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Updating
the FOREST SYSTEM

Québec 



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Warning

This document should not be considered as representing the official position of the ministère des Ressources naturelles with regard to the amendments to be made to the current forest system.



Presentation

This document provides an overview of the work undertaken to update Quebec's forest system. Part A presents a review of the objectives of the forest system. Part B discusses the environmental, social and economic issues surrounding sustainable forest management. Lastly, Part C proposes new objectives for forest conservation and development in Quebec, and examines various ways of meeting those objectives.



Summary

The forest system has five main objectives: to protect the forests and promote the multiple use of forest resources, to ensure compliance with the allowable annual cut, to make forest companies accountable for their forest management, to promote the development of the forest sector and to protect the public interest.

Since Quebec's forest system has only been implemented for ten years, it is not possible to draw broad, definitive conclusions about whether or not these objectives have been met, first, because some results will only become apparent in the long term, and second, because the information currently available is by no means complete. Overall, though, it would seem that the introduction of the forest system, and especially the *Forest Act* and regulations, has brought about a significant improvement in the management and development of Quebec's public forests. For example:

- more of the timber obtained from the public forests is processed;
- better use is made of the timber harvested from the public forests, and of by-products such as chips, shavings and sawdust;
- the rate of use of public forest timber allocations has increased;
- a greater percentage of the timber harvested, and of the timber allocated in public forests, is now processed in lumber mills;
- despite the increased use of timber from the public forests, the consumption of timber and fibres from priority supply sources (private woodlots, chips, sawdust, shavings and recycled wood fibres) is increasing at a faster rate;
- more mills, especially in the lumber sector, now have secure long-term supplies;
- new provisions now exist to protect the forest environment, including the provisions of the *Regulation respecting standards of forest management for forests in the public domain* and the *Forest Protection Strategy*;

- public forest timber allocations are consistent with the allowable annual cut; they take into account the real needs of the mills by providing the portion of their supplies that cannot be obtained from sources other than the public forests;
- a broader range of individuals, companies and organizations now has access to timber from the public forests;
- general and five-year forest management plans submitted by timber supply and forest management agreement holders now take into account the needs of regional county municipalities and the general public;
- the provisions concerning the funding of forest management activities ensure that expenditure is shared between industry and the State, and that funds are readily available;

the State receives more dues for use of timber obtained from the public forests.

However, it is clear that some provisions of the forest system need to be improved, as do the Department's management practices and the methods used by the forest industry. For example:

- the volumes of wood not allocated in areas governed by timber supply and forest management agreements can be transferred only to the owners of processing plants; under the current rules, they cannot be used to satisfy the many other, increasingly diversified needs that are emerging;
- the Department's ability to promote the construction of wood processing plants and the creation of increased capacity is reduced, since almost all available volumes of the most sought-after species have now been allocated; if the forest products industry is to be consolidated and grow, production in the public and private forests must increase;
- every year, a certain percentage of allocated volumes in the public forests is not used, and it will be necessary to relax the rules to enable these volumes to be harvested as needed;

- the forest management plans prepared by timber supply and forest management agreement holders are deficient (imprecise or incomplete forest data, inadequate integration of the strategies of agreement holders in the same area, etc.);
- mechanisms to assess the effectiveness of the *Regulation respecting standards of forest management for forests in the public domain* and to measure the achievement of forest protection objectives were adopted only recently, and are still incomplete;
- the method used to establish the allowable annual cut must be improved; simulation hypothesis documentation needs to be enriched, forest data must be updated, and more weight must be given to the effects of natural disturbances;
- the measures adopted to inform and consult the general public on the general and five-year forest management plans submitted by timber supply and forest management agreement holders have not been as successful as was originally hoped; very few people have shown an interest; elements such as the lack of publicity for consultations and the absence of plans written in non-technical language are blamed for this;
- the regional county municipalities participate much more than the general public in consultations on the forest management plans submitted by agreement holders, because the holders are required to consult them and because they have the resources to intervene as needed; however, the RCMs still consider the consultation procedure to be deficient, and would like to be able to contribute to the preparation of the plans;
- the control mechanisms used by the Department to enforce the Act and regulations are only partly effective; not all offences are currently punished;
- forest management continues to be sector-based, and integrated management approaches are still the exception.

On the basis of the information currently available and in light of the results observed up to this point, it is possible to state that the forest system has been generally successful in meeting its objective of industrial development. Some improvements still need to be made to increase spin-offs from the

processing of timber and fibres; essentially, this involves increasing the rate of use of the volumes of available timber, finding new outlets for currently unmarketable species, and promoting the production of high value-added products.

The other objectives of the forest system have also led to significant improvements, especially in the areas of forest protection and public consultation. The remaining problems must be dealt with by changing current practices, especially in connection with the setting of production objectives, the control, monitoring and assessment of forest management activities, integrated resource management and a transparent approach to forest management.

In addition, it is clear that decisions concerning the updating of the forest system cannot be made solely on the basis of current results. A range of environmental, social and economic issues linked to the sustainable management of the forest environment must also be taken into account. Steps must be taken to maximize the benefits derived from the use and development of all the resources of the forest environment; to ensure that the communities concerned play a role in forest management; to ensure that the values and individual needs of each community are respected; and to preserve the diversity of forest ecosystems and protect their integrity. The action taken must, obviously, be in keeping with the current budgetary situation and with Government policy, in particular in connection with deregulation, decentralization, regional development, land use planning and relations with Native communities, besides taking a realistic view of each player's ability to pay and complying with the user-pay principle.

All these considerations, then, explain why the objectives of the forest system must be reviewed. The public forests, and the resources they contain, are a national heritage that must be developed and managed in the best interest of the population, in other words in accordance with its values and expectations. This heritage must be protected and used in such a way that the greatest possible benefits and advantages accrue to the population. The revised forest system must be based on the four following general objectives:

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- it must reflect the values and meet the needs of the population;
- it must preserve the viability of forest ecosystems;
- it must increase the social and economic spin-offs generated by the use of the forest environment;
- it must increase the transparency of the forest management process.

The main changes proposed are intended to improve the use made of all forest resources, to clarify management and production objectives, to increase public involvement in forest management, to ensure increased protection for the forest environment, to increase the transparency of the forest management process and to ensure a fairer distribution of the benefits derived from the forest.



Introduction

The *Forest Act* was assented to in December 1986, but was fully implemented only after a transitional period lasting from 1987 to 1990. This period was devoted mainly to negotiating the first timber supply and forest management agreements and to developing the regulations and other instruments that come under the Act, in particular the *Regulation respecting standards of forest management for forests in the public domain* and the *Regulation respecting forest management plans and reports*.

It is impossible to make a definitive judgment of a forest system that has been in existence for barely ten years. In fact, it is only in the longer term that we will know if measures such as the restoration of production on harvesting sites have really been successful, or if the anticipated forest yields have actually been achieved. In addition, it has become clear that some of the objectives were not clearly defined, and that the necessary steps were not taken to ensure verification of compliance with the Act. As a result, not all the information needed to complete a full review of the forest system is currently available. A review remains necessary, however, in particular because:

- the general public is entitled to obtain as full a picture as possible of the results achieved since the implementation of the system and, more specifically, since the coming into force of the *Forest Act*;
- it is important to ensure that the provisions applied allow changes affecting forest management issues to be monitored.

The 1986 adoption of the *Forest Act* was a major turning point in the management and development of Quebec's forests. By revoking all existing timber limits and guarantees of timber supply, the Act terminated a timber allocation system that had been in force for several decades in the public forests. At the same time, it abolished the operational exclusivity enjoyed by a number of forest companies in certain areas. The *Forest Act* also introduced new rules governing the management and development of the public forests, including:

- the requirement to comply at all times with the allowable annual cut or forest possibility;
- the requirement to restore to production all sites harvested or otherwise used for forestry purposes;

- the requirement to protect the forest and its resources, for conservation purposes, and to permit multiple use;
- the requirement for individuals and organizations to obtain a forest management permit before undertaking forest management activities;
- the requirement to pay dues established on the basis of the market value of the timber harvested.

The Act introduced a new method of allocating timber in the public forests, known as the timber supply and forest management agreement. The agreements are issued to the holders of wood processing plant permits. Agreement holders are allocated a volume of timber from specific species. The volume in question is established on the basis of the plant's raw material requirements and the possibility of obtaining supplies from so-called priority sources, such as private woodlots and chips.

Agreement holders are required to comply with environmental protection standards when carrying out forest management activities. To achieve the forest production objectives established in their agreements, they must also plan and carry out forest management activities such as the planting of trees and pre-commercial thinning.

The Government helps fund activities such as these. It agrees that the amounts invested in silvicultural treatments applied to achieve production objectives may count in lieu of the payment of dues on harvested timber. Only the cost of applying the treatments is admissible as payment of dues, and it is the Government that establishes the scale of corresponding values. Expenses incurred for planning forest management activities or constructing and maintaining forest infrastructures are therefore not admissible as payment of dues, and must be paid in full by the agreement holder.

A timber supply and forest management agreement covers an initial period of 25 years. However, it is revised every five years and extended for a further five-year period if the holder has fulfilled its commitments and complied with the provisions of the Act.

The *Forest Act* and regulations have been amended several times since they were first adopted. The amendments were introduced either to enable the

Government to achieve its objectives, or to take new requirements into consideration. For example, amendments were made:

- to make available to the public, before approval, the general and five-year forest management plans submitted by timber supply and forest management agreement holders; to ensure that public consultations are held, and to require that the regional county municipalities be consulted on the plans;
- to allow forest management contracts to be granted in forest reserves to a broader range of individuals, companies and organizations (including Native communities, local municipalities and regional county municipalities), so as to promote economic development;
- to reserve volumes of timber from the public forests on a temporary basis for individuals planning to build a wood processing plant or to increase the processing capacity of an existing plant;
- to allow restrictions to be placed, during the year, on the harvesting of timber from the public forests, in order to use up occasional surpluses of timber and fibre from other sources of supply, such as timber from private woodlots and by-products from processing plants;
- to introduce a method of calculating timber allocations for the public forests that takes into account the availability of recycled fibre;
- to provide better protection for the forest environment, and to promote multiple use of the forests by improving the standards of forest management and stipulating that such standards may be adapted as necessary to local conditions or the nature of the proposed management activities;
- to allow the dues collected on timber harvested from the public forests to be used in part as direct funding for management activities in both public and private forests, and activities designed to protect or develop all the resources of the forest environment (the *forest resource development program* was introduced following the adoption of these legislative changes);
- to create the **Société de protection des forêts contre les insectes et maladies** and the **Société de protection des forêts contre le feu**;
- to permit the creation of regional agencies for private forest development; to require every agency to prepare a protection and development plan for the private forests (identifying the methods to be

used to ensure a sustainable supply of timber) consistent with the objectives of the development plans in force in the regional county municipalities;

- to introduce a fund that will finance the production of seedlings, the preparation of forest surveys and the carrying out of forestry research;
- to stipulate that the forests constitute a heritage and that the Department must promote their sustainable development in order to satisfy the economic, ecological and social needs of present and future generations;
- to establish the six main criteria for measuring sustainable development in Quebec's forests.

Since the coming into force of the Act, the changes in the underlying economic, environmental and social context for forest management have been profound. They include:

- the on-going elimination of trade barriers;
- an increase in the number of countries competing with Quebec in its traditional market niches;
- the increasing importance of environmental issues;
- the social and economic difficulties of rural and Native communities;
- pressure to increase the development of forest resources and to provide broader access to the public forests, including access for users from outside the forest industry;
- the budgetary restrictions that require the Government to review its role, its priorities and its policies;
- the trend within Government to reduce administrative and regulatory constraints on business and to decentralize certain responsibilities;
- general calls for the implementation of sustainable forest management.

As part of the review of the forest system, it will be important to verify whether the objectives of the *Forest Act* and the various amendments to the Act have been, or are likely to be met. The Department must also make sure that it is not required to respond to problems that it failed to detect at an earlier date. In addition, the review is expected to reveal whether the current provisions are sufficient to meet the challenges of sustainable forest management and, if necessary, to determine the changes to be made to the Act or to the other components of the forest system.

PROCEDURE

The ministère des Ressources naturelles is seeking a broad consensus on the changes to be made to the forest system. Its specific goals are:

- to produce a complete, transparent review of the present forest system, including an assessment of its performance;
- to identify the issues facing forest managers and developers;
- to obtain as broad a participation as possible by individuals and organizations with an interest in forest conservation and development.

The procedure implemented by the Department has five main stages:

- the production of a review of the forest system;
- the production of a documentary record of the main issues in forest management;
- the drafting of preliminary proposals concerning the changes to be made to the Acts, regulations, policies, programs and standards currently in force;
- the holding of public hearings;
- the adoption of a plan of action leading to an updating of the forest system beginning in 1999.

The three first stages have now been completed. The main work carried out to produce the review of the forest system included:

- surveys of the impact of the forest system, as observed by the holders of timber supply and forest management agreements, regional county municipalities and the Department's regional offices;
- thematic reviews produced by Departmental task forces on various subjects, including the granting of forest rights, timber tariffs, the funding of forest management activities, the planning of forest management activities, the monitoring and control of forest management activities, forest protection, industrial development and the situation of the workforce in the forest industry;

- an analysis of the thematic reviews by the **Forum des directeurs du Secteur des forêts and des services régionaux** and the **Comité directeur de la mise à jour du régime forestier**.

The examination of forest management issues involved the following work

- the production of a document outlining the issues;
- the production of a working document describing the action needed to meet the challenge of sustainable forest management;
- an analysis of the change to be made to the forest system, in response to the issues identified, carried out by the **Forum des directeurs du Secteur des forêts and des services régionaux** and the **Comité directeur de la mise à jour du régime forestier**.

Taken as a whole, the above work formed the foundation for the drafting of this reference document (September 1998) that constitutes a preliminary proposal for an updating of the forest system.

The remaining stages in the updating process for Quebec's forest system will involve:

- public hearings on the objectives to be set and on the changes to be made to the forest system;
- consultation with other Government departments (ministère de l'Environnement et de la Faune, etc.) and central, non-Government agencies;
- an analysis of the results of the public hearings;
- the drafting of recommendations on the objectives to be set and on the changes to be made to the current forest system;
- an analysis of the impact of the proposed changes on the various groups dealt with by the Department;
- a comparative analysis of the proposed system with the provisions in force in other Canadian provinces or in US states bordering on Quebec;
- the preparation of a bill to amend the *Forest Act*, related Acts (where necessary) and the Departmental summary;

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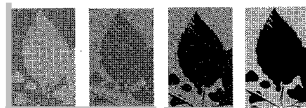
- the preparation of amendments to the current regulations (where necessary);
- the drafting of a final document on the updating of the forest system, designed for mass distribution;
- changes to related standards and instructions.



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Part A
Review of
the Forest System



1. GRANTING RIGHTS IN THE PUBLIC FORESTS

The *Forest Act* states that the minister of Natural Resources may grant a timber supply and forest management agreement to a qualified person, i.e. a person authorized to construct or operate a wood processing plant. The minister is authorized to act where forest production is sufficient and where it is in the public interest that an agreement be granted.

The minister may also conclude a contract entrusting a person with the management of forest areas not covered by agreements. Forest management contracts are granted with a view to promoting economic development. The duration of each individual contract is established by the minister. The minister may also promote multiple use of the forest environment, by authorizing the harvesting of timber for purposes including the production of firewood, wildlife and recreational developments or public utility works, by authorizing the cultivation and operation of sugar bushes for acericultural purposes, or by creating educational and research forests, experimental forests and forest stations.

BACKGROUND

The *Forest Act* was originally adopted with the main goal of solving the supply problems experienced by timber processing mills. At the time, a combination of factors suggested that a timber shortage was likely to occur in the medium term. For example, a spruce budworm epidemic had destroyed 235 million cubic metres of softwood timber — the equivalent of ten years of harvesting. Also, the development of the sawmill sector in the period 1976 to 1986 had increased the total softwood harvest by more than 30%.

A number of deficiencies had also been observed in the public forest management process. For example, when the Act was adopted, it was thought that the average annual harvest of fir-spruce-pine-larch could be increased from 21 to 26 million cubic metres simply by ensuring that all cutting areas were regenerated. However, the Government's commitments in the form of timber supply guarantees for these same species amounted to some 29 million cubic metres per year. This level of harvesting could not possibly be maintained, given the practices of that time. Finally, the

possibility of providing stable supplies to many timber processing mills was limited by the territorial exclusivity granted to some forest companies. In adopting the Act, the Department was therefore committing itself to an extensive reform of the public forest allocations granted in the past.

1.1 GRANTING TIMBER SUPPLY AND FOREST MANAGEMENT AGREEMENTS

THE SYSTEM

Every year, timber supply and forest management agreement holders are entitled to obtain forest management permits that allow them to harvest a volume of roundwood from one or more species in a given area, thus enabling them to operate their timber processing mills. The volume in question is established on the basis of the mill's needs and the availability of roundwood or fibre from priority supply sources including the private woodlots, chips, sawdust and shavings, or recycled fibres. Volumes of roundwood allocated in the public forests are therefore considered to be residual supplies, in that they fulfil the requirements of mills unable to obtain all their supplies from other sources.

The person to whom the minister grants an agreement is required to pay annual harvesting dues established on the basis of the volume harvested. The agreement holder also has a number of other obligations, including the planning and carrying out of the silvicultural treatments needed to achieve the annual forest yield established for each forest area used for timber production. In fact, all agreement holders are required to assess the quality and scope of the treatments carried out during the year, and to submit an annual report.

A timber supply and forest management agreement covers a period of twenty-five years. Once every five years, on the anniversary of the date on which it came into force, it is extended by a further period of five years if the holder has complied with its commitments and with the provisions of the Act. When extending the agreement, the Department may revise the volume of timber allocated to take into account any changes in the mill's requirements, the volumes of timber or fibre available from other supply sources, differences in the allowable annual cut calculation following the acquisi-

tion of new data, or the forest management activities carried out in the previous five years.

The minister may terminate an agreement if the holder does not comply with its commitments or apply the standards of forest management. An agreement may also be terminated if the holder does not pay the harvesting dues owed to the Government, if the mill has not been in operation for a year and a half or longer, or if a change occurs in the mill's controlling interests.

Agreements are granted, among other things, to provide stable supplies for mills and to ensure that the best possible use is made of timber from different supply sources.

RESULTS

Providing the mills with stable supplies

Highlights

a) The granting of timber supply and forest management agreements at the end of the transitional period

- During the 1987-1990 transitional period, the Department granted 288 agreements, 247 of which were for the supply of lumber mills and 41 for the supply of pulp mills.
- The number of mills having access to secure long-term supplies in the public forests increased from 200 in 1987 to 288 in 1990 — in other words, a total increase of 44%. The lumber industry benefited most from the change, since the number of lumber mills with secure long-term supplies increased from 166 to 247.
- Allocations of fir-spruce-pine-larch dropped significantly. On March 31, 1987, they totalled 28.9 million cubic metres and exceeded the allowable annual cut by 14%. On March 31, 1991, however, they had fallen to 25.9 million cubic metres, well below the allowable annual cut, estimated at that time to be 27.5 cubic metres.

- The volumes of fir-spruce-pine-larch allocated on a long-term basis to the lumber industry increased from 15.6 million to 17.6 million cubic metres. In contrast, the volumes allocated to pulp mills fell slightly, from 8.4 million to 8.1 million cubic metres.
 - From March 31, 1987, to March 31, 1991, allocations of species from the pine and hemlock, cedar, hardwood and aspen groups increased by 35% to 4.9 million cubic metres. The allocations accounted respectively for 73%, 20%, 30% and 56% of the allowable annual cut for the groups in question.
- b) The granting of timber supply and forest management agreements between 1991 and 1996
- Between 1991 and 1996, nearly 20 new agreements were granted annually by the minister. Hence, of the 262 agreements in force on March 31, 1996, 113 (43%) were granted after the transitional period, including 73 following transactions affecting the assets of the mills in question. On the other hand, 40 new mills had obtained agreements during the period, including 36 in the lumber sector.
 - Between 1991 and 1996, the number of agreements granted for lumber mills dropped from 254 to 232. This was due to a wave of mill consolidations made inevitable by the significant under-utilization of processing capacity. In addition, some mill owners gave up their agreements because they considered the ensuing responsibilities under the *Forest Act* to be too onerous.
 - Between 1991 and 1996, the number of agreements granted to pulp mills dropped from 41 to 30. This was due mainly to the fact that changes in mill supply methods (greater use of chips and recycled fibres), as a result of technological developments, effectively eliminated the need for the agreements.
 - After 1990, approximately 550 modifications were made to agreements outside the five-year extension dates stipulated in the Act. The modifications in question were aimed at improving mill supplies or changing the sources of allocated volumes. The volumes themselves were modified 379 times — in 287 cases to increase the allocation and in 78 cases

to reduce it. A further 14 modifications changed the species allocated but did not change the volumes. Overall, the modifications increased the allocations of timber from the public forests by 3.7 million cubic metres. The supply territories were changed 329 times. The Department and the agreement holders negotiated these modifications even though the Act did not specifically state that agreements could be modified during five-year periods, except where necessary to comply with legislation other than the Forest Act or to take the public interest into account.

