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ON
TRENDS OF FORESTRY

Fiscal Year 2000

SUMMARY

Provisional Translation

FORESTRY AGENCY
Ministry of Agriculture, Forestry and Fisheries, Japan
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With the postwar reconstruction and high economic growth after World War II, wood demand increased rapidly and there was a pressing need for enhancing wood supply capability in Japan. Private forest, which account for about 60% of Japan's total forest area was considered to be one of the obstacles to the development of forestry and the expansion of wood supply because of its considerably small-scale ownership.

The Forestry Basic Law was enacted in 1964 in order to strengthen forestry productivity and to raise the status of forestry workers, with the premise of active demand for wood and a high motivation for forest management.

Various measures under the Forestry Basic Law helped to greatly increase forest resources as well as wood supply capability.

However, the scale of forest management size did not expand, especially among small-scale forest owners. Moreover, the demand has shifted drastically from domestic timber, which is traded in small volumes with numerous varieties and through many distribution stages, to imported timber, which is traded through simpler distribution route in large volumes of consistent quality and with high competency.

Subsequently, under the influence of appreciating yen, wood demand reached a peak and forest-products prices was became stagnant for a long time. Improvement of the structure of forest ownership as well as the production, distribution and processing of wood came to a standstill and the forestry and wood industry became stagnant.

The public interest or expectations toward forests has become more diverse and more vocal and thus forest management policy to meet the above mentioned interests or expectations is now being sought.

On the other hand, due to the low and stagnating wood prices and the increase of expenses including labor costs, the profitability of forestry has been declining sharply and forest owners, especially small-scale ones, have lost their interest toward forestry.

Amidst increasing calls for sustainable economic society, it is essential to promote the "cyclical use of forest resources" in which wood is produced cyclically and used efficiently with forests being nurtured at the same time. It is critical that not only forest owners themselves but also the society as a whole will make the utmost effort to promote this cyclical use of forest resources.
Fig. 1 Trend of the Number of Individual Forest Owners

Fig. 2 Trend of Wood Supply (Industrial wood)
Source: Forestry Agency, "Demand and Supply of Woods"

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic timber</th>
<th>Imported logs</th>
<th>Imported products</th>
</tr>
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<tbody>
<tr>
<td>1955</td>
<td>4,528</td>
<td>5,655</td>
<td>7,053</td>
</tr>
<tr>
<td>1960</td>
<td>11,759</td>
<td>9,016</td>
<td>11,385</td>
</tr>
<tr>
<td>1965</td>
<td>11,385</td>
<td>9,781</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>11,385</td>
<td>9,781</td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>11,385</td>
<td>9,781</td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td>11,385</td>
<td>9,781</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>11,385</td>
<td>9,781</td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>11,385</td>
<td>9,781</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>11,385</td>
<td>9,781</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>11,385</td>
<td>9,781</td>
<td></td>
</tr>
</tbody>
</table>
The philosophy of the new basic policy is to fulfill the multi-functional role of forests in a sustainable way through "sustainable forest management", under which forests are conserved and utilized while maintaining their soundness and viability.

Also, in consideration of the fact that both forestry and wood industry play an important role in the improvement of forests as well as the cyclical use of forest resources required to help their sound development and to promote production, supply and use of wood in line with public needs.

In order to maintain soundness and vitality of forests, and to meet public demands toward forest management according to forest classifications, introduction of long-term cyclical forest management, constant implementation of forestry works including thinning of plantation forests must be promoted.

In order that forestry will be able to continue to be responsible for the maintenance of forests as well as the sustainable use of forest resources, fostering work force capable of effective and stable forest management, intensifying forest works and management, securing and developing employees must be promoted.

In order to stabilize the supply of wood products with reliable quality in line with needs, increasing efficiency of distribution system through information technology and utilizing local timber must be promoted for the wood industry will be able to contribute to the cyclical use of forest resources in future.

In order that mountain villages will be able to play an important role in creating safe and prolific national land, while utilizing local resources, mountain villages need to be vitalized by creating and securing diverse job opportunities, by improving of living conditions and by promoting interchange activites with cities.
Long-term Cyclical Forest Management

Upper level: (50 year old) selective cutting
Lower level: artificial planting or natural regeneration

Upper level: (65 year old) selective cutting
Lower level: (15 year old) cleaning

Upper level: (80 year old) selective cutting
Lower level: (30 year old) thinning

Upper level: (115 year old) selective cutting
Lower level: (65 year old) selective cutting
Lowest level: (15 year old) cleaning

Upper level: (130 year old) regeneration-cutting
Lower level: (80 year old) selective cutting
Lowest level: (30 year old) thinning

Upper level: (100 year old) selective cutting
Lower level: (50 year old) selective cutting
Lowest level: planting

