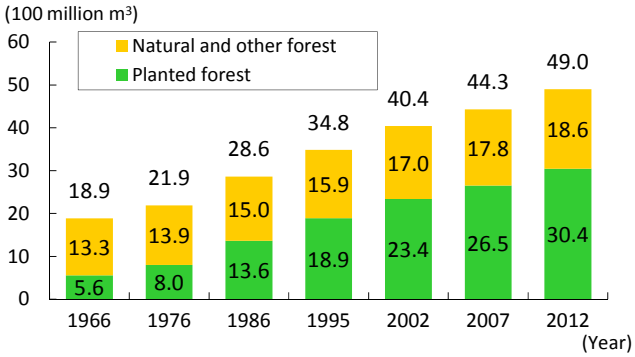


Fig.II-1: Growing stock in forest

Forests now provide a variety of goods and services indispensable for people's lives and national economy in Japan through the fulfilment of multiple functions such as land conservation, watershed conservation, and mitigation of global warming, among others.

1.2 Fundamental Policy on Forest and Forestry

Forest management and conservation activities are being implemented based on the "Forest and Forestry Basic Plan" (July 2011), which was formulated in accordance with the "Forest and Forestry Basic Act" as well as the "National Forest Plan" (October 2013), formulated in accordance with the "Forest Act." "Forest and Forestry Basic Plan" is to be revised in 2016.

National economic strategies, namely the "Japan Revitalization Strategy (Growth Strategy) 2015" and the "Basic Policy on Economic and Fiscal Management and Reform 2015" state that the government does implement sound measures to realize transforming forestry into a growth industry, as stated in the "Plan for Creating Dynamism through Agriculture, Forestry and Fishery Industries and Local Communities" revised in June 2014. .

2. Forest Management

2.1 Promotion of Forest Management

Thinning practices and replanting after regeneration cutting, which are crucial for the maintenance of forest conditions, have been carried out while proper use of forest resources is promoted. In some forests, depending on their respective locational conditions, management practices for developing multi-storied forests and long-rotation management have been conducted.

It is necessary to carry out thinning a total of 520,000 hectares annually in order to ensure the carbon sequestration required for achieving Japan's GHG emission reduction target.

The revised "Forest Act" in 2011 introduced the administrative order system to halt logging being practiced without giving prior notification to the authority and oblige those loggers to replant on the site, as well as the assurance system of proper management of forests even in cases where the forest owners are unidentified. The Forestry Agency is conducting a survey on forest acquisition by foreigners and foreign capital, and 13 cases (totaling 173 hectares) were reported in 2014.

Stable supply of seedlings, which are prerequisite for replanting after regeneration cutting, is also important. The Forestry Agency has been promoting expansion of production of containerized seedlings as well as development of second-generation elite trees. In light of pollen allergy recognized as a national disease, the Forestry Agency has been implementing countermeasures against pollen dust including through supply of seedlings of low-pollen Japanese cedar (sugi) variations (Fig.II-2).

Gifu Prefectural government and a private sector are cooperating to increase production of seedlings grown in containers.

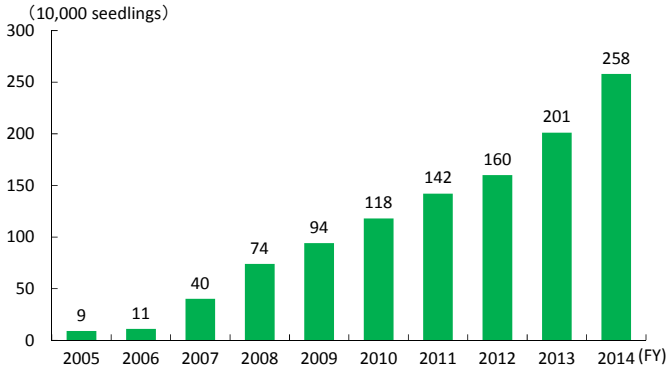


Fig.II-2: The production volume of seedlings of low-pollen Japanese cedar

2.2 People's Participation in Forest Management

In May 2015, the 66th National Tree Planting Ceremony was held in Ishikawa Prefecture, followed by the 39th National Tree Tending Ceremony held in Gifu Prefecture in October.

In recent years, voluntary forestry activities by NPOs and private companies are expanding. Additionally, the business sector shows growing interest in revitalization of forestry and its contribution to local development.

Donations for forest management are solicited through the "Green Fundraising Campaign" (approximately 2.1 billion yen was collected in 2014).

35 of 47 prefectures have introduced their own local taxation systems with the objective of supporting forest management activities (total revenue collected through the taxation systems was estimated at 28.8 billion yen in FY2015).

2.3 Research & Development and Dissemination

Based on the "National Research and Development Strategy in the Forest, Forestry, and Wood Products Industry" established in September 2012, the national government, in cooperation with the Forestry and Forest Products Research Institute and prefectural governments, is conducting research and development to provide solutions for current policy challenges.

The Forestry Agency has been training technical experts with considerable knowledge and expertise in forest and forestry ("Foresters"). Since FY2014, those successfully passing the Agency's examination have been registered, whose information is made public. The number of registered Foresters is 717 at the end of 2015. They are providing support to local municipalities for policy planning on forests and forestry.

3. Forest Conservation

3.1 Protection Forests

Forests providing particularly important public benefits, including watershed conservation and soil loss prevention, are designated as “protection forests,” which have reached 12.14 million hectares as of FY2014. Even in other forests than the protection forests, the “Forest land development control system” is applied in accordance with the “Forest Act” to regulate the development of forests into other land uses.

3.2 Disaster Control

When natural disasters occur in mountainous areas, the Forestry Agency quickly conducts surveys of the extent of the damage and elaborate recovery work.

The Forestry Agency and prefectural governments conduct “forest conservation projects.” The projects include installation of disaster control facilities, replanting of trees for stabilization of mountain slopes, restoration of devastated mountain streams and development of coastal disaster-prevention forests.

3.3 Conservation of Forest Biodiversity

The Forestry Agency is promoting appropriate thinning, development of ecologically diversified forests and conservation of forest ecosystems with high wilderness value, based on the “National Biodiversity Strategy of Japan 2012-2020,” which was adopted by the government in September 2012.

The Forestry Agency is also promoting conservation of forests, particularly those identified as World Heritage sites and Biosphere Reserve sites. In 2016, three of the seven existing Biosphere Reserves were geographically expanded with some renaming: “Mount Hakusan”, “Yakushima and Kuchinoerabu Jima” and “Mount Odaigahara, Mount Omine and Osugidani,”

3.4 Wildlife and Pest Control

In FY2014, approximately 9,000 hectares of forests were damaged by wild animals, 80% of which was caused by deer (Fig.II-3). This serious situation has occurred against a background of increased population of deer and the expansion of their habitat.

Installation and maintenance of protective fences as well as control of wild deer population through capturing have been promoted. New methods to capture wild deer in an effective manner are being experimented and developed.

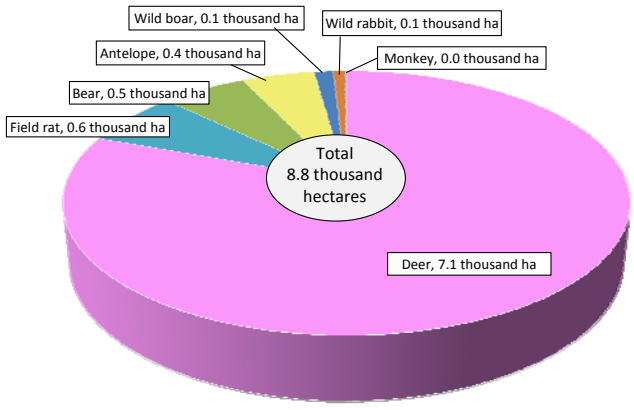


Fig.II-3: Area of forests damaged by major wild animals in FY2014

In FY2014, the volume of pine trees damaged by pinewood nematode (*Bursaphelenchus xylophilus*) stood at 0.56 million m^3, approximately one-fourth of its peak, but such damage is still the worst among all caused by forest pests and diseases in Japan. The volume of damage to *Quercus* spp. and *Castanopsis* spp. trees caused by oak platypodid beetle (*Platypus quercivorus*) was 0.4 million m^3, approximately one-eighth of its recently peak year FY2010. The Forestry Agency is implementing preventive measures through the application of chemicals as well as logging and fumigation of affected trees.

4. International Cooperation

4.1 Promotion of Sustainable Forest Management

As of 2015, the worldwide forest area was approximately four billion hectares, or 31% of global terrestrial land area according to Food and Agriculture Organization (FAO) of the United Nations. During five years between 2010 and 2015, the world's forest area decreased by 3.31 million hectares annually. FAO points out that even though, globally, the extent of the world's forest continues to decline as human populations continue to grow and demand for food and land increases, the rate of net forest loss has been cut by over 50 percent over the past 25 years (Fig.II-4).

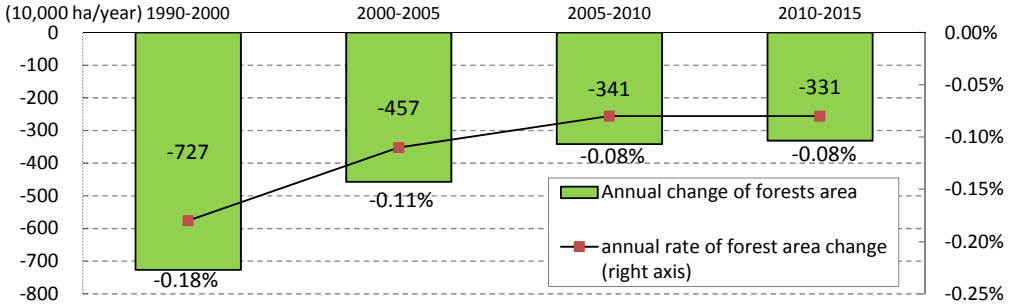


Fig.II-4: Changes in world's forest area (1990-2015)
Footnote; FAO's Global Forest Resources Assessment 2015

Several initiatives are being undertaken to develop international criteria and indicators (C&I) for sustainable forest management. Japan is a member of the Montreal Process for the conservation and sustainable management of temperate and boreal forests consisting of Pan-Pacific 12 countries.

Illegal logging hinders the efforts toward sustainable forest management. The Government of Japan (GOJ) is promoting international efforts to combat illegal logging in this regard.

Forest certification is a private sector's initiative aiming to advocate consumers' purchase of legally produced wood products to promote sustainable forest management. In Japan, two forest certification schemes, run by the Forest Stewardship Council (FSC), an international organization, and the Sustainable Green Ecosystem Council (SGEC), an independent organization solely operating in Japan, have been in place. The percentage of certificated forests in Japan is relatively low compared to those in European and North American countries.