- On March 31, 1996, some 27.5 million cubic metres of fir-spruce-pine-larch had been allocated, out of a possibility of 28.2 cubic metres. This represented an increase of 6% from March 31, 1991. Allocations had also increased for the pine and hemlock (+2.5%), cedar (+42.5%), hardwood (+52%) and aspen (+60%) species groups.
 - In fact, On March 31, 1996, overall allocations had increased by approximately 1.5 million cubic metres from their 1991 levels. Despite the increases, however, they still remained within the allowable annual cut for the species groups in question, although allocations of fir-spruce-pine-larch were very close to the upper limit (92.5%).
 - In 1995-1996, 80% of all roundwood consumed in Quebec was consumed by lumber mills, compared with just 64% in 1990-1991.
- c) Termination of timber supply and forest management agreements
- Between 1989 and 1996, a total of 150 agreements were terminated for different reasons (an average of 21 per year). In half the cases, the terminations were mandatory, following transactions affecting mill assets. In 67 of the 69 cases falling into this category, the transactions in question involved acquisitions of sawmills by paper mills seeking to enhance their supply security. In most cases, new agreements were granted to the acquirers.

- In 47 cases, the agreements were terminated due to mill closures (28) or bankruptcies (19). All these terminations occurred between 1991 and 1993, when the forest products industry experienced a number of economic problems. One agreement was terminated because the holder's mill had not been in operation for more than a year and a half. A further 19 terminations were due to the fact that the mills' requirements had changed to such an extent that supplies from the public forests were no longer justified. Four agreements were terminated because their holders had not fulfilled their commitments, and two others had not paid their harvesting dues.
 - The agreement terminations released approximately 13.9 million cubic metres of timber, most of which have since been reallocated.
- d) Extensions of timber supply and forest management agreements
- On March 31, 1997, 173 of the 276 agreements in force had been reviewed and extended. In no case was an extension refused because the agreement holder had failed to fulfil its commitments. Allocations were reduced or increased in 20% and 38% of cases, respectively. The reductions were necessary either because the allowable annual cut in the common areas in question had been reviewed downwards, or because the mill simply needed less timber from the public forests. Where the allocations were increased, this was generally due either to an increase in the allowable annual cut, or to agreement terminations by paper mills, releasing additional volumes of timber.
 - The allocations granted when these 173 agreements were extended increased by a total of 686,000 cubic metres per year. However, this increase satisfied only part of the demand for additional supplies. This was especially true in the case of lumber sector demand for fir-spruce-pine-larch and hardwood species.

Table 1 shows the changes in the number of timber supply and forest management agreements, the volumes allocated and the allowable annual cut for the period 1987 to 1996.

Table 1

CHANGES IN THE NUMBER OF TIMBER SUPPLY AND FOREST MANAGEMENT AGREEMENTS, VOLUMES ALLOCATED AND ALLOWABLE ANNUAL CUT, FROM 1987 TO 1996					
Date	Number of timber supply and forest management agreements	Volumes allocated (Millions of cubic metres)		Allowable annual cut (Millions of cubic metres)	
		F-S-P-M	Other	F-S-P-M	Other
31-03-87	200*	29.0	4.3	25.4	9.3
31-03-91	295	25.9	5.0	27.5	17
31-03-96	262	27.5	7.3	28.2	15

*Timber limits and supply guarantee agreements

Observations

The main conclusions from the review of agreements granted since the forest system came into force are as follows:

- the Government is able to fulfil its mill supply commitments, taking into account the forest management strategies deployed;
- in future, more forest companies will be able to benefit from secure long-term supplies;
- the demand for timber from the public forests is significant, and is still partially unsatisfied;
- some species are rare, and competition between the forest companies for these species is fierce.

When the *Forest Act* was adopted, it stipulated that the holders of wood processing plant operating permits on March 31, 1987, who had processed wood harvested from the public forests on a continuous basis during the five preceding years were entitled to obtain timber supply and forest management agreements.

Other agreements have been granted since the transitional period ended, mainly to satisfy demand. However, a number of criteria have been established as a basis for the allocation of public forest timber volumes when more than one application is received. The criteria are:

- the applicant's financial situation;
- the project's regional impact;
- the number of jobs created or maintained;
- the importance of the company in the community;
- the project's added value contribution.

Most of the people questioned so far have said they agree with these criteria. However, they do not agree on their relative importance. For example, timber supply and forest management agreement holders tend to consider **job creation** (for companies processing less than 100,000 cubic metres) and **job maintenance** (for companies processing more than 100,000 cubic metres) to be more important, while regional county municipalities give priority to the **regional impact of**

the project. The municipalities also expressed doubts as to whether the Department actually applies the criteria, and would like to be involved more closely in the public forest timber allocation process.

It is also important to note that there are no criteria for determining the method that should be used (timber supply and forest management agreement or forest management contract) in different circumstances to allocate timber in the forest reserves. Similarly, there are no guidelines for the signature of forest management contracts with specific partners. For example, should the Department give preference to municipalities for the management of forest reserves located within municipal boundaries?

Ensuring the best possible use of timber from the different sources of supply

Highlights

- On March 31, 1991, the timber supply and forest management agreements granted during the transitional period had reduced annual public forest allocations from 33.3 to 30.9 million cubic metres.
- The Department respects the allowable annual cut established for each species group when it allocates timber from the public forests.
- Allocations granted since 1994-1995 have sometimes exceeded the allowable annual cut. This has happened where the allowable annual cut was reduced after preparation and approval of the general forest management plans. These situations, temporary in nature, were due to the fact that the five-yearly review dates for the agreements were not synchronized with the coming into force of the general plans. However, when issuing forest management permits, the Department can ensure that timber harvests do not exceed the new allowable annual cut calculation. Such situations are likely to create inequities between agreement holders in the same common area, since some holders will be forced, temporarily, to absorb the reductions, while others will not. To some extent, they also discredit the public consultation process applicable to the general plans, since the plans are not applied in their entirety immediately after approval.
- Since 1987, the volumes shipped to the lumber sector mills have increased.

- The increase in the volumes of public forest timber allocated (by 1995-1996, allocations had reached 89% of the allowable annual cut for all species) has reduced the Department's capacity to promote the construction of new timber processing mills or to expand production in existing mills. Consequently, it may have hindered the implementation of some higher added-value projects.
- Not all the volumes allocated in a given year are used (some 4 million cubic metres per year, across all species, are not used).
- The Department has respected the residual nature of the public forest supplies, in that its allocations take into account both the needs of the mills and the timber and fibre available from other supply sources.

Observations

Several factors must be considered when allocating timber from the public forests. These include the distances to be travelled, the accessibility of timber and fibres of the species and qualities required, the need for mills to have a certain security of supply in order to obtain funding for their projects, and the management needs in the public forests. Despite this, it is possible to conclude that the principle of residual supply has been upheld.

First, mill requirements are, generally speaking, estimated fairly accurately. In 1995-1996, the rate of authorized consumption use across all species was 85%. This figure rose to 90% for mills using species from the fir-spruce-pine-larch group, and was 80% for pulp mills using hardwood species. However, it fell to 60% for lumber mills also consuming hardwood species. This latter result may depend on a number of factors, including inaccurate forest survey data or the quality selection made by the sawmills. Overall, however, the results appear to be satisfactory, in that they are close to real mill consumption figures, and take into account potential market variations (the need for flexibility).

Second, the volumes of timber and fibre available from supply sources other than the public forests have also been accurately estimated. In fact, consumption of timber from these other sources is progressing more quickly. Total consumption of timber and fibres across all species and supply sources increased from 48.2 million cubic metres in 1990-1991 to 60.3 million cubic

metres in 1995-1996. However, most of the 12.1 million cubic metre increase (7.4 million cubic metres) came from supply sources other than the public forests. More specifically:

- in the private forests, the rate of use of authorized harvests across all species increased from 66% in 1990-1991 to 75% in 1995-1996;
- the consumption of roundwood, chips, sawdust and shavings imported from outside Quebec increased from 53 million cubic metres in 1990-1991 to 6.1 million cubic metres in 1995-1996;
- between 1990-1991 and 1995-1996, the level of consumption of chips, sawdust and shavings remained steady at around 90% of available volumes.

In fact, the real problem lies not in the residual volume calculation, but in the fact that residual volumes are adjusted only once every five years. This long lapse of time means that it is difficult to make full use of the volumes available from other supply sources when the industry's needs decline as a result of economic cycles. Section 46.1 of the *Forest Act* does in fact provide a partial solution to these occasional problems, but it is difficult to apply and can produce inequities. The section was re-amended recently to allow variations in forest company performance to be taken into account in its application.

Better use has also been made of the timber available in the public forests. Nevertheless, a percentage of supply requirements are still not met even though some allocated volumes are not harvested. In addition, very little can be done to promote the use of timber harvested in the public forests for the production of high added-value products.

1.2 RESERVING VOLUMES OF TIMBER

THE SYSTEM

The *Forest Act* authorizes agreements with individuals planning to construct timber processing mills or to increase the capacity of existing mills. It is permitted, for that purpose, to reserve volumes of timber from the public forests for a period of six months. The purpose of this provision is to create conditions favourable to the implementation of industrial projects.

This type of agreement may be entered into where timber supply sources are sufficient and the allowable annual cut is respected. The agreements are renewable for five periods of six months. For the holders, they include the obligation to pay dues equal to 20% of the product of the reserved volume, multiplied by the unit rate established in accordance with section 72 of the Act.

RESULTS

Promoting new industrial projects

Highlights

- On March 31, 1996, 63 agreements had been entered into, nearly 5.2 million cubic metres of timber had been reserved, and \$4.9 million had been paid to the Government.
- Thirty-nine of the agreements led to the implementation of industrial projects giving rise to total allocations of 28 million cubic metres of timber. Twenty new mills were built, and 19 existing mills were expanded. Twelve other projects, requiring allocations of approximately 1.2 million cubic metres, are still under consideration. Finally, 12 agreements were terminated before the related projects were implemented.

Observations

The provisions of the Act allowing for guaranteed supply stability for the promoters of industrial projects seem to be helping achieve the objectives.

1.3 GRANTING MANAGEMENT CONTRACTS

THE SYSTEM

When the *Forest Act* was first adopted, it allowed the minister to sign management contracts entrusting individuals with the management of forest lands with forest reserve status. The main purpose of this provision was to stem the subdivision of private woodlots other than by allowing individuals to acquire tracts of public forest land. It was also intended to promote the creation and consolidation of silvicultural companies.

RESULTS

Stemming the subdivision of private woodlots

Highlights

- Contracts such as this had existed since 1981 in the Bas-Saint-Laurent (nine) and Gaspé (five) regions. All the contract holders were joint management organizations.
- No new contracts were granted between 1986 and 1993, when the provision was abolished.

Observations

Thanks to these contracts, some 91,700 hectares of public forests were brought under management. Most of the funding came from the Government, through its Financial Assistance Program for the Development of Private Woodlots. However, the management contracts did not **stem the subdivision of the private woodlots**.

Promoting the creation of silvicultural companies

Similarly, the management contracts did not lead to the creation of more silvicultural companies. On the other hand, they did help secure the viability of the joint management organizations.

1.4 GRANTING FOREST MANAGEMENT CONTRACTS

THE SYSTEM

The minister has been authorized since 1993 to enter into forest management contracts in order to promote **the management of forest reserves**. A **further goal** of the provision is to broaden the range of persons able to take responsibility for managing the public forests for economic development purposes. In particular, forest management contracts can be entered into with local municipalities and regional county municipalities.

The forest areas covered by forest management contracts must be managed in accordance with a plan approved by the minister. Contract holders must comply with the standards of forest management stipulated by regulation or by the minister. They must also pay the prescribed dues, unless they are exempt

from this requirement due to their status as municipalities. A contract may be signed by several holders, who are then required to agree among themselves in order to harmonize their operations.

RESULTS

Allowing persons to participate in the management of public forests

Highlights

- In December 1996, 43 such contracts were in force, covering a total of 281,722 cubic metres.
- Eighteen contracts had been signed with joint management organizations and forest cooperatives, mainly in the Bas-Saint-Laurent (9) and Gaspé (5) regions, and a further 13 had been signed with wood processing plant operating permit holders, all in the Côte-Nord region. Five contracts had also **been signed with local municipalities in Abitibi-Temiscamingue** and with a regional county municipality in the Quebec City region.

Observations

The signature of forest management contracts is a recent innovation, and this partly explains why so few contracts have so far been concluded. On the other hand, the possibility of signing contracts is limited by a number of factors, including the following:

- the contracts apply only to forest reserves, and the areas currently enjoying reserve status are fairly small;
- some forest reserves are already committed to exclusive uses, such as research and experimentation, and are therefore not available for forest management contract purposes;
- the forest reserves are scattered and not very productive. In many cases, forest management activities would require expenditure in **excess** of the revenues that could be produced in the short term from timber harvesting;
- **the municipalities interested in signing contracts** would like to manage or develop all forest resources, including wildlife resources. However, the contracts do not allow them to do this.

The forest management contracts have enabled new parties to become involved in public forest management. They have also helped supply timber processing mills. In 1995-1996, some 146,703 cubic metres of timber were harvested from forests covered by forest management contracts, and 93% of this total was processed by lumber mills. On the other hand, most of the timber was shipped to mills that already had stable supplies, and was not considered when calculating public forest timber allocations.

1.5 MANAGING PUBLIC FOREST RESERVES

THE SYSTEM

Under the *Forest Act*, the forest reserves are composed of forest areas not covered by timber supply and forest management agreements. The minister may, if he wishes to promote the management of these areas, grant one or more timber supply and forest management agreements (upon which the area's forest reserve status expires) or he may, without affecting the forest reserve status:

- enter into forest management contracts;
- constitute educational and research forests, experimental forests or forest stations;
- authorize the execution of a guaranty of auxiliary timber supply;
- carry out forest management work himself, and offer the harvested timber for sale by public auction.

When the *Forest Act* was adopted, the Government's only purpose in creating the forest reserves was to conserve sufficient flexibility to be able to promote specific industrial projects. In the last few years, this same flexibility has allowed it to satisfy various other demands.

RESULTS

Promoting the development of industrial and other projects

Highlights

- At the end of the transitional period, the total area of the forest reserves was 41,806 square kilometres, or 11% of workable public forest lands. Since 1991, however, the minister has granted timber supply and forest management agreements on some reserve areas, and by March 31, 1996, their total size had been reduced to 31,678 square kilometres.
- The minister has signed 47 forest management contracts covering a total area of 217,624 hectares.
- On March 31, 1996, the reserves included 16 educational and research forests covering a total area of 36,190 hectares. In addition, one forest station and 385 experimental forests were located in forest reserves (plus another 211 located outside the reserves).
- Between 1991 and 1996, nearly \$9.4 million were invested in forest reserve management, mainly in the Quebec City and Côte-Nord regions. However, the data relating to this figure are somewhat fragmented.

Observations

By including some forest reserves in common areas, it has been possible to increase the volumes of timber allocated to the processing mills by some 525,000 cubic metres, and hence to promote the development of the forest industry. The timber in question falls mainly into the fir-spruce-pine-larch species group.

The forest reserves provide the Government with a certain amount of flexibility, allowing it to satisfy demands other than those of the forest companies. This flexibility is becoming increasingly valuable. The forest reserves satisfy some of the requirements, but they are scattered, often not very productive, and their size cannot be increased without affecting the rights granted under timber supply and forest management agreements.

1.6 GRANTING FOREST MANAGEMENT PERMITS FOR DIFFERENT PURPOSES

THE SYSTEM

The Department may promote multiple use of the forests by authorizing forest management activities for purposes other than the supply of timber processing mills. For example, under sections 10 to 23 of the *Forest Act*, forest management permits may be issued:

for the harvesting of firewood for domestic or commercial purposes;

for sugar bush cultivation and management for acericultural purposes;

for public utility works;

for mining activities;

for wildlife or recreational development projects.

The Act stipulates the conditions attached to the various permits. All the permits are valid for a period of one year, except the sugar bush management permit, which is valid for five years and is renewable if the holder has met its obligations, submitted a report of activities and used 50% or more of the average tapping capacity every year. However, renewal of a sugar bush management permit may be refused in order to authorize public utility works. The permit may also be revoked if the holder fails to fulfil its commitments.

RESULTS

Allowing forest management activities in a common area or forest reserve for purposes other than the supply of a timber processing plant

Highlights

- Approximately 13,000 permits for the harvesting of domestic firewood are issued every year, especially in the Saguenay-Lac-Saint-Jean (4,500 permits) and Abitibi-Temiscamingue (2,500 permits) regions. These permits generate annual dues of approximately \$200,000. Approximately 170,000 cubic metres of timber are harvested annually for this

purpose. In the Bas-Saint-Laurent, Quebec City and Cantons-de-l'Est regions, the demand for permits exceeds the supply.

- Approximately 175 permits for the harvesting of commercial firewood are issued every year, mainly to organizations responsible for managing wildlife on public lands. The annual authorized harvest of 53,500 cubic metres generates more than \$100,000 in dues.
- Approximately 100 permits are issued every year to authorize forest management activities for public utility purposes. The volumes harvested under such permits vary significantly from year to year, depending on the type of project, but generally speaking the revenues generated are in excess of \$200,000.
- Approximately 200 permits are issued every year for forest management activities related to mining activities. Annual revenues for this type of permit vary considerably, depending on the volumes harvested. For example, they totalled \$278,000 in 1994-1995, but just \$107,000 in 1995-1996.
- More than 200 permits are issued every year for wildlife or recreational development projects. Between 10,000 and 15,000 cubic metres are harvested every year under these permits, generating annual revenues of between \$17,000 and \$35,000 for the Government.
- Approximately 1,000 sugar bush management permits for acericultural purposes were still in force in 1995-1996. They covered an area of approximately 22,000 hectares and generated revenues of \$440,500 in that year. The demand for new permits is high, since acericulture is a profitable business, and the Government is unable to satisfy it in six regions of Quebec. As a result, some 450 applications, covering a total potential area of 16,000 hectares, are being held in abeyance.

Observations

Every year, the Department receives a large number of applications for different types of forest management permits. The 15,000 or so permits issued annually generate revenues of slightly more than \$1 million. Nevertheless, some problems persist.

- Not all applications for permits can be satisfied, due to a shortage of timber resources.
- Because of the large number of permits issued, it is difficult to control the work of permit holders, and especially difficult to ensure that they comply with the standards of forest management for forests in the public domain.
- The tariffs established for the harvesting of domestic firewood and for wildlife or recreational development projects do not take into account the market value of the timber. Similarly, the rent paid by sugar bush management permit holders is still below that paid in the private sector, even though the gap has closed in recent years.
- A number of problems have arisen with respect to the coexistence of the holders of permits issued for purposes other than the supply of timber processing mills and the holders of timber supply and forest management agreements.
- **The records kept in respect of the harvesting activities authorized under the various permits are deficient.**
- The Department is unable to satisfy some applications for commercial permits (e.g. deforestation for agricultural purposes, the harvesting of mushrooms and moss, etc.) **because the demand was not anticipated.**

2. PUBLIC FOREST TIMBER TARIFFS

BACKGROUND

The **1987** report of the Belanger-Therrien Committee, on public forest timber tariffs, states that before the present forest system was introduced, tariffs were not calculated by any generally accepted method, such as the cost, parity or revenue methods, but were generally established in a completely arbitrary way. In fact, the Committee pointed out that, from a meagre 25% per cord in **1887**, cutting dues increased slowly. The process was hampered by administrative decisions **that often seemed arbitrary rather than based on a strict mathematical equation between market value and the predetermined rate.**

To understand the recent history of public forest timber tariffs, it is important to remember that the forest reform took place in the economic and forest-

related context of the mid-1980s. After years of abundance and expansion, and after a period of believing that the forest resource was practically inexhaustible, people suddenly began to worry about stock failures in some areas, as supply demands continued to increase. An extensive change was therefore needed in the method used to manage the public forests.

