Montreal Process
First Country Forest Report
(2003 Report)

[Excerpt]

Japan

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This report contains excerpts from the original report compiled in Japanese.

Executive Summary

The Montreal Process is a working group on criteria and indicators (C&I) designed to scientifically and objectively assess the national progress toward "sustainable management of temperate and boreal forests." Participants in the Working Group include Argentina, Australia, Canada, Chile, China, Japan, the Republic of Korea, Mexico, New Zealand, the Russian Federation, the United States of America and Uruguay. The Montreal Process set down 7 criteria and 67 indicators as "measures" for the sustainability of forest management. The agreed criteria and the number of indicators for each criterion are as follows.

Criterion 1: Conservation of biological diversity (9)
Criterion 2: Maintenance of productive capacity of forest ecosystems (5)
Criterion 3: Maintenance of forest ecosystem health and vitality (3)
Criterion 4: Conservation and maintenance of soil and water resources (8)
Criterion 5: Maintenance of forest contribution to global carbon cycles (3)
Criterion 6: Maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies (19)
Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management (20)

Japan has been actively working toward the development and implementation of the Montreal Process C&I. In the "Montreal Process: Year 2000 Progress Report," which was published in 2000 and covered 12 members' progress in implementing C&I initiatives, Japan presented three projects that were aimed to measure some C&I and six projects that were applicable for C&I. Among others, in the "Forest Resources Monitoring System" launched in 1999, first round of nationwide data collection will be completed by 2004, and use of the collected data is expected to improve the ability to report on C&I and the data accuracy in the future.

This is the first report concerning forests in Japan that is prepared according to all Montreal Process C&I. All Montreal Process members were required to prepare and publish such report in 2003. At present, no member country is able to submit data on all of the 67 indicators and only three members including Japan can submit data on more than 70% of the indicators. Difficulties for the member countries to report on the indicators are due to various reasons such as that relevant data are not collected, national consensus on data-collecting methods has not been built, and that it is difficult to scientifically interpret collected data. In this paper, Japan submits data on 50 out of 67 indicators, while addressing results of case studies as well as details of the projects that are currently being implemented but have yet to come to a conclusion with respect to the other 17 indicators.

Summaries for individual criteria are shown below.

Criterion 1: Conservation of biological diversity

Biological diversity includes elements such as the "diversity of ecosystems," "diversity among species," and "genetic diversity within a species."

Ecosystem diversity relates to forest resources, age class distribution and conservation areas by forest type. In Japan, during the period of high economic growth from the 1960s to the 1970s, the rapid increase in domestic demand for wood supply brought about a need for the quantitative increase of wood production while the fuel was switched from firewood and charcoal to oil and gas. Under such circumstances, reforestation was promoted to replace broadleaved forests, which had been the source of firewood and charcoal, as well as natural forests and wilderness, with planted forests of conifer trees that would grow faster and provide highly useful wood. As a result, planted forests have increased to account for about 40% of the total forest area in Japan. In the current age class distribution, forests aged 31 to 41 years form a peak and young forests aged 40 years or below account for 70% of the total. Protected areas account for 7% of the total forest area in Japan, and the proportion of protected areas tends to be larger in regions at higher sea levels. Efforts have been made to assess the level of forest fragmentation by indexing the continuity of forests based on the results of the vegetation survey in the Fifth Basic Survey of the Natural Environment. According to the assessment, forest fragmentation tends to be low in areas where the forest industry has traditionally been popular, such as the Tohoku area along the Sea of Japan, the Japan Alps areas including Nagano, as well as Nara, Kyoto, Tokushima and Kochi.

In terms of species diversity, as forests cover about 70% of Japan's national land area, most of the species living in Japan seem to depend on forests. More specifically, almost all mammalian species, 15% of avian species and 41% of botanical species depend on forests. When viewing the danger of extinction, which is a significant factor indicating the sustainability of species diversity, with respect to avian species, 38 species or 48% of forest-dependent species are reported to be threatened with extinction or have already become extinct.