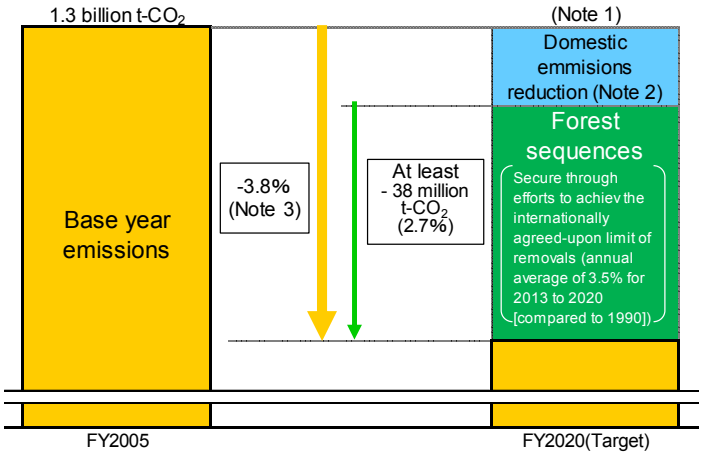
4.2 Global Warming and Forests

Measures against global warming are being conducted under international frameworks, in particular the United Nations Framework Convention on Climate Change (UNFCCC).

Japan does not have a target for the "Second Commitment Period" (2013 to 2020) of the Kyoto Protocol, but has a target for 2020 under the Convention, announced at COP19. In this target, Japan is to remove 3.8% of its 2005 level GHG emissions, 38 million tons CO_2 (2.7% equivalent) of which was determined to be achieved by forest carbon sinks measures, including thinning of planted forests of an average of 520,000 hectares per year (Fig.II-5).

The GOJ submitted its Intended Nationally Determined Contribution (INDC) for GHG emissions beyond 2020. This INDC sets a reduction target at the level of a reduction of 26.0% by FY2030 compared to FY2013. This INDC also provides that 2.0% (approximately 27.8 million tons CO_2 equivalent) of GHG emmisions would be reduced by forest carbon sinks measures. COP21 of UNFCCC, held in 2015, adopted the Paris Agreement, which provides a legal framework to streangthen the global response to the threat of climate change beyond 2020.

In Japan, it was decided in December 2015 to consider a new framework, including national taxation systems for forest environmental services, to secure stable financial resources for forest management, such as thinning parctices required to achieve the GHG removal targets.



Note 1: In order to achieve domestic emission reduction targets, it is necessary to achieve not only the reduction from the base year emissions (the portion indicated in blue in the figure) but also the reduction in the amount equivalent to an estimated emissions increase due to economic growth, etc. in or after the base year.

Note 2: Excluding the reduction in the amount equivalent to an estimated emissions increase due to economic growth, etc. in or after the base year

Note 3: The target does not take into account the emission reduction effect resulting from nuclear power

Fig.II-5: Forest carbon sinks measures activities in GHG reduction target

In addition, the GOJ has been promoting the “Reducing Emissions from Deforestation and Forest Degradation in developing countries and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks” (REDD+ initiative). In this regard, the GOJ has provided not only bilateral assistance to developing countries but also a significant amount of funds to Forest Carbon Partnership Facility (FCPF) and Forest Investment Program (FIP), both established by the World Bank, UN-REDD established by the FAO, the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) and Green Climate Fund (GCF) established under the UNFCCC.

In November 2015, the GOJ adopted its national adaptation plan to climate change, emphasizing the need to reduce disaster risk from frequent and stormy weather through designating protection forests for erosion control and constructing forest conservation facilities for sediment control.

4.3 International Discussions on Biodiversity

It is estimated that at least 80% of the earth’s remaining terrestrial biodiversity is found in forests. As of May 2015, the Convention on Biological Diversity has been signed by 194 countries and the European Union (EU). Consideration of domestic measures are underway in Japan with a view to accepting Nagoya Protocol on Access and Benefit-sharing put into effect during COP12 in 2014.

4.4 Japan’s Cooperation

Japan is implementing international cooperation for promotion of sustainable forest management in developing countries by providing technical and financial assistance through bilateral and multilateral schemes.

According to data from the Organization of Economic Cooperation and Development (OECD), official development assistance (ODA) provided with forestry sector in the world amounted to 930 million dollars in 2014, 140 million dollars of which was from Japan. Japan in the second largest donor in 2014, following UK.

Bilateral assistance, in the form of transfer of technical cooperation, and provision of grants and loans, has been implemented mainly through the Japan International Cooperation Agency (JICA). The GOJ has also given financial support to the International Tropical Timber Organization (ITTO) headquartered in Yokohama, Japan.

Table I: Forestry projects conducted by JICA since1976 (as of December 2015)

Region	Number of countries	Number of projects finished	Number of projects underway	Total of projects
Asia, Middle East, and Oceania	17	81	8	89
Latin America	11	27	3	30
Europe and Africa	13	18	8	26
Total	41	126	19	145

1. Forestry

1.1 Forestry Production

In 2014, the value of gross forestry production was 451.5 billion yen, with 6 % increase from the previous year, but it has been on a declining trend over the long term since the peak in 1980 (Fig.III-1).

The volume of domestic roundwood production bottomed out at 15.09 million m^3 in 2002 and it stood at 19.92 million m^3 in 2014 (Fig.III-2). By tree species, the volume of *sugi* (Japanese cedar) production was the largest at 11.19 million m^3 (56%), followed by *hinoki* (Japanese cypress) at 2.40 million m^3 (12%), and *karamatsu* (larch) at 2.37 million m^3 (12%). By region, that with the largest production was Tohoku (25 %), followed by Kyushu (23 %), and Hokkaido (17 %).

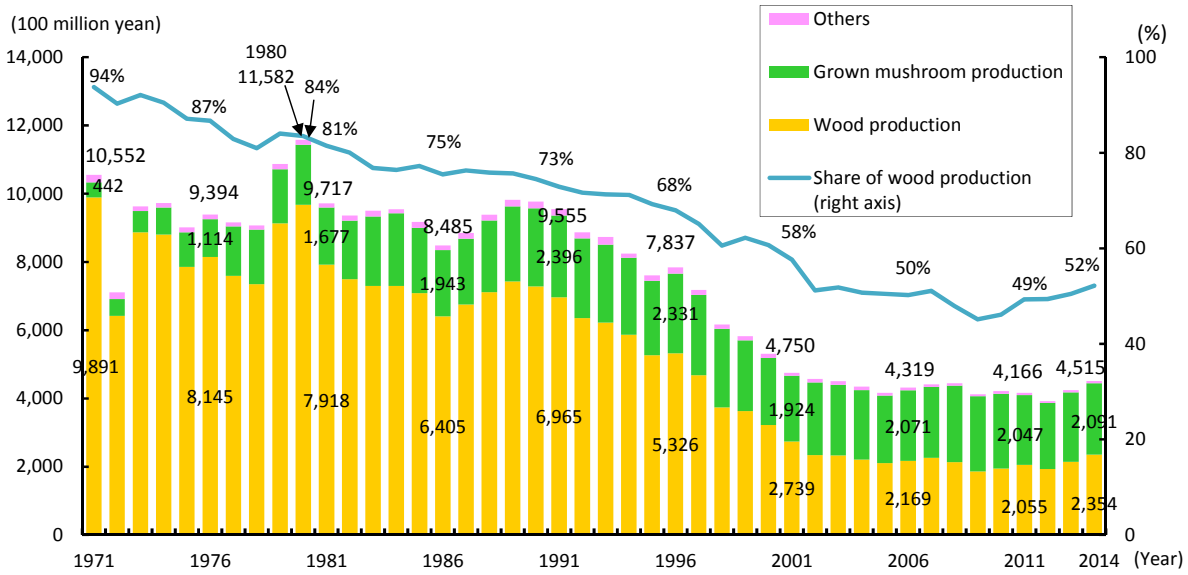


Fig.III-1: Value of gross forestry production

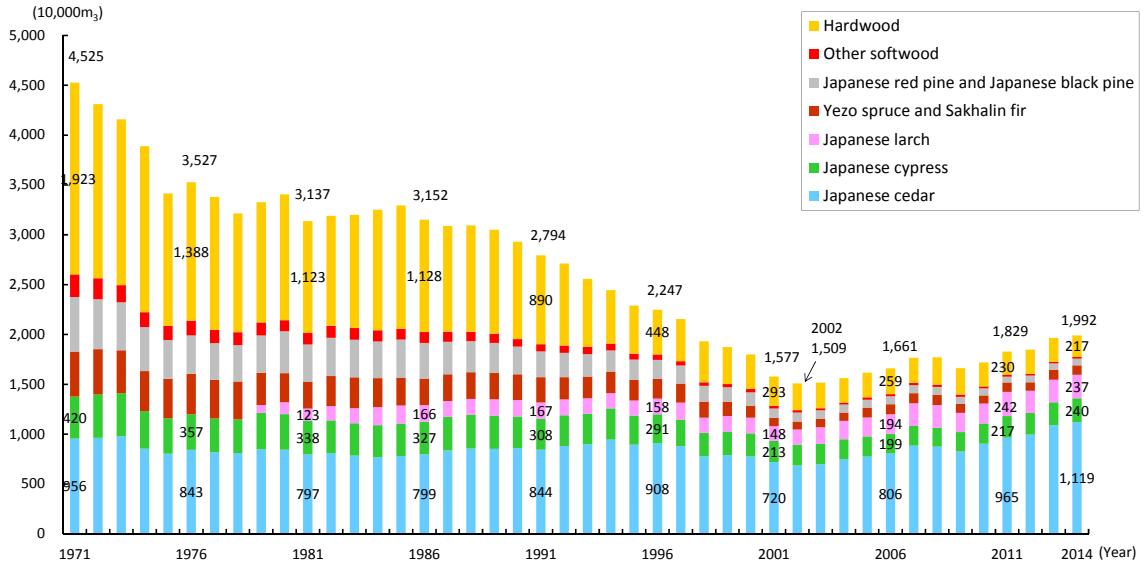


Fig.III-2: Volume of domestic wood production

1.2 Forestry Management

In Japan, most of private forests are owned by a large number of small scale forest owners.

The aging of forest owners and increase of forest owners who live away from their forests make it more difficult to identify forest owners and forest boundaries. The revised “Forest Act” in 2011 introduced a mandatory notification system that requires new forest owners to register with the local municipalities and also promotes the sharing of forest owners’ information within relevant departments of local governments. Cadastral surveys are being conducted in forests.

As forestry activities carried out by forest owners are mainly tending, the income from forest management is small.

The Forest Owners’ Cooperatives are major forest management bodies, accounting for more than half of forestry activities, including planting, weeding and thinning. However, approximately 70% of regeneration cutting is conducted by private (independent) forestry contractors, not forest owners’ cooperatives.