As far as tariffs were concerned, this was the end of a period during which the State had used cutting dues to promote industrial investment rather than to profit financially from a collective resource. Moreover, accused of indirectly subsidizing their lumber mills to the detriment of American competitors, Canada and Quebec were under strong pressure from their southern neighbour and main **trading partner**. **The pressure culminated in the imposition of a 15% export tax in 1986.**

The private woodlots owners, for their part, denounced unfair competition by the Government in its role as **manager of the public forests**. The 1985 white paper *Building a Forest for Tomorrow*, stated that the current tariff system favoured over-utilization of the public forest resource at the expense of other supply sources, and did nothing to encourage optimal use of the available timber. The authors recommended that dues be based on the market value of standing timber, or stumpage value. Finally, market analysis revealed a clear discrepancy between the dues collected from the industry and the market value of the timber harvested.

THE SYSTEM

Section **72** of the *Forest Act* states that the unit rates applicable to the calculation of dues for each species **or group of species must correspond to the stumpage value of the timber**. The unit rates vary according to the region in which the timber is harvested. The *Regulation respecting forest dues*, for its part, states that the parity technique, which establishes the value of goods by comparing them with other goods whose sale price is known, must be used to calculate the stumpage value for the purposes of the annual unit rate grid review. The results of the stumpage value calculation for each species or group of species/quality in each tariffing zone is published annually in the *Kegulation respecting unit rates*.

In addition, dues are now adjusted every four months (by indexing them to the stumpage value). In fact, there used to be a two-year delay between consideration of private market prices and actual adjustment of the dues charged on public forest timber. This was conducive to over-billing or under-billing in some cases. The indexing method now in place, based on monthly finished goods price indicators published by Statistics Canada, has reduced the average dues adjustment period from two years to six months.

RESULTS

Forest dues are not a tax, but a fair sale price for a much sought-after collective resource. The tariffs must therefore be fair for the Quebec people who own the resource, for the forest companies that process it, and for the private woodlot owners who need to sell the timber they harvest on their own land.

Providing a fair return for the State

Highlights

- Since 1987, the average dues for public forest timber have soared from \$2.09 to \$12.58 per cubic metre — an increase of 500%. Despite this, however, the total volume of timber harvested in the public forests has increased by 16%.
- In the period 1987 to 1997, the State's total revenues from dues increased by **600%**, from \$53 million to \$400 million.
- Average dues for the fir-spruce-pine-larch group are currently equivalent to those charged by Quebec's neighbouring provinces and states.

The dues charged for the fir-spruce-pine-larch group have tripled in recent years, but those charged for hardwood species and aspen have remained more or less stable, despite rising prices on the private stumpage market. In 1995-1996, the total amount of dues collected on hardwood species was less than the cost of managing the hardwood forests.

- During the last American survey on countervailing duties (1990-1991), Quebec was found to be the province for which the American Department of Trade had calculated the lowest subsidy rate (0.01%) in terms of forest dues (three other provinces were also investigated).

Observations

Since the tariff reform came into force, dues have generally followed stumpage market trends, especially for species in the fir-spruce-pine-larch group. Not only has the reform enabled the State to finance forest management and development, but it has also positioned Quebec favourably in the trade dispute between Canada and the United States.

On the other hand, the somewhat perfunctory method used until recently to establish hardwood tariffs has created a differential with the private stumpage market. Finally, even though the sale of standing timber in the private forests constitutes a valid point of reference, there are some significant differences in harvesting conditions in the public and private forests (average transaction volume, mechanization level, average size of cutting areas, etc.). As a result, the Department must make some significant adjustments to the stumpage value.

Establishing tariffs that are fair to the forest companies and enabling Quebec's industry to remain competitive

Highlights

- The number of tariffing zones increased from 20 in 1987-1988 to 28 in 1988-1989 and, finally, to 65 in April 1996. Despite the subdivisions, the average variations in stumpage values within the zones have remained high (fir-spruce-pine-larch — average standard deviation/zone = \$2.86 per cubic metre).
- A survey of timber supply and forest management agreement holders revealed that many considered intra-zone variations and zone border variations to be unfair.
- Until quite recently, the zone-based value adjustment model developed in 1988 was applied only to the fir-spruce-pine-larch species group.
- The present tariff grid has 18 species/quality groups. However, in 1995-1996, the fir-spruce-pine-larch group alone accounted for 83% of the harvest and 95% of the dues paid.

Observations

Although some progress has been made, the significant rise in stumpage values since 1994-1995 has exacerbated company demands for fair treatment.

Maintaining a competitive balance with the private market

Highlights

- From 1990 to 1995, harvests of timber from the fir-spruce-pine-larch group increased from 3.6 million to 4.2 million cubic metres in the private woodlots, or 102% of the allowable annual cut. At the same time, in the public forests, they increased from 18.1 million to 25.6 million cubic metres, or 85% of the allowable annual cut.
- During the same period, hardwood harvests fell from 1.7 million to 1.6 million cubic metres in the private woodlots, but doubled in the public forests, from 1.3 million to 2.6 million cubic metres, revealing a certain competitive imbalance between the two supply sources.

Observations

In the case of softwood species (fir-spruce-pine-larch), the annual reference to stumpage values seems to have maintained the competitive balance between the two sides. In the case of hardwood species, however, the practice of indexing dues to the price of finished goods generated a discrepancy that seems to have favoured public forest harvests.

Adjusting tariffs to market conditions

Highlights

- Since the indexing mechanism was introduced, it has forced fir-spruce-pine-larch dues upwards in seven of the eight periods considered (prior to 1998).
- If we compare changes in the composite index of softwood lumber prices and private woodlot stumpage values for the fir-spruce-pine-larch group, we see that stumpage values are much less volatile than finished goods prices.
- As far as the hardwood species are concerned, the effects of the indexing mechanism have varied depending on the finished goods. Its use without annual reference to stumpage values has opened up a gap between private market prices and dues tariffs.

Observations:

Thanks to the indexing mechanism, it was possible to reduce a significant discrepancy during a period when finished goods prices were extremely volatile. This allowed the dues to be adjusted more quickly to market conditions. However, if used alone, without annual reference to the private market, the mechanism is likely to open up a gap between dues tariffs and private sector prices.

3. FUNDING FOREST MANAGEMENT ACTIVITIES

BACKGROUND

One of the deficiencies identified in the debates surrounding the adoption of the *Forest Act* was the inadequacy of forest management efforts. Yet, in its 1972 *Exposé sur la politique forestière* (forest policy statement), the ministère des Terres et forêts had mentioned the importance of increasing public forest production. The elements to be considered included growing fibre needs and the anticipated reduction in the amount of land set aside for forest production due to urbanization on the one hand and the emergence of new forest and forest resource uses on the other.

Before the *Forest Act* was adopted, very little forest management work was done in the public forests, and funding varied from year to year, depending on the availability of Government budgets. Moreover, harvests were viewed as separate from forest management, and there was no legal requirement for the forest companies to return harvesting areas to production. In short, the industry harvested the timber and the Government managed the forests when funds were available.

THE SYSTEM

The adoption of the *Forest Act* changed the division of responsibility between the industry and the Government by making the industry responsible for carrying out forest management work. In fact, timber supply and forest management agreement holders undertake, every year, to apply the silvicultural treatments needed to achieve the annual yields stipulated in their agreements. The Government, for its part, continues to establish standards for the treatments, and helps fund them by granting credits on the dues

payable under the Act. Section 73.1 of the Act states that agreement holders may pay their dues in cash or by way of silvicultural treatments. However, not all forest management work is admitted as payment of dues. For example, expenses related to the planning, construction and maintenance of forest roads and the monitoring of management work are excluded. The *Regulation respecting forest dues* stipulates that credits may only be granted to cover the cost of carrying out silvicultural treatments.

Every year, the Department draws up the list of silvicultural treatments admissible as payment of dues, and establishes the value of each treatment in accordance with the calculation rules laid down in the *Regulation respecting forest dues*. The results of the calculations appear in the *Minister's Order respecting the value of silvicultural treatments* published on April 1 every year.

During the early years of the forest system, the value of the silvicultural treatments generally corresponded to the average unit cost of the contracts granted by REXFOR for similar treatments. The average unit cost was weighted to take into account the size of the areas treated. In the case of treatments for which REXFOR had not granted contracts – for example, those involving the harvesting of merchantable timber or the aerial spraying of phytocides – the values were established on the basis of work done in governance by the Department, or estimates by experts.

The minister, in accepting silvicultural treatments as payment of dues, promotes the carrying out of the work needed to achieve the yields stipulated in the timber supply and forest management agreements. The theoretical funding limit, which corresponds to 100% of the dues payable, should not normally hinder the preparation and implementation of management strategies designed to achieve maximum allowable cut effects. The silvicultural treatments themselves should be based on forest-related criteria. Accordingly, the value assigned to a treatment or to the use of a given piece of equipment must not create a bias by encouraging forest companies to seek higher credits and hence obtain undue financial benefits. Finally, in addition to promoting the application of good quality silvicultural treatments, the values assigned to each treatment must be sufficient to provide the forest workers with decent working conditions.

Since 1995, it has also been possible for the minister to accept, as payment of dues, the funding by timber supply and forest management agreement holders of forest management activities carried out by third parties and of all other forest management activities carried out with a view to protecting or developing forest resources, in both the public and private domains. The minister may also grant credits for this purpose.

Credits are granted after receipt of the agreement holder's annual report of activities. However, temporary credits may also be granted upon presentation of a silvicultural progress report. The same funding conditions apply to forest management contract holders.

RESULTS

Funding forest management work

Highlights

- According to surveys of timber supply and forest management agreements holders and the Department's management units, no management strategies were cancelled as a result of funding difficulties in the first five-year period. In the second five-year period, two agreement holders appear to have modified their strategies, but only in respect of marginal volumes equivalent to around 0.15% of the allowable annual cut.
- In addition, no silvicultural treatments were cancelled as a result of funding difficulties. However, the dues charged on hardwood species were insufficient to fund all selection felling work. The Department corrected this situation by allowing the transfer of dues credits between forest companies sharing the same common area.

Observations

The formula that allows forest companies to pay their forest dues in cash or in the form of silvicultural treatments has provided funding for the work needed to achieve predetermined production objectives.

Sharing the responsibility for forest management funding between the Government and the industry

Highlights

According to the available data, around 2.6% of the credits granted as payment of dues in 1996-1997 were used for purposes other than the application of silvicultural treatments.

Observations

Generally speaking, the method used to calculate the value of silvicultural treatments, based solely on the cost of carrying out the work, and the method currently used to allocate credits, have allowed the Government to involve the industry in the funding of management activities by entrusting it with the financial responsibility for planning, applying and monitoring the work (silvicultural treatments).

Establishing fair and equitable values

Highlights

A comparative study of changes in the values stipulated in the regulation and the average cost of the contracts granted by REXFOR reveals a certain number of trends. Also, by comparing the values stipulated in the regulation with the average cost of the contracts granted by the forest companies for specific treatments in specific years, it is possible to judge whether or not the values fixed for those treatments are sufficient. Finally, the calculation method and reference data used are also important in assessing the accuracy and fairness of the values assigned to the various treatments. The analysis described here was based on **pre-commercial thinning and planting, the two most important treatments in terms of areas treated and credits granted.**

- Between 1989 and 1993, the average values stipulated in the regulation increased, whereas the average cost of the contracts granted by REXFOR decreased systematically.
- From 1990 onwards, the values stipulated in the regulation were sufficient to pay for good quality work, since REXFOR was able to do the same work at a lower cost.

Observations

The results suggest that the credits granted were sufficient to carry out all the treatments required. However, according to the silvicultural contractors and forest cooperatives questioned for the survey, the work often appears to have been done at the expense of the forest workers.

Selecting the most appropriate treatment on the basis of silvicultural needs

Highlights

- In more than 80% of cases, the sites to be treated, the work to be done and the equipment to be used were selected on the basis of silvicultural considerations alone.
- Pre-commercial thinning is the treatment selected most often, due to the credit it attracts. It is also the treatment for which the Department grants the most credits (\$42 million in 1996-1997).

Observations

Generally speaking, the credit level seems to have very little impact on the treatment applied or the equipment used. Similarly, the choice of site does not seem to depend on the credit, except in the case of pre-commercial thinning.

4. PLANNING FOREST MANAGEMENT ACTIVITIES IN THE PUBLIC FORESTS

BACKGROUND

When the forest system was created, timber from the public forests was allocated mainly by means of guarantees of timber supply and timber limits. These two allocation methods provided for forest planning mechanisms.

The timber limits came into existence during the last century. From 1939 onwards, the limit holders were required to submit a management plan to the Department for all the forest lands allocated to them, together with a more detailed management plan for the sector to be harvested during each 10-year period. The limit holders could not harvest timber in excess of the limit permitted by the allowable annual cut.

Public forest lands not allocated as timber limits were known as "Crown forests". In such cases, timber was allocated by means of guarantees of timber supply. When the *Forest Policy* was adopted in 1972, the Crown forests were the subject of the 'management plan' operation by which all Quebec's forests were divided into 44 management units. A three-step forest planning process was then introduced. The three steps were:

- preparation of a forest management and long-term timber allocation plan for the province as a whole;
- preparation of a forest management and long-term timber allocation plan for each management unit;
- preparation of a short-term forest management plan for each management unit.

The goal of this process was to ensure that all Quebec's public forest lands, as well as the lands in each management unit, were managed according to the principle of sustained yields.

In 1985, the white paper entitled *Bâtir une forêt pour l'avenir* (Building a Forest for the Future) identified the following problems:

- an inadequate level of forest production;
- deficient application of management plans;
- separation of harvesting and forest management activities;
- non-optimal use of the timber available in the timber limits.

THE SYSTEM

The planning process stipulated in the *Forest Act* has the following aims:

- to ensure compliance with the allowable annual cut;
- to make timber supply and forest management agreement holders responsible for drawing up forest management plans;
- to integrate forest management activities;
- to ensure compliance with forest and forest resource protection standards and land use standards.

In addition, it has been necessary since 1993 to consult other forest users in the forest planning process. The general public and regional county municipalities must now be informed of and consulted on the plans submitted, as an integral part of the planning process.

In practice, forest planning is based on the following tools:

- the *Forest Management Manual*;
- the *Regulation respecting standards of forest management for forests in the public domain*;
- the *Regulation respecting forest management plans and reports*;
- the general forest management plan;
- the five-year forest management plan and the annual forest management plan;
- an information and consultation procedure for forest management plans.

The *Forest Management Manual* describes, among other things, the method and basis used to calculate the allowable annual cut and the anticipated effects of the various silvicultural treatments.

The *Regulation respecting standards of forest management for forests in the public domain* stipulates the measures and silvicultural practices required to protect forest resources and uses.

The general forest management plan covers a period of 25 years. It is revised every five years to take into account the extension of the agreement. It includes a description of the forest and the main forest resources, together with the ways in which those resources are used to also get out

- the forest management objectives (including achievement of the yields stipulated in the timber supply and forest management contract) established in light of the local context, the resources themselves and the uses to which they are put;
- the general forest management strategy, specifying the nature, scope and approximate location of the work that will be carried out to achieve the objectives;

Updating the FOREST SYSTEM

- the basis and results of the allowable annual cut calculations.

The five-year and annual forest management plans describe how the management strategy in the general plan will be implemented. They contain the following information and documents:

- the nature and scope of the treatments to be carried out;
- an estimate of the volumes to be harvested for each species or group of species;
- a description of the infrastructure to be built;
- maps indicating where the different activities will be carried out, and showing the location of sites that will be protected integrally, as well as those at which special harvesting methods will be applied.

The annual plan differs from the five-year plan in terms of the level of detail and the period covered.

Timber supply and forest management agreement holders are responsible for preparing the plans, and the Department is responsible for approving them.

Since 1988, any individual or organization may examine the general and five-year plans prepared by timber supply and forest management agreement holders before they are approved. In addition, a procedure was introduced in 1993 to ensure that both the general public and the regional county municipalities are consulted on the plans. The procedure is used to ensure that the management plans take public concerns into account, and that they result in the development and harmonious use of all forest resources.

The timber supply and forest management agreement holders are responsible for organizing the consultations, processing any requests for changes to the plans, indicating the follow-up action they intend to take, and reporting to the minister on the results of the consultations. The Act provides for a conciliation process to deal with disputes between agreement holders and individuals, regional county municipalities or groups.

The Department, for its part, establishes the information and consultation period for the plans, publishes notices, makes the plans available to the management unit, informs the public about the procedure, refers

groups and individuals requesting consultations to the agreement holder concerned, and answers questions of a general nature. If a dispute arises, the Department's representative encourages the parties to come to an agreement, and if this is not possible, the minister has the power to appoint a conciliator.

RESULTS

Ensuring that the public is properly informed about forest management plans and the public forest management framework, that public concerns are taken into account in the management plans, and that all forest resources are developed and used harmoniously

Highlights

- Only 61% of the regional county municipalities, 55% of the forest companies and 43% of the departmental specialists questioned for the survey thought the information and consultation procedure had met the goal of ensuring that the public is properly informed about the forest management plans and the public forest management framework.
- In addition, only 61% of regional county municipalities, 56% of forest companies and 43% of departmental specialists thought the information and consultation procedure had enabled public concerns to be taken into account in the forest management plans.
- Only 32% of regional county municipalities, 53% of forest companies and 40% of departmental specialists thought the procedure had enabled all forest resources to be developed and used harmoniously.
- Some 40% of agreement holders mentioned the lack of public interest in the consultation process, and also said the exchange of information was a one-way street -- in other words, they gave information to the other forest users, but not vice-versa.
- The five-year forest management plans submitted in 1994 were each consulted by an average of 10 people, and only one person in every six made written comments on the plans after consultation.

- Some 46% of all five-year forest management plans were modified during their first year of application, 62% during the second year and 73% during the third year. In addition, 20% of the plans were modified three or more times during their first three years of application.
- Approximately 55% of the regional county municipalities questioned for the survey said the consultation period was too short, 44% thought the procedure was not sufficiently clear, and 98% said they thought the Department should be represented at all consultations.
- Generally speaking, the regional county municipalities said they would like to become involved at an earlier stage in the forest planning process. They deplored the fact that planning activities were concerned with the development of timber but not of other forest resources.
- More than 80% of the regional county municipalities said the agreement holders gave satisfactory answers to their questions on the plans, and responded within a reasonable period.

Observations

The public and regional county municipality information and consultation procedure has not achieved its objectives.

Although relations between regional county municipalities and agreement holders are good, the regional county municipalities would like to be involved earlier in the plan preparation process, rather than after submission of the completed plans. They also deplore the fact that the plans are concerned with the development of the timber resource alone, and merely provide protection for the other resources.

Public participation is poor, perhaps due to procedural deficiencies and the many modifications made to the forest management plans after approval.

In addition, it is important to remember that the information and consultation process is a recent innovation. For non-specialists, forest planning and forest terminology can be complex. Yet, in recent years, events such as the *Summit on Private Forests*, the introduction of the *Forest Resource Development Program* and consultations on the inhabited forest

concept have fostered the involvement of community spokespeople in the forest planning process. This may help increase the impact of the information and consultation procedure in the coming years.

Considering public land use and standards for the protection of forests and forest resources in the forest planning process, so as to allow for the multiple use of the forests

Highlights

Nearly 75% of the departmental specialists consulted thought the land use plan was incomplete or very incomplete.

Observations

The review does not show whether or not the objective was achieved. However, it does reveal a problem with the updating of the public land use plan.

Ensuring compliance with the allowable annual cut

Highlights

- Between 1991 and 1996, softwood yields and hardwood yields improved slightly in all common areas, by 1% for the former and by 6% for the latter.
- The yields of the pine-hemlock and cedar species groups fell respectively by 6% and 8% in all common areas.

