REPORT ON THE MID-TERM EVALUATION OF FRDA II

MARCH 1994
Canada–British Columbia
Partnership Agreement on Forest Resource Development: FRDA II

Mid-Term Evaluation

Canada  BC
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Dear Sirs:

Deloitte & Touche are pleased to submit our report on the mid-term evaluation of the Canada-British Columbia Partnership Agreement on Forest Resource Development (FRDA II) 1991-1996.

In developing our report, we have been careful to focus on issues of significance and to be objective and balanced in presenting our evaluation perspective of the Agreement goals and objectives to this, its mid-point. Also, we have identified those elements of the Agreement which will require attention through to its conclusion and, indeed, which most likely will have an impact beyond 1996.

We are confident the results of this evaluation will serve the two levels of government well and we hope contributes to their efforts to continue to stimulate and sustain the forest resources of British Columbia.

We wish to thank all of the management and staff of Natural Resources Canada, the Ministry of Forests, and the several forest sector professionals who participated in and contributed to this evaluation.

Sincerely,

DELOITTE & TOUCHE

Robert L. Cummings, CA, CMC  
Partner

RLC/jkc
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EXECUTIVE SUMMARY

This mid-term evaluation indicates that, to date, the Agreement has been responsive to the needs and conditions of the forestry sector in British Columbia while, at the same time, achieving positive progress towards satisfying its intended objectives. It is ambitious, complex and multi-thrusted in its program structure - a design expected to make the broadest and most expeditious impact to sustain the sector’s continuing enhancement and development. Much has been done and the Agreement supports efforts to enhance and integrate all forest values and practices into processes that maximize the social and economic benefit of the resources to the Province.

We found that the programs fit well with the objectives and concerns they are intended to address. The programs address many important priorities in the forestry sector in British Columbia, including incremental silviculture, integrated resource management, new silvicultural systems, forest resource inventory and forestry research. Also, FRDA II provides an important mechanism for Natural Resources Canada and the Ministry of Forests to communicate, co-operate and coordinate forestry matters in British Columbia.

Physical targets, particularly those of the large operational silviculture sub-program, are being achieved.

The major impacts, which can be quantified during the Agreement period, should come from the incremental silviculture investment projects. Approximately $100 million-worth of these activities are planned over the 5-year Agreement period and to June 30, 1993, as planned, approximately $28 million had been expended.

FRDA II impacts have already been significant to the mid-point. In terms of operational silviculture activities, more than 61,000 hectares have been surveyed, spaced, pruned and fertilized. Approximately 569 person-years of employment have been created and the total net economic gain expected from these silviculture investments is in the order of $46 million.

The indeterminateness of some goals and objectives, and the lack of related quantifiable output or result oriented measurements, hampers the precise definition of the impacts of several of the other important programs and sub-programs. Greater goal clarity in a number of areas will greatly assist in demonstrating clearly the important impact of those initiatives.

Given performance to date, goals and targets through to the end of the Agreement likely will be realized. However, we have concerns in the Forest Resource Inventory sub-program, the Economic and Social Analysis Program and the Opportunity Identification Program that targets will be a challenge to achieve by the end of the Agreement, given allocated resource levels.
Our assessment indicates that, in general, there is a reasonable balance between the level of financial and staff resource commitment with the goals and objectives to be achieved.

Notwithstanding the difficulty in altering major program thrusts, significant refinements and changes have been implemented in response to emerging government priorities and public pressures to shift from timber production to a more balanced approach to integrated forest management.

Our evaluation indicated that the management direction and administration of the Agreement is reasonably sound.

Overall Agreement direction and management is provided by the Management Committee, supported by the Secretariat, and appears to be functioning well. Operational direction and management is provided by the program and sub-program Working Groups, who are very familiar with program activities, priorities and issues. However, there is a "gap" between the overall Agreement direction provided by the Management Committee and the operational implementation managed by the Working Groups. Two of the Management Committee members are assisting to bridge this gap.

We found that the Advisory Committee, established to provide stakeholder input and advice to the Management Committee, has not been effective to date. This is due mainly to a lack of clarity and definition of their role as advisors to the Management Committee.

The Agreement is a good though ambitious agreement. It supports many of the new initiatives and directions of the forestry sector that have to be developed, improved and maintained if sustainable development is to be realized in operational terms well beyond this Agreement’s term. It is a major investment towards the achievement of future economic and social benefits for the Province and Canada and needs to be protected through on-going future investments.

Whereas many Agreement-specific initiatives are well under way and are likely, barring any funding restrictions, to continue through the balance of the Agreement, there are areas where the Agreement can provide additional support to initiatives that, of themselves, are well beyond the expectations and intents of FRDA II to resolve. These include the broader needs to have in place a long-term resource strategy for the forestry sector, to develop a current and complete resource inventory and to emphasize the need for improved silvicultural systems. Since the underpinnings of FRDA II are directed at the challenges of sustaining the development of the forestry sector, it is important that FRDA II’s priorities be synchronized with these broader sector priorities if the longer term goals of sustainable development are to be realized.
We understand a number of initiatives currently are underway by the Ministry of Forests to reach these goals and, given their importance, responding to and supporting them has to be a serious consideration for FRDA II's Management Committee.
I INTRODUCTION

BACKGROUND

This report represents the results of the mid-term evaluation of the Canada-British Columbia Partnership Agreement on Forest Resource Development (FRDA II). The report was prepared by Deloitte & Touche in association with Timberline and Nalitka, forestry and economic resource consultants respectively.