Fig. Forest Classifications

Efficient and effective forest management for fulfillment of the multifunctional roles of forest
Inducing desirable forest according to its preferential functions
Promoting management that the people can readily understand

Water and land conservation
Symbiosis of forest and people
Cyclical use of forest resources
Forest management for conserving land and water resources
Forest management for conservation of forest ecosystem and enhancing forest space use
Forest management for efficient and sustainable wood production

Eupstream of dam areas
Interior reservoir areas
Potential disaster areas
Landscape forest
Forest for health and refreshment purposes
Habitats of animals and plants
Equality plantation forest areas
Geography enabling efficient forestry work

Promoting measures for conserving land and water resources
Forest management by public authorities
Promoting appropriate forest management according to the purpose of each forest
Promoting forest use including environmental education
Promoting Long-term cyclical forest management practice for sustainable wood production
Intensive management and operation
Improving efficient production

Source: Forest Agency Data
The Japanese archipelago stretches from north to south in a narrow arc and has ranges of mountains as its backbone. In the mountainous regions of the subarctic zone in Hokkaido and those to the north of the Chubu district, there are forests of conifers such as fir and Japanese spruce. Forests of deciduous broad-leaved trees as typified by beech, oaks etc. are seen mainly in eastern Japan. In western Japan, forests of evergreen broad-leaved trees are widely distributed and in the Southwestern Islands subtropical forests of mangroves, etc. are also found.

Forests cover about 25 million hectares or about 70% of Japan's national land area. Of the entire forested area, planted forests make up 10 million hectares accounting for 41% and natural forests and others make up 15 million hectares accounting for 59%. The current growing stock is about 3.8 billion with an average annual growth of 80 million consisting mainly of planted forest, which mostly require further tending and thinning.

8.87 million hectares of forests is designated as Protection Forests for conserving water resources, preventing natural disasters, preserving living environment, etc.. While putting certain restrictions on felling and development, special measures on taxation system, loans, etc. are being taken for forest owners.

Since many of the planted forests are nearing the time for thinning, urgent and systematic thinning from 2000 to 2004 for 1.5 million hectares has started.

In recent years, there have been new initiatives for forest management such as the support for tree planting and thinning under collaboration with municipalities both downstream and upstream, the creation of fund for forest management utilizing water charges, and public participation in forest management.

Changing with the times, the public demands with regards to forests have become more diverse. Especially in recent years, the demands are becoming even more diversified and specific such as a growing expectation for recreation, the conservation of the natural environment, and the mitigation of global warming.
Figure 1: Comparison of public opinion on forests and forestry

Figure 2: Comparison of public opinion on green trees
Development of forestry and mountain villages responsible for maintaining healthy and vital forests

1 Ⅰ 管理の背景と問題

- 94% of forest owners have less than 20 hectares of forest, respectively, this indicates that the scale of each private forest is extremely small in Japan. While forest-product prices have been going down for a long time, management costs, such as labor costs etc., have gone up, then the profitability of forestry has been reduced substantially. Therefore, the interest in forest management has been decreasing, especially among small-scale forestry owners.

- There are approximately 6,000 forestry enterprises working on with log production and silviculture, 64% of which are private. Many of them are small and weak in management. Forest management units are small and scattered, and the stagnant forestry production of recent forest owners have made it more difficult to maintain business and to improve operational efficiency.

- The number of employees in forestry has decreased to 70,000 of which 29% are older than 65 years old, this indicates that forestry employees are decreasing and getting older noticeably.

2 Ⅱ 生産基盤改善のための対策

- In order to proceed with efficient forestry works and appropriate conservation and management of forests, the forest roads and branch roads are under improvement. Moreover, to accommodate geographical features and forestry implementation, the development and practical application of high performance forestry machines and the establishment of an operation system by combining several high performance forestry machines are on going.

3 Ⅲ 山村の活性化と森林の持続可能な利用

- Mountain villages cover 50% of Japan's national land area but the population accounts for only 4% and the ratio of the elderly people over 65 is 24%, this is significantly high in comparison to the national average of 15%. Depopulation and aging in mountain villages is advancing.