The boundaries of 73 common areas, accounting for 60% of the total area committed to forest production, have been modified significantly since the forest system was introduced (a difference of more than 2%). As a result, it is difficult to judge whether or not the yields for individual areas have been achieved.

- In the remaining 78 common areas that constitute the productive forest, softwood yields have fallen in 48 areas (59%) and hardwood yields in 37 areas (47%).
- The yield reductions were significant in 31 common areas; in 19 areas, softwood yields fell by more than 10%, and in a further 12 areas hardwood yields fell by more than 30%.

- Approximately 40% of the timber supply and forest management agreement holders and departmental specialists consulted thought the general forest management plans did not permit compliance with the allowable annual cut.
- The agreement holders thought the data obtained from the ten-year survey were insufficient to enable them to prepare their general forest management plans (37%), five-year plans (59%) and annual plans (78%). However, it should be remembered that plan preparation is not one of the goals of the ten-year survey.
- A significant percentage of agreement holders did not collect data themselves (12% for the general forest management plan, 19% for the five-year plan and 12% for the annual plan), even though they agreed that the ten-year survey data were insufficient.
- Some of the departmental specialists and companies consulted thought the form and content of the forest management plans should be improved (26% for the general forest management plan, 38% for the five-year plan, and 37% for the annual plan).

Observations

It is difficult to judge whether or not this objective has been achieved, since it is not sufficiently clear and is open to interpretation:

- the changes to common area boundaries have complicated the forest yield monitoring process;
- there is some ambivalence between maintaining the yields stipulated in the timber supply and forest management agreements and estimating the common area's allowable annual cut accurately;
- no specific timber quality improvement objectives have been established;
- the sustained-yield principle is difficult to apply in forests with abnormal age structures.
- the measures needed to monitor and assess an objective as important as compliance with the allowable annual cut have not been introduced.

Making timber supply and forest management agreement holders responsible for preparing forest management plans

Highlights

- The forest system review shows that timber supply and forest management agreement holders have prepared the plans required, and that the plans are in conformity with the *Regulation respecting forest management plans and reports*. On the other hand, the quality of the plans does not appear to be entirely satisfactory.
- All annual forest management plans submitted for 1995-1996 were modified at least once. In 75% of cases they were modified on four or more occasions, and in 19% of cases on six or more occasions.
- In more than 60% of the common areas, 75% or less of the work originally planned was actually carried out. This figure fell to 50% or less in 35% of the areas.

Only 27% of the five-year plans implemented in the last three years have not yet been modified, and nearly 20% have been modified on three or more occasions.

- The departmental specialists thought the problems described in the general plans were properly documented in only 50% of cases. More than a quarter (27%) said they were not satisfied with the way in which the problems had been taken into account in the calculation basis, and thought the management strategies were unrealistic.
- The departmental specialists thought 48% of the five-year forest management plans and 59% of the annual plans submitted for approval were not in conformity with the strategies proposed in the general forest management plans. The main problems were related to the nature and scope of the silvicultural work to be carried out.
- The departmental specialists thought only 15% of the general forest management plans, 8% of the five-year plans and 32% of the annual plans submitted were based on adequate data (acquired by the agreement holders) when they were initially submitted.

- More than 80% of departmental respondents and more than 90% of company respondents thought the forest companies should continue to prepare five-year and annual plans.
- Most of the departmental specialists thought responsibility for the preparation of general forest management plans should not lie exclusively with the forest companies. Only 14% thought the companies should prepare the part of the general plan containing the estimated allowable annual cut.
- Around 65% of the forest companies thought it was their responsibility to estimate the allowable annual cut and to describe the problem situation in the general forest management plan.
- The plan analysis and approval procedure was considered unsatisfactory by both the departmental specialists and the forest companies consulted. In the former group, 62% thought the procedure was unsatisfactory for the general forest management plans and 43% for the five-year and annual plans. In the latter group, 34% were dissatisfied with the general forest management plan procedure, 31% with the five-year plan procedure and 22% with the annual plan procedure.

Observations

The results reveal a mutual lack of confidence on the part of industry and departmental representatives. The former consider the State employees to be fussy and rigid, while the latter do not think the companies make a sufficient effort to submit plans of the quality required to manage the forests properly.

This unease seems to be based on two problems – the division of responsibility between the Department and the timber supply and forest management agreement holders on the one hand, and the lack of forest planning knowledge on the other.

The Department is responsible for establishing public forest yields. When an agreement holder prepares its general plan, it calculates the allowable annual cut. In other words, it establishes the yield for the area covered by the plan, based on its own needs. However, estimating the allowable annual cut is a highly complex operation, and the Department can hardly be

said to be fulfilling its responsibilities in this area if its role is limited to approving the general plan. To be **valid**, forest planning must be based **on** data that provide a realistic picture of the area to be managed and a solid basis for the preparation and implementation of a suitable strategy. There appear to be a number of significant deficiencies in this area.

Integrating forest management activities

Highlights

- The departmental specialists consulted thought that, in 40% of cases, the management strategy described in the general plan did not cover the concerns of other timber supply and forest management agreement holders sharing the same common area.
- In the specialists' view, 51% of agreement holders in the same common area did not work together when preparing their general plans, and more than 35% did not consult their fellow agreement holders when preparing their five-year and annual plans.
- Only 22% of agreement holders thought their planning activities were highly integrated, and 25% said they were not really or not at all integrated. Several respondents felt integration was difficult or even impossible, due to individualistic behaviour, the inherent problems of cost sharing, the efforts required to optimize profits, and so on.
- More than 80% of the agreement holders consulted thought it was vital to appoint a representative for each common area. The representative's role would have to be clarified, but it would not be one of integration.

Observations

These results suggest that the objective of integrating forest management activities has not been achieved. Integration is considered by timber supply and forest management agreement holders to be restrictive, even at the forest planning stage. It therefore comes as no surprise that this objective should not have been achieved.

5. CONTROLLING AND MONITORING FOREST MANAGEMENT ACTIVITIES IN THE PUBLIC FORESTS: PROTECTING THE FORESTS AND THEIR RESOURCES

BACKGROUND

The *Lands and Forests Act*, in force during the 1970s, contained only a handful of provisions on forest protection. These included the requirement for a buffer strip to be left along salmon rivers and around provincial parks, along main forest access roads and around **some** lakes.

From 1974 onwards, the ministère des Terres et Forêts required forest companies to leave a buffer strip along some watercourses and around lakes. Prescriptions were attached to cutting permits in order to preserve the strips, but in practice they were often ignored.

In 1976-1977, the ministère des Terres et Forêts published a *Forest Management Guide* containing measures applicable to all forest lands (drainage network, roads, bridges, culverts, gravel pits, etc.), timber harvesting (piling areas, forest camps, skidding trails), the management of drinking water supply basins, the management of certain wildlife habitats (white-tailed deer, moose, caribou and aquatic wildlife) and recreational developments (campsites, picnic areas, roadside rest areas, etc.). Prescriptions were attached to cutting permits, requiring permit holders to comply with the Guide. In practice, however, only partial compliance was achieved.

It soon became necessary to revise the guide, for a number of reasons. For example, new knowledge was acquired on wildlife needs and the effects of timber harvesting on the quality of aquatic environments, the concept of essential wildlife habitat was introduced, and the forests began to be used increasingly for recreational purposes. The ministère de l'Énergie et des Ressources undertook this task in the **early 1980s**, in cooperation with the ministère du Loisir, de la Chasse et de la Pêche and the ministère de l'Environnement.

A new document was published in 1986, known as the *Guide des modalités d'intervention en milieu forestier* (guide to forest management standards). The publication described the protective measures and timber harvesting methods to be applied on the sites and within the zones indicated on the public land use map.

Again, compliance with the protective measures was ensured by means of prescriptions attached to cutting permits. However, the guide was often ignored because it had no legal standing

THE SYSTEM

The *Forest Act* established new rules for the management of Quebec's forests. In particular, the Act made it compulsory to comply with the multiple-use principle, which was also one of the objectives of the forest system.

The Regulation respecting standards of forest management for forests in the public domain

In November 1988, the Government conferred legal status on the protective measures stipulated in the *Forest Management Guide*, in order to force compliance by forest managers. Section 25 of the *Forest Act* states that every holder of a forest management permit must, in carrying out forest management activities, comply with the standards of forest management that the Government prescribes by regulation. The standards are intended, among other things, to ensure:

- the preservation or renewal of the forest cover;
- the protection of all forest resources;
- the compatibility of forest management activities with the use of the public lands on which they are carried out.

The *Forest Act* was amended in 1993 to allow the Department, in exceptional circumstances or upon approval of the five-year or general forest management plan, and after consulting the Government departments concerned, to prescribe standards of forest management that differ from those prescribed by regulation when the regulation does not provide adequate protection for all the resources in a given area due to the specific features of the area or the nature of the project to be carried out.

The *Regulation respecting standards of forest management for forests in the public domain* was also amended in 1996. The amendments included a tightening of measures for the protection of lakes and watercourses, a reduction in the size of cutting areas, a requirement for permit holders to maintain, at all times, a 7-metre

high forest cover over 30% of all wooded sectors in territorial reference units, rules governing cutting methods aimed at protecting established regeneration and soils, an increase in the size of the buffer strips between cutting areas of more than 100 hectares, and a measure prohibiting all forest management activities on certain fragile sites.

Also in 1996, the Department began systematic monitoring of the application of the *Regulation respecting standards of forest management for forests in the public domain*, and of the effectiveness of its more difficult elements.

The Forest Protection Strategy

In 1989, in the wake of the *Forest Act*, the Government published its *Politique d'utilisation des pesticides en milieu forestier* (policy on pesticide use in the forests), recommending the adoption of a strategy to reduce pesticide use in the forests while maintaining the level of timber production.

Two years later, the ministère de l'Énergie et des Ressources submitted a draft strategy that became the subject of extensive public consultations. Once the **Commission sur la protection des forêts**, created by the **Bureau d'audiences publiques sur l'environnement**, had submitted its report, entitled *Des forêts en santé* (healthy forests), the ministère des Forêts drafted the final version of the strategy, incorporating most of the recommendations made by the Commission members.

The aims of the *Forest Protection Strategy*, adopted in May 1994, are to ensure respect for the biophysical components of the environment, to maintain forest yields and socio-economic activities, to promote the development and harmonious use of all forest resources, and to eliminate chemical pesticide use by the year 2001. The document contains 54 commitments concerning the reduction of the maximum size of single block cutting areas, the protection of the forests against insects, disease and competing vegetation by means of preventive silviculture, and the measures required to protect fragile sites. The strategy recommends forest and environmental monitoring of management work, as well as intensification of research into preventive silviculture. The Department has undertaken to submit a preliminary public review of the strategy's application in 1999.

Forest biodiversity

In June 1992, representatives of more than 150 countries met in Rio de Janeiro and signed an **International Convention on Biodiversity**. Canada was one of the signatory countries. The gouvernement du Québec, which officially confirmed its adherence to the convention on November 25, 1992, created an interdepartmental committee responsible for preparing an implementation strategy. The Department has been involved in the Committee's work.

The Department has also published an initial review of forest biodiversity, and has made a number of commitments. It has introduced a monitoring and research program to enhance knowledge on the effects of forest management practices on biodiversity. An interdepartmental agreement on vulnerable species has been signed, and a knowledge and conservation program for exceptional forest ecosystems is currently under preparation.

Climate change

In the years since 1988, the Department has created a forest ecosystem monitoring network comprising 31 sites. Its purpose is:

- to study the impact of climate change on forest ecosystem development;
- to monitor long-term forest ecosystem dynamics;
- to analyze the links between environmental components and natural stresses (diseases, insects, windfall, fires, etc.);
- to collect the data required for comparative analysis.

The Department has also joined forces with the ministère de l'Environnement et de la Faune and the ministère de l'Agriculture, des Pêcheries et de l'Alimentation to implement an atmospheric pollutant measurement network in Québec's forests and farming communities. The network is known by its French acronym REMPFAAQ.

In November 1992, Québec adhered to the **Framework Convention on Climate Change** adopted five months earlier by the UN. An interdepartmental committee, on which the Department was represented, drew up a plan to implement the Convention. The plan

requires the Department to define the problem of climate change in the context of the forests, to clarify the role of forest ecosystems in the carbon cycle, and to estimate the possible impact of global warming.

RESULTS

Protecting all forest resources and ensuring that forest management activities are compatible with land use

Highlights

- Not all the Department's regional offices have used systematic methods or information compilation systems to monitor the application of the *Regulation respecting standards of forest management for forests in the public domain*. Consequently, it is not possible, from the available data, to judge how far the regulation's forest protection objectives have been achieved.
- During the surveys carried out for the purposes of the review, 65% of timber supply and forest management agreement holders said they used mechanisms to control compliance with the *Regulation respecting standards of forest management for forests in the public domain*. However, only 13% of management unit employees said they had observed the use of such mechanisms by agreement holders.
- With respect to the objective of protecting all forest resources, a high percentage of management unit employees had observed deficiencies in the application of the *Regulation respecting standards of forest management for forests in the public domain*. In particular, they mentioned the provisions concerning the protection of intermittent watercourses (70%), watercourse crossings (68%), gravel and sand pits (46%) and under-utilization of timber (41%). A total of 2096 of this group thought the *Regulation respecting standards of forest management for forests in the public domain* did not provide adequate protection for all forest resources.
- With respect to the objective of harmonizing forest management activities with land use, the management unit employees said they were satisfied with the results obtained so far. Most of this group, like the timber supply and forest management agree-

ment holders, thought the *Regulation respecting standards of forest management for forests in the public domain* was effective in this area.

Observations

The available data are insufficient to allow a full appraisal of the impact of the *Regulation respecting standards of forest management for forests in the public domain*. On the other hand, the qualitative appraisal carried out by means of surveys revealed a number of deficiencies, at the level of both compliance with the regulation and the effectiveness of its provisions in protecting the forest environment as a whole. However, there does not appear to be a problem in terms of compliance with and the effectiveness of the standards aimed at ensuring compatibility between forest management activities and land use.

Maintaining or reconstructing the forest cover

Highlights

- Reconstitution of the forest cover in cutting areas is by far the most important element of the *Regulation respecting standards of forest management for forests in the public domain*, in terms of the surface areas involved. The initial period for the achievement of regeneration objectives has only just ended (eight years for cutting carried out between 1988 and 1996). However, the current monitoring system (the forest management permit issuing system) does not provide adequate information on the results obtained. It does not include a monitoring schedule, and is designed to obtain information on the application of the forest management manual rather than on compliance with the regulation.
- The time allowed for reconstituting the forest cover in piling, lopping and sawing areas, gravel pits and sand pits and forest camp sites has now expired, but here again, the current monitoring system is inadequate. As a result, only partial data are available, and they are insufficient to judge the extent to which the objective has been achieved.
- A high percentage of the management unit employees consulted had observed deficiencies in the application of the *Regulation respecting standards of forest management for forests in the public domain*. These deficiencies mainly affected

the provisions concerning the regeneration of piling, lopping and sawing areas (27%) as well as gravel pits and sand pits (46%).

- Most of this group thought the *Regulation respecting standards of forest management for forests in the public domain* did not help maintain or reconstitute the forest cover in cutting areas (24%), piling, lopping and sawing areas (32%), gravel pits and sand pits (57%) or forest camp fires (22%).

Observations

The available data are insufficient to evaluate the application of the *Regulation respecting standards of forest management for forests in the public domain*. However, the qualitative appraisal carried out through the surveys has revealed a certain number of deficiencies, in terms of both the application and the effectiveness of the provisions aimed at reconstituting the forest cover.

Ensuring compliance with natural stand dynamics, and minimizing or, if possible, eliminating pesticide use

The Department is presently unable to verify whether or not these objectives have been achieved, since the *Forest Protection Strategy* only came into force in 1995-1996. An initial review of the strategy will be carried out in 1999.

Helping maintain biological diversity

Although several monitoring activities have been undertaken, it is not possible to verify whether or not this objective has been achieved, since no quantifiable results are available. The monitoring and research program introduced in 1996 should eventually provide the information required to evaluate the situation.

Helping alleviate climate change

It is too soon to say whether or not this objective has been achieved.

6. CONTROLLING AND MONITORING FOREST MANAGEMENT ACTIVITIES IN THE PUBLIC FORESTS: MAINTAINING YIELDS, SCALING HARVESTED TIMBER, COMPLYING WITH LEGISLATION AND REGULATIONS, AND REPORTING

BACKGROUND

Before the forest system came into force, there were no control or monitoring mechanisms to verify and maintain forest yields. The same applied to the reporting process. However, under the Act, timber supply and forest management agreement holders are now required to comply with the allowable annual cut, and the Department is required to produce a five-year report on the state of the forests. Accordingly, mechanisms have been introduced.

With respect to scaling, practices have changed over the years. In some cases, the holders of harvesting rights scaled the timber they had harvested and the Department verified it. In other cases, the Department carried out the scaling itself. The latter practice became less common, however, when the forest system was introduced.

In addition, the legal framework used to allow the Department to fine offenders, generally by multiplying the prescribed dues. This practice disappeared with the adoption of the Canadian and Quebec charters of human rights and freedoms.

THE SYSTEM

Maintaining yields

Under section 42 of the *Forest Act*, a timber supply and forest management agreement holder is entitled to obtain an annual permit authorizing it to harvest a given volume of roundwood to supply its timber processing mill. In exchange, the holder must carry out the silvicultural treatments required to achieve the annual yield stipulated in the agreement. The silvicultural treatments in question are listed and quantified in the management strategy contained in the general forest management plan. The *forest Management Manual* lays down the evaluation criteria and describes the anticipated effects of the different treatments. Section

79 of the *Forest Act* sets out the conditions for salvaging timber damaged by natural disasters (forest fire, insect epidemic or **cryptogamic** disease).

Maintenance of yields is based on a fair estimate of the allowable annual cut, calculated using reliable methods and assumptions, as well as on up-to-date data. It is also based on an adequate management strategy (harvesting of stipulated volumes in appropriate stands, application of silvicultural treatments of the stipulated quality and scope, successful integration of forest management activities) and on the salvaging of timber damaged by natural disasters.

Scaling of harvested timber

Under section 26 of the *Forest Act*, forest management permit holders must scale the timber harvested, using one of the methods prescribed by regulation of the Government. The methods in question are described in the document entitled *Méthode de mesurage des bois – Instructions* (timber scaling methods – instructions). Scaling carried out by permit holders is verified by the Department in accordance with current verification standards. In this way, the Department is sure of receiving the cutting dues to which it is entitled.

Complying with legislation and regulations

Under the Canadian and Quebec Charters of Human Rights and Freedoms, individuals are deemed innocent until proven guilty, and are entitled to a full and complete defence. Legal action for failure to comply with the *Forest Act* and its regulations (*Regulation respecting standards of forest management for forests in the public domain*, *Regulation respecting the scaling standards for timber harvested in the public domain*, *Regulation respecting sugar bush management permits in the public domain*, *Regulation respecting forest management plans and reports*, *Regulation respecting plant permits*) is therefore subject to the *Code of Penal Procedure*.

Reporting

Under section 212 of the *Forest Act*, the minister must present a report every five years to the National Assembly on the state of the forests. The report describes the steps taken to protect and develop Quebec's forests, and the efforts made to acquire the knowledge and tools required to manage the forests.

In addition to the *Report on the State of Quebec's Forests*, the Department publishes a number of other reports, including a review of biodiversity, a review of the *Forest Protection Strategy* (to come), an annual report and a statistical portrait entitled *Forest Resources and the Forest Industry*.

RESULTS

Ensuring that the basis used to calculate the allowable annual cut is valid, and updating the data banks

Highlights

- 75% of management units and 50% of timber supply and forest management agreement holders were unable to test the simulation hypotheses for natural forests due to a shortage of data.
- 60% of management units and 50% of timber supply and forest management agreement holders were unable to test the other simulation hypotheses, including those relating to losses from timber use, due to a shortage of data.
- The information collected to update the survey data banks is insufficient to provide an accurate and complete description of the state of areas damaged by forest operations and natural disturbances.

Observations

Estimates of the allowable annual cut are distorted, partly because the simulation hypotheses are not sufficiently well-founded and the data bank updating process is incomplete.