As for indicators on genetic diversity, most of them are considered to be difficult to measure at the present.

Criterion 2: Maintenance of productive capacity of forest ecosystems

In Japan, 95% of the total forest area is legally available for timber production. Almost all planted forests consist of native species. While some exotic species were planted in the past, they are rarely seen nowadays. The growing stock of both planted and natural forests has been increasing every year. The annual removal of timber only accounted for about 30% of the annual growth of forests, which maintains the sustainability of timber productivity of the forests in Japan. On the other

hand, the Japanese forestry industry has been in stagnancy due to the deteriorated profitability in competition with cheap foreign timber. There is concern that tree thinning, which is necessary for the development of healthy forests, would not be conducted in a timely manner and this would raise problems in terms of the various functions of forests including timber productivity in the future.

With respect to non-timber forest products, though the volume determined to be sustainable has yet to be exactly identified, the production of edible forest products has been growing sharply since the 1960s and the production of various kinds of mushrooms other than shiitake mushroom has also been increasing along with diversification of dietary habits. Furthermore, the import of cheap shiitake mushrooms from abroad has been increasing rapidly.

Among wild birds and animals, deer and wild boar were traditionally popular games for hunting and used sustainably in Japan. However, due to the recent progress in national land development and changes in land use in hilly and mountainous areas, these animals have been causing increasing damage to agricultural and forestry products as well as to the natural ecosystem. As a result, the number of captured deer and wild boars has been increasing accordingly.

Criterion 3: Maintenance of forest ecosystem health and vitality

Damage caused by “pine nematode” carried by the “pine sawyer beetle,” which is the most serious damage to forests in Japan, has been decreasing and recently fallen to one-third of its peak level. The area of forest affected by fire has also been at a low level below 3,000 ha annually.

In connection with air pollution, the impact of acid rain on forests has been investigated. Based on the results of fixed-point analysis with respect to pH and other chemical properties of rainfalls during the measuring period and soil acidity, we were unable to find any evidence affirming that forests were declining due to acid rain or air pollution.

Criterion 4: Conservation and maintenance of soil and water resources

Since 1897 when the protection forest system was established, the area of forest land managed primarily for protective functions such as watershed protection, flood control, avalanche prevention and riverside forest preservation has been increasing year by year. However, with respect to Criterion 4, we still cannot identify nationwide data on many indicators.

Criterion 5: Maintenance of forest contribution to global carbon cycles

The total forest biomass in Japan in 1995 was 1.302 billion tons, of which 1.287 billion tons were from planted forests and 15 million tons were from natural forests. If it is converted to carbon stocks, 643 million tons were from planted forests and 8 million tons were from natural forests, reaching a total of 651 million tons. The amount of carbon dioxide absorbed by forests has been increasing since 1990, reaching 26.6 million carbon tons in 1995. Forests absorb nearly 10 %

of the total carbon dioxide emissions in Japan.

Criterion 6: Maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies

The socio-economic benefits of forests are divided into five categories: "production and consumption," "recreation and tourism," "investment in the forest sector," "cultural, social and spiritual needs and values," and "employment and community needs."

In the category of "production and consumption," demand for wood supply increased during the period from the 1960s to the 1970s due to the rise in the number of housing starts along with the economic growth. It then remained almost level at 100 million m^3 in the 1980s. Since 1998, the number of housing starts has been declining because of the stagnant economy, and a significant decrease has been seen in the shipment value of wood and wood products, the volume of wood supply, and the shipment volume of timber. One of the major factors that brought about the decrease in the shipment value of wood and wood products and the shipment volume of timber was the increase in imports of foreign timber. As demand for wood supply declined, the annual consumption of wood per person has also been decreasing from $0.9m^3$ in 1990 to 0.7-0.8 m^3 in 1998 while the sum of the shipment value of wood and wood products and the shipment value of non-wood products fell to 0.68% of GDP in 2000.