This evaluation study results from the requirement within the Agreement that the two levels of government jointly effect and complete an evaluation of the programs with regard to the recommendations of a National Forest Sector Strategy for Canada and the objectives of the Agreement. This report complies with the requirement to complete an evaluation at, or near, the mid-point of the Agreement.

OBJECTIVES AND SCOPE

Objectives of the Agreement

The overall objective of the Agreement is to promote the sustainable development of the forest resources of British Columbia by enhancing the environmental health of the forests, stimulating the economic and social prosperity of British Columbia and Canada, and addressing the future growth of the forest community.

Specifically, to achieve the objectives of this Agreement, the seven principal programs shall undertake to:

- improve the value, quality and health of young forests through stand tending activities;
- improve forest management practices through forestry research, enhance public knowledge of the forests, and extend research results and other technical information to forestry practitioners;
- assess and maximize the economic and social benefits of forest resources management, identify and communicate market opportunities and assess innovative technologies and products;
- enhance the integrated management of the full range of forest resources; and,
- develop a forest management ethic and capability amongst small-scale woodlands owners.
Objectives of this Mid-term Evaluation

The objective of this mid-term Evaluation was to assess the overall effectiveness, to date, of FRDA II meeting its goals and objectives. Specifically, the evaluation was to:

- determine if the objectives and goals set out in the Agreement are being met;
- determine if the Agreement will meet, in part, the principles listed in Schedule C (FRDA II Agreement), and the Commitment to Action, detailed in the Canada Forest Accord;
- determine if the expectations and goals for the remainder of the Agreement are sufficiently structured to fulfil the objectives of the Agreement;
- determine what course of action should be taken to direct or modify the strategies for effecting Agreement objective adherence;
- recommend changes to program goals or activities to better reflect changes in the status of government policies, the environment, social or economic circumstances;
- determine if the Agreement is having a desirable impact on the regional, provincial, and national economies; and,
- identify further studies which would address gaps in knowledge identified in assessing the above that may assist in the completion of a Final Evaluation of the Agreement in 1996.

Scope of this Mid-term Evaluation

This mid-term evaluation study was focused at three different levels:

- an overall assessment, against defined and agreed-to evaluative criteria, with respect to the Agreements’ objectives, the principles of Schedule C and the Commitment to Action;
- an assessment of the achievements of individual programs against their specific program objectives to date; and,
- an assessment of the future program and Agreement intents and objectives.
The scope of our review did not concern itself with an assessment of the process of discussion and negotiation leading to the Agreement’s program priorities and funding allocations. Rather, our evaluation focus centred on the resulting product - the defined objectives and intents of the FRDA II Agreement.

The overall scope of the study was defined during the Planning Phase and presented to representatives of the Management Committee in our Preliminary Assessment Report dated September, 1993.

Our mid-term evaluation did not attempt to assess or evaluate specific projects or individual initiatives within programs and sub-programs. The performance data we reviewed with respect to FRDA II funding and accomplishments covered the period from commencement of the Agreement (April 1, 1991) through to June 30, 1993. We reviewed the available performance, financial and other relevant and related program-specific data to that date. However, available and relevant information to our evaluation process beyond that date was used, where appropriate. We conducted numerous interviews with Program, Working Group and Advisory Committee resources. These discussions were directed to reviewing progress to date and plans for the remaining term of the Agreement.

During our Data Collection phase, our evaluation team participated in facilitating and co-ordinating a one-day workshop between the Advisory Committee members and the Working Groups’ co-chairpersons.

**EVALUATION METHODOLOGY**

Our evaluation approach was designed to address the significant components of the Agreement. We focused our attention on the Agreement objectives and the specific scope and objectives outlined in the terms of reference for this mid-term evaluation. Our Preliminary Assessment Report confirmed the scope of our evaluation activities and defined the primary evaluation criteria we applied during the review. These criteria are defined on the page opposite.

Our evaluation strategy and methodology were designed to assess:

- program and sub-program accomplishments;
- impacts and value-added considerations; and,
- overall Agreement intentions.

Our methodology involved four principal phases. Each incorporated specific objectives, activities and milestones.
Our Planning Phase was critical. We had to define and refine our overall analytical evaluation framework to ensure we focused on issues that were significant and that provided insight into those areas that concerned the overall management and performance against Agreement objectives. At the same time, we had to ensure we gained sufficient information with respect to the performance of programs and sub-programs.

We did not attempt, nor did we intend, to acquaint ourselves with the performance of individual or specific projects within the program structures. This approach enabled us to focus on the significant issues and the mechanisms in place to manage the Agreement’s programs against its intended objectives and goals.

Our review involved collecting and assessing documentation on each of the Agreement programs and sub-programs. This included: performance and financial information; various studies and reports relevant to the initiatives undertaken within programs; and, material pertinent to the overall progress and status of the Agreement. In addition, we undertook interviews with Management Committee and Working Group personnel responsible for the implementation of program plans and actions. Following participation in a joint Advisory Committee/Working Group meeting to report out on individual program and sub-program status and performance, we interviewed selected members of the Advisory Committee.

We reviewed the findings and recommendations of the FRDA I final evaluation and excerpts from the report of the Auditor General of Canada dealing with federal participation in the management and delivery of forest resource development agreements in British Columbia and other jurisdictions. Our interview and background information was collected and reviewed to support the development of our findings and conclusions on the management and implementation of the Agreement.