Ensuring that the management strategy is applied, that the quality of the work done is satisfactory, that timber damaged by natural disasters is salvaged, and that forest management activities are integrated

Highlights

- The scope (area) of non-commercial silvicultural treatments (pre-commercial thinning, reforestation, drainage, etc.) is as stipulated in the general forest management plans.

Updating the FOREST SYSTEM

- Partial cutting areas are larger than anticipated in the general forest management plans.
- The volumes harvested are within the allowable annual cut.
- According to most of the departmental specialists consulted, the methods used to verify scaling do not allow the Department to check compliance with the principle of sustained yields.
- The departmental specialists also thought estimates of timber usage losses were deficient.
- Between 1990 and 1994, the Department's requirements concerning the application of silvicultural treatments were not enforced in between 9% and 15% of partial cutting areas.
- The quality of other silvicultural treatments is adequate.
- Only 30% of timber volumes damaged by natural disasters were covered by special salvage plans, and only 20% of the damaged volumes were actually salvaged. In addition, 66% of the volumes covered by the special plans were harvested, and salvage work was carried out in 50% of the areas covered by the plans.

Observations

With respect to the scope of the silvicultural treatments, the monitoring and control activities suggest that the management strategies have been implemented. On the other hand, they do not indicate whether or not the treatments have been applied on the right sites at the right time. The survey data do not inspire much confidence, because they are insufficient to allow proper planning of the treatments provided for in the general forest management plan strategies, within the one-year and five-year time frames. There are also some doubts as to scaling and the system's ability to account for all the volumes harvested. The scaling verification process and the estimates of usage losses during harvesting are both called into question. In the latter case, significant differences exist between the standards governing the allowable annual cut estimates on the one hand, and the scaling of harvested volumes on the other.

The quality of the silvicultural treatments seems, generally speaking, to be satisfactory, except for partial cuts, where a large number of treatments are refused. This may affect the future quality of the forests and lead to lost revenues for the Government, as well as to difficulties in marketing hardwood timber if the quality is not up to standard.

Only part of the timber damaged by natural disasters was salvaged between 1990 and 1994. In addition, forest management activities were poorly integrated.

Ensuring that the prescribed dues are collected

Highlights

- A third of the departmental specialists consulted thought the current scaling verification and control methods did not allow the Government to collect all the dues owed.
- The main problems mentioned included lack of manpower, the wide variety of tasks performed by the verification officers, rigid working hours, the absence of line and technical support for the verification officers, wasted expertise and experience, and the inaccuracy of timber loss measurements during harvesting.

Observations

The department has some doubts as to whether this objective has been achieved.

Ensuring compliance with the legislation and regulations

Highlights

- Very little objective, factual information is available on the application of the legislation and regulations. This is especially true of the *Regulation respecting standards of forest management for forests in the public domain*. However, the surveys revealed a high level of dissatisfaction among departmental representatives, especially as regards the provisions applicable to watercourse crossings (68%), intermittent watercourses (70%), sand pits (46%), forest roads (35%), piling, lopping and sawing areas, and under-utilization of timber (41%).

- Action appears to be taken against only a small percentage of offenders (around 10%).
- Offence management appeared to improve in the period 1990-1994. The factors observed included an increase in the number of files processed and convictions obtained, an increase in the number of fines, an increase in the number of civil suits and a reduction in the rate of offence file refusals by the ministère de la Justice (now less than 10%).

Observations

Although there has been a clear improvement in the offence management process, problems still remain, due in particular to the large number of offences committed, varying levels of tolerance in the regions, and the fact that the investigators are overworked.

Reporting to the population

Highlights

- The second report on the state of the forests was more complete than the first, but a number of subjects were not treated due to insufficient data.
- The Government has found it difficult to produce the various reports required, due in particular to the lack of integration and compatibility of the various databanks, the absence of a validation procedure for some specific data, and the failure to meet data input deadlines in some cases.

Observations

The reporting process is incomplete.

7. PROTECTING THE FORESTS AGAINST FIRES, INSECTS AND DISEASES

Fires, insect infestations and diseases are natural phenomena that have many very different effects on the forests, including the destruction of timber stocks needed by the industry. Measures must therefore be taken to protect the forests against these natural agents.

BACKGROUND

In Quebec, the prevention of forest fires has been a source of concern for more than a hundred years. As early as 1870, the province adopted an *Act respecting land clearance and the protection of forests against fires*, and the first protection organizations were created early in the 20th century.

Over the years, the forest area to be protected was increased, and the number of protection organizations had grown to 35 by the 1960s. In 1972, an in-depth reform led to the creation of seven conservation corporations with exclusive responsibility for protecting Quebec's forests from fire. In January 1994, the corporations and their Federation were merged in an effort to save money and improve efficiency, creating a single body known as the **Société de protection des forêts contre le feu**.

The structure to protect the forests against insects and diseases was introduced much more recently. In 1937, the Department of Lands and Forests created the entomology, meteorology and pathology offices, and a more structured detection system was introduced in 1952 with the creation of a federal forest research laboratory in Quebec City. In 1972, the governments of Canada and Quebec redefined their respective roles. The federal government became responsible for producing the annual report on insects and diseases, and the Quebec government for producing the special reports needed to plan, implement and assess direct control programs. Eleven years later, Quebec took over all screening, monitoring and control work, while the federal government concentrated its efforts on research. In 1990, the Québec government created the **Société de protection des forêts contre les insectes et les maladies**, which is responsible for preparing and implementing insecticide spraying programs. Finally, in 1994, Quebec adopted its *Forest Protection Strategy*, which makes prevention the cornerstone of the system to protect the forests against insects and diseases.

THE SYSTEM

The ultimate responsibility for protecting the forests against fire lies with the minister responsible for applying the *Forest Act*. The **Société de protection des forêts contre le feu** has the task of implementing control programs. The Société is funded by the

Department, the timber supply and forest management agreement holders and the owners of large private woodlots (more than 800 hectares).

The board of directors of the **Société de protection des forêts contre le feu** is composed of representatives of the funding bodies. The board decides on strategic orientations, prepares the provincial organization plan, adopts the budget and ensures that the objectives have been achieved. The Société's administrative structure also includes a number of regional protection boards composed of representatives from the forest community and forest users. It is the boards that are responsible for defining regional protection orientations.

Quebec has two separate fire protection zones. The *intensive protection zone* extends as far as the northern boundaries of the timber supply and forest management agreement territories. Forests located further to the north are covered by a *restricted protection* system. In this latter zone, interventions are carried out only when human lives are threatened, when valuable infrastructures may be destroyed or when the fire is likely to spread into the intensive protection zone.

The forest fire protection system is based on a four-step approach: prevention, detection, pre-suppression and suppression.

The prevention component encompasses the measures aimed at preventing forest fires caused by human activity. These include information, education and the control of some high-risk activities.

Fast detection of fires does much to improve the efficiency of fire fighting interventions. Québec's objective is to detect fires before they damage 0.5 hectares of forest. The general public is encouraged to report fires, and aerial detection is also carried out. Flammability indicators, the presence of lightning and weather forecasts are all taken into account when planning detection patrols.

Pre-suppression includes all activities carried out in advance of actual fire fighting. This step is designed to ensure that everything is ready when fire fighting finally begins.

Forestfire suppression activities cover everything from initial attack to total extinction. The quality of fire protection is assessed mainly on the basis of fire suppression results expressed in terms of burnt areas and costs.

As is the case for fires, the ultimate responsibility for protecting the forests against insects and diseases lies with the minister responsible for applying the *Forest Act*. The minister relies on cooperation from the timber supply and forest management agreement holders, and on the **Société de protection des forêts contre les insectes et maladies** for support in this task.

Funding for the task of protecting the forests against insects and diseases is provided by the Department, the timber supply and forest management agreement holders, and the owners of large private woodlots.

The system to protect the forests against insects and diseases is based on a three-step approach: prevention, detection and control. Prevention is based partly on forest management activities, and more particularly on harvest management, the protection of established regeneration and stand cultivation to reduce forest vulnerability to insects and diseases. All these activities must be included in the forest management plans submitted by timber supply and forest management agreement holders. Detection is based on a network of permanent, semi-permanent and temporary observation stations created to detect the main destructive agents, monitor their progress and measure their impacts. The network is maintained by the Department. The task of eradicating insects is the responsibility of the **Société de protection des forêts contre les insectes et maladies**, which plans and carries out aerial insecticide spraying and controls the results. The Department must approve all protection plans.

Finally, when a forest area is damaged by a natural disturbance, the Department draws up a special management plan to facilitate timber salvage. The area's agreement holders are obliged to implement the plan.

RESULTS

Ensuring the long-term survival of forest ecosystems

Highlights

- Since 1924, the average size of areas damaged by lightning fires has remained more or less stable.
- Insecticides are used in only a very small percentage of the total area damaged by insects.
- Special plans are drawn up to govern the salvage of timber damaged by natural disturbances. Salvage operations are no more harmful to the forest environment than normal harvesting operations.

Observations

Protection activities do not seem to have had a negative impact on the forests or their resources. Insects and fires continue to play their role as agents of forest renewal.

Ensuring that all forest resources are used harmoniously

Highlights

- No cases have been identified in which direct control or salvage activities have been detrimental to forest users.
- The population tends to be reassured when it sees forest fire fighting operations.
- The population views the failure to salvage timber damaged by natural disturbances as a waste of resources.
- Non-industrial forest users have not complained about the use of the biological insecticide *Bacillus thuringiensis* (Bt).

Observations

Despite the absence of quantitative indicators, we can nevertheless state that protection activities do not hinder the multiple use of the forests.

Maintaining economic activities

Highlights

- Spruce budworm epidemics have only a marginal impact on the allowable annual cut throughout Quebec (3%). However, their effect varies from one common area to the next, and may be as high as 30% in some cases.
- Spruce budworm epidemics have positive effects that have not yet been quantified (thinning, mature stand renewal).
- Every year, fires destroy only 0.1% to 0.2% of the intensive protection zone, but can nevertheless have a considerable impact on certain common areas.
- Despite technical improvements, the size of the area destroyed by lightning fires has not changed much since 1924. On the other hand, the prevention of fires caused by humans has been more successful since 1971, and the size of the area damaged by such fires has decreased.
- The prevention of fires and insect epidemics may delay natural forest renewal, and in some cases may even be conducive to larger disasters during high-risk periods.
- The special salvage plans covered only 30% of damaged volumes, and only 20% of the timber likely to be lost was actually harvested.

Observations

It is difficult to assess the effectiveness of the protection system, partly because the impacts of prevention activities and disturbance agents are unknown, and partly because the available information is not taken into account in forest yield assessments. In addition, unlike the insect prevention system, the fire prevention system is not governed by a comprehensive strategy based on protection objectives adapted to the forest-related, ecological, economic and social problems encountered, and the approach used is not included in the forest management strategy.

Making timber supply and forest management agreement holders responsible for protecting the forests against fires, insects and diseases

The forest companies, as members of the boards of directors of the protection organizations, help fund the forest fire, insect and disease protection systems and are involved in the decision-making process.

They are also responsible for implementing the special forest management plans governing the salvage of timber damaged by natural disasters. Timber supply and forest management agreement holders actually harvested an average of 66% of the volumes covered by the special plans.

8. INDUSTRIAL DEVELOPMENT

BACKGROUND

The growth of Quebec's forest industry is based to a large extent on the allocation of cutting rights to sawmill owners, and the abolition of the timber limits.

Before April 1, 1987, forest resource management was based on legislation passed several decades earlier which had not been amended to any significant degree prior to 1974. The State, which owned more than 80% of all forest lands, granted timber limits to forest companies, giving their holders the right of ownership over all the timber available in a given area. The companies were required to manage the area in accordance with the standards then in force. This system provided the limit holders with stable, long-term supplies, provided they complied with the regulations governing operations, scaling and the payment of dues.

By the end of the 1960s the situation had changed sufficiently to justify a legislative reform. The sawmill industry, faced with a growing demand, wanted to expand. At the same time, the timber volumes available in the timber limits, held mostly by paper mills, continued to be largely under-utilized. In 1974, the Government amended the Act to allow the timber limits to be terminated, in exchange for guarantees of timber supply, and to permit the creation of Crown forests that would provide the sawmill industry with the supplies it needed.

Over a ten-year period, the size of the timber limits was reduced by 32% and, thanks to the timber volumes that became available, the sawmill industry was able to increase its production by more than 250%, becoming the largest forest operator in Quebec. During the same period, the total harvest in the public and private forests increased from 23 million cubic metres in 1970 to more than 34 million cubic metres in 1979, with softwood timber accounting for 30 million cubic metres. The rampant under-utilization of 1970 had become a thing of the past.

THE SYSTEM

A number of programs have been introduced by the Department, in cooperation with other government bodies, to promote the development of the forest sector. However, the greatest contribution to the forest sector development has been made by the changes to the system of granting rights and the abolition of the timber limits.

RESULTS

Ensuring that maximum use is made of timber

Highlights

- Between 1990 and 1995, total roundwood consumption increased by 20% (from 29.5 million cubic metres to 35.5 million cubic metres).
- During the same period, the volumes harvested in the public forests and private woodlots increased by between 47.5% (63.5% fir-spruce-pine-larch) and 67% (87% fir-spruce-pine-larch).
- The volumes allocated in the public forests increased by 16%, from 30.9 million cubic metres in 1990 to 35.9 million cubic metres in 1996.
- On the other hand, some of the measures aimed at increasing the use of available timber (sales by auction, case-by-case interventions, etc.) had very little impact.

Observations

Maximum use of timber was considered to be the main industrial development objective of the 1987 forest reform. The review suggests that the results have been positive.

Promoting optimal use of timber

Highlights

- Very little information is available on timber use by tree type. However, optimal timber use can be promoted by ensuring that several different types of users share the same common area, by integrating cutting activities, and by encouraging agreement holders to exchange timber.
- Between 1990 and 1995, total timber consumption increased by 25%, and total roundwood consumption by 19.4%. This suggests that fuller use has been made of the timber harvested, and this has translated into a 38.3% increase in by-product use.
- Between 1990 and 1995, the ratio of roundwood consumed/1,000 board feet fell from 5.21 cubic metres to 4.88 cubic metres in the softwood lumber sector.

Observations

Roundwood is not always used optimally, but progress has been made in this respect.

Providing forest sector companies with secure supplies

Highlights

- Possession of a timber supply and forest management agreement seems to be important in financial circles, since the percentage of agreements used as guarantees has more than doubled in recent years, increasing from 11.8% in 1991 to 26.7% in 1995.
- Other administrative measures were provided to ensure security of supplies. These included the auxiliary timber supply, timber reservations, etc.

Observations

Possession of a timber supply and forest management agreement giving access to secure supplies is undeniably beneficial to the development of the forest industry. However, there is reason to question the impact of supply security on the possibility of promoting optimal timber use.

Promoting the consolidation of forest sector companies

Highlights

- Between 1990 and 1995, the number of wood processing companies fluctuated between 1,000 and 1,150.
- During the same period, average mill consumption increased by 23.2%. However, the increase tended to be proportionally smaller in larger companies.
- The industrial timber consumption structure changed very little between 1990 and 1995. The relative share of mills consuming 100,000 cubic metres of timber or less remained stable, as did the share of all other mills.

Observations

Very few structural changes occurred in the distribution of industrial consumption between companies of different sizes. However, the smaller companies increased their consumption more than their larger counterparts.

Helping maintain the competitive position of Quebec's forest sector companies

Highlights

- The recent increases in dues and other amounts payable under the forest system (expenditure for forest protection, forest planning, contributions to the forest fund, etc.) did not affect the competitive position of most sectors of the forest industry, which improved in the period 1984-1995.
- In the lumber and panel sector, the competitiveness of Quebec's industry increased in terms of both timber costs and total production costs.
- In the newsprint sector, the industry's situation improved in comparison with that of its competitors in British Columbia and the north-eastern United States. However, it deteriorated in comparison with that of companies from the southern United States.

Observations

The forest system has helped maintain the competitiveness of Quebec's industry. However, certain benefits, such as supply security, should be taken into account when assessing the competitive positions of the different sectors.

Promoting maximum timber processing

Highlights

- No timber supply and forest management agreements have been granted to companies outside Quebec.
- In the last ten years, production has increased considerably in all industry sectors – for example, by 30% in the sawmill industry, and by 18% in the pulp and paper sector. Shipments of waferboard and MDF panels have increased by 166% and 98% respectively.

Observations

It is difficult to draw a direct link between the growth of industrial production and the implementation of the forest system, but many of the measures introduced have undoubtedly had an impact.

Promoting optimal timber processing

Highlights

- The element that increased the most in the forest products industry structure between 1990 and 1995 was the relative weight of the panel sector (from 3.9% to 5.2% of total consumption).
- The sawmill industry became the main consumer of timber, accounting for 52.7% of total consumption. In contrast, the share of the pulp and paper sector fell from 50.6% to 40.8% between 1990 and 1995.
- Allocated volumes increased by 16.7%, from 30.8 million cubic metres in 1991 to 36 million cubic metres in 1997. Allocations increased by 44.4% and 100.9% respectively in the sawmill and panel sectors, and fell by 40.5% in the pulp and paper sector.
- In 1997, the sawmill sector obtained 81.0% of all allocations, the pulp and paper sector 9.9% and the panel sector 7.7%.

Observations

So far, the forest system has been flexible enough to adapt to structural changes in the industry.

Increasing the economic and social contribution of timber production and processing activities

Highlights

- Despite increases in production levels, the number of processing sector jobs has dropped significantly.
- Since 1984, 9,500 jobs have been lost (a reduction of 13.3%) in the forest products processing sector. Ninety-four percent of these jobs were in the pulp and paper sector. Technological developments and structural rationalizations are the main culprits.
- The number of secondary processing jobs increased by 6.3% (approximately 1,895 additional jobs).
- Despite this, the forest sector has remained dominant, generating 14.5% of all manufacturing jobs in Quebec, and 20% of all Quebec's exports. The most recent data show an improvement in the employment situation throughout the forest products industry, and especially in the secondary processing sector.

Observations

The forest sector has retained its importance in Quebec's economy. However, it is still subject to cyclical and long-term fluctuations in the demand for finished goods.

Promoting regional development

Highlights

- Job losses in the processing sector have had a significant impact in the regions whose economies are dominated by the forest industry.
- All the regions except the Cantons-de-l'Est have seen an increase in the use of timber from their public forests (volume allocated compared with allowable annual cut).
- In 1990, between 90% and 110% of allocated volumes were processed locally in four regions out of ten, compared with six out of ten in 1995.

Observations

Overall, inter-regional differences in timber processing declined between 1990 and 1995.

9. MANPOWER IN THE PUBLIC FORESTS

THE SYSTEM

In adopting the Forest Act, the gouvernement du Québec was attempting to tighten the forest management framework. Although improving the manpower situation was not one of the direct goals of the forest system, its clear impact on forest sector development would necessarily be reflected in the employment figures.

The effects of the forest system have been examined from four standpoints: employment, working conditions, organization of work and labour relations.

RESULTS

Employment in the forest sector

Highlights

- Between 1987 and 1994, the total workforce assigned to non-commercial silvicultural work increased by 20% per year, or by 1,165 person jobs per year over seven years.
- On the other hand, the number of reforestation jobs decreased in the same period. This was due mainly to the completion of reforestation work in areas that were poorly regenerated or not regenerated prior to the adoption of the Forest Act, and to a reduction in the reforestation objective from 250 million to 150 million plants per year.
- In 1994, a third of all jobs in the public forests were in non-commercial sectors (1994).
- Between 1989 and 1994, the number of harvesting jobs decreased slightly, mainly due to improvements in operational mechanization. The volumes harvested by entirely mechanical means increased from 43% to 79% of the total. Volumes harvested in the public forests increased from 20 million cubic metres to 30 million cubic metres in the period under consideration. Productivity also increased significantly, from 26 cubic metres per person-day in 1987 to 34 cubic metres per person-day in 1994.

Observations

The main effect of the coming into force of the Forest Act was without question an increase in the total number of jobs in the forests. The requirement to comply with the sustained-yield principle led to an increase in the amount of silvicultural work done (especially release cutting and pre-commercial thinning). However, the available employment data are incomplete and it is extremely difficult to obtain reliable figures on the forest sector workforce.