The area of forest land managed for recreation and tourism has been increasing due to the rise in national demand for forests for recreational and tourism purposes. Accordingly, the number of facilities managed for recreation and tourism per 100,000 people increased from 3.08 in 1990 to 3.62 in 2000. However, the annual number of visitors to natural parks has been slightly decreasing since 1992.

Measuring by the Forestry Agency's budgets, the amount of investment in the forestry sector has recently been on a downward trend, and the initial budget for FY 2003 was ¥447.6 billion. The number of forestry extension specialists/agents, who are assigned to prefectural governments with the aim of promoting improvement in forestry technology, streamlining forestry management and maintaining forests in order to develop the forestry industry as well as to enhance various functions of forests, reached a peak of 3,183 in the 1960-1965 period, but then started to decrease and fell to 2,197 in 2000.

Forests managed for the protection of the range of cultural, social and spiritual needs and values include protection forests, of which the area has been increasing in response to national needs. In light of the fact that forests have quite a number of functions, in November 2001, the Science Council of Japan conducted a provisional estimation of the monetary value of non-consumptive use of forests in its report at the request of the Minister of Agriculture, Forestry and Fisheries. According to the report, the function of preventing surface erosion was valued at ¥28.2565 trillion/year, the

function of improving water quality at ¥14.6361 trillion/year, the function of reserving water resources at ¥8.7407 trillion/year, the function of preventing shallow landslide at ¥8.4421 trillion/year, and the function of mitigating floods at ¥6.4686 trillion/year.

With respect to employment and community needs, the number of direct employments in the forestry sector has been declining every year, accounting for 0.34% of the total employment in 2000. The average wage for workers engaged in the forestry industry and that for workers engaged in wood/wood products production were ¥12,710/day and ¥3.477 million/year, accounting for 122% and 177% of the level in 1990 respectively. Typically, workers engaged in the forestry industry are paid on a daily basis, but recently more workers, mainly young employees (under 30 years of age), are paid on a monthly basis, which indicates improvement in their labor conditions. The frequency of forestry accidents is about 10 times higher than the average accident frequency for all industries due to the difficulty in mechanization because of the steep terrain of mountainous areas where forestry work sites are located.

Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

The legal, institutional and economic framework for forest conservation and sustainable management is divided into five categories: “legal framework (laws, regulations, guidelines),” “institutional framework,” “economic framework (economic policies and measures),” “measuring and monitoring,” and “research and development.”

Within a comprehensive framework of government plans concerning forests, “Basic Plan on Forest and Forestry” is formulated under the Basic Law on Forest and Forestry and the forest planning system is established under the Forest Law. National, prefectural and municipal governments are required to formulate plans to effectively implement policies while mutually ensuring consistency in these plans on respective regional or administrative levels, and to take necessary measures to achieve them. These forest plans are intended to specify basic directions in forest management at national, local and municipal levels and also to provide guidelines for forest owners in carrying out forest management operations in their forests, such as cutting or planting trees in their forests. When establishing or changing forest plans, governments are required to make the draft plans available for public inspection and secure the opportunity for the public to participate in the planning process by submitting their comments. Furthermore, for the purpose of ensuring compliance with provisions and guidelines concerning forests in these forest plans, various procedures have been established such as reporting of cutting and planting of trees, recommendation of appropriate forest management practices and voluntary formulation and approval of 5-year forest management plans. In addition to the forest planning system, the protection forest system is implemented to impose restrictions on the conversion of forest lands and cutting of trees with respect

to forests that are particularly required to achieve their functions of providing public benefits.

As for cross-sectoral planning and coordination, national, local and municipal governments are required to consult with the administrative authorities concerned when establishing or changing forest plans. As measures for human resource development and training, the Forest Training Institute of the Forestry Agency provides training programs to develop forestry experts who are able to appropriately meet the increasingly diversified and sophisticated public needs for forest and forestry. In FY 2000, a total of 2,421 trainees received training programs in 82 courses.