A key emphasis of our overall evaluation strategy was to ensure that the findings from our review of each of the programs could be summarized consistently and integrated into conclusions specific not only to individual programs, but also, where appropriate, to facilitate our assessment of the overall Agreement progress. Each program was assessed against our primary evaluation criteria and each of the defined program and sub-program objectives were gauged against achievement specific sub-criteria. At the same time, our assessment of the overall Agreement was subjected to measurement against those same primary criteria. In this way, we were able to achieve consistency at both the program and the overall Agreement level.

Consolidating these program-specific and overall findings and conclusions was achieved through frequent internal evaluation team meetings specific to individual programs and meetings designed to assess both broad, specific and common issues relevant to the overall Agreement.
A common theme to our evaluation strategy was to focus our efforts on an objective and constructive analysis. This involved consistently employing our evaluation framework across each program and, in the overall context of the Agreement, to Schedule C and the Commitment to Action, detailed in the Canada Forest Accord. While the consultants maintained objectivity and focus in their analyses, the objectivity of the evaluation results was further enhanced by the input and challenge of experts. We used a Challenge Panel of forest sector experts to review our initial directions and initiatives, our evaluation criteria, and our findings, conclusions and overall evaluation issues.

The use of this Panel resulted in an objective and constructive focus on issues of significance during the development of our final conclusions and recommendations.

**REPORT STRUCTURE**

The balance of this report is segregated into five sections. The section which immediately follows presents a perspective of the forestry sector within British Columbia and of the FRDA II Agreement. Section III discusses our overall assessment of the Agreement to date. Section IV identifies several Agreement-level and common issues to be addressed now and in the future.

Section V, discusses each program individually against the primary evaluation criteria, describes the accomplishments to date and presents our significant findings and conclusions. The last section of our report summarizes all of the recommendations presented within this document.

Recommendations are identified in the text by their indentation and *bold italics* type.
II PERSPECTIVE OF THE FORESTRY SECTOR AND THE AGREEMENT

FORESTRY SECTOR WITHIN BRITISH COLUMBIA

Historically, the forest sector has been a significant contributor to the prosperity and economic well-being of both British Columbia and Canada. It has generated considerable provincial employment, spawned new communities and new products and, indirectly, has supported and sustained other important elements of the provincial economy. Nationally, it has helped to propel Canada to one of the world leaders in forest product exports, it contributes significantly to government revenues and is the dominant sector again leading the nation out of recession.

In British Columbia the forest resource is of vital economic and social importance. The sector has been termed "the engine of growth" and remains the cornerstone of the provincial economy, accounting for about half of the total value of provincial manufacturing shipments. Other manufacturers within British Columbia depend to a major degree on a healthy forest sector. Directly and indirectly the sector contributes significantly to the province’s Gross Domestic Product. It continues to be the dominant employer in over 200 British Columbia communities and both direct and indirect employment from the sector approximates 20% of the total provincial labour force.

Similar to other resource-based industries, the forestry sector in British Columbia has not been exempt from heightened public concern over social and environmental demands and dictates. Intensified scrutiny and challenge are the order of the day in the 1990’s. Concerns continue to surface regarding the sector’s ability to demonstrate that it is:

- safeguarding the environment and natural values of the forest habitat;
- enhancing forest values through more effective and skillfully applied integrated resource management practices; and,
- developing implementable guidelines to preserve the genetic and biological diversity for the future.

All of these challenges have to be addressed and balanced while attempting to maintain the sustainable development of a healthy forest sector.
Expanding public concerns over the management of a finite forest, not only in British Columbia but also globally, are issues that are critical and are having to be addressed now. Recurring projections of reductions in the land available for harvesting and, implicitly, the scale and impact of the existing forest-based sector and related industries are being seen to have potentially serious consequences. Obviously, events resulting in this scenario clearly would have significant negative impacts to the British Columbia economy and the well-being and prosperity of its residents. Only by ensuring that forest productivity is maintained through the continuing investment of effort into new and improved forest management practices and superior treatments can and will these fears be allayed.

Given the paramount importance of the sector to the provincial and national economies, it is not surprising that both levels of government have a vital interest in ensuring that the healthy performance of the forest sector in British Columbia is sustained. Dating back to the Economic and Regional Development Agreement of 1984, efforts to ensure continued sustainable development of the British Columbia forest sector have been the underpinning of both previous and the current partnership agreements between the two levels of government. These major economic investments and commitments, satisfying the forest sector priorities of both levels of government, have contributed significantly. Through past regeneration and reforestation activities and currently through incremental silviculture treatments the growing demands for timber can and will be sustained from a less extensive forest land base.

The dominance of provincially-owned forests in the forest resources of the province clearly establishes the responsibility for sustainable resource development with this level of government and its licensed industry partners. The importance of the sector both in the regional economy and in the national balance of trade, in the environment and in the research and technological operations of Canada also provide a clear incentive for strong federal participation in the development of a sustainable development future in the British Columbia forestry sector.

The sector will continue to present increasingly complex challenges to resource managers and competing investment options and decisions will involve intricate and difficult solutions. Nonetheless, what is abundantly clear is that continued commitment and appropriate levels of investment must be maintained if the expected benefits of sustainable development are to be achieved and operationally realized.
## FRDA II BUDGET

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<td>7. Coordination, Implementation &amp; Evaluation</td>
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*Management Committee correspondence of August 30, 1993 indicates that if the province matches announced cuts to federal grants and contributions, the two levels of government will only be able to support a $181.0 million total Agreement over five years. Where these reductions will be allocated had not been finalized at the date this mid-term evaluation report was issued.
FRDA II

Creating FRDA II

The Canada-British Columbia Partnership Agreement on Forest Resource Development (FRDA II) is a joint federal-provincial agreement whose origin dates back to the umbrella Economic and Regional Development Agreement of November, 1984. FRDA II represents the continuation of a long-standing federal-provincial partnership and is the third such general forestry agreement of its type since the early 1980’s. As with previous agreements, the intent of this current partnership agreement is to continue the commitment to promote the sustainable development of the forest resources of British Columbia.