Working conditions in the public forests

Highlights

- Forest operations are defined differently in the Forest Act and the Labour Code. In the Forest Act (section 3), the term is used to describe both commercial and non-commercial operations, whereas in the Labour Code it refers only to commercial operations. On the other hand, sections 242 and 256 of the Act, aimed specifically at maintaining the *status quo* for timber harvest and transportation workers, explicitly excluded workers assigned to other forest management tasks.
- The working conditions (pay, etc.) of harvest workers are more advantageous than those of workers in non-commercial fields.
- As 70% of the companies carrying out work in the public forests are privately owned, the working conditions of their employees are not known. In fact, only 10% of forestry workers are hired directly by timber supply and forest management agreement holders.
- The number of industrial accidents and employment injuries in the forests declined between 1987 and 1994, thanks mainly to improved mechanization. According to the **Commission de la sante et de la sécurité au travail**, however, the forest sector is still one of the employment sectors presenting the highest risk.
- Half of all forest workers live at a distance from their homes, so as to be close to their workplaces. Non-commercial workers obtain poorer housing conditions.
- The number of workers who owned their machinery increased significantly between 1987 and 1994.

- Many non-commercial workers receive lump sum payments. Their average weekly pay is between **\$640** and \$655. Harvest workers, most of whom are salaried, earn 15% more. This difference in remuneration, combined with the more seasonal nature of the non-commercial work, explains the difference between the average annual incomes of these two groups. Harvest workers earn an average of \$31,286 while the others earn between \$12,848 and \$21,113.

Observations

The forest system was not introduced to dictate conditions of employment in the forests. Sections 242 and 256 of the *Forest Act* were aimed solely at maintaining a certain level of consistency between the union accreditation reference areas after termination of the timber limit system and the areas covered by timber supply and forest management agreements.

Organization of work

Highlights

- The number of contractors working in private woodlots (mainly road construction, harvesting and transportation), forest cooperatives (mainly non-commercial work) and joint management groups (mainly non-commercial work) has increased considerably since 1987.
- In 1987, 32% of the forest sector workforce was employed by the paper mills, compared with just 10% eight years later. The decline can be explained in part by the reduction in the volumes of timber allocated to the paper mills.
- Very small enterprises (five person-years and less) now make up 50% of the employer group, while small and medium-sized enterprises (between five and 25 person-years) make up 30%.

Observations

The fact of transferring responsibility for silvicultural work to the timber supply and forest management agreement holders contributed directly to the increase in subcontracting, although the phenomenon of subcontracting already existed before the forest system came into force.

Section 225 of the *Forest Act* enabled the forest cooperatives to stabilize part of their workforce (harvesting work) and to invest considerable sums in the acquisition of the machinery they needed to develop. However, not enough data are available on the companies hired by the timber supply and forest management agreement holders to carry out work in the public forests.

Labour relations

Highlights

- Since 1987, the rate of unionization among forest workers has plummeted, mainly due to the growing use of subcontractors, the transfer of forest activities from the paper mills to the sawmills, changes in mill supply methods and the growing number of owner-operators.
- Most of the unionized workers are involved in harvesting activities.

Observations

According to the forest industry, workers have not left the unions. Most of the decline in unionization can be attributed to the fact that new workers, involved mainly in non-commercial activities, do not join a union. The companies said that, despite the reduction in the number of harvest-related jobs (cutting and transportation), the percentage of unionized employees has in fact increased.

According to the unions, section 256 of the *Forest Act* did not allow union accreditations recognized before the forest system came into force to be maintained. This is due to the fact that the areas covered by the timber supply and forest management agreements are not the same as those covered by the former timber limits. The question of actual employer arose with regard to union accreditation in common areas shared by several timber supply and forest management agreement holders.

10. ACHIEVING THE OBJECTIVES OF THE FOREST SYSTEM

The forest system has five main objectives: to protect the forests and promote the multiple use of forest resources, to ensure compliance with the allowable annual cut, to make forest companies accountable, to promote the development of the forest sector and to protect the public interest. The forest system review reveals that these objectives have been partially achieved.

Protecting the forests and promoting multiple use of forest resources

The forests and their resources have received much better protection since the forest system was introduced. The main methods used to provide immediate and long-term protection for the forests include land use plans for lands in the public domain, the *Regulation respecting standards of forest management for forests in the public domain*, the *Forest Protection Strategy* and the mechanisms introduced to monitor forest ecosystems and measure atmospheric pollutants.

Before the adoption of the *Forest Act*, the Department had very little power to force the forest companies to comply with its directives concerning the protection of the forests and the most essential forest components, such as riparian environments and wildlife habitats. This situation was remedied by the adoption of regulatory provisions.

The *Regulation respecting standards of forest management for forests in the public domain*, adopted in 1988, contains provisions relating, among other things, to the protection of water quality, the routing and construction of roads, the protection of wildlife habitats, and the protection of forest regeneration. The regulation was revised in 1996, following the adoption of the *Forest Protection Strategy*. Tougher standards were introduced at that time to govern elements such as the protection of lakes and watercourses and the size of cutting areas. So far, however, the Department cannot confirm that all forest management permit holders have complied with all the provisions of the regulation, since it lacks effective control mechanisms.

In 1996, the Department also undertook an assessment of the regulation's effectiveness, beginning with an examination of the provisions that appeared to be the most difficult to apply. Improvements could be made in particular to the provisions concerning the protection of intermittent watercourses and those governing the installation of watercourse crossings.

The *Forest Protection Strategy* is still too recent for its impact to be clear. Nevertheless, the Department has undertaken to issue a public report in 1999 on the results obtained since the strategy came into force.

Compliance with the allowable annual cut

The *Forest Act* includes the obligation to comply at all times with the allowable annual cut. The allowable annual cut is equal to the maximum volume of timber that may be harvested in perpetuity from a particular area without reducing the production capabilities of the forest, taking into account the forest management strategies developed.

Accordingly, a timber supply and forest management agreement may be granted where the allowable annual cut is sufficient. The person who signs the agreement is required to adopt a silvicultural strategy that will enable the forest production objectives to be achieved.

Forest management activities may also be authorized in forest reserves, provided the allowable annual cut is not exceeded. For example, a forest management contract may be granted to a municipality or regional county municipality.

Since the forest system came into force, timber supply and forest management agreements have been granted on the basis of the allowable annual cut for all harvestable species. The allowable annual cut is also considered at the five-year renewal stage, and where necessary the allocations are revised. In fact, the Act stipulates that the allowable annual cut may be recalculated in light of information that becomes available during five-yearly reviews – for example, new forest survey data.

In some agreements, allocations were actually reduced at the review stage because the allowable annual cut had been revised downwards. In other cases, the allowable annual cut has been increased following recalculations, enabling the Department to consider some or all of the new supply applications received.

Existing data also show that harvesting is consistent with the allowable annual cut. Moreover, the silvicultural work stipulated in the forest management strategies of agreement holders appears to have been carried out. Such work is aimed at achieving pre-established forest yields. Generally speaking, silvicultural work is also carried out in compliance with the Department's instructions concerning proper methods.

Finally, both softwood and hardwood yields improved slightly throughout Quebec in the period 1991 to 1996.

However, a more detailed analysis at the common area level **reveals** a certain number of problems.

In a significant number of cases since 1994, allocations have temporarily exceeded the allowable annual cut. This situation is due to the fact that the five-yearly extensions of timber supply and forest management agreements are not synchronized with the approval of the general forest management plans. In fact, it sometimes happens that allowable annual cuts are reduced after preparation of the general forest management plans. In such cases, allocations will exceed the allowable annual cut from the time the agreement is extended until the time the management plan is approved.

When issuing forest management permits, the Department always ensures that harvests are consistent with the new allowable annual cut calculation. However, in cases where allocations exceed the allowable annual cut — even temporarily — the letter of the law is not being upheld. Such situations are also likely to create inequities between agreement holders in the same common area, since some holders will be forced, temporarily, to absorb the reduction, while others will not.

In nearly half the common areas, it is presently impossible to know if production objectives have been achieved. The geographical boundaries of those areas have been changed to such an extent that it is now extremely difficult to see whether or not local yield objectives have been met. A significant drop in softwood yields has been observed in 12% of the common areas, and an equally significant drop in hardwood yields has been observed in 8% of the areas.

A number of improvements to the allowable annual cut calculation process have been identified. These include enriching simulation hypothesis documentation, updating forest survey data, and giving more weight to the effects of natural disturbances such as forest fires and insect infestations.

Discrepancies have also been observed between the standards used to assess the allowable annual cut and those governing forest management operations. This suggests that the volumes lost during harvesting may be greater than expected.

Accountability of forest companies

Timber supply and forest management agreement holders have fulfilled their obligations to produce general, five-year and annual forest management plans. On the other hand, the plans are often modified after they come into force. In most cases, the modifications are necessary because the original plans were of poor quality. The problems observed are related mainly to the lack of sufficient documentation on forest management problems, leading to sometimes inadequate management strategies, invalid allowable annual cut calculations and questions as to the exclusive responsibility of agreement holders in this respect. Also problematical are the incomplete nature of the survey data collected and the failure to coordinate the activities of agreement holders in the same common area, contrary to the provisions of the *Forest Act*.

The agreement holders, for their part, believe the Department's management is too rigid. For example, they are critical of the complex requirements concerning the form and content of forest management plans. In their view, this results in a large number of modifications that would not otherwise be necessary.

Modifications to the plans appear in some cases to be inevitable, for example to take into account field observations or fluctuations in the demand for wood products. However, the large number of modifications seems to suggest a lack of preparation on the part of agreement holders. This situation is worrying because it raises doubts about the achievement of forest production objectives. In addition, as the general and five-year plans are subjected to an information and consultation procedure involving the general public and the regional county municipalities, the credibility of the consultation process may be compromised if it is discovered that the plans have not been prepared with sufficient rigour.

On the other hand, agreement holders have fulfilled their responsibilities with respect to the public consultations on their draft general and five-year forest management plans. In fact, in surveys concerning the application of the forest system, the regional county municipalities mentioned the level of cooperation received from agreement holders. They also mentioned the limits of the existing procedures.

Developing the forest sector

Overall, the current system is contributing to the development of the forest industry. From the very beginning, the abolition of the territorial exclusivity enjoyed by certain companies freed new volumes of timber and hence promoted the development of the sawmill and panel sectors.

The granting of timber supply and forest management agreements **has**, for its part, helped secure forest supplies, allowing the mills to plan their activities in the longer term and obtain financing more easily for their projects. **The** mechanisms used to grant, amend and terminate agreements have also proved to respond adequately to the changing needs of the timber processing mills.

Other indicators also tend to show that better use is now made of the timber resource. In fact, an increase in total roundwood consumption, an improvement in allocation use rates, a more complete use of roundwood and by-products and an increase in the percentage of timber sent to the lumber mills **have** all been observed. The independent sawmills, for their part, are clearly more efficient than those owned by

paper mills when it comes to reducing the production of chips and shavings. Finally, a non-negligible percentage of public forest timber allocated every year by agreement is not harvested.

Protecting the public interest

Under the provisions of the *Forest Act*, a timber supply and forest management agreement is granted if the allowable annual cut is sufficient, and if it is in the public interest to do so. The Act also states that the boundaries of the territory covered by an agreement may be changed if this is in the public interest. However, it does not define what it means by 'the public interest'. Consequently, the notion must be assessed on a case-by-case basis.

The Act also considers the public interest in a much broader sense, since it provides for the introduction of forest conservation measures and measures to protect the forests against natural disturbances. It also imposes obligations on the holders of timber supply and forest management agreements, forest management contracts and forest management permits. Moreover, it introduces a requirement to circulate information on forest management plans, provides for public consultations on the content of the plans, defines offences and establishes recourses in cases of non-compliance with agreement conditions or current regulations. Finally, it requires the Department, the Government and the holders of rights to render accounts, and stipulates that a public register of timber supply and forest management agreements must be kept up-to-date.

Generally speaking, the public interest is considered to a much greater extent than was the case before the current forest system came into force. The most significant progress has been made in terms of the allocation and use of timber and fibre from all sources, as well as the dues payable for timber harvested from the public forests, forest conservation, and consultation of the regional county municipalities on the forest management plans submitted by timber supply and forest management agreement holders.

Nevertheless, improvements are still needed, especially in the control and monitoring of the application of the *Forest Art* **and regulations, the rendering** of accounts, public participation in the fixing of forest management objectives, and the holding of consultations on forest planning.

CONCLUSION

Generally speaking, the forest system has allowed the main objectives of its implementation to be achieved at least partially. The system is a clear improvement over the situation that used to prevail, but significant progress is still required to correct the deficiencies identified and face up to the challenges of the 21st century.

Part B
Forest
Management Issues



Forest management issues are closely linked to the requirements of sustainable development. Sound forest management practices must take into account the vitality of the forest ecosystems, protecting and maintaining them for the benefit of all living creatures as well as for the development of **good** social, cultural, environmental and economic prospects for present and future generations.

Sustainable forest management requires :

- the adoption of management and development approaches that allow consideration for the forest as an ecosystem, the maintenance of diversity, the protection of the natural processes that occur in the forest, with a constant focus on the economic use of forest resources;
- recognition for the wide range of social, environmental and economic benefits that forests provide for the population, individuals and businesses, and a constant effort to maintain and increase those benefits.

The forests are an extremely valuable heritage, and as such must be managed carefully and fairly. The forests must be able to continue to play their ecological role, and their biological diversity must be preserved. Forest resources must be managed in an integrated way, to produce goods and services. The socio-economic spin-offs from the use of the forests, especially in terms of **jobs** and revenues, must not only **be** maintained, but must also be enhanced for the well-being of local communities and society in general.

Sustainable forest development means using the resources available for economic purposes. However, the conditions in which this must be done are changing. A growing number of countries and consumers are demanding products that meet environmental standards. The need to satisfy this demand is impacting increasingly on the commercial strategies of public and private companies alike. To maintain their presence on the market, companies must be able to prove that their products are manufactured using technologies consistent with the concept of sustainable development.

Sustainable development takes into account social values and individual quality of life, and is based on a fair division of resources and wealth within communities. Accordingly, the communities should be able to participate in decisions concerning the use of the forest and should receive a significant share of the spin-offs.

It is also important to realize that many communities depend mainly, and sometimes exclusively, on the forests. The forest management approach adopted must therefore allow these communities to survive and prosper. Sustainable forest management thus offers prospects for all communities whose development is linked to the use and production of forest resources.

There is a growing pressure to improve the situation of Native communities. Governments and industries alike are being questioned on what they are doing to consider Native values and involve Native people in the management and use of forest lands and resources.

Many of the demands made by Native communities are similar to those made by rural communities, in that their goal is to improve living conditions. Sustainable development must therefore not only satisfy these demands, but also promote a closer relationship between Native populations and local communities in pursuit of shared objectives.

The *Forest Act* was amended in 1996 to stipulate that sustainable forest management must satisfy six main criteria. It must be conducive to the preservation of biological diversity, the maintenance and improvement of the condition and productivity of forest systems, the conservation of soil and water resources, the maintenance of the function of forest ecosystems as a component of global ecological cycles, the maintenance of the multiple socio-economic benefits society derives from the forests, and the giving of proper consideration, in selecting forms of development, to the values and needs expressed by the populations concerned.

Also in 1996, the *Act respecting land use planning and development* was amended to stipulate that the regional county municipalities may, when reviewing their development plans, establish policies with a view to instituting sustainable management in the private woodlots within the meaning of the *forest Act*. As a result, the municipalities can now take concrete steps to ensure that the forests in their regions are used in a sustainable way.

Nevertheless, other legislative and regulatory changes may become necessary to help achieve the goal of sustainability.

In their capacity as forest managers, the *gouvernement du Québec*, private woodlot owners, other public bodies and private organizations must develop a culture in which the notion of sustainability is ever-present. The mission of these organizations must no longer consist simply in meeting their own needs or those of a target customer group; on the contrary, it must be based on environmental, social and economic concerns, in a global perspective and with a long-term vision.

The updating of the forest system must therefore express this need to achieve sustainable development. It should allow a form of forest management:

- for and by the people,
for the biosphere and the natural environment,
- for resources and for the economy.

ISSUE

- Ensuring that the forest system is consistent with the precepts of sustainable development.

1. FOREST MANAGEMENT FOR AND BY THE PEOPLE

To achieve sustainability, the communities and individuals whose well-being and prosperity depend on forest development must be involved in forest management. The socio-economic spin-offs from the use of the forests must be optimized for the benefit of the population in general and the local or Native populations living in the forest environment.

CONTEXT AND BACKGROUND

Forest management for the people

In Québec, the outlying regions are getting poorer and the fabric of rural life in the countryside is tending to disintegrate. The number of jobs available in farming and forestry continues to drop, particularly as a result of mechanization and automation. Because of the precarious state of public finances, the State cannot make the investments needed to ensure optimal development of the forest resource. In addition, there is demand from local communities that the income generated by forest activities be shared in a fairer way, and some even question the validity of the rights granted by the State. Lastly, an increasing number of elected municipal council members would like to see changes in the way the forests in their area are managed to increase the benefits for their communities. They rely on forest resources to fuel local development.

Management by the people

The experience of sector-based, centralized and sometimes poorly-integrated management of forest resources has led to calls from communities to increase the level of local participation in the management of the land and its resources. Key players at the local and regional levels are worried about the importance given to business interests, which are responsible both for timber production and timber processing.

The partnership between these major economic players and the Government, acting as the manager of the forests in the public domain, also causes unease, given the current situation of public finances. A lack of information on major forest issues prevents citizens from participating fully in the management of the forests.

In addition, Native communities are asking to play a more active role in the economic activities relating to the exploitation of the forest resource. They would also like to share their vision of forest development with other players, and obtain the assurance that their values and needs will be taken into account when decisions concerning forest development are made.

MAIN ISSUES

- Increasing the level of input from communities and individuals whose prosperity and well-being depend on maximizing potential as part of the forest management process.
- Optimizing the social and economic spin-offs generated by forest resources for the general population as well as for the regional, local and Native communities that depend on the forest.

SPECIFIC OBJECTIVES

- To allow the communities to benefit from the results of forest resource development.
- To mobilize the communities around a variety of forest management projects.
- To give due consideration to the values, needs and activities of Native people when selecting development options.
- To satisfy social expectations, taking into account commercial and non-commercial values such as heritage, environment, landscape, ethics and culture.
- To be transparent and promote public participation.

2. FOREST MANAGEMENT FOR THE BIOSPHERE AND THE NATURAL ENVIRONMENT

The contribution made by Quebec's forests to the major planetary cycles, such as the water and carbon cycles, must be safeguarded, and the ecological function of all forest ecosystems must be protected.

CONTEXT AND BACKGROUND

The population of Quebec and various specialized groups have repeatedly emphasized the importance of the ecological role played by Quebec's forests, in particular in terms of maintaining the quality of the environment. Species and ecosystem protection, sustainable resource use, sound management practices and smaller felling areas are among the points most frequently raised.

An increasing number of stakeholders have come to consider that the traditional ways of protecting ecosystems and forest resources, such as eco-parks and ecological reserves in particular, are not sufficient to meet the needs for forest protection. The perception of these needs varies, however, depending on whether they are expressed by an urban or rural population. As a whole, though, the population of Quebec has clearly indicated its desire to ensure the protection of environment quality and of all forest resources.

In addition, the scientific community and the organizations involved with conservation have shown that an increase in human activities and certain technological developments, such as the introduction of genetically-modified living organisms into an ecosystem, can pose a serious threat to certain forest ecosystems.

New environmental requirements have begun to emerge at the international level, especially since the early 1990s when the first concerns were voiced regarding the loss of biological diversity. Old-growth forests, rare stands of trees, and areas that shelter endangered species have also become a focus for concern.

The **Earth Summit** held in Rio de Janeiro, which led to the conclusion of international conventions on biological diversity and climate change, also acted as a catalyst for sustainable development. The countries that signed the conventions are coming under pressure to introduce management methods consistent with their commitments.

At the same time, commercial and environmental requirements are tending to stress the need to use resources economically, and to rely more on the use of recycled fibres. A reduction of loss and wastage, the re-use of residues and lower energy consumption are now expected in both harvesting and processing operations. Export companies seeking to retain or increase their market share are compelled to adopt management methods that protect the environment and reflect a sustainable approach to resource exploitation. They must also work to prevent the loss of biodiversity, the destruction of fragile or exceptional environments and the deterioration of natural processes, soils and water, by using methods that reduce the stress on the environment and allow the vitality and productivity of all ecosystems to be maintained.