1.3 Forestry Workforce

In recent years, there has been some sign that the number of forestry workers will bottom out (approximately 51,000 in 2010). The share of aged forestry workers (aged 65 or older) still remains high at 21%, but the share of young forestry workers (aged 35 or younger) has risen up to 18% (Fig.III-3).

Since FY2003, the Forestry Agency has been implementing “Green Employment Programme” to provide young people with opportunity to learn basic forestry skills. The outcome of the Programme has led to a significant increase in the number of new forestry workers (Fig.III-4).

The Forestry Agency is also promoting systematic and step-by- step training of forestry workers with advanced knowledge and skills.

The occupational accident rate of forestry industry remains high, and therefore it is crucial to secure safe working conditions.

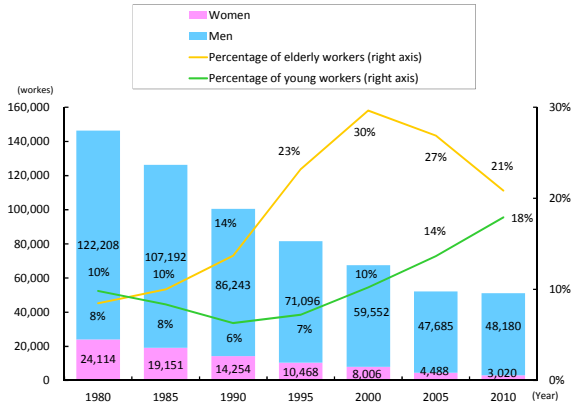


Fig.III-3: Number of forestry workers

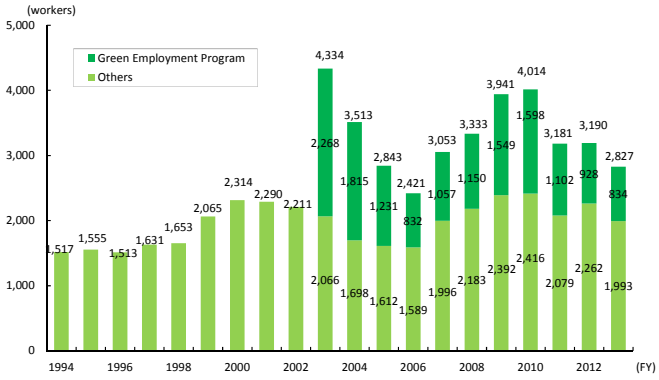


Fig.III-4: Number of new entrants to forestry workforce

2. Non-Wood Forest Products

In 2014, the total production value of non-wood forest products was 272.3 billion yen, of which nearly 90% was derived from mushroom production. Mushroom production has been decreasing since 2011 and was 458,000 tons in 2014, the same as that in the previous year (Fig.III-5). The number of households producing mushrooms has also been decreasing.

In 2014, the overall price of mushrooms went up, indicating the declining trend would be reversed (Fig.III-6). In particular, the price of dried *shiitake* mushrooms went up by 13% in 2014. The Forestry Agency is supporting initiatives to expand consumption of and stabilize supply of mushrooms.

Production of firewood has been on an increasing trend since 2007 and was 53,000 m^3 in 2014. Production of charcoal has been declining over the long term and was 28,000 tons in 2014. Production of bamboo used for products such as paper has been increasing since 2010. Other non-wood forest products being produced or harvested include wild vegetables, medicinal herbs and lacquer.

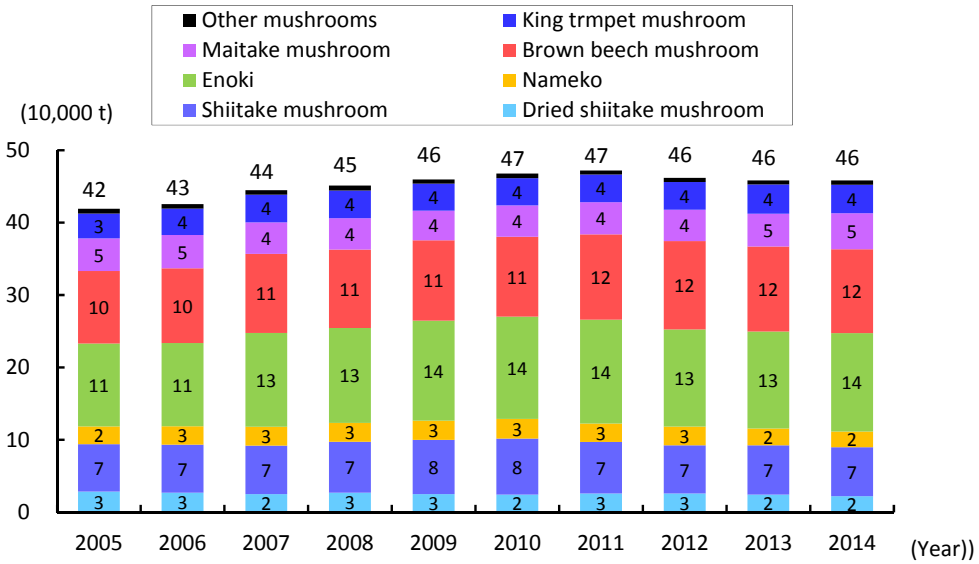


Fig.III-5: Volume of mushroom production

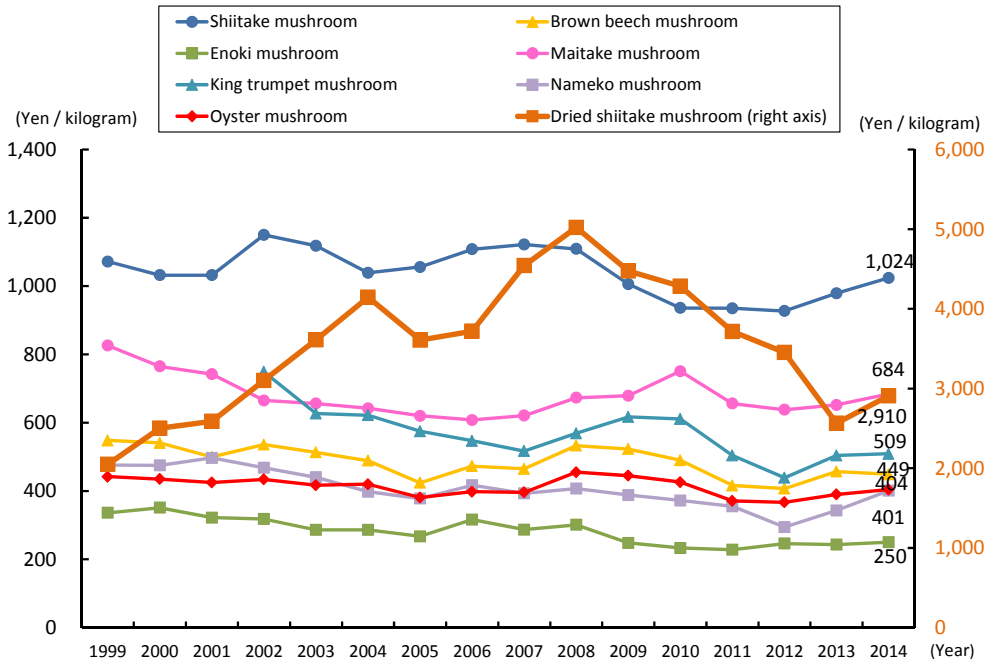


Fig.III-6: Price of mushroom

3. Rural Mountain Communities

3.1 Current State of Rural Mountain Communities

Rural mountain communities, where people engaged in forestry are living, play a significant role in securing multiple functions of forests. In Japan, 'Mountain Village Areas Due for Development,' designated pursuant to the "Mountain Villages Development Act", cover 50% of the total land area, accounting for 60% of the total forest area. It is becoming more difficult to maintain the management of forests due to continuing depopulation and aging population in such communities.

On the other hand, some of urban residents have come to show greater interests in the life of rural mountain communities as rich forest and water resources, beautiful landscapes, traditions and cultures are available there.

3.2 Revitalization of Rural Mountain Communities

The "Comprehensive Strategy for Regional Revitalization", which was revised in December 2015 by the government, states that transforming forestry into a growth industry is one of the policy measures for achieving basic targets of regional revitalization.

In March 2015, the "Mountain Villages Development Act" was revised and extended with the aim of enhancing measures for developing rural mountain communities. To this end, the Ministry of Agriculture, Forestry and Fisheries established a new scheme, which supports initiatives by rural mountain communities to create job opportunities and to improve their income level, through promoting utilization of rural resources, including fuel wood and wild vegetables.

The Forestry Agency is supporting initiatives by forest owners who harvest (fell) their forest trees on their own (often called 'self-harvesting forest owner') and other local residents to conserve and revitalize *satoyama forests* (forests which are close to residential areas in rural communities but underutilized) and increase utilization of forest resources. Effective exchanges between rural mountain communities and urban societies are widely conducted through hands-on activities in agriculture, forestry and fishery; use of forests for therapeutic activities; and forest environmental education.

Recently, more attention has been paid to initiatives by self-harvesting forest owners, as they can play an important role in rural forestry and contribute to revitalizing rural economies. Some of the self-harvesting forest owners are taking the initiative called "Wood Station Projects," where thinned trees are brought in and exchanged into quasi-local currency tickets (or vouchers) by selling those logs to users, including power plants consuming woody biomass.

Initiative to revitalize a local community through utilization of rural maple resources as syrup material: In Chichibu area in Saitama Prefecture.

Chapter IV Wood Products Industry and Wood Use

1. Supply and Demand for Wood

1.1 Global Wood Supply and Demand

The total volume of industrial roundwood consumption at a global level had decreased since autumn of 2008 but started to increase again in 2010. Sawn softwood consumption tends to recover in North America. In Europe, export of sawn softwood has increased.

In Russia, exports of industrial roundwood are decreasing. China is increasing imports of industrial roundwood, as well as exports of plywood.

At the Trans-Pacific Partnership (TPP) Ministerial Meeting on October 2015, an Agreement in Principle was reached on the TPP Agreement. This Agreement in Principle provides reduction of tariffs, the period for elimination of tariffs, and safeguard measures on plywood and lumber, which are applicable to countries that have a high value of exports or a significant increase in value of exports. In this Agreement in Principle, it was also agreed to strengthen the member's discipline to regulate trade on illegally-logged timber.

1.2 Wood Supply and Demand in Japan

Japan's wood demand is showing signs of recovery after hitting the bottom in 2009, but has not reached the level of 2008, amounting to 75.80 million m^3 (roundwood equivalent).

Domestic wood supply has been increasing since bottoming out in 2002. In 2014, it increased to 23.65 million m^3 (roundwood equivalent).

The volume of imported wood decreased to 52.15 million m^3 (roundwood equivalent), down by 3% from the previous year.

The self-sufficiency ratio of wood has been recovering since bottoming out in 2002, and was 31.2% in 2014.