Since much of the not satisfactorily restocked lands are expected to have been successfully brought back into production by the turn of the century, both as a result of the Forest Act changes placing reforestation responsibilities on those harvesting the land and the initiatives of FRDA I, there emerged a concern and an identified need to refocus efforts on enhancing the new young or second growth forests. Reforestation was no longer enough - better ways had to be found to provide treatments which would deal with local and global social and environmental demands, with maintaining the forests biological diversity and with meeting the increasing demand for high-quality wood products. To ensure that young new forests could achieve maturity in ways that were economically and environmentally acceptable meant influencing the future yield and quality of these young forests through continuing investments in incremental silvicultural practices. This was not a shift from the basic silviculture emphasis of the past, and activities already in place, but rather an extension of existing and new silvicultural practices and systems to intensify the growth and quality of the younger forests. It was in the context of this challenge that the two levels of government were charged with creating and implementing FRDA II.

Whereas FRDA I focused heavily on basic silviculture through the reforestation of forest areas that were not satisfactorily restocked FRDA II’s emphasis was intended to be directed more at applying the principles of incremental silviculture.

The Agreement

Using the successes achieved under FRDA I and acknowledging the changing social, economic and environmental requirements to be satisfied, the two levels of government set out to negotiate this second major partnership agreement. The FRDA II program structure and budget is presented on the page opposite. While the process of negotiation involved numerous discussions and debates over priority issues, areas of focus and the allocation of funding to programs, a set of guiding principles in Schedule C and the Commitment to Action (Canada Forest Accord) established the broad parameters of FRDA II.
A number of factors influenced the design of FRDA II:

- the economic constraints of the early 1990's drove the level of activity that could be supported;
- the concern for maintaining and creating employment particularly in the forest dependent communities had to be addressed;
- local and global social and environmental demands had to be recognized;
- moving to support the growth and development of new young forests meant a much broader and integrated set of activities had to be considered;
- a commitment to the young forests had to be acknowledged through longer term planning, research, careful and accurate inventory assessments for effective investment decisions had to be developed; and;
- better communication and dissemination of information had to be achieved.

As a result, the Agreement covers a broad base of critical issues and opportunities forged into seven programs. While operational silviculture activities dominate, in terms of the funds allocated, FRDA II's scope is considerably more complex and extensive than FRDA I. Yet, it cannot, and was not intended to, cover all the needs that have to be satisfied. It is intended to address specific opportunities and to be incremental to programs already in place within both Natural Resources Canada and the Ministry of Forests. Opportunities to be addressed under FRDA II include:

- improvement of the value, quality and health of young stands through stand tending;
- improvement of current forest management practices on federal, provincial and private forest lands;
- identification of new or value-added products and markets; and,
- enhancement of the integrated management of the full range of British Columbia's forest resources.

A longer term forest sector strategy was deliberately left to the province to develop, ideally during the course of the Agreement, as a basis or foundation for continuing with the priorities for sustainable development of the province's forest resources.
Indeed, though outside the Agreement, a Forest Sector Strategy Committee is in place and may influence initiatives during the balance of the Agreement but most certainly is likely to be a dominant contributor to the shape of future sustainable development initiatives and agreements within the Province.

**Beyond FRDA II**

Recognizing that this mid-term evaluation is not a challenge of the Agreement’s origin or program structure and emphasis, but rather an attempt to assess performance against its stated objectives and intents, it is nonetheless important to highlight some critical future considerations.

The Agreement, by design, is fixed term versus continuous. It provides a "boost" and affords certain incremental or additional initiatives to be implemented to complement and support existing base programs and activities. This focus on incrementality in FRDA II recognizes the changing requirements for sustaining the forest resources and the need for investments to be made in:

- developing a comprehensive inventory of forestry areas;
- continuing research and funding support for better methods and practices; and,
- implementing better silvicultural systems as new practices evolve.

If the maximum benefits are to be realized in operational terms from these incremental FRDA II initiatives and investments, then serious future continuing investments cannot be overlooked.

Both levels of government play and will continue to play critical and vital roles in the successful implementation of FRDA II. The very nature of the manner in which the Agreement is jointly funded and structured provides considerable value and a basis for bringing together the two key players who share a common interest in a successful sustainable forest sector in British Columbia. Therefore, it will be important for this partnership alliance to continue well beyond 1996.

The complexity of the pressures and demands likely to surface in the future, given the experience of the past, require much input, talent and resources, if sustainability of the forest sector is to be realized in operational terms. Besides, a significant investment has already been made and it needs to be protected through continuing joint support of initiatives already in place and likely to be necessary in the future.
Recent cut-backs to funding and the doubts surrounding a future agreement create a state of managing in uncertainty. Given the significance of the sector to both participants, it is imperative that the management uncertainty is removed, so that the longer term viability and sustainability of the forest sector can be realized.
III OVERALL ASSESSMENT

This section presents our overall assessment and conclusions of the mid-term evaluation of FRDA II. To place all the programs into perspective, from a funding point of view, the diagram opposite sets out the FRDA II budget allocations. It should be noted that the significant Program 1, Sustainable Forest Development, has been split between the Operational Silviculture activities, and the New Directions activities.