MAIN ISSUE

Managing Québec's forests in a way that safeguards their contribution to major ecological cycles and that protects the ecological function of forest ecosystem.

SPECIFIC ISSUES

- To help preserve the major planetary cycles and the ecological functions of forest ecosystems.
- To protect ecosystems, species and genetic diversity, with particular attention to exceptional, representative and fragile ecosystems as well as threatened or vulnerable species.
- To encourage economic resource use by promoting recycling, residue recovery, waste reduction and energy savings.

3. SUSTAINABLE FOREST MANAGEMENT FOR RESOURCES AND FOR THE ECONOMY

The promotion of economic prosperity and job creation requires that the resources of the forest environment be developed and put to the best possible use.

CONTEXT AND BACKGROUND

The timber processing industry and employment

The development and processing of timber are one of the mainstays of economic development in Quebec as a whole and in the outlying regions in particular. Quebec's timber processing industry is strongly export-based and, with the emergence of new producers in various parts of the world and the liberalization of trade patterns, it must retain its competitive advantage if it is to survive. This will mean adapting to new markets and new needs, and introducing innovative technology at all stages in the production process. These changes, which affect the whole of the industrialized world, have a negative impact on employment. Increased competition in traditional timber sectors, as in other industrial sectors, often means fewer new jobs and fewer jobs in general.

The steady erosion of employment in the timber processing industry affects the whole of Quebec, but has been felt most acutely in rural regions where the timber industry has always been the main economic activity and thus the main source of wealth. Despite the presence of highly competitive businesses, the economic situation in many regions is deteriorating as jobs are lost. Specialized workers move out, regional dynamism suffers and the communities that depend on the forest sector become poorer. To solve these problems, it is important to develop the secondary processing industry and to diversify the local economy.

The traditional timber processing industry currently consumes a major portion of Quebec's forest production, and any changes made in response to the need to protect the environment or to diversify use could lead to a reduction in the forest areas available for commercial production. If employment-generating businesses are to be maintained and extended, and if the contribution made by the forest sector to the national and regional economies is to be preserved, timber production will have to be optimized in the most productive areas in order to increase the economic spin-offs from the timber processing industry.

Given current yields, Quebec's forest production could be increased significantly, in terms of both quantity and quality, in the short and medium terms, by targeting the optimum development of the areas in commercial production.

In addition, an increase in the spin-offs resulting from timber processing will require a diversification of both markets and products. The goal must be to develop a leading-edge industry, in terms of technology and the production of high value-added products. Secondary processing offers attractive possibilities for development: the manufacturing of high value-added, hi-tech timber products in Quebec has the potential to create a large number of jobs.

Engineered timber products such as beams, spliced studs, composite flooring products, wood-cement sheathing and laminated lumber are all examples of the new generation of products. This sector is undergoing strong growth and provides opportunities for new businesses and new jobs. The secondary processing of softwood lumber into fencing or bedding is another promising area for job creation.

Maximizing the use of all forest resources

The use of the forests for recreation, tourism and outdoor activities has already led to the creation of a significant number of direct and indirect jobs. A better use of all resources in the forest environment is thus one of the elements that will lead to an increase in employment.

Landscapes, streams and lakes, wildlife, and vegetation are essential elements for tourism and outdoor activities. Wildlife also generates other activities such as hunting, fishing and trapping.

In this connection, it is important to note that timber harvesting operations have a major impact on the forest environments, particularly in areas where various forms of even-age stand management are practised. Recreational and tourism activities create a considerable number of jobs and also offer scope for further development. Many direct jobs are created in the forest itself, when sites are made accessible and facilities are constructed, and in the reception services provided by wildlife reserves, outfitting operations, ZECs and provincial and national parks. Other new jobs may be created in connection with the harvesting of forest plants for non-timber production purposes, such as the collection of essential oils and mushroom harvesting.

Sustainable forest management necessarily involves the harmonization of forest activities with recreational and tourism activities, with the agreement of the communities, and especially the Native communities, concerned. Better service integration, and perhaps an integrated approach to resource management, will be required if the forest environment is to be put to better use and to yield its full potential in terms of job creation.

International pressure for sustainable development

The expectations of the population of Quebec regarding forest conservation are reflected in international trends. Timber exporting countries must, to maintain their current markets and expand into new markets, introduce management methods consistent with the principles of sustainable forest development. Business and industry will also find it to their advantage to

implement recognized, reliable environmental management systems. Around the world, various attempts have been made to define the parameters for sustainable forest development, and the results will have a strong influence on the methods used to develop and use forest resources both in Quebec and elsewhere. If Quebec is to retain its advantages and its specificity, and maintain its control over the main levers for economic development, it must be able to demonstrate its expertise in the field of sustainable development at the national and international levels.

MAIN ISSUE

- Continuing to produce wealth and create jobs by developing all forest resources and putting them to the best possible use.

SPECIFIC ISSUES

- To develop and diversify the companies that manage and use forest resources.
- To improve resource processing, and develop new markets and high value-added products.
- To consolidate rural communities, in particular by using and developing forest resources in the best possible way, and by maintaining and diversifying job-creating activities.
- To improve the competitiveness of Quebec's forest resource processing industries.
- To adapt management methods and systems, to satisfy the rules and requirements of sustainable development.
- To promote the know-how and special features of Québec's forest sector at the international level.
- To develop management methods that promote the best possible use and development of forest sites.

4. THE IMPLEMENTATION OF SUSTAINABLE FOREST MANAGEMENT

If greater social, environmental and economic benefits are to be derived from the forests, they must be used carefully and attention must be paid to their long-term development. In addition, they must be managed in a way that allows the integration of the other activities for which they provide the setting. The approach selected must be based on specific methods, and appropriate mechanisms must be designed to assess the results achieved.

CONTEXT AND BACKGROUND

Sustainable development is based on three objectives: environmental protection, economic development, and increased benefits for the population. For it to become a reality, all the resources of the forest environment must be developed and used in the best possible way. In addition, if sustainable development is to have a positive impact on quality of life, the general public must be involved at all levels of the management process to ensure that the decisions made and actions taken reflect their expectations. This will necessarily involve the development of cooperative working methods in public and private organizations, among environmental specialists and specialists in resource development, and within the general public. It will also be important to agree on a single definition of sustainable development of forest resources and the forest environment!

The implementation of sustainable development will require the setting up of a planning, implementation and monitoring process that is able to provide an overview of the forest environment based on accurate and exhaustive information. Research, development and follow-up activities are essential ingredients in data collection. Management processes also generate masses of information that must be used to ensure that objectives have been properly formulated and that they reflect the conditions and potential observed on-site. Data collection and data processing are both operations that require major investment.

Besides the funding required to enhance knowledge about the forest, sustainable development also requires sufficient, stable funding for forest resource development activities and, more specifically, for the silvicultural methods applied to ensure that production objectives are met. Two possible sources of funding exist: duties collected by the State on the actual value of the resource harvested, and the investment of some of the revenues generated in development activities, with the remainder constituting the forest sector's contribution to Quebec's collective wealth.

MAIN ISSUE

- Developing an overall view of the forest environment and sustainable forest management, with a focus on stable financing.

SPECIFIC ISSUE

- To promote sustainable development as a general approach, and an overall view of the forest environment based on a broad, long-term conception of environmental, social and economic concerns shared by public and private organizations.
- To reinforce the State's contribution in the implementation of integrated management methods for the resources of the forest environment.
- To establish the conditions and the financial and other resources needed to ensure sustainable forest management.
- To increase the pace of research and development, especially in the area of technology.
- To set up mechanisms to adapt forest management practices and to assess the progress achieved in integrating all dimensions of sustainable development

Part C Recommandations



Updating the FOREST SYSTEM

The implementation of Quebec's forest system and the coming into force of the *Forest Act* and regulations have improved the way in which the public forests are managed and exploited, since:

- timber and pulp are used more efficiently;
- the forest environment receives more protection; forest management has been intensified;
- a broader range of individuals and organizations are involved in forest management;
- timber resources are used for many different purposes;
- the public forests are managed in a more transparent manner;
- the forest products industry has been given room to grow.

However, it is clear that the system itself, the Department's approach to management and the industry's current practices need to be improved. More specifically, improvements must target:

- increasing forest production;
- improving the planning of forest management activities;
- enhancing the effectiveness of forest and environmental control and monitoring procedures during forest operations;
- using the forests in a more diversified way;
- promoting integrated forest resource management;
- encouraging the communities to participate more in the setting of forest management priorities and objectives;
- increasing the participation of individuals, organizations and municipalities in the preparation of the management plans of agreement holders;
- increasing the added economic and social value of primary and secondary timber and fibre processing activities.

The updating of the forest system must enable the challenges of forest management to be addressed. In particular, it must reassert the need to manage and

develop the forests in a way that is consistent with the values and aspirations of the communities and the general public.

More specifically, current practices must be reviewed in order to increase the role played by the general public in the management and development of the forests. However, the pursuit of this objective should not reduce the capacity of future generations to obtain the same benefits as the present generation from the forest development process. Accordingly, special attention should be paid to participatory management and sustainable forest management. In addition, forest management must be transparent. Only if these conditions are met will it be possible to uphold the values and aspirations of the population, and to comply with the priorities that have been established.

THE GENERAL INTENTION

The forests must be managed and developed in the best interests of the public; in other words, in accordance with the values and aspirations of the population. To achieve this it will be necessary to introduce participatory, transparent and sustainable management practices.

THE OBJECTIVES OF THE FOREST SYSTEM

The forests must be managed and developed in a way that allows the following general and specific objectives to be achieved.

Respecting the values of the population and satisfying its needs

The Department proposes to adopt measures that will allow the general public and communities or their representatives to become involved in establishing forest conservation and development objectives. The measures must also enable local and regional features and priorities to be taken into account when preparing policies, programs and standards.

More specifically, the forest system must:

- allow for Increased participation in **forest management** by the general public, local communities, Native people and local or regional institutions;
- permit more spin-offs from forest development at the local and regional levels and in the Native communities.

Preserving the viability of forest ecosystems

The Department proposes to introduce measures or mechanisms to preserve the diversity of forest ecosystems and species. It intends to protect the viability of ecosystems so as to maintain **or** even increase the benefits generated by their conservation and development.

More specifically, the forest system must:

- allow biological diversity to be protected;
- enable the ecological functions of forest ecosystems to be preserved;
- ensure that resources are used economically.

Increasing the economic spin-offs from forest use

The Department proposes to improve forest production by developing areas of potential in an integrated way and by stimulating the resource uses that generate the most benefits for the population.

More specifically, the forest system must:

- enable resource production to be increased;
- allow for optimal use of the timber resource;
- produce an improvement in the competitiveness of Quebec's industry and promote better resource processing;
- offer the State a fair return for the use of public forest resources.

Increasing the transparency of forest management

The Department proposes to strengthen the public reporting requirements for all public and private players. It also advocates a clarification of the roles of the Government and the various other public and private sector organizations involved.

More specifically, the forest system must:

- lead to an improvement in the reporting process;
- introduce transparency into the roles of every player in both the public and the private sectors.

Table 2.1

GENERAL OBJECTIVE

Respecting the values **of the** population and satisfying its **needs**

SPECIFIC OBJECTIVE

To allow for increased participation in forest management **by** the general public, local communities, Native people and local or regional institutions.

PROBLEM

PROPOSAL

- | | |
|---|--|
| <ul style="list-style-type: none"> • Municipalities and Native communities wish to participate in making decisions relating to the use of timber from the public forests. Other key players in the forest sector, and the general public, wish to see a more transparent approach to forest management. A lack of understanding of forest issues is another problem mentioned. • Inconsistencies in the way the general public and the regional county municipalities are informed and consulted have resulted, among other things, in a low level of public participation. The inaccessible language used in many plans has also been criticized. • Rural and Native communities would like to play a greater role in managing the public forests. | <ul style="list-style-type: none"> • Introduce a provision concerning public information rights into the <i>Forest Act</i> (subject to the restrictions set out in the <i>Act respecting Access to the documents held by public bodies and the Protection of personal information</i>). • Develop and implement awareness raising activities concerning sustainable forest management. • Consult regional bodies and Native peoples before granting new rights in the forest. • Define national and regional orientations for forest development, in collaboration with the communities concerned, and target levels for forest management. • Establish mechanisms for cooperative planning of forest management activities in inhabited forest zones and, in the long term, in common areas. • Develop and implement coordination mechanisms better adapted to the needs and values of Native communities. • Inform municipalities and Native communities about various aspects of forest management, including: <ul style="list-style-type: none"> - the procedure for allocating timber in public forests; - the allowable annual cut; - timber allocations; - use of timber allocations; - departmental administrative practice. • Improve the information and consultation procedure in connection with forest management plans: <ul style="list-style-type: none"> - organize information sessions on forest management plans and on forest management; - encourage agreement holders to maintain permanent, on-going communications with regional county municipalities, Native communities and the general public in order to identify their needs before beginning the planning process; - require agreement holders to develop a communications plan to ensure the successful application of their public information and consultation procedure. • Ensure the presence of a departmental representative at the information sessions and public hearings held for the benefit of the general public, the regional county municipalities and the Native communities in connection with forest management plans. <p>Establish agreements to allow municipalities and Native communities to take charge of certain forest management activities and responsibilities.</p> |
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Updating the FOREST SYSTEM

Table 2.2

GENERAL OBJECTIVE

Respecting the values of the population and satisfying its needs.

SPECIFIC OBJECTIVE

To permit more spin-offs from forest development at the local and regional levels and in the Native communities.

PROBLEM	PROPOSAL
• The steady decline of rural communities has resulted, among other things, in a decrease in the number of jobs available in the farming and forest sectors. • Not enough is known about the current working conditions and pay standards applied in public forest work.	Promote the use of forest land for purposes other than timber production. • Encourage the realization of projects linked to the inhabited forest concept. • Empower regional communities to approve inhabited forest projects and to manage the funds available in order to promote project start-ups. • Allow individuals, businesses and groups other than those holding mill permits to have access to the timber available in public forests. • Clarify the data that must be supplied to the Department concerning jobs and working conditions in public forest work. • Strengthen the links between the Department and the other Government departments and agencies responsible for working conditions, remuneration, etc.

Updating the FOREST SYSTEM

Table 3.1

GENERAL OBJECTIVE

Preserving the viability of forest ecosystems.

SPECIFIC OBJECTIVE

To allow biological diversity to be protected.

PROBLEM	PROPOSAL
Insufficient protection is provided for ecosystems, species and biological diversity.	- Grant legal recognition to exceptional forest ecosystems. - Develop a strategy for the preservation of exceptional forest ecosystems in the public forests. - Implement measures, in collaboration with other interested bodies, to promote the preservation of exceptional forest ecosystems in private forests. - Develop indicators for the assessment of biodiversity at the regional level. - Assess the importance of old-growth forests and, where necessary, adapt forest management objectives, orientations and practices. - As part of Quebec's strategy to implement the Convention on Biological Diversity: - contribute to the establishment of a network of protected areas that are representative of the diversity of forest ecosystems in Quebec; - in collaboration with the ministère de l'Environnement et de la Faune, develop special forest management standards for areas peripheral to certain protected areas; - implement an <i>in situ</i> and <i>ex situ</i> genetic diversity conservation strategy. - Develop a silvicultural approach for landscapes and verify its applicability.

Table 3.2

GENERAL OBJECTIVE

Preserving the viability of forest ecosystems.

SPECIFIC OBJECTIVE

To enable the ecological functions of forest ecosystems to be preserved.

PROBLEM	PROPOSAL
The scope of knowledge about the ecology of the forest is limited, and the available knowledge is not widely disseminated.	- Enhance knowledge about the impact of forest practices on the state and productivity of forest ecosystems. - Develop and use indicators to measure the state of forest ecosystems and their productivity. - Assess the effects of forest practices on northern forest ecosystems and, where necessary, correct management objectives and practices. As part of the plan of action following on the Framework Convention on Climate Change: - develop and use indicators to measure the impact of climate change on forest ecosystems; - define and implement measures to reduce the effects of climate change on the viability of forest ecosystems. - Disseminate knowledge about the ecology of the forest.
In connection with the protection of forest resources and the compatibility of forest management activities with the land use plan: before 1996, not all the regional offices systematically monitored the application of the <i>Regulation respecting standards of forest management for forests in the public domain</i>, and some had no method for compiling data. The method developed in 1996 is not yet fully applied by all regional offices.	Ensure that the provincial method for monitoring the application of the <i>Regulation respecting standards of forest management for forests in the public domain</i> is implemented, to allow the production of regional and provincial overviews (a lack of resources has been noted).
The SEPI system is currently used to monitor the reconstitution of the forest canopy over piling, logging and sawing areas, gravel and sand pits and forest camps. The system is not entirely satisfactory, since it includes no scheduled follow-ups and was designed for data collection in accordance with the Forest Management Manual rather than the <i>Regulation respecting standards of forest management for forests in the public domain</i>.	- Ensure that the agreements to monitor the reconstitution of the forest canopy over cutting areas are applied; prepare a schedule for follow-up action and, as a temporary measure, a data collection and transmission system (until implementation of the SIEF). - Make the necessary changes to the SEPI, or apply other measures, to ensure proper monitoring of the work undertaken to bring piling, logging and sawing areas, sand and gravel pits, and forest camps back to production.

Updating the FOREST SYSTEM

Table 3.2

GENERAL OBJECTIVE

To contribute to preserving the viability of forest ecosystems.

SPECIFIC OBJECTIVE

To maintain the ecological functions of forest ecosystems.

PROBLEM	PROPOSAL
• The qualitative assessment carried out during the surveys identified several problems regarding both the application and the effectiveness of the provisions of the <i>Regulation respecting standards of forest management for forests in the public domain</i> dealing with the reconstitution of the forest canopy (especially in piling, logging and sawing areas and sand and gravel pits), as well as problems concerning the protection of all forest resources (especially intermittent watercourses and crossing points). • The holders of timber supply and forest management agreements are not required to report on their compliance with the <i>Regulation respecting standards of forest management for forests in the public domain</i>. • The fact that the <i>Land use plan for lands in the public domain</i> is not updated often enough can lead to a failure to comply with the land use requirements and the rights granted. • The holders of timber supply and forest management agreements wish to be assessed on the basis of the results obtained and not on the basis of the measures implemented, a solution that could be applied where results can be measured in the short term, provided control and monitoring costs do not rise as a result.	• Intensify monitoring of the effectiveness of the standards established by the <i>Regulation respecting standards of forest management for forests in the public domain</i> to ensure that they enable the objectives to be met. • Continue to train workers and supervisors. • Require that agreement holders establish measures to monitor their management activities in compliance with the <i>Regulation respecting standards of forest management for forests in the public domain</i>, report the results to the Department and, on request, provide the raw data used to compile the report. • Improve the updating process for the <i>Land use plan for lands in the public domain</i>. • Develop the control and monitoring measures provided for in the <i>Regulation respecting standards of forest management for forests in the public domain</i> to reflect the results obtained.

Table 3.3

GENERAL OBJECTIVE

Preserving the viability of forest ecosystems.

SPECIFIC OBJECTIVE

To ensure that resources are used economically.

PROBLEM	PROPOSAL
• There is room to improve efforts to eliminate wastage, recover residues, reduce waste and save energy in harvesting and processing operations.	• Encourage the persons responsible for forest development to save energy (by planning and maintaining the road network more efficiently, for instance) and to process timber in a more rational way (by developing "clean" technologies based on non-fossil fuels, such as residues). • Promote the opening up of new markets, the manufacturing of innovative products and the development of more economical processing methods, as well as recycling, residue recovery and waste reduction. • Maintain the various measures proposed by the Government or the Department (industrial development fund, FAIRE program, small sawmill adaptation program and technology control program).

Table 4.1

GENERAL OBJECTIVE

Increasing the economic spin-offs from forest use.

SPECIFIC OBJECTIVE

To enable resource production to be increased.