In the category of economic framework, investment and taxation policies have been established to support forest conservation and sustainable forest management, such as a forestry-related special tax treatment, forestry-related financing system and forestry-related credit guarantee system. In terms of foreign trade policies, Japan imposes no quantitative restriction on imports and only charges a low tariff on foreign products. Thus, the Japanese forest product market is sufficiently open to foreign suppliers.

With respect to measuring and monitoring, forest resources are investigated and assessed through the regular survey on the state of forest resources, forest surveys conducted upon the establishment of forest plans, and through monitoring conducted under the Forest Resources Monitoring System. Furthermore, active efforts are being made to publicize various statistical data on forestry management and wood production through periodical publications, websites, survey reports, white papers, instruction manuals on institutions and laws. It however remains a future task to achieve compatibility with other countries in measuring and monitoring on indicators.

Research and development are being carried out by various entities including the national government, incorporated administrative agencies, prefectural governments, universities, private companies and research institutes. Focusing on the Forestry and Forest Products Research Institute, the budget for research on forest ecosystems increased particularly in the past five years, thereby driving up its overall budget. Many other indicators on research and development, including the ability to predict the possible impact of climate changes on forests, have yet to be clarified.

Conclusions and Next Steps Forward

Up to now, the Montreal Process has proceeded through several steps. The first step was the "development" of C&I during the period from the beginning of the Montreal Process in 1994 until the adoption of Santiago Declaration in 1995 for the agreement of 7 criteria and 67 indicators for sustainable forest management. The second step was the "measurement" of C&I, and all Montreal Process member countries established the Technical Advisory Committee (TAC) and worked toward a measurement of indicators. This is Japan's first trial to exhaustively report data and trends concerning forests in Japan according to the Montreal Process C&I, and it is also Japan's first major result of its efforts toward measurement of C&I.

The next step will be the "application" of C&I, which means a process of designing future policies with the use of knowledge and information that have been acquired through the implementation of monitoring, assessment and reporting. In November 2001, Japan held the International Expert Meeting on Monitoring, Assessment and Reporting (MAR) on Progress Toward Sustainable Forest Management as a Country-Led Initiative in Support of the UNFF in Yokohama, contributing to the development of discussions on this issue. The ultimate goal of C&I initiatives is to clearly demonstrate the progress toward sustainable forest management and to identify the trends of relevant data on individual indicators, thereby providing materials for policy-makers to make the best decisions and offering feedback for the policy-making Processes.

We hope that this paper will be the first step toward achieving this goal. While preparing this paper, we found several issues and problems concerning C&I initiatives. The issues that Japan should cope with for the application of C&I may be roughly summarized into the following four from a short-term perspective.

The first issue is how this paper shall be evaluated. The sustainability of forest management should not be assessed in an isolated manner based on each individual indicator but comprehensively based on all 67 indicators as a whole. For example, the rapid decrease of forest areas in developing countries, which is currently going on, may be a highly effective indicator affirming that forests are not sustainably managed. However, the sustainability of forest management cannot be determined merely on the basis of this aspect but it should be assessed based on all relevant indicators concerning social and economic aspects. The 2003 Country Forest Reports are the first ones to collect measurement results covering all indicators, and it is important for each country to assess the sustainability of forest management through the effective use of these results in the report. In compiling Japan's 2003 Country Forest Report, data were collected mainly from administrative information owned by relevant authorities, but it is desirable for wider range of stakeholders including researchers to evaluate and discuss the paper. The various parties concerned are expected to be involved in C&I initiatives, and from such a perspective, we hope that as many

parties as possible will be able to make use of this paper.