OVERALL

The Agreement has been designed to achieve an overall objective of working towards the sustainable development of the forest resources of British Columbia.

This mid-term evaluation indicates that, to date, the Agreement has been responsive to the needs and conditions of the forestry sector in British Columbia while, at the same time, achieving positive progress towards satisfying its intended objectives. It is ambitious, complex and multi-thrusted in its program structure - a design expected to make the broadest and most expeditious impact to sustain the sector's continuing enhancement and development. It was not intended to address all of the issues and concerns facing the forestry sector and hence, the incremental focus of its scope of application. It continues to protect the investments already made through previous agreements and existing basic programs. Much has been done and the Agreement supports efforts to enhance and integrate all forest values and practices into processes that maximize the social and economic benefit of the resources to the Province.

At this, its mid-point, the Agreement has made progress against its five-year program objectives. Where quantifiable goals are defined, they are being achieved. However, the quantification of goals and targets for many of its program thrusts are less clearly evident. Whereas progress is being made towards those objectives, their measurement in precise terms of clear outputs is more difficult to establish. A more fully developed set of output-oriented and measurable targets would have been useful to guide the programs and measure performance.

Our evaluation identified some specific concerns and considerations that should be addressed during the remaining period of the Agreement. Whereas many Agreement-specific initiatives are well under way and are likely, barring any funding restrictions, to continue through the balance of the Agreement, there are broader forest sector areas supported by several of those Agreement initiatives that may justify additional priority.
The forest sector long-term strategic "roadmap" needs to be developed as the basis for confirming FRDA II’s incremental silviculture activities and as the blueprint for priority activities beyond the Agreement. Similarly, a completed resource inventory incorporating the past and present FRDA II investments would be useful if the economic contributions expected are to be effectively reflected in future plans and timber supply forecasts. Also, continued FRDA II support through research and development of new and improved silvicultural systems and practices must be supportive of and in concert with existing silvicultural systems initiatives.

The Agreement is a good though ambitious agreement. It supports many of the new initiatives and directions of the forestry sector that have to be developed, improved and maintained if sustainable development is to be realized in operational terms well beyond this Agreement’s term. It is a major investment towards the achievement of future economic and social benefits for the Province and Canada and needs to be protected through on-going future investments.

BY CRITERION

Relevance

In general, we found that the programs fit well with the objectives and concerns they are intended to address, within the overall FRDA II Agreement context.

The Agreement programs address many important priorities in the forestry sector in British Columbia, including incremental silviculture, integrated resource management, new silvicultural systems, forest resource inventory and forestry research.

Also, FRDA II provides an important mechanism for Natural Resources Canada and the Ministry of Forests to communicate, co-operate and coordinate forestry matters in British Columbia.

Our evaluation found that the Agreement and its constituent programs for the most part support the Schedule C principles and the commitments in the Canada Forest Accord. Given the generality and high level of these principles and commitments, precise, one-to-one matching is not possible. However, the general directions and intents of the Agreement are in harmony with these principles and commitments.
Achievement of Intended Results/Impacts

The FRDA II programs have achieved many important results and impacts, and are expected to achieve significant results and impacts by the end of the Agreement period. In terms of operational silviculture activities to June 30, 1993, more than 61,000 hectares have been treated, creating approximately 569 person-years of employment, throughout British Columbia, with resulting community stability and other important impacts. The expected net gain from this investment in treatment, to June 30, 1993, is in the order of $46 million.

Progress to the mid-point of the Agreement indicated that, generally, all programs are achieving their targets. Physical targets, particularly those of the large operational silviculture sub-program, are being achieved. Results and impacts in some of the other "softer" programs and sub-programs, e.g. Integrated Resource Management and Communications and Extension, while more difficult to measure, appear to be on track.

Several programs are expected to have important impacts. For example, the silvicultural systems and research initiatives, are likely to contribute significantly to the introduction of alternative systems in place of clear cut logging, where appropriate, and in reaction to strong public pressure.

We expect that, given performance to date, goals and targets through to the end of the Agreement likely will be realized. However, we have concerns in the Forest Resource Inventory sub-program, the Economic and Social Analysis Program and Opportunity Identification Program that targets will be a challenge to achieve by the end of the Agreement, given allocated resource levels.

The indeterminateness of some goals and objectives, and the lack of related quantifiable output or result oriented measurements, hampers the precise definition of the impacts of several of the other important programs and sub-programs. Greater goal clarity in a number of areas will greatly assist in demonstrating clearly the important impact of those initiatives.

Appropriateness

In general, our assessment indicates that there is a reasonable balance between the level of financial and staff resource commitment with the goals and objectives to be achieved. However, we noted that a number of programs are "straining" to achieve their goals and objectives.

At a program and sub-program level, the goals and objectives of the Opportunity Identification and Economic and Social Analysis Programs, and to a lesser extent, the Forest Resource Inventory sub-program, appear to be ambitious for their allocated resources.
Our evaluation noted that while forestry research activities have increased within both the federal and provincial jurisdictions to address important and relevant issues, that FRDA II-type funding may not be ideal for such inherently longer term activities. Though it is important to augment these initiatives with FRDA II funding, it is critical to have in place mechanisms and funding that will sustain them beyond FRDA II.

We also recorded instances (e.g. Programs 2, 3 and 5) where internal program resource allocation might be improved through program-level strategic planning to ensure resources are allocated to the areas of greatest strategic significance and benefit.

Responsiveness

To the extent practical in a program as complex as FRDA II, the Agreement has been responsive to changing conditions. Notwithstanding the difficulty in altering major program thrusts, significant refinements and changes have been implemented in response to emerging government priorities and public pressures to shift from timber production to a more balanced approach to integrated forest management.