- In order to promote the settlement of people from cities as well as people in mountain villages comprehensive measures are essential, including creating and securing various business opportunities utilizing regional resources, providing comfortable living condition and promoting exchange between urban and rural communities by making the most of positive feature of mountain villages.
### 図1-1

<table>
<thead>
<tr>
<th>大小</th>
<th>私有林内所有者の数</th>
<th>私有林の面積</th>
</tr>
</thead>
<tbody>
<tr>
<td>1ha以下</td>
<td>1,171,747</td>
<td>12,256千ha</td>
</tr>
<tr>
<td>5-20ha</td>
<td>5-20ha</td>
<td></td>
</tr>
<tr>
<td>20-100ha</td>
<td>20-100ha</td>
<td></td>
</tr>
<tr>
<td>100ha以上</td>
<td>100ha以上</td>
<td></td>
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</table>

### 図1-2

<table>
<thead>
<tr>
<th>因子</th>
<th>1980年</th>
<th>1999年</th>
</tr>
</thead>
<tbody>
<tr>
<td>原木価格指数 (総合平均価格)</td>
<td>90</td>
<td>65</td>
</tr>
<tr>
<td>木材製品価格指数 (原木価格指数)</td>
<td>45</td>
<td>40</td>
</tr>
<tr>
<td>ヒノキ原木価格</td>
<td>70</td>
<td>65</td>
</tr>
<tr>
<td>西部ヒマラヤトチリ原木価格</td>
<td>36</td>
<td>35</td>
</tr>
<tr>
<td>ヒノキ生産価格</td>
<td>168</td>
<td>150</td>
</tr>
<tr>
<td>林業生産価格</td>
<td>148</td>
<td>140</td>
</tr>
<tr>
<td>施工材料価格 (総合平均価格)</td>
<td>100</td>
<td>95</td>
</tr>
<tr>
<td>労働コスト（伐採）</td>
<td>80</td>
<td>75</td>
</tr>
</tbody>
</table>

*注：1999年の基準で、1980年を100として比較。*
The demand for wood products (in terms of logs) in 2000 was 97.81 million, a slight increase of 6% from the previous year but was below 100 million for the second consecutive year.

The supply of domestic timber in 2000 was 19 million, 3% less than the previous year. On the other hand, the supply of imported timber increased to 79 million, 9% up from the previous year.

The import volume of softwood lumber products, which are in high demand as building materials, increased from 1999.

By producing area: North American timber still accounts for the majority with about 60% but its share has been decreasing in recent years. On the other hand, European softwood lumber products, which accounted for only 8% in 1995, expanded their share to 25% in 2000 with the increasing price competitiveness due to the devalued Euro.

The number of new housing construction decreased from the high level of 1.71 million houses in 1990 and has been fluctuating around 1.2 million due to the sluggish economy, etc.

Amidst a growing demand for housing quality, with the amendment of the "Building Standard Law" in June, 1998 and the enforcement of the "Housing Quality Assurance Law" in April, 2000 the demand for wood has drastically shifted from lumber with excellent surface to kiln-dried lumber or laminated lumber with reliable quality and performance.
In order to manage the national forests as "common assets of the nation, with the people's participation, for the sake of people" and to make it really worth of being named as "forests for the people", a shift to social-benefit-oriented forest management as well as the establishment of a simple and efficient operation system through the streamlining and cutting back of organizations and personnel, is being put forward based on laws concerning the reform of national forests enacted in 1998.

1. Measures for the realization of "forests for the people"

(a) Social-benefit-oriented forest management

The national forests cover 7.6 million hectares, approximately 20% of Japan's land area and about 30% of the entire forest area. A large portion of these forests are located in the backbone mountain ranges or upstream water reservoir areas, including pristine natural forests.

The reform process enlarged the area of forests managed primarily for social objectives, from 50% to 80% of total forest area. These objectives include water resource management, soil conservation, recreational use and environment protection.

In addition to the conventional practice of designating protected forests, Green Corridors system which connects protected forests mainly the forest ecosystem reserves is introduced to formulate a network of wildlife habitats.

(b) Effective use of the national forest resources

Taking advantages of diverse forest resource, the national forests supply rare species timbers or large diameter logs indispensable for the construction of large scale public facilities and traditional buildings such as shrines and temples, etc., which are seldom produced nowadays from private forests.

(c) Aiming at administration and management of national forests open to the public

Many national forests are open to the public as "Recreational Forests" for use for health, culture and educational purposes. Local national forest offices work with forestry volunteer groups to establish or improve forest.

Information on forests as well as on forestry is provided to public through various events including forest markets or through websites.
Fig. 1 | Re-organization of the National Forests Zoning System for more social-benefit-oriented Forest Management

- Wood production forests: 4.13 million ha (50%)
- Nature conservation forests: 1.41 million ha (20%)
- Land conservation forests: 1.43 million ha (20%)
- Landscape and recreational forests: 0.64 million ha (10%)

- Forests for water resource management, soil conservation and sheltering: 4.10 million ha (50%)
- Forests for conservation of ecological, cultural, historical, recreational and spiritual values: 2.05 million ha (30%)
- Forests for sustainable use of wood resources: 1.44 million ha (20%)
- Forests managed for safe and comfortable living environment through prevention of soil discharge, land disaster, water resource conservation and sheltering: 0.64 million ha (10%)
- Forests managed for efficient utilization of wood as an environmentally excellent material: 1.44 million ha (20%)
- Forests managed for protection of natural environment including pristine forest ecosystems and for recreational use: 0.64 million ha (10%)