1.3 Wood Prices

Prices for domestic roundwood, in particular for *sugi* and *hinoki*, declined in 2014, due to decreased demand in the housing sector (Fig.IV-1).

The prices of lumber also declined in 2014 (Fig.IV-1), while the prices of wood chip rose.

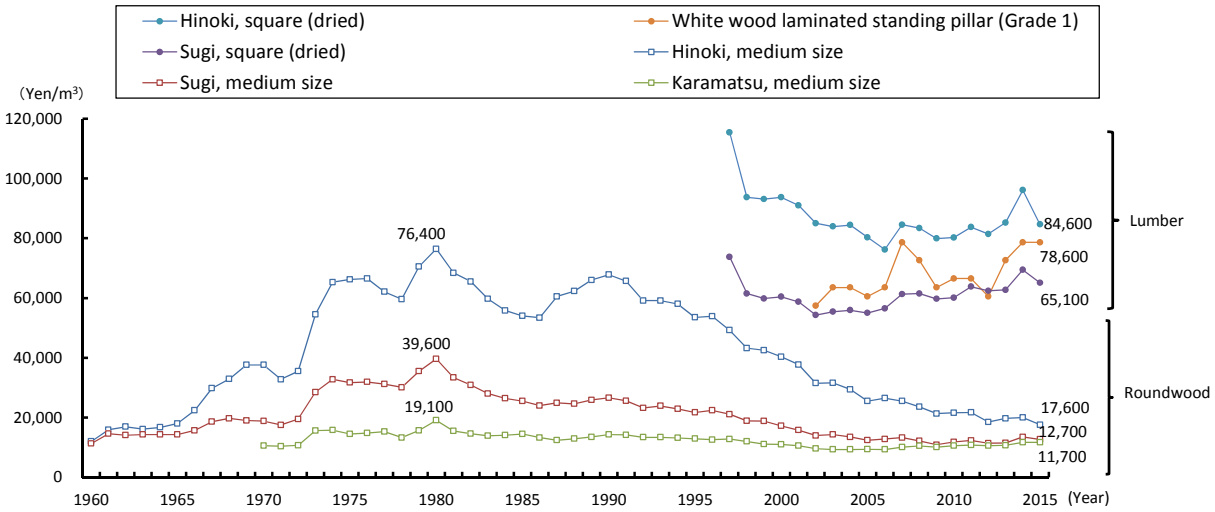


Fig.IV-1: Wood prices in Japan

1.4 Combating Illegal Logging

The GOJ is promoting use of legally and sustainably produced wood products based on a basic philosophy of “no use of wood products from illegal logging.”

Based on the “Basic Guidelines for Green Purchasing,” the GOJ uses wood products with certified legality and sustainability in governmental procurements and also promotes activities that encourage private companies and general consumers to use legally-harvested wood products. The USA, EU, and Australia have already introduced and enforced their legal framework to combat illegal logging individually.

1.5 Wood Exports

In 2015, the value of wood exports reached 22.9 billion yen, with 29% increase from the previous year (Fig.IV-2). Export of processed wood products is a future challenge.

Several initiatives are undertaken to promote exports of wood through exhibiting wood and wooden houses at housing exhibitions abroad and participating in the revision work of Chinese wooden building standards.

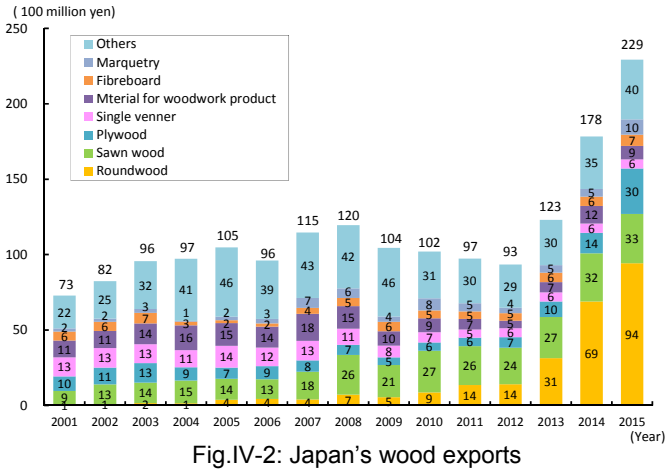


Fig.IV-2: Japan’s wood exports

In Miyazaki Prefecture, a joint initiative by a laminated timber industry and a pre-cut industry are undertaken to export pre-cut lumbers for materials of traditional housings to the Republic of Korea.

2. Wood Products Industry

2.1 Overview

Wood products industry processes roundwood, produced from forestry activities, into wood products and distributes them to users and consumers, responding to their needs for wood products.

It is a challenge to establish a system that can supply competitive wood products with regards to quality, performance, price and stable supply. The Forestry Agency is supporting introduction of equipment for wood processing and wood distribution, so as to establish a stable and efficient supply chain of wood products.

2.2 State of the Major Wood Products Manufacturing

As for lumber production, shipments are on a downward trend. The share of domestic wood in the raw material inputs for lumber mills is as high as 70% (Fig.IV-3). Large-scale lumber mills are becoming dominant in terms of their share of total lumber production. Acquisition of Japanese Agricultural Standard (JAS) certification and supply of wood products with certified quality and performance including kiln-dried lumber are needed.

As for laminated lumber production, the share of domestic wood in material input for laminated lumber mills has been rising, but it still remains at 16% in 2014.

As for plywood production, the share of domestic wood used for plywood production is rising, reaching approximately 70% in 2014. However, the share of domestic wood in the total wood supply for plywood, including imported plywood, was approximately 30% in 2014.

As for wood chip production, almost all the materials for wood chip mills are domestic wood. On the other hand, the share of domestic wood chips in wood chip consumption, including imported wood chip, remains at approximately one-third.

As for pre-cut timber production, the share of precut-timber in total woods used for wood frame construction method has been rising to approximately 90%. Some pre-cut timber mills are switching their materials from imported timber to domestic timber.

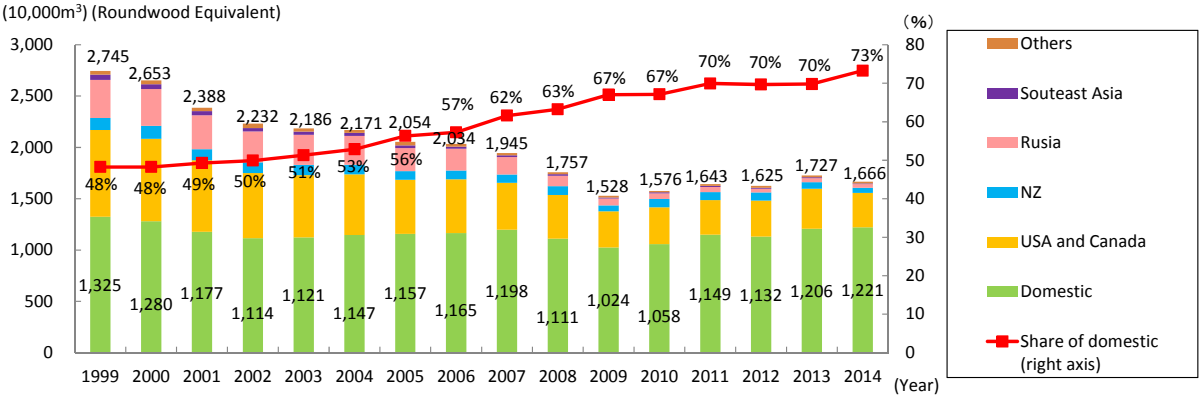


Fig.IV-3: Material inputs for lumber production

2.3 Development and Dissemination of New Products and Technology

Efforts are being made to develop and disseminate new wood products and new wood processing technology, including CLT (Cross Laminated Timber) and wooden fireproof material for fireproof buildings.

The Forestry Agency is promoting research and development of cellulose nanofibre, which is expected to be used as a new material.

3. Wood Use

3.1 Importance of Wood Use

The use of wood materials contributes to mitigation of global warming, sustainable fulfillment of forests' multiple functions and vitalization of local economies, as well as to provision of comfortable and healthy living conditions.

The Forestry Agency is promoting the "*Kizukai*" (attention to wood use) initiative to provide consumers with information on significance of wood use, as well as the "*Mokuiku*" (wood use education) initiative to provide children and adults with opportunities to gain familiarity with wood and learn about wood culture.

3.2 Wood Use in Housing Sector

In Japan, approximately 40% of wood demand and more than half of domestic wood demand are for building construction. Approximately half of new housing starts in Japan are wooden constructions. However, use of timber as horizontal structural member like beams in housing constructions is still low. In this regard, it is important to promote research and development in new processing technology and products including timber used as horizontal structural member.

Local housing projects are also promoted, which support cooperation among forest owners, log producers, lumber producers, and local home builders. The Forestry Agency supports initiatives to develop human resources of architect with knowledge and skills in wood use.

3.3 Wooden Public Buildings

The “Public Buildings Wood Use Promotion Act” was enacted in 2010 with the aim of promoting wood use in public buildings, many of which are not made of wood. In FY2014, the national government constructed 100 low-rise public buildings, out of which 32 were made with a wooden structure. In addition, 172 public buildings were renovated with wooden exterior/interiors.

The Forestry Agency also promotes the use of wood in civil engineering work, as well as school buildings and other public buildings in urban areas.

Wooden public facilities
(Left: Wooden hall, one of the biggest wooden buildings in Japan, Nanyo City, Yamagata Prefecture;
Right: Wooden school buildings of Kanuma City, Tochigi Prefecture)

3.4 Energy Use of Woody Biomass

Woody biomass, utilized as energy resources, is mainly derived from mills’ residue, construction residue, and thinned woods. The use of woody biomass derived from thinned wood is increasing.

In recent years, boilers and stoves fueled by woody biomass are being introduced and used in public facilities and ordinary homes as well as in horticulture facilities. Production of wood pellet is also increasing.

Woody biomass power plants are being constructed in various areas utilizing the “Feed-in Tariff (FIT) Scheme for Renewable Energy” (introduced in July 2012). While woody biomass is expected to contribute to local economies, stable supply of fuel wood is essential.

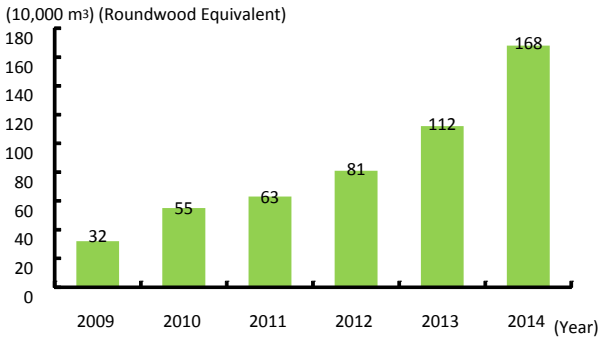


Fig.IV-4: Woody biomass for energy use derived from thinned wood

Chapter V National Forest Management

1. Roles of National Forests

1.1 Distribution of National Forests and Their Roles Expected

National Forests represent approximately 30% of the total forest area, or almost 20% of the total land area in Japan. Widely distributed in remote mountainous areas and headwater areas, National Forests perform vital roles in fulfillment of multiple functions of forests, including land conservation, watershed conservation, and biodiversity conservation.