PROBLEM	PROPOSAL
- Because of the imprecise wording of the objective relating to allowable annual cut, it is difficult to assess the results obtained. In addition, the sustainable yield principle applies to relatively normal forest stands, whereas in Quebec several common areas are under-stocked in mature trees or over-stocked in over-age trees. The application of the sustainable yield principle has resulted in either under-use or over-use of available stands and stocks. - The fact that the Department intervenes only to analyze and approve forest management plans, especially general forest management plans, means that it is unable to fully exercise its responsibility as the manager of the forests in the public domain. - Community input in the carrying out of forest management projects is limited. - Integrated resource management remains the exception rather than the rule. - Forest management activities are not sufficiently integrated, especially at the planning stage, although integration is required by law. Integration will become even more necessary following the definition of new issues.	- Clarify the objectives of the forest system, especially in connection with sustainable yield, in order to allow certain forest stands to be brought up to standard more quickly and to allow more intensive management on suitable sites. - Confirm the Department's responsibility in determining the allowable annual cut and production objectives. - Insert clauses into forest management agreements to encourage integrated management of forest resources. - Assign priority to integrated resource management in areas covered by forest management agreements, inhabited forest areas and wildlife reserves. - Correct the provisions of the Act dealing with the integration of forest management activities to require all the holders of timber supply and forest management agreements working in a common area to officially designate a single forest manager recognized by the Department.

Table 4.1

GENERAL OBJECTIVE

Increasing the economic spin-offs from forest use.

SPECIFIC OBJECTIVE

To enable resource production to be increased.

PROBLEM	PROPOSAL
- The assessment of allowable annual cut remains imprecise, first because the data from the forest surveys is not entirely reliable, and second, because simulation hypotheses used to calculate allowable annual cut have not been sufficiently validated. - The need to find a volume of timber of a particular quality often leads to an over-harvesting of certain strata or cutting areas and a failure to comply with the sustained-yield principle. The data available on the forest is insufficient to develop adequate forest management strategies. - Little is known about the negative and positive effects of natural disturbances (fires, insects and disease) over the short and long term, whether within a single common area, a region or the province as a whole. - Areas that have been damaged by a disturbance are not monitored. - Natural disasters can have a major impact on allowable annual cut at the local level. There is nothing in the Act to specify the grounds on which the allowable annual cut may be revised outside the period reserved for the extension of timber supply and forest management agreements, or who is responsible for such a revision. - Only a small fraction of the volumes of timber affected by natural disturbances is salvaged through special plans.	- Require forest companies to agree with the Department on related training, and require them to establish five-year plans of action for training. Add a section to general plans dealing with training. - Require the holders of timber supply and forest management agreement to prepare forest surveys before drawing up their annual and five-year plans, in order to prescribe effective remedial work and to ensure that the work has been carried out adequately. - Require forest companies to provide survey data when filing their five-year forest management plans and their annual management plans. - Quantify the negative and positive effects of insect infestations and forest fires, over the short and long term, and the effects of direct and indirect intervention to control the causes of disturbance. Take the data into account when calculating allowable annual cut and determining management practices. - Introduce systematic monitoring of natural disturbances, to include the area affected, the proportion of salvageable timber, the volume actually salvaged, the reasons for failure to salvage, where applicable, and the degree of regeneration. - Specify that the minister may require the allowable annual cut to be recalculated following a disturbance caused by fire, insects or disease. - Require the holders of timber supply and forest management agreements to take part in any plan to salvage the timber affected by a natural disaster.

Table 4.1

GENERAL OBJECTIVE

Increasing the economic spin-offs from forest use.

SPECIFIC OBJECTIVE

To enable resource production to be increased.

PROBLEM	PROPOSAL
- The resources devoted to scaling verification are considered to be insufficient. Scaling alone cannot ensure compliance with allowable annual cut, and the assessment of usage loss in cutting areas is deficient. The standards used to assess timber volume during management controls differ from those used to calculate allowable annual cut. - The decreasing availability of State resources creates problem situations. - The forest system introduces the notions of maximum volume, compliance with allowable annual cut and improvement in timber quality that are linked to the sustainable yield principle. However, these notions are open to interpretation and no precise objectives have been set for improvements in forest yields and forest quality. - Work must be carried out to define the objectives of forest fire fighting as clearly as the objectives to combat insects and disease. - A strong demand exists for management permits other than permits issued to supply processing plants (roughly 15,000 permits per year). As it currently stands, the Act does not allow permits to be issued for the commercial harvesting of non-timber resources (such as mushrooms, mosses, etc.).	- Include an assessment of usage loss (non harvesting of scattered stands, under use of hardwoods, over-wide buffer strips, rotting rates, etc.) in the existing control and monitoring process; provide financial incentives to reduce waste. - Adopt a single method (agreement holders + management units) to assess timber losses. - Strengthen monitoring standards (scaling, inventory of usage loss, rot, management standards) and harmonize them with survey standards. - Develop other methods for funding the management activities needed to fully develop forest potential. - Clarify the Objectives and projected results for each common area, in terms of management intensity, yield and quality improvement on the basis of regional guidelines. - Publish an administrative document to clarify the new objectives of the forest system to ensure that everyone involved has a similar understanding of the objectives. - Develop a management policy for fighting forest fires that provides a clear definition of the objectives pursued and assesses the advisability of intervening systematically, whether directly or indirectly. - Revise the classes of permit that do not involve the supply of a processing mill to promote multiple use of the forest environment.

Table 4.1

GENERAL OBJECTIVE

Increasing the economic spin-offs from forest use.

SPECIFIC OBJECTIVE

To enable resource production to be increased.

PROBLEM	PROPOSAL
- The legality of the changes made to timber supply and forest management agreements during their five-year periods of validity, even with the consent of the agreement holders concerned, has been questioned. - The very large number of common areas generates administrative complexity, in particular when forest management plans are being drawn up, leading to additional costs and preventing optimal yields from being achieved. The large number of changes made to the boundaries of common areas makes it impossible to verify compliance with the allowable annual cut. - The form and content of current forest management plans are too complex. - Not all holders of timber supply and forest management agreements carry out systematic monitoring of their silvicultural work, although the resulting data is needed to verify compliance with the allowable annual cut. In addition, a disturbing percentage of partial cuts have been refused for the purpose of offsetting duty payments. - Partial cutting is deficient.	- Clarify the current legal framework to allow timber supply and forest management agreements to be amended, with the consent of the holder, during a five-year period of validity, in connection with the boundaries of common areas and the volume and species of timber allocated. - Reduce the number of common areas by making it easier to merge areas with the agreement of a majority of agreement holders: introduce a mechanism to allow agreement holders who oppose the merging of common areas to be heard by the minister. - Divide Quebec's forests into large permanent management units used to establish socio-economic and forest-related objectives for each area's development. - Improve and simplify the form and content of forest management plans, and examine the possibility of reducing their number. - Require the holders of timber supply and forest management agreements to apply a reliable, uniform monitoring and control mechanism to their operations, to enable the results to be assessed. - Establish a procedure to ensure adequate monitoring by agreement holders. - Obtain compensation from agreement holders following a failure to comply with the requirements concerning silvicultural treatments, or impose penalties. - Examine the possibility of certification for markers.

Table 4.2

GENERAL OBJECTIVE

Increasing the economic spin-offs from forest use.

SPECIFIC OBJECTIVE

To promote optimal use of the timber resource.

PROBLEM

- The method used to calculate residual timber volumes when assessing the performance of forest companies is deficient.
- Forest companies do not process timber in the best possible way.
- Every year, at least 2 million cubic metres of softwoods and a similar volume of hardwoods are not harvested by permit holders, while many applications for permits are turned down. Quebec is thus deprived of the economic spin-offs generated by timber production.
- Under-use results in a monetary loss for the State.
- The lack of outlets for pulp quality hardwoods increases the difficulty of management work and prevents large volumes of quality hardwoods and sought-after softwoods from being made available.
- After taking over many sawmills, the paper industry today controls 70% of the wood chip market in Quebec. Other sawmills are unable to sell their wood chips at a fair price, especially when supply is high.
- According to an internal survey of the Department's regional offices, the timber harvested on land covered by forest management agreements is used primarily to supply mills owned by holders of timber supply and forest management agreements.

PROPOSAL

- Change the method of calculating residual volumes to take into account the average annual amount of timber consumed during a five-year period of application of a timber supply and forest management agreement.
- Grant priority for additional volumes of timber to forest companies who use processing techniques offering the best performance levels.
- Introduce more flexibility into sections 92.0.1 and 92 of the **Forest** Act to allow the minister to optimize the use of the timber available and meet specific needs (occasional supply problems, natural disasters, multiple forest use, etc.).
- Revise the provisions of the Act that authorize the holder of a timber **supply** and forest management agreement to transfer the unused part of a timber allocation to a future year.
- Allow allocated but unharvested timber to be sold, perhaps by auction, along with unallocated timber in areas covered by several timber supply and forest management agreements.
- Introduce more flexibility into the administrative measures to ensure optimum use of timber. Publish data on available timber.
- Simplify the process for exporting wood chips and partly-finished lumber by allowing terms and conditions to be set, in particular regarding volume and duration, to promote Quebec's economic development.
- In collaboration with agreement holders, assess the possibility of establishing an electronic exchange similar to the exchange operating for other commodities, in order to sell some of the wood chips produced when processing timber from the public forests, and examine other ways to solve the problem.
- Introduce a clause into timber supply and forest management agreements to allow timber (standing or harvested) to be sold by auction.

Table 4.2

GENERAL OBJECTIVE

Increasing the economic spin-offs from forest use.

SPECIFIC OBJECTIVE

To promote optimal use of the timber resource.

PROBLEM	PROPOSAL
- Optimum timber processing depends on the existence of more numerous, more varied processing plants. Currently, the Department issues wood processing plant permits to control the volume of timber used and limit timber allocations in private forests. - Industrial users and developers of the various forest resources are not sufficiently diversified. - The current rules do not allow forest companies to exchange timber harvested in public forests in order to put it to the best possible use. - The process for issuing authorizations that have little impact on forest resources is too complicated. - Little is known about the activities carried out in forest reserves. Control and monitoring is insufficient, in particular as regards compliance with the Act and regulations. - The difficulty of marketing timber harvested under a forest management contract may limit the application of this formula. - The lack of synchronization between the five-year review of timber supply and forest management agreements and the period covered by a five-year forest management plan occasionally results in timber allocations for a group of species that exceed the allowable annual cut.	- Repeal section 163 of the <i>Forest Act</i> and revise sections 162 and 164 accordingly. - Support regional communities that wish to identify new ways of developing their industrial structure and, in collaboration with local development councils, contribute to the implementation of industrial projects. - Facilitate the exchange of timber by relaxing the current rules to allow saw-quality logs to be sent to sawmills and to ensure that the pulp and paper industry uses only pulp-quality timber. - Simplify the procedure (by repealing the notion of necessity in the order in council) for issuing authorizations to harvest small volumes of timber in the following cases: - permits granted for experimental or research purposes; - permits granted for the purposes of a guarantee of auxiliary timber supply; - guarantees of auxiliary timber supply entered into to facilitate the construction or extension of a processing plant. - Establish a system to authorize, control and monitor the work carried out in forest reserves. - Make the northern limit of forest reserves official. - Take into account timber from land covered by forest management contracts in calculating residual volumes. - Maintain the extension dates for agreements (section 75), but amend section 77 to synchronize the five-year reviews of common area agreements with the date of coming into force of general management plans approved by the minister.

Updating the FOREST SYSTEM

Table 4.3

GENERAL OBJECTIVE

Increasing the economic spin-offs from forest use.

SPECIFIC OBJECTIVE

To produce an improvement in the competitiveness of Quebec's industry and promote better resource processing.

PROBLEM	PROPOSAL
• Timber is not being processed in the best possible way. • The right conditions must be created to allow forest resource companies to be more competitive at the national and international levels.	• Contribute towards major investments designed to promote value-added products and competitiveness. • Extend the existence of the industrial development fund, the FAIRE program, the small sawmill adaptation program and the technology control program. • Maintain the financial incentives for the development of expansion projects, and projects to implant secondary processing mills. • Maintain funding for research organizations. • Maintain support and funding for activities to promote Quebec's industry and timber products in Canada and abroad. • Promote the products resulting from secondary timber processing in the USA. • Present activities outside Canada to improve the image of Quebec's forest in terms of sustainable development.

Updating the FOREST SYSTEM

Table 4.4

GENERAL OBJECTIVE

increasing the economic spin-offs from forest use.

SPECIFIC OBJECTIVE

To offer the State a fair return for the use of public forest resources.

PROBLEM	PROPOSAL
• The price of standing timber in private forests is a valid reference, but sales have decreased in recent years and other points of reference must be found. In addition, the harvesting conditions in public forests vary, and the Department must take this fact into account when establishing the stumpage value. • The dues payable for certain harvesting permits in the public forests are not based on the stumpage value. • Credits are issued for certain commercial silvicultural work performed in hardwood forests. • Credits are issued each year for forest management work. However, no penalties apply if the work does not produce the desired result.	• Use the auction price of timber from the public forests that is not allocated to the holders of timber supply and forest management agreements as another basis for comparison when establishing the stumpage value, or the price of the timber they fail to use. • Continue to examine various techniques and mechanisms to improve Quebec's tariff system. • Apply a uniform tariff based on the market value of timber to all holders of forest management permits. • There is no agreement on whether these credits should be maintained. The question must be examined further before alternative formulas are proposed. • Introduce the possibility of imposing financial or other penalties, which may include the reduction or withdrawal of timber allocations, on permit holders who fail to achieve the objective of returning to production a site for which credits on dues have been granted, because the required work was not carried out or was performed incorrectly.

Updating the FOREST SYSTEM

Table 5.1

GENERAL OBJECTIVE

Increasing the transparency Of forest management.

SPECIFIC OBJECTIVE

To improve the reporting process.

PROBLEM	PROPOSAL
- The requirement that the holders of timber supply and forest management permits submit reports should be reinforced to reflect the responsibilities entrusted to them. - The monitoring of forest management and, consequently, the reporting process are deficient. - The holders of forest management permits do not always comply with the Act and the regulations. Because of the lack of resources, only a small percentage of offences are dealt with. - The penalties imposed for a failure to comply with the legislative requirements, in particular the <i>Regulation respecting standards of forest management for forests in the public domain</i>, are too lenient to act as a deterrent. - Certain credits granted for managing the public forests are used for other purposes. - The scarcity of departmental resources affects forest management and development and prevents new needs and new socio-economic and environmental requirements from being taken into account.	- Require the holders of timber supply and forest management agreements and the holders of forest management contracts to report publicly on their success in achieving their management objectives in the public forests, and more specifically in connection with the provisions of the <i>Regulation respecting standards of forest management for forests in the public domain</i>. - Clarify the objectives for public forest management and establish mechanisms to allow input from forest operators and the general public when they are determined. - Define a framework for the assessment of the forest system based on criteria for sustainable forest development. - Improve monitoring for the application of the forest system in order to reveal the progress achieved as compared to the objectives fixed. - Establish a forest management information system (to process the data needed to monitor management practices). - Improve the process for dealing with offences under the Act and the regulations, by - increasing the number of inspectors; - issuing more statements of offence; - bringing more cases under the civil law; - publishing details of offences; - releasing the names of offenders on request. - Review the penalties under the Act to make them more dissuasive, by: - increasing the amount of each fine; - requiring offenders to return the areas concerned to production. - Verify the operations of the holders of timber supply and forest management agreements. - Allocate the resources needed to produce and publish information about sustainable forest management. - Intensify or redirect research, assessment, monitoring and technological development programs to facilitate sustainable forest management.

Updating the FOREST SYSTEM

Table 5.2

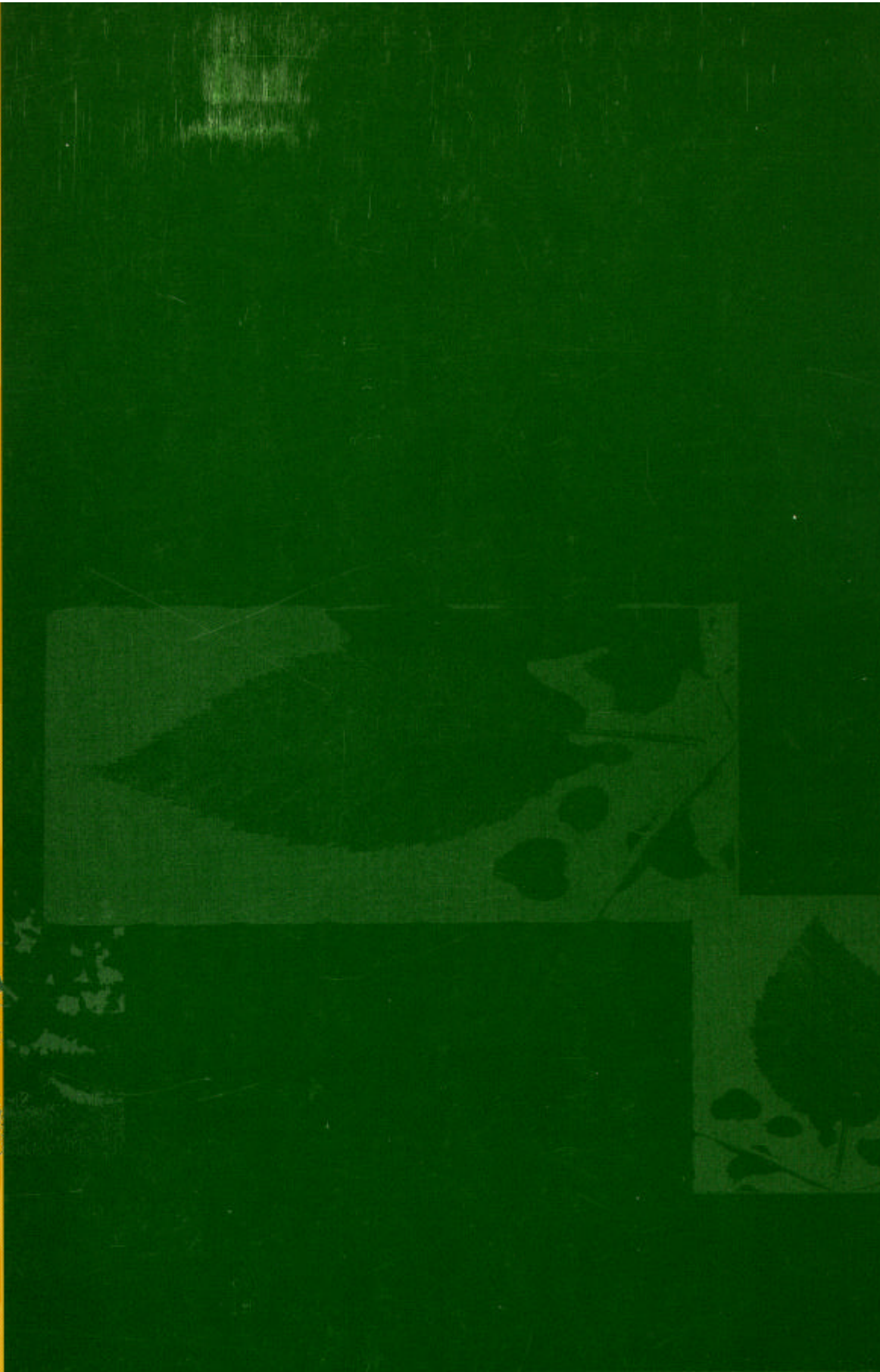
GENERAL OBJECTIVE

Increasing the transparency of forest management.

SPECIFIC OBJECTIVE

To introduce transparency into all roles.

PROBLEM	PROPOSAL
Forest management is often performed on a sector-by-sector basis, which in recent years has led to the establishment of various tribunals and organizations, such as the forest protection corporations. On the national stage, forest management and timber processing do not enjoy the level of visibility they would normally receive, given the issues at stake.	- The role of the Department must be re-centred on the basic functions of the State, in other words the study and monitoring of major socio-economic trends, the definition of government guidelines and policies, the preparation of bills and draft regulations (including the definition of forest management standards and the fixing of timber prices), the allocation of resources and the reporting of its activities. - Establish a body able to implement a constructive partnership, organized in a flexible fashion and subject to a stringent requirement of transparency, with the mandate of providing support for the application of the forest system - Assign priority to a results-based management approach, forward-looking and transparent, to allow the simplification of procedures and a strengthening of the responsibilities of forest users and professionals.



Gouvernement du Québec
**Ministère des
Ressources naturelles**