Social forests: (50%)

Source: Forest Agency Date

Fig. 2 | Green Corridor System

- Forest Biosphere Reserve
- Important pristine forests
- Forest Bio-genetic Resource Preservation Forest
- Genetic resources which consist of important part of forest ecosystem
- Plant Community
- Protected Forest
- Specific plant community
- Specific Animals Habitat
- Protected Forest
- Important habitat for specific animals
According to FAO, the area of the world's forests was estimated to be 3,454 million hectares, covering about 27% of the land areas. Between 1990 and 1995, a net loss of 56.3 million hectares of forests was estimated, which is 1.5 times as large as the Japan's entire land area.

Japan is the second largest timber importing-country after the United States. In light of this, Japan aims to emphasize viewpoints of global environmental issues, the sustainable use of resources, the balance of right and responsibility between exporting and importing countries, etc.

In October 2000, the United Nations Economic and Social Council adopted the resolution establishing the United Nations Forest Forum.

In July 2000, the illegal logging issue was discussed at the Kyushu-Okinawa Summit, and G-8 members asserted that they would vigorously tackle this issue. Japan, as a member country of G8, has determined to look into concrete measures.

Certification and labeling of sustainable forest management, the Forest Stewardship Council (FSC) the International Organization for Standardization (ISO) etc., has been developing internationally. In Japan, a forest owner in Mie Prefecture and a forest owners' cooperative in Kochi Prefecture acquired FSC certification in February and in October, 2000 respectively.

The Sixth Conference of the Parties to the United Nations Framework Convention on Climate Change (COP6) held in November, 2000, discussed how to implement the Kyoto Protocol. The Japanese government maintained that activities to preserve and increase absorbents must be promoted and not be restricted to fight global warming, but it did not reach an agreement. The deliberations are to be resumed in July, 2001.

Japan determined the "Outline for Promotion of Efforts to Mitigate Global Warming" in July, 1998, and enforced the "Law Promoting Measures to Fight Global Warming" in the following April. With the reference to the Outline, the Forestry Agency drew up the "Basic Direction of Measures to Fight Global Warming in the spheres of Forests, Forestry and the Timber Industry" and is vigorously pressing forward with this issue by promoting afforestation projects in devastated areas.

Japan is actively promoting bilateral technical cooperation, through the Japan International Cooperation Agency (JICA) financial contributions to international organizations including the International Tropical Timber Organization (ITTO) the Food and Agriculture Organization of the United Nations (FAO) and projects sponsored by the Forestry Agency,
Fig. 1

P Values of the World's Exports and Imports of Timber

Source: FAO, "STATISTICS DATABASE" (updated on October 5th, 2000 and effective as of December, 2000)

Note: Totals are inconsistent due to rounding off of figures.

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Exports (133.7 billion dollars)</th>
<th>Total Imports (137.6 billion dollars)</th>
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</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>237</td>
<td>148</td>
</tr>
<tr>
<td>Japan</td>
<td>125</td>
<td>90</td>
</tr>
<tr>
<td>China</td>
<td>115</td>
<td>77</td>
</tr>
<tr>
<td>France</td>
<td>90</td>
<td>66</td>
</tr>
<tr>
<td>U.K.</td>
<td>90</td>
<td>68</td>
</tr>
<tr>
<td>Germany</td>
<td>284</td>
<td>199</td>
</tr>
<tr>
<td>Sweden</td>
<td>199</td>
<td>97</td>
</tr>
<tr>
<td>Finland</td>
<td>199</td>
<td>97</td>
</tr>
<tr>
<td>Other developed areas</td>
<td>400</td>
<td>254</td>
</tr>
<tr>
<td>Other developing areas</td>
<td>1,138</td>
<td>635</td>
</tr>
</tbody>
</table>

Fig. 2

Outline of the Overall Measures to Address Global Warming

Promotion of Efficient Use of Wood Resources, etc.
Promotion of Forest Management, etc.
Stimulating Public Discussion about the Introduction of Daylight Saving Time
Expansion of Greening Activities as Measures to Mitigate Global Warming, etc.

Overall measures to address Global Warming

- Strengthening Earth Observation System, etc.
- Promotion of International Cooperation
- Comprehensive Promotion Measures to Mitigate Global Warming
- Promoting Measures to Reduce CO₂ Emissions, Focusing on Measures related to Energy Supply and Demand
- Promotion of Measures to Limit Emissions of other Greenhouse Gases
- Promotion of Measures Involving CO₂ Sinks Such as Afforestation, etc.
- Strengthening Research and Development of Advanced Innovative Environmental and Energy Technologies
- Reviewing Lifestyle