Funding of the important Integrated Resource Management sub-program was substantially increased by $7.5 million over three years in response to the need to develop better practices to protect the province’s resources. Also, funding of approximately $1.5 million has been set apart from FRDA II to address the important international public perception contentions.

However, there are areas where the Agreement can provide additional support to initiatives that, of themselves, are well beyond the expectations and intents of FRDA II to resolve. These include the broader needs to have in place a long-term resource strategy for the forestry sector, to develop a current and complete resource inventory and to emphasize the need for improved silvicultural systems. Since the underpinnings of FRDA II are directed at the challenges of sustaining the development of the forestry sector, it is important that FRDA II’s priorities be synchronized with these broader sector priorities if the longer term goals of sustainable development are to be realized.

In terms of a long-term strategic resource and sector plan, whose development extends well beyond the responsibilities of FRDA II, it will be important through FRDA II initiatives, to encourage, promote and support initiatives and activities which assist the realization of this strategic “roadmap”. We understand a number of initiatives currently are underway by the Ministry of Forests to reach this goal and, given its importance, responding to and supporting them has to be a serious consideration for FRDA II’s Management Committee.
Given the existing and likely continuing public pressure with respect to land use issues and traditional logging practices, it follows that during the remainder of the Agreement, emphasis and support through FRDA II’s sub-programs 1.4 and 1.5 have to be critical priorities if resource inventory and silvicultural systems initiatives are to be achieved. If the incremental silvicultural returns are to be maximized, a carefully defined inventory of what and where the forest areas are that would benefit most from the investments has to be developed. FRDA II’s initiatives must continue to complement these initiatives.

Similarly, improving the productivity of the forest through the application of new and improved silvicultural systems and practices, while broader than FRDA II, must continue to be integral initiatives within the Agreement through to 1996.

**Management Direction**

Our evaluation indicated that the management direction and administration of the Agreement is reasonably sound. It is based, in part, on a number of structures and mechanisms developed specifically by FRDA II and, in part, on existing well established and functioning structures and mechanisms at Natural Resources Canada and the Ministry of Forests.

Overall Agreement direction and management is provided by the Management Committee, supported by the Secretariat, and appears to be functioning well. Operational direction and management is provided by the program and sub-program Working Groups, who are very familiar with program activities, priorities and issues.

A recent initiative, whereby two of the Management Committee members are becoming more directly involved with the interactions of the Secretariat and the Working Groups, will assist in resolving issues and concerns raised relative to Working Group accountability.

We found that the Advisory Committee, established to provide stakeholder input and advice to the Management Committee, has not been effective to date. However, various other advisory and technical groups, at the program and sub-program level, appear to be meeting their objectives and making a contribution.

We noted that there is not yet in place an agreed overall strategic long-term plan for the forestry sector in British Columbia, which could be used to guide FRDA II initiatives to the areas of greatest strategic importance. While we recognize that developing this strategic sector plan is beyond the intents of FRDA II, several initiatives are proceeding outside FRDA II to develop a suitable plan. It will be important to continue these efforts not only because of the significance of the sector to the province’s economy, but also, because it can serve as an invaluable guideline to future partnership agreements.
Some program-specific strategic plans exist to assist in allocating resources and prioritizing projects and activities. However, Working Groups in a number of programs and sub-programs, including Programs 2, 3, and 5, still need to develop or fully implement their plans.
IV: AGREEMENT-LEVEL AND COMMON FINDINGS AND CONCLUSIONS

This section outlines the Agreement-level findings and conclusions as well as those of a common nature, applying to all, or a number of programs. In this regard, this section discusses: FRDA II Impacts; and, Management Framework.

FRDA II IMPACTS

The impacts of FRDA II have already been significant to the mid-point. In terms of operational silviculture activities, more than 61,000 hectares have been treated, creating approximately 569 person-years of employment, to June 30, 1993. The total net extra returns over costs and social return on investment, or economic gain expected from these silviculture operations, to June 30, 1993, is in the order of $46 million.

The major impacts, which can be quantified during the Agreement period, should come from the incremental silviculture investment projects - spacing, fertilizing and pruning young stands. Approximately $100 million-worth of these activities are planned over the 5-year Agreement period and to June 30, 1993, as planned, approximately $28 million had been expended.

The major impacts expected are in the value and timing of future harvests on particular sites, not in an expanded volume of harvest. The only treatment being applied with clear volume implications is fertilization, which is a relatively minor part of the planned program.

The illustration on the following two pages portrays the expected impact of a typical spacing investment in Coastal Douglas Fir. The spaced stand may in fact yield slightly less total merchantable volume than the untreated stand - depending on rotation selected, utilization standards at the time of harvest, and other factors. However, it is expected to yield a higher average size and value of bolewood, due to the concentration of stand biomass production on fewer trees. Also, economic/commercial rotation can be shortened (Note 1), and in addition, pruning of lower branches can add further value, through the production of clear (knot-free) wood.

Note 1: Stand responses will vary by site, species, intensity of treatment and other factors such as weather in the year of treatment; costs of each treatment vary by competition contracts, density/treatment specified, accessibility, terrain and other factors; future prices will vary by species, piece size, grade, density, future scarcity and other factors. Expected values, or central estimates are used for projection and analysis in each dimension.
UPPER RIGHT
Spaced stand 15-20 years old
Douglas Fir - medium site
595 Stems per hectare
Average Treatment Cost: $976/ha.