90% of the National Forests are designated as “protection forests” in accordance with the “Forest Act.” Furthermore, 95% of the land designated as “World Natural Heritage” sites in Japan (Shiretoko, Shirakami Sanchi, Ogasawara Islands, and Yakushima) is located in National Forests.

1.2 National Forest Management

National Forests, an important asset of the country, are managed in an integrated manner under the National Forest Management Programme. Since FY2013, this programme has been executed under the General Account Budget with a view to further promoting sound management of national forests aiming to enhance public benefits and to contribute to revitalization of Japan’s forests and forestry.

2. Specific Initiatives under the National Forest Management Programme

2.1 Further Promotion of Management with Emphasis on Public Benefit

The Forestry Agency directly manages National forests, which are categorized in five forest types based on expected functions: “landslide prevention,” “natural conservation,” “recreational use,” “comfortable environment development”, and “watershed conservation”

Forest conservation projects are being implemented, aiming at restoration of devastated areas to maintain protection forests. Such forest conservation project is also carried out by the Forestry Agency in private forests where their damage is severe.

In managing National forests, some key thematic activities, like thinning for forest carbon sinks measures and wood use in forest conservation projects, are also implemented.

Furthermore, in order to conserve biodiversity, the Forestry Agency designates and manages “Protected Forests” in national forests, including “Forest Ecosystem Reserves” and “Green Corridors.” In September 2015, the Forestry Agency revised the system of “Protected Forests” to simplify the classification of seven types into three, introduce restoration measures, and establish a simple and efficient structure of management. Measures against damage by deer and other wild animals are implemented in National Forests as well.

Based on “Agreements for Maintenance and Development of Public Benefits of Forests” with private forest owners, the Forestry Agency manages private forests located in close proximity to national forests in an integrated manner. It has concluded seven agreements for forests of 172 hectares as of the end of FY2014.

Promotion of wood use in construction of conservation facilities

Capture of deer, as a countermeasures against deer damage

2.2 Contribution to Forest and Forestry Revitalization

In accordance with the National Forest Management Programme, the Forest Agency is (i) developing and disseminating technologies for low-cost forest practices, such as utilization of containerized seedlings and an integrated operation of felling, site-preparation and planting using forestry machine, (ii) developing human resources including forestry contractors and technical experts (nationally certified “Foresters”), (iii) promoting development of forestry road systems and forest operations in collaboration with private forests by establishing cooperative forest management areas, and (iv) promoting stable wood supply through “System Sales” contracts with major wood processing companies, such as large-scale lumber mills or plywood factories. In FY2014, roundwood supplied through “System Sales” contracts accounted for 57% of the whole roundwood sale from national forests.

2.3 National Forests as “Forests for People”

In accordance with the National Forest Management Programme, the Forestry Agency provides various organizations with access to field activities such as forest environmental education and forest management and conservation, by designating national forests for such field activities as “Forests for Students,” “Forests for Voluntary Groups,” “Forests for Wood Culture,” and “Forests for Corporations.” The Forestry Agency also implements model projects in collaboration with local stakeholders and nature conservation groups.

Parts of national forests are lent to local governments and residents to improve their economies or welfare. “Recreational Forests” are managed and administered in partnership with those concerned in local communities.

For recovery and reconstruction following the Great East Japan Earthquake, the Forestry Agency is implementing restoration of coastal disaster-prevention forests within national forests devastated by the great tsunami as well as decontamination of national forests contaminated by the accident of the Fukushima Nuclear Power Stations of Tokyo Electric Power Company (TEPCO). Some national forest sites are being used for the temporary storage of soil removed through decontamination work.

Chapter VI Reconstruction from the Great East Japan Earthquake

1. Recovery of Forest, Forestry, and Wood Products Industry

1.1 Recovery of Forest, Forestry, and Wood Products Industry

Following the Great East Japan Earthquake, there were reports of damaged forest conservation facilities and forest roads as well as collapsed hillslopes in 15 prefectures. Recovery works have been implemented in damaged areas, approximately 90% of which have already been completed.

As many as 115 wood processing/distribution facilities also suffered major damage from the earthquake throughout Japan. The Forestry Agency has assisted those damaged firms in abolishing, restoring or reconstructing their facilities and 98 of the damaged firms have resumed operation to date.

1.2 Restoration of Coastal Forests

The tsunami caused by the Great East Japan Earthquake damaged a total of 140km of coastal disaster-prevention forests in six prefectures.

The recovery works in the damaged coastal disaster-prevention forests are underway, to be completed within ten years. The recovery works have been commenced in a total of 114km of coastal disaster-prevention forests, except for areas where entry is prohibited due to radioactivity. The works have been completed for 38km of the entire forests under recovery work.

In the course of recovery works, citizens' participation in planting and tending of trees is being promoted. For completion of the recovery, stable supply of a large number of seedlings as well as continuous treatment of planted trees needs to be secured.

Reconstruction and planting of damaged coastal forests, with participation of local community

Promoting production of seedlings for reconstruction of coastal forests

1.3 Promotion of Wood Use for Reconstruction and Contribution by Forest and Forestry

Local governments have provided approximately 54,000 "emergency temporary houses" with a quarter of those houses (approximately 15,000 houses) being built with a wooden structure. They also constructed or plan to construct approximately 7,000 public houses (reconstruction houses) with a wooden structure.

Also seen are moves to rebuild houses of victims affected by the disaster with wood constructions, along with initiatives to utilize wood in recovery and reconstruction works taking place in the civil engineering sector.

A large amount of woody debris that occurred due to the earthquake and tsunami has been utilized for producing wood-based panels and fuel input for boilers and power plants. In Aizu-wakamatsu City in Fukushima Prefecture, Miyako City in Iwate Prefecture, and Kesennuma City in Miyagi Prefecture, power plants which burn thinned wood as fuel input have already started operation.

2. Reconstruction from Nuclear Accident

2.1 Measures against Radioactive Materials in Forests

GOJ and municipalities concerned are conducting decontamination work through removing fallen leaves and sediment with higher priority on forests in the neighborhood of communities. In addition, a guideline was developed to conduct decontamination work in forests where local communities' members, users or operators are entering on a daily basis, such as mushroom timber yard and campsites.

Decontamination work is conducted by the Ministry of Environment (MoE) for forests in the "Special Decontamination Areas," by the local municipalities for private forests in the "Intensive Contamination Survey Areas", and by the Forestry Agency for national forests, respectively.

The Forestry Agency has been conducting a survey and researches on distribution of radioactive materials in forests. It is also conducting monitoring and verification tests for performance of forest practices, including thinning, as a countermeasure against radioactive materials in the forests in the Intensive Contamination Survey Areas. In addition, verification tests are also undertaken as a step toward revitalization of forests and proper forest management in the forests in "the Zone in Preparation for the Lifting of the Evacuation Order."

In March 2016, the "Project Team of Relevant Ministries and Agencies for Revitalization of Forests and Forestry in Fukushima" finalized the "Comprehensive Approaches towards Revitalization of Forests and Forestry in Fukushima".

2.2 Supply of Safe Forest Products

As of January 2016, shipment restriction orders were effective on 23 non-wood forest products including mushrooms and wild plant shoots, in which radioactive cesium was found to exceed the standard value (100 Bq/kg for general food).

Shipment restrictions are to be lifted when it is determined that cultivation management is being practiced based on the "Guidelines Concerning Management of Mushroom Cultivation from Roundwood to Decrease Radioactive Cesium" (established in October 2013) and that no mushrooms exceeding the standard value are produced. The Forestry Agency is providing support for continuation or resumption of mushroom production. Shipment restrictions on wild mushrooms and wild vegetables are being lifted gradually.

In response to a decreasing supply of roundwood for cultivating mushrooms from Fukushima prefecture, the Forestry Agency helps to coordinate supply and demand for roundwood for mushroom production.

2.3 Disposal of Contaminated Bark and Roundwood for Mushroom Production

Some of tree barks from lumber mills in Fukushima and neighboring prefectures, which had been generally used as fuel or compost before the accident, was retained in the lumber mills due to possibility of contamination with radioactive cesium. The Forestry Agency is providing assistance in disposal of such barks in waste disposal sites and the amount of retained bark is decreasing. The disposal of roundwood for cultivating mushrooms which can no longer be used is carried out.

2.4 Damage Compensation

Private forestry organizations and mushroom growers in Fukushima and other prefectures has been claiming compensation for inconvenience in their business caused by evacuation orders as well as for damages and/or losses concerning *shiitake* mushroom production and TEPCO has started to make payment of compensation. In September 2014, TEPCO started to accept the applications for compensation for the loss of value in real estate pertaining to forests in evacuation order areas.

Appendix

1. Forestry-related Fundamental Figures

Item	Unit	1980	1995	2000	2005	2010	2011	2012	2013	2014
i Gross domestic product (GDP)	billion yen	242,838.7	495,165.5	502,989.9	503,903.0	482,676.9	471,578.7	475,331.7	479,083.7	486,938.8
Forestry (A)	billion yen	826.0	695.8	886.5	446.4	・・・	・・・	・・・	・・・	・・・
Forestry / GDP	%	0.34	0.14	0.17	0.09	・・・	・・・	・・・	・・・	・・・
Forestry (B)	billion yen	・・・	・・・	・・・	142.7	151.9	155.9	142.1	157.3	180.0
Forestry / GDP	%	・・・	・・・	・・・	0.03	0.03	0.03	0.03	0.03	0.04
ii Total number of workers	million	55.36	64.57	64.46	63.56	62.57	59.77	62.70	63.11	63.51
Forestry	million	0.19	0.09	0.07	0.06	0.08	0.07	0.08	0.08	0.08
Forestry / Total # of workers	%	0.34	0.14	0.11	0.09	0.13	0.12	0.13	0.13	0.13
iii Land area of Japan	million ha	37.77	37.78	37.79	37.79	37.79	37.79	37.79	37.79	37.79
iv Forest	million ha	25.28	25.15	25.15	25.12	25.10	25.10	25.08	25.08	25.08
Forest / Land area	%	67.8	67.5	67.5	67.4	67.3	67.3	67.3	67.3	67.3
v Conservation Forest	million ha	7.32	8.57	8.93	11.65	12.02	12.05	12.09	12.12	12.14
Conservation Forest / Forest	%	29.0	34.1	35.5	46.4	47.9	48.0	48.2	48.3	48.4
vi Growing stock of forest	billion m^3	2.5	3.5	3.5	4.0	4.4	4.4	4.9	4.9	4.9
vii Industrial wood supply/ consumption	million m^3	112.21	113.70	101.01	87.42	71.88	74.40	72.19	75.46	75.80
Domestic production	million m^3	36.96	24.30	19.06	17.90	18.92	20.09	20.32	21.74	23.65
Import	million m^3	75.25	89.40	81.95	69.52	52.96	54.31	51.87	53.72	52.15
Self-sufficiency rate	%	32.9	21.4	18.9	20.5	26.3	27.0	28.1	28.8	31.2
viii New housing starts	million units	1.27	1.47	1.23	1.24	0.81	0.83	0.88	0.98	0.89
Ratio of wooden structure	%	59.2	45.3	45.2	43.9	56.6	55.7	55.1	56.1	54.9

Notes 1: Figures in "Forestry (B)" are equal to the Figures in "Forestry (A)" minus the production value of National Forest Management Special Account.
2: "Conservation forest area" in "v" refers to the area excluding duplication.
3: "Industrial wood supply/ consumption," "Domestic production" and "Import" in "vii" refer to the volume in log equivalent.