The second issue is related to the use of C&I as domestic tools for forest policies. More specifically, as mentioned at the beginning of this chapter, the next step will be a process of designing future policies with the use of knowledge and information that have been acquired through the implementation of monitoring, assessment and reporting of data on 67 indicators. Indicators should naturally imply "targets" or "thresholds" to explicitly demonstrate how close we have come against such targets (these targets may include both quantitative and qualitative ones, and when it is difficult to set targets for individual indicators, targets may be set collectively for multiple indicators or criteria as a unit), as well as to make the reporting more easy to understand. Therefore, in order to use C&I as a basic policy framework, it is necessary to clarify, to some extent, the targets or desired states for individual indicators; otherwise, it would be extremely difficult to objectively assess the information acquired from the measurement of indicators. Furthermore, in Japan, the Policy Evaluation System has been in effect under law since 2001 for the purpose of setting targets on all government policies and assessing their achievement. It will be important to promote the application of C&I while ensuring coordination with such political frameworks.

The third issue is a global compatibility of initiatives in different countries. The Montreal Process is basically related to domestic efforts in individual countries to demonstrate the sustainability of their forest management, but at the same time, it is a global approach to share knowledge and information among member countries based on a common understanding toward the sustainability of forest management on a global basis. From this standpoint, it is necessary to promote compatibility among initiatives in different countries while sharing Japan's efforts and experience toward sustainable forest management with international community through this report.

It is not always easy to objectively assess whether individual countries manage their forests sustainably, but one of the reasons why approximately 150 countries participate in the C&I process seems to be that C&I are believed to have a potential of serving as common standards for assessing the sustainability of forest management. Japan is providing overseas forestry cooperation in many developing countries through ODA projects, where effective use C&I is expected from the perspective of promoting sustainable forest management on a global basis.

However, when conducting global comparisons, it is always necessary to take into consideration specific conditions in individual countries. Among the Montreal Process member countries, Japan, which is a country with small land, has characteristics totally different from those in countries with large land areas such as Russia, Canada, the United States and China. For instance, typical size of ownership of forest lands differ significantly among those countries. Japan's forest rate is the highest of all Montreal Process members but the absolute amount of its forest resources is undoubtedly insignificant compared to those of the huge countries. With the active demand for wood supply during the post-war period of high economic growth, the reforestation policy was promoted

for the purpose of equalizing the imbalance of supply and demand for wood, and it has successfully achieved through the development of a wide area of planted forests that now accounts for about 40% of the total forest area in Japan. Nevertheless, due to the declining wood price, Japan depends on foreign wood products to meet 80% of domestic wood demand. Under such circumstances, Japanese forestry management faces difficulty in recouping investment costs, which has become a major factor causing delays in the silvicultural operations for planted forests, such as tree thinning and reforestation. However, this historical development is also specific to Japan, and such problems specific to particular countries are not easily reflected in C&I, which are measures shared globally in nature. The promotion of tree thinning is one of the most critical tasks in Japan's forestry policy, but it is difficult to reflect this issue in the Montreal Process C&I. In this respect, it may be necessary to supplement the C&I assessment with Japan's original evaluation system such as the Policy Evaluation System mentioned above. There seems to be a movement to design original national or local indicators while participating in the global C&I process. In such a case, it is also necessary to further discuss how to consolidate the Montreal Process C&I initiatives into domestically important forestry policy tasks.

The fourth issue is harmonization with an approach toward forest certification. In the past discussion on C&I, it was argued that the C&I assessment of the sustainability of forest management should be carried out at a national level and the majority had a skeptical view toward the application of C&I at a sub-national level (e.g. application to individual forest management entities). However, as the world-wide movement to acquire forest certification becomes active, a better understanding of the supplementary role of C&I has been gained in the Montreal Process as well. Recently, in Japan, a growing number of forestry management entities seek to obtain forest certifications under globally accredited schemes, whereas there is also a movement to develop original national certification standards. Thus, there is a growing public interest in certification and labeling. When carrying out C&I initiatives in the future, it will be necessary to ensure harmonization with such trends and movements.

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