LOWER RIGHT
Spaced stand 80 years old
494 Stems per hectare
Merchantable volume: 632 m³/ha.
Average diameter at breast height: 45 cm
Net Present Value: $4,340/ha.

UPPER LEFT
Untreated stand 15-20 years old
Coast Douglas fir - medium site
4,444 Stems per hectare

LOWER LEFT
Untreated stand 90 years old
918 Stems per hectare
Merchantable volume: 738 m³/ha.
Average diameter at breast heights: 34 cm
Net Present Value: $1,461/ha.
If the total benefit analysis can be conducted within a particular forest management estate, e.g. Timber Supply Area (TSA) or Tree Farm Licences (TFL) in British Columbia, some increased harvest in a particular period could be predicted. This harvest could have especially high economic and social value if it helps avoid or reduce industry dislocation during a temporary scarcity of commercial-size timber (e.g. during a temporary period of projected Allowable Annual Cut "falldown").

Unfortunately, the necessary framework for forest estate (TSA) analysis of such investments is not yet in place in British Columbia. Silviculture investments in British Columbia, which are expected to result in positive changes in yield and timing of harvest, are still not reflected in official timber supply projections. The lack of such a framework has impacts far beyond FRDA II, but does hinder the quality of an analysis of the current FRDA II investments.

In the absence of an appropriate forest framework, silviculture planners made a sensible decision to develop a stand-level model which could assist in allocating resources to each stand type. A target ROI of 4% (real) was established, and expected net present values of each treatment were generated. These expected net returns should be greater than the treatment cost for each stand to be treated.

Long-term impacts of program and sub-programs such as Research and Development, Forest Resource Inventory and Silvicultural Systems are expected to be significant. However, quantification of such impacts are difficult, though they can be assessed in terms of factors such as:

- Cost savings;
- Extra sustainable harvest; and,
- Higher value forests.

To be able to perform more complete quantification, additional studies are required and we have made recommendations in this regard, in the Program Assessment section of this report.

Similarly, the work on future developments in the British Columbia forestry sector - for example, development of hardwood resources, in sub-program 1.3, and of secondary forest industries, in Program 5, entail very large potentials for socio-economic gain in the province and nationally. These goals and targets could be better quantified and the program priorities clarified based on the quantification of both costs and benefits of achievement.

1. The Management Committee should direct an increased emphasis on the definition of costs, benefits and impacts, in all programs, over the remaining term of the Agreement.
MANAGEMENT FRAMEWORK

Management Structure

The jointly shared management framework and administrative structure in the complex and diverse FRDA II Agreement appears to function reasonably well. However, there is a "gap" between the overall Agreement direction provided by the Management Committee and the operational implementation managed by the Working Groups. This gap centres on the effective coordination and challenge of specific operational plans and priorities in regards to the overall Agreement objectives and intents. The current initiative involving two of the Management Committee members is assisting, and likely will continue to assist, to bridge this gap.

The existing management framework of FRDA II is structured as follows:

- The Management Committee consists of 2 senior representatives from each of the two levels of government. This Committee is responsible for overall direction-setting and management of the Agreement.

- The Secretariat reports to the Management Committee, and is responsible for co-ordinating the fiscal management and implementation of the Agreement in support of the Committee. It is the liaison and administrative link between the operational Working Groups and the Management Committee. Also, it functions as the Working Group responsible for implementing Program 7 of the Agreement.

- Working Groups, co-chaired by a representative of both governments, are responsible and accountable for implementing and delivering the Agreement's seven programs. From a reporting standpoint, these Working Groups are answerable directly to the Management Committee.

- An Advisory Committee who provide advice to the Management Committee.

The Management Committee appears to function effectively, as an overall direction-setting management body for the Agreement. As intended, in an extremely diverse and complex Agreement like FRDA II, this Committee is generally not involved in program-specific operational decisions and initiatives.

The Secretariat has developed and implemented a number of policies and procedures to ensure sound administration of Agreement program activities.

The Working Group structure has worked well and offers the advantage of ensuring operational programs are managed in a hands-on manner, by teams very familiar with the programs.
While the individual components of the Agreement management and administrative structure, taken separately, appear to operate effectively, it has not resulted in the optimum combination of Working Group empowerment with overall Agreement-level steering and direction-setting. This is the result of a structure whereby the Working Groups report directly to the Management Committee, without any clear and defined intermediate link to challenge and coordinate their specific implementation activities and initiatives. Given the overseeing and direction-setting responsibility of the Management Committee, it is not surprising that this reporting relationship has resulted in considerable Working Group autonomy, in terms of program-specific priorities and initiatives, albeit within the broad Agreement framework. Whereas the issue of Working Group autonomy is not in question, the absence of any mechanism to challenge program plans prior to their presentation to the Management Committee is a concern.

This concern is being addressed. Two of the Management Committee members have become more directly involved with the Secretariat and the Working Groups.

This recent initiative and approach essentially bridges the gap by linking the Agreement’s overall management group more closely with the operational Working Group level, although not through a formal re-structuring or mandate re-definition.

2. For the remaining term of FRDA II, and in future agreements, selected members of the Management Committee should continue to participate in a hands-on manner by working more closely with the Working Groups and the Secretariat.

Advisory Committee

The Advisory Committee, as a communications mechanism for stakeholders in the FRDA II Agreement, has not been an effective mechanism for providing advice to the Management Committee. This is due mainly to a lack of clarity and definition of their role as advisors to the Management Committee.