Source: i: Cabinet Office "SNA (System of National Accounts)," ii: Ministry of Internal Affairs and Communications "Labor Force Survey" (Iwate, Miyagi and Fukushima prefectures are excluded from the data for 2011.)
iv, v, vi: Forestry Agency, vii: Forestry Agency "Wood Demand and Supply," viii: MLIT "Statistics on Building Construction Starts"

2. Gross Domestic Product Classified by Economic Activities (at current prices)

(Unit: billion yen)

Item	1995	2000	2005	2010	2011	2012	2013	2014
Gross domestic product	495,166	502,990	503,903	482,677	471,579	475,332	479,084	486,939
Industries	463,956	468,062	445,662	424,842	414,224	418,052	421,167	427,781
Agriculture, forestry and fisheries	9,346	8,896	6,108	5,656	5,426	5,740	5,689	5,666
Forestry (A)	696	887	446	・・・	・・・	・・・	・・・	・・・
Forestry (B)	・・・	・・・	143	152	156	142	157	180
Mining	861	627	400	301	304	290	320	342
Manufacturing	114,669	111,439	99,699	94,333	87,284	87,948	88,319	90,149
Pulp, paper and paper products	3,399	3,237	2,728	2,376	2,360	2,200	2,110	2,086
Wood and wooden products	1,469	1,240	946	714	773	766	800	844
Construction	40,850	37,130	29,018	26,198	26,461	26,797	28,385	29,564
Electricity, gas and water supply	13,329	13,576	11,712	11,008	8,551	8,005	8,316	9,631
Wholesale and retail trade	75,788	70,661	74,814	65,981	67,131	67,964	68,496	68,577
Finance and insurance	31,964	30,445	30,789	23,766	22,430	21,865	21,482	21,089
Real estate	53,757	57,864	54,042	56,890	56,726	56,505	56,161	56,307
Transport and communications	35,264	34,821	・・・	・・・	・・・	・・・	・・・	・・・
Transport	・・・	・・・	24,379	23,465	22,858	23,686	23,276	24,402
Communications	・・・	・・・	26,269	25,978	25,871	25,999	26,372	26,669
Service activities	88,129	102,604	88,433	91,266	91,183	93,254	94,350	95,385
Others	31,209	34,928	58,241	57,835	57,355	57,280	57,917	59,158

Note 1: Figures in "Forestry (B)" are equal to the Figures in "Forestry (A)" minus the production value of National Forest Management Special Account.
2: "Transport and communications" is divided into "Transport" and "Communications".
3: Total figures may not be equal to the sum of each item due to round off.

Source: Cabinet Office "SNA (System of National Accounts)"

3. Gross Forestry Output

(Unit: billion yen)

Item	1995	2000	2005	2010	2011	2012	2013	2014
Gross output of forestry	760.55	531.10	416.77	421.69	416.59	391.69	424.71	451.45
Roundwood production	526.61	322.13	210.23	194.55	205.52	193.33	214.34	235.43
Softwood	436.76	265.33	177.41	170.16	185.05	171.40	193.66	215.86
Japanese Cedar (*sugi*)	187.39	123.78	87.53	93.50	101.77	97.31	112.02	129.61
Hardwood	86.02	54.72	31.71	23.76	19.81	21.29	20.06	18.95
Wood fuel production	7.93	6.16	6.09	5.08	5.06	4.39	5.53	5.66
Mashroom production	218.32	196.89	198.50	218.91	204.72	193.15	203.73	209.08
Forestry by-product	7.70	5.92	1.96	3.15	1.29	0.83	1.10	1.28
Value-added of Forestry	532.91	351.87	245.60	225.50	223.78	208.99	228.03	243.70

Note: Total figures may not be equal to the sum of each item due to round off.

Source: MAFF "Report of Statistics on Forestry Income".

4. Current State of Forest Resources

(Unit: 1,000ha, million m^3)

Classification			Total		Standing timber area (canopy cover more than 30%)				Treeless land (canopy cover less than 30 %)		Bamboo groves
					Planted forest		Natural forest				
			Area	Growing stock	Area	Growing stock	Area	Growing stock	Area	Growing stock	Area
Total			25,081	4,900.51	10,289	3,041.87	13,429	1,858.19	1,201	0.45	161
National forest	Subtotal		7,674	1,151.82	2,327	467.32	4,717	684.06	629	0.45	0
	Under the Forestry Agency's jurisdiction	Subtotal	7,610	1,146.20	2,321	466.03	4,667	679.72	623	0.45	0
		State-owned	7,509	1,126.81	2,240	446.86	4,664	679.50	604	0.44	0
		Government reforestation	93	19.39	81	19.17	2	0.22	9	0.00	0
		Others	9	0.00	0	0.00	0	0.00	9	0.00	0
	Under other agency's jurisdiction		64	5.62	6	1.28	51	4.34	7	0.00	0
Private and public forest	Subtotal		17,407	3,748.69	7,962	2,574.56	8,712	1,174.13	572	0.00	161
	Public forest	Subtotal	2,919	557.70	1,287	350.30	1,495	207.40	131	0.00	6
		Prefecture	1,210	218.53	479	120.88	672	97.66	58	0.00	0
		Municipality	1,709	339.16	808	229.42	823	109.75	73	0.00	5
	Private forest		14,437	3,184.21	6,662	2,221.18	7,186	963.03	437	0.00	153
	Others		51	6.79	14	3.09	30	3.70	4	0.00	3

Note 1: Data cover the forests defined in the Forest Law Article 2.1.

2: "Others" and "Under other agency's jurisdiction" refer to forests that are not subject to the Regional Forest Plans for Non-national Forest under the Forest Law Article 5 and for National Forest under the Forest Law Article 7.2.

3: Total figures may not be equal to the sum of each item due to round off.

4: Figures are as of March 31, 2012.

Source: Forestry Agency

5. Planted Area by Tree Species

(unit: ha)

	Total	Softwood					Hardwood
		Japanese Cedar (*sugi*)	Japanese Cypress (*hinoki*)	Pine (*matsu*)	Japanese Larch (*karamatsu*)	Others	
1995	(48,650) 45,241	(13,660) 13,196	(22,332) 20,908	(219) 199	(2,739) 2,677	(5,544) 4,577	(4,156) 3,684
2000	(31,316) 28,480	(8,223) 7,967	(11,574) 10,745	(233) 223	(2,524) 2,493	(4,954) 4,014	(3,808) 3,038
2005	(25,584) 22,498	(5,216) 5,011	(7,096) 6,307	(226) 183	(3,534) 3,423	(5,728) 4,611	(3,784) 2,963
2010	(18,756) 16,388	(4,132) 3,844	(2,820) 2,262	(247) 237	(4,604) 4,418	(4,265) 3,381	(2,688) 2,246
2011	(19,596) 16,697	(4,598) 4,311	(2,830) 2,347	(178) 169	(4,950) 4,713	(4,220) 2,839	(2,819) 2,318
2012	(20,277) 16,992	(4,648) 4,425	(2,643) 2,103	(245) 214	(5,155) 4,821	(4,687) 3,112	(2,897) 2,318
2013	(22,225) 18,906	(5,429) 5,215	(2,780) 2,512	(330) 231	(5,099) 4,620	(5,811) 3,942	(2,777) 2,386
2014	(21,088) 17,720	(5,185) 5,098	(2,543) 2,404	(554) 518	(4,603) 4,128	(5,709) 3,622	(2,492) 1,950

Note 1: Figures do not include National Forest.

2: Figures in parentheses refer to the total area which includes area planted as the lower story of multiple storied forest.

Source: Forestry Agency

6. Planted Forest Area by Age Classes

(Unit: 1,000ha)

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX
1985	604	895	1,263	1,691	1,762	1,569	947	337	240	205	178	137	111	83	148				
1989	436	700	943	1,351	1,691	1,746	1,413	777	270	224	183	151	118	93	79	52	62		
1994	278	421	699	937	1,336	1,686	1,719	1,388	735	262	213	172	139	112	86	67	105		
2001	131	226	350	589	874	1,149	1,599	1,677	1,522	946	353	204	171	144	112	89	62	52	70
2006	88	168	227	352	593	873	1,143	1,582	1,649	1,500	918	345	200	168	141	106	90	62	120
2011	73	114	159	231	347	584	852	1,111	1,565	1,631	1,473	921	345	194	164	138	105	87	174

Note 1: Figures are as the end of each fiscal year.

Note 2: For the year 1985, the class XV contains forests older than that class. For 1989 and 1994, the class XVII contains forests older than that class. For the years 2001, 2006, and 2011 the class XIX contains forests older than that class.

Source: Forestry Agency

7. Thinned Area and Use of Thinned Wood

(FY)	Thinned area (1,000ha)			Used volume of thinned wood (million m^3)					
	Total	Private and public forest	National forest	Total	Private and public forest				National forest
					Subtotal	Sawnwood	Roundwood	Others	
2007	521	395	126	5.37	3.44	2.14	0.47	0.83	1.93
2008	548	434	114	5.66	3.68	2.26	0.39	1.03	1.98
2009	585	446	140	6.37	4.23	2.57	0.48	1.18	2.14
2010	556	445	110	6.65	4.43	2.70	0.42	1.31	2.22
2011	552	437	115	7.11	4.86	2.88	0.40	1.58	2.25
2012	488	368	121	7.59	5.21	3.00	0.36	1.86	2.38
2013	521	400	121	8.11	5.65	3.23	0.44	1.97	2.46
2014	465	339	126	7.69	5.21	2.91	0.33	1.97	2.47

Note 1: Used volumes are in roundwood equivalent.

2: Total figures may not be equal to the sum of each item due to round off.

Source: Forestry Agency

(Private and public forest)

(FY)		1990	1995	2000	2003	2004	2005	2006	2007
Thinned area (1,000ha)		277	215	304	312	277	281	282	395
Used volume of thinned wood (million m^3)	Total	2.34	1.83	2.74	2.83	2.84	2.84	3.24	3.44
	Sawnwood	1.70	1.25	1.95	1.85	1.84	1.81	1.96	2.14
	Roundwood	0.37	0.34	0.41	0.50	0.45	0.41	0.48	0.47
	Others	0.26	0.24	0.38	0.48	0.55	0.62	0.80	0.83

Note 1: Used volumes are in roundwood equivalent.

2: Total figures may not be equal to the sum of each item due to round off.

Source: Forestry Agency

8. Forest Area by Owners

	2015	
	Forest area (ha)	Ratio to total area (%)
Total	17,626,113	100.0
Private	13,565,022	77.0
Public	3,368,731	19.1
Prefecture	1,271,529	7.2
Public corporation	391,189	2.2
Municipality	1,404,456	8.0
Property ward	301,557	1.7
Incorporated Administrative Agencies	692,360	3.9

Note 1: Total figures may not be equal to the sum of each item due to round off.

2: "Incorporated Administrative Agancies" include National University Corporations and Special Corporations.

Source: MAFF "2015 Census of Agriculture and Forestry"

9. Number of Forestry Management Bodies and their Forest Area

(Unit: #, ha)

	Total		-3ha		3-5ha		5-20ha		20-50ha		50-100ha		100ha-	
	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area
Total	140,186	5,177,452	2,642	1,650	41,049	149,366	69,250	638,990	17,871	509,510	4,892	320,798	4,482	3,557,138
Corporation	6,789	1,512,674	925	176	595	2,254	1,824	19,486	1,216	38,580	797	55,469	1,432	1,396,709
Private Company	2,534	831,262	602	100	194	714	623	6,380	382	11,601	201	13,396	532	799,071
Cooperative	3,016	483,989	301	76	169	650	711	8,228	646	21,091	478	33,720	711	420,224
Agricultural cooperative	119	45,319	1	2	5	18	17	212	28	935	16	1,185	52	42,967
Forestry cooperative	2,261	296,112	277	70	82	316	451	5,415	476	15,625	402	28,253	573	246,432
Other cooperatives	636	142,558	23	4	82	316	243	2,601	142	4,531	60	4,281	86	130,825
Other corporations	1,106	188,696	19	...	213	817	441	4,368	166	5,203	96	6,821	171	171,484
Non-corporation	131,724	2,051,347	1,715	1,472	40,400	146,904	67,194	616,812	16,430	463,576	3,873	249,485	2,112	573,098
Individual	125,136	1,759,002	1,507	1,422	39,012	141,685	64,269	588,125	15,328	429,640	3,392	216,460	1,628	381,670
Public	1,673	1,613,431	2	2	54	208	232	2,691	225	7,355	222	15,843	938	1,587,331

Source: MAFF "2010 Census of Agriculture and Forestry"

10. Roundwood Production

(Unit: 1,000m^3, %)

			1995	2000	2005	2010	2011	2012	2013	2014	Relative change from previous year (%)
Total			21,242	17,034	16,166	17,193	18,290	18,479	19,646	19,916	1.4
By tree species	Softwood	Subtotal	16,575 (78)	13,707 (80)	13,695 (85)	14,789 (86)	15,986 (87)	16,062 (87)	17,246 (88)	17,743 (89)	2.9
		Japanese Cedar (*Sugi*)	8,852	7,671	7,756	9,049	9,649	9,956	10,902	11,194	2.7
		for sawnwood	8,642 <53>	7,258 <57>	6,737 <58>	6,695 <63>	7,089 <62>	7,295 <64>	7,825 <65>	7,872 <64>	0.6
		Japanese Cypress (*Hinoki*)	2,882	2,273	2,014	2,029	2,169	2,165	2,300	2,395	4.1
		Red pine (*Akamatsu*), Black pine (*Kuromatsu*)	1,551	1,034	783	689	580	661	624	674	8.0
		Japanese Larch (*Karamatsu*), Yezo spruce (*Ezomatsu*), Todomatsu (*Abies sachalinensis*)	2,779	2,410	2,910	2,821	3,373	3,098	3,275	3,327	1.6
		Others	375	319	232	201	215	182	145	153	5.5
	Hardwood		4,667 (22)	3,327 (20)	2,471 (15)	2,404 (14)	2,304 (13)	2,417 (13)	2,400 (12)	2,173 (11)	▲ 9.5
By use	Sawnwood		16,252 (77)	12,798 (75)	11,571 (72)	10,582 (62)	11,492 (63)	11,321 (61)	12,058 (61)	12,211 (61)	1.3
	Plywood		228 (1)	138 (1)	863 (5)	2,490 (14)	2,524 (14)	2,602 (14)	3,016 (15)	3,191 (16)	5.8
	Chips		4,762 (22)	4,098 (24)	3,732 (23)	4,121 (24)	4,274 (23)	4,556 (25)	4,572 (23)	4,514 (23)	▲ 1.3

Note 1: Figures in parentheses refer to the percentage to total volume.
2: Figures in < > are the percentage of sugi for sawnwood to the total volume for sawnwood of all species.
3: Total figures may not be equal to the sum of each item due to round off.

Source: MAFF "Wood Demand and Supply Report", "Timber Statistics"

11. Wood Supply/Demand Chart (roundwood equivalent)

(Unit:1,000m³)

Supply \ Demand		Demand								Domestic consumption											Export									
			Industrial use								Industrial use						Fuel wood					Industrial use						Fuel wood			
		Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Mushroom cultivation	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Mushroom cultivation	Subtotal	Charcoal	Firewood	Wood chips for fuel	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Subtotal	Charcoal	Firewood	Wood chips for fuel
Supply	Total	(16,687)	(6,922)		(6,922)				(9,765)	(16,687)	(6,922)		(6,922)				(9,765)			(9,765)									
		75,799	72,547	26,139	31,433	11,144	3,830	313	2,940	73,770	70,536	26,032	30,123	11,087	3,293	313	2,921	946	52	1,923	2,029	2,010	107	1,310	56	537	19	13	1	5
	Roundwood	(6,922)	(6,922)		(6,922)					(6,922)	(6,922)		(6,922)																
		26,604	26,604	16,263	4,821	4,611	909			24,594	24,594	16,156	3,511	4,555	372						2,010	2,010	107	1,310	56	537				
	Forest residue	231	231		231					231	231		231																	
	Import	45,712	45,712	9,876	26,381	6,533	2,921			45,712	45,712	9,876	26,381	6,533	2,921															
	Mushroom cultivation	313						313		313						313														
	Fuel wood	(9,765)							(9,765)	(9,765)							(9,765)			(9,765)										
		2,940							2,940	2,921							2,921	946	52	1,923	19						19	13	1	5
Domestic production	Total	23,647	21,492	12,211	5,047	3,346	889	313	1,843	21,622	19,486	12,104	3,737	3,293	352	313	1,824	69	52	1,703	2,025	2,006	107	1,310	53	537	19	13	1	5
	Roundwood	21,261	21,261	12,211	4,816	3,346	889			19,255	19,255	12,104	3,506	3,293	352						2,006	2,006	107	1,310	53	537				
	Forest residue	231	231		231					231	231		231																	
	Mushroom cultivation	313						313		313						313														
	Fuel wood	1,843							1,843	1,824							1,824	69	52	1,703	19						19	13	1	5
Import	Total	52,152	51,054	13,928	26,386	7,798	2,942		1,098	52,148	51,051	13,928	26,386	7,794	2,942		1,098	877	0	220	4	4	0		3					
	Roundwood	5,342	5,342	4,052	5	1,265	20			5,339	5,339	4,052	5	1,262	20						4	4	0		3					
	Wood products Subtotal	45,712	45,712	9,876	26,381	6,533	2,921			45,712	45,712	9,876	26,381	6,533	2,921															
	Wood products Sawnwood	9,876	9,876	9,876						9,876	9,876	9,876																		
	Wood products Pulp	5,788	5,788		5,788					5,778	5,788		5,788																	
	Wood products Chips	20,594	20,594		20,594					20,594	20,594		20,594																	
	Wood products Plywood	6,533	6,533			6,533				6,533	6,533			6,533																
	Wood products Others	2,921	2,921				2,921			2,921	2,921				2,921															
	Fuel wood	1,098							1,098	1,098							1,098	877	0	220										

Note 1: Figures in parentheses refer to the volume of pulp and chips from mill residue or construction waste, which are already included in the volume of sawnwood, plywood, or others. These figures are excluded from "total" and "subtotal".
2: "Forest residue" refers to branches or roots carried into mills for use.
3: Total figures may not be equal to the sum of each item due to round off.
Source: Forestry Agency "Wood Demand and Supply Chart", 2014

12. Wood Supply/Demand (roundwood equivalent)

(Unit: 1,000m³)

	Total wood supply/ demand	Wood for industrial use	Fuel wood	Wood for mushroom production	Wood demand for industrial use by sector				Wood supply for industrial use by source		Self-sufficiency rate(%)
					Sawnwood	Pulp and chips	Plywood	Others	Domestic wood	Imported wood	
1955	65,206	45,278	19,928	-	30,295	8,285	2,297	4,401	42,794	2,484	96.1
1960	71,467	56,547	14,920	-	37,789	10,189	3,178	5,391	49,006	7,541	89.2
1965	76,798	70,530	6,268	-	47,084	14,335	5,187	3,924	50,375	20,155	73.7
1970	106,601	102,679	2,348	1,574	62,009	24,887	13,059	2,724	46,241	56,438	46.7
1975	99,303	96,369	1,132	1,802	55,341	27,298	11,173	2,557	34,577	61,792	37.4
1980	112,211	108,964	1,200	2,047	56,713	35,868	12,840	3,543	34,557	74,407	32.9
1985	95,447	92,901	572	1,974	44,539	32,915	11,217	4,230	33,074	59,827	37.1
1990	113,242	111,162	517	1,563	53,887	41,344	14,546	1,385	29,369	81,793	27.6
1995	113,698	111,922	721	1,055	50,384	44,922	14,314	2,302	22,916	89,006	21.4
2000	101,006	99,263	940	803	40,946	42,186	13,825	2,306	18,022	81,241	18.9
2005	87,423	85,857	1,001	565	32,901	37,608	12,586	2,763	17,176	68,681	20.5
2010	71,884	70,253	1,099	532	25,379	32,350	9,556	2,968	18,236	52,018	26.3
2011	74,403	72,725	1,157	520	26,634	32,064	10,563	3,464	19,367	53,358	27.0
2012	72,189	70,633	1,119	437	26,053	31,010	10,294	3,275	19,686	50,947	28.1
2013	75,459	73,867	1,204	388	28,592	30,353	11,232	3,690	21,117	52,750	28.8
2014	75,799	72,547	2,940	313	26,139	31,433	11,144	3,830	21,492	51,054	31.2

Note 1: "Wood supply/ demand" refers to the sum of roundwood volume and imported products volume (sawnwood, plywood, and pulp and chips) converted into roundwood equivalent.
2: "Others" refers to items such as glulam, worked wood, sleeper, utility pole, pile wood, and scaffolding wood.
3: "Self-sufficiency rate" = "Wood supply (Domestic Wood)" / "Total wood supply" ×100
4: Total figures may not be equal to the sum of each item due to round off.
5: The "Fuel wood" includes wood chips for fuel, utelized by woody biomass power plants.
Source: Forestry Agency "Wood Demand and Supply Chart"

13. Domestic/Imported Wood Supply/Demand (roundwood equivalent)

(Unit: 1,000m³)

			1995	2000	2005	2010	2011	2012	2013	2014	Relaltive change to previous year (%)
Total wood supply/demand			113,698	101,006	87,423	71,884	74,403	72,189	75,459	75,799	-
Wood for industrial use			111,922	99,263	85,857	70,253	72,725	70,633	73,867	72,547	▲ 1.8
Fuel wood			721	940	1,001	1,099	1,157	1,119	1,204	2,940	-
Wood for mushroom production			1,055	803	565	532	520	437	388	313	▲ 19.3
Wood for industrial use	Total	Total	111,922	99,263	85,857	70,253	72,725	70,633	73,867	72,547	▲ 1.8
		Domestic Wood	22,916	18,022	17,176	18,236	19,367	19,686	21,117	21,492	1.8
		Imported Wood	89,006	81,241	68,681	52,018	53,358	50,947	52,750	51,054	▲ 3.2
		Self-sufficiency rate (%)	20.5	18.2	20.0	26.0	26.6	27.9	28.6	29.6	1.0
	Sawnwood	Subtotal	50,384	40,946	32,901	25,379	26,634	26,053	28,592	26,139	▲ 8.6
		Domestic Wood	16,252	12,798	11,571	10,582	11,492	11,321	12,058	12,211	1.3
		Imported Wood	34,132	28,148	21,330	14,797	15,142	14,732	16,534	13,928	▲ 15.8
		Self-sufficiency rate (%)	32.3	31.3	35.2	41.7	43.1	43.5	42.2	46.7	4.5
	Pulp and chips		(6,280)	(6,537)	(7,974)	(6,192)	(6,725)	(6,708)	(7,972)	(6,922)	▲ 13.2
		Subtotal	44,922	42,186	37,608	32,350	32,064	31,010	30,353	31,433	3.6
		Domestic Wood	5,989	4,749	4,426	4,785	4,914	5,309	5,177	5,047	▲ 2.5
		Imported Wood	38,933	37,437	33,181	27,565	27,150	25,702	25,176	26,386	4.8
		Self-sufficiency rate (%)	13.3	11.3	11.8	14.8	15.3	17.1	17.1	16.1	▲ 1.0
	Plywood	Subtotal	14,314	13,825	12,586	9,556	10,563	10,294	11,232	11,144	▲ 0.8
		Domestic Wood	228	138	863	2,490	2,524	2,602	3,255	3,346	2.8
		Imported Wood	14,086	13,687	11,723	7,066	8,039	7,692	7,977	7,798	▲ 2.2
		Self-sufficiency rate (%)	1.6	1.0	6.9	26.1	23.9	25.3	29.0	30.0	1.0
	Others	Subtotal	2,302	2,306	2,763	2,968	3,464	3,275	3,690	3,830	3.8
		Domestic Wood	447	337	316	379	438	454	627	889	41.8
		Imported Wood	1,855	1,969	2,447	2,589	3,026	2,821	3,063	2,942	▲ 4.0
		Self-sufficiency rate (%)	19.4	14.6	11.4	12.8	12.6	13.9	17.0	23.2	6.2

Note 1: "Wood supply/demand" refers to the sum of roundwood volume and imported products volume (sawnwood, plywood, and pulp and chips) converted into log equivalent.
2: "Others" refers to items such as glulam, worked wood, sleeper, utility pole, pile wood and scaffolding wood.
3: "Self-sufficiency rate" = "Domestic wood supply" for each category / "total" or "subtotal" for each categoey ×100
4: Figures in parentheses refer to the volume of pulp and chips from mill residue or construction waste, which are already included in the volume of sawnwood, plywood, or others. Therefore, these figures are excluded from "total" and "subtotal".
5: Total figures may not be equal to the sum of each item due to round off.
6: The "Fuel wood" includes wood chips for fuel, utelized by woody biomass power plants.
Source: Forestry Agency "Wood Demand and Supply Chart"

14. Wood Supply by Country (roundwood equivalent)

(Unit: 1,000m^3, %)

			1995	2000	2005	2010	2011	2012	2013	2014
Imported wood	North America	Subtotal	(34.2) 38,261	(28.9) 28,700	(18.8) 16,129	(19.2) 13,506	(19.1) 13,871	(18.6) 13,108	(18.9) 13,942	(17.9) 13,013
		U.S.	23,273	14,460	6,844	5,838	5,877	5,560	6,225	6,153
		Canada	14,987	14,240	9,285	7,668	7,993	7,548	7,717	6,860
	Southeast Asia	Subtotal	(14.7) 16,418	(13.7) 13,569	(12.2) 10,511	(8.9) 6,287	(9.1) 6,586	(8.8) 6,235	(8.7) 6,439	(9.2) 6,718
		Malaysia	7,601	6,690	5,888	3,773	3,701	3,543	3,518	3,293
		Indonesia	6,334	5,858	4,137	2,304	2,622	2,506	2,787	3,328
		Others	2,482	1,021	486	209	263	186	134	97
	Russia		(6.4) 7,131	(7.5) 7,429	(8.6) 7,411	(3.3) 2,343	(3.3) 2,410	(3.1) 2,196	(3.2) 2,380	(3.1) 2,221
	Europe		(2.2) 2,411	(4.7) 4,675	(6.9) 5,937	(7.1) 4,967	(7.6) 5,553	(7.8) 5,509	(9.1) 6,754	(7.6) 5,554
	Others	New Zealand	(3.8) 4,263	(4.4) 4,374	(3.4) 2,878	(3.9) 2,720	(3.8) 2,772	(3.6) 2,570	(3.0) 2,217	(2.6) 1,858
		Chile	(4.7) 5,311	(3.8) 3,795	(4.6) 3,952	(6.7) 4,726	(7.2) 5,210	(7.3) 5,189	(6.3) 4,617	(6.2) 4,468
		Australia	(6.6) 7,428	(8.7) 8,604	(10.2) 8,729	(11.0) 7,722	(7.7) 5,629	(7.5) 5,323	(5.6) 4,106	(5.8) 4,203
		China	(1.8) 2,061	(2.5) 2,445	(3.0) 2,544	(3.0) 2,084	(3.6) 2,633	(3.4) 2,396	(3.4) 2,483	(3.4) 2,434
		Others	(5.1) 5,721	(7.7) 7,651	(12.3) 10,591	(10.9) 7,663	(12.0) 8,695	(11.9) 8,421	(13.3) 9,810	(14.7) 10,585
	Subtotal		(79.5) 89,006	(81.8) 81,241	(80.0) 68,681	(74.0) 52,018	(73.4) 53,358	(72.1) 50,947	(71.4) 52,750	(70.4) 51,054
Domestic wood			(20.5) 22,916	(18.2) 18,022	(20.0) 17,176	(26.0) 18,236	(26.6) 19,367	(27.9) 19,686	(28.6) 21,117	(29.6) 21,492
Total			(100.0) 111,922	(100.0) 99,263	(100.0) 85,857	(100.0) 70,253	(100.0) 72,725	(100.0) 70,633	(100.0) 73,867	(100.0) 72,547

Note 1: Figures refer to the sum of domesic/ imported roundwood volume and imported products volume (sawnwood, plywood, and pulp and chips) converted into roundwood equivalent.
2: "Others" of "Southeast Asia" include Philippines, Singapore, Brunei, Papua New Guinea, and Solomon.
3: "Others" of "Others" include African countries.
4: Figures in parentheses refer to the percentage of each volume to the "total" volume of each year.
5: Total figures may not be equal to the sum of each item due to round off.

Source: Ministry of Finance "Trade Statistics of Japan", Forestry Agency "Wood Demand and Supply Chart"

15. Number of Mills/Factories and Production Volumes

		Unit	1995	2000	2005	2010	2011	2012	2013	2014
Sawnwood	Number of sawmills	plants	14,565	11,692	9,011	6,569	6,242	5,927	5,690	5,468
	Sawnwood shipments	1,000m^3	24,766	17,231	12,825	9,415	9,434	9,302	10,100	9,595
Plywood	Number of plywood mills	plants	455	354	271	192	203	197	195	186
	Inputs for plywood production	1,000m^3	7,321	5,401	4,636	3,811	3,858	3,837	4,181	4,405
	General plywood production	1,000m^3 (1,000m^2)	655,799	3,218	3,212	2,645	2,486	2,549	2,811	2,813
	Special plywood production	1,000m^3 (1,000m^2)	340,687	1,534	1,037	647	703	640	654	584
Laminated wood	Number of laminated wood factories	plants	293	281	259	182	181	174	166	165
	Laminated wood production	1,000m^3	582	892	1,512	1,455	1,455	1,524	1,647	1,555
Wood chips	Number of wood chip mills	plants	3,535	2,657	2,040	1,578	1,545	1,536	1,510	1,477
	Wood chip production	1,000tons (1,000m^3)	11,226	10,851	6,005	5,407	5,633	5,861	6,452	5,850

Note: "Number of sawmills" excludes sawmills with output power less than 7.5kW.

Source: MAFF "Wood Demand and Supply Report", "Timber Statistic", Japan Laminated Wood Products Association

16. Number of Sawmills and Sawmill Employees

	1995	2000	2005	2010	2011	2012	2013	2014
Number of sawmills	14,565	11,692	9,011	6,569	6,242	5,927	5,690	5,468
-22.5kW	1,394	1,137	899	784	757	716	716	692
22.5-37.5	3,317	2,635	1,919	1,333	1,286	1,195	1,140	1,079
37.5-75.0	5,472	4,406	3,371	2,165	2,015	1,891	1,759	1,684
75.0-150.0	2,596	1,991	1,552	1,196	1,124	1,082	1,039	990
150.0-300.0	1,233	980	782	641	619	601	604	607
300.0kW-	553	543	488	450	441	442	432	416

Note: Figures exclude sawmills with output power less than 7.5kW.

Source: MAFF "Wood Demand and Supply Report", "Timber Statistics"

Full text (in Japanese) of the “Annual Report on Forest and Forestry for FY2015” is available on the website of the Forestry Agency:

http://www.rinya.maff.go.jp/j/kikaku/hakusyo/27hakusyo/index.html

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