An Advisory Committee, a forum for external stakeholders, including industry, has been established with terms of reference to provide:

☐ an avenue for communications between Management Committee and forestry stakeholders; and,

☐ an opportunity for forestry stakeholders to put forward recommendations and advice to Management Committee on the programs.

However, the Advisory Committee has met several times and has delivered some useful advice to the Management Committee.
We found a general lack of understanding and consensus, including amongst Advisory Committee members, of what the specific role of the Committee is, or should be. Members we spoke to felt strongly that the specific role has not been clear since the inception of the Committee. Some felt that, to have been effective, the Committee should have been constituted at the time the Agreement was being developed so that input and advice could have been offered during its design.

A consequence of this lack of clarity regarding the Committee's role has been reduced participation by members and relatively low turnouts at meetings.

To be able to play an effective advisory role, the Committee needs a working understanding of program and sub-program activities. Based on our interviews and observations, this has not been the case to date. Some of the Working Groups felt that the Committee could be useful to them, to obtain stakeholder input, but that the Committee was not playing such a role, nor, as constituted, was it intended to.

In overall terms, we concluded that the current uncertainty regarding the mandate of the Advisory Committee has not supported its intended role as an effective mechanism for providing advice to the Management Committee. We consider that a need for such a body still exists, to provide an avenue for forestry stakeholder input and communications, at an overall Agreement level.

3. The Advisory Committee should focus more on communicating FRDA II initiatives to stakeholders and, in turn, providing feedback to Management Committee on stakeholders' interests, anxieties and concerns.

4. In future agreements of this nature, an Advisory Committee would be more effective if it is constituted at the initial design stages of the Agreement, has a clear mandate and is seen as an integral component of the agreement's overall framework - not as managers of the agreement objectives, but rather, as challengers and advisors to the process during direction and goal setting.

**Accountability**

Effective accountability at the Working Group level is assisted through a number of policies and procedures requiring planning, reporting and monitoring. However, accountability mechanisms are weakened, due to the management structure weaknesses already discussed and a lack of measurable output-oriented performance measures. The recent initiative whereby certain members of the Management Committee are working more closely with the Working Groups and the Secretariat, may provide an effective vehicle for improving accountability, both during the remainder of the Agreement and in the future.
Working Group accountability is facilitated through a series of policies and procedures developed by the Secretariat. Program and sub-program planning is performed through five year and annual plans assembled by the Secretariat and approved by the Management Committee. At the project level, planning is performed through Working Group project commitments. Reporting includes Quarterly and Annual reports, prepared by the Secretariat, to which Working Groups provide input.

Program, sub-program and project monitoring is performed by Working Groups, although independent evaluators may be, and have been, appointed. The independent annual audits and mid-term and final evaluations, also assist in monitoring performance and in ensuring accountability.

Due to the general wording of most program and sub-program objectives and goals, measurable performance criteria typically are not defined in quantifiable terms, and those that are, are not output or result oriented. This makes it extremely difficult to effectively measure performance.

Project selection and funding is primarily a Working Group responsibility, within the overall Agreement parameters, policies and procedures. Based on the current management structure, no-one beyond the Working Group is likely to review specific detailed project selections and allocations critically to ensure that they are consistent with the overall Agreement priorities, and are not disproportionately emphasized or skewed in favour of particular interests.

Working Group reports are not probed in depth, and there is no rigorous process of reporting against agreed performance criteria.

In overall terms, Working Group accountability could be improved by tightening the general wording of, and quantifying goals and objectives and by addressing the structural issues set out under the Management Structure above.

5. To improve accountability, clear and measurable output or result-oriented performance measures should be established at two levels: at the individual (significant) project level; and, at the program level.

6. The two Management Committee members, working in conjunction with the Secretariat, should perform a critical review of annual plans including significant new project initiatives to ensure consistency with overall Agreement priorities and with other program initiatives.
V PROGRAM ASSESSMENT

1. SUSTAINABLE FOREST DEVELOPMENT
   - OPERATIONAL ACTIVITIES

Program Overview

This program consists of two sub-programs: 1.1: Tending the Forests; and, 1.2: Integrated Resource Management (IRM).

As set out opposite, the five-year budget for this part of Program 1 is approximately $120 million, split between the sub-programs.

1.1 Tending the Forests

The major goal of this sub-program is to improve the value, quality, and health of young forests, through incremental stand tending activities. These include improvements to: stand spacing - to promote larger individual trees at harvest; fertilization - to add extra bole growth; and, pruning - to produce knot-free wood.

Over the term of the Agreement, total original FRDA II Program 1.1 physical goals were established at 85,000 hectares of spacing, 23,000 hectares of fertilizing and 12,000 hectares of pruning. The budget for tending activities was divided among the six forest Regions of British Columbia based upon an updated version of the FRDA I allocation. The total treatment goals have been reduced somewhat since program inception, due to shifts from this Program to other programs, and the reduction of the total FRDA II budget since 1993.

The goals also included the development of a Geographic Information System (GIS) for silviculture data.

1.2 Integrated Resource Management (IRM)

This sub-program aims at facilitating cooperation with other resource agencies in planning, assessing, implementing and monitoring FRDA II projects in relation to their impact on non-timber resources. The sub-program activities are to include data collection and analysis, specialized inventories and mapping, and the refinement of operational guidelines for managing the forest resources.

Other agencies, such as the British Columbia Ministry of Environment, Lands and Parks, have important responsibilities in the many interactions of forest-dependent resources, and FRDA II resources have been channelled to support selected work within these "non-Agreement" agencies.
Program 1: Operational Activities
Share of Funding

Other FRDA Programs
$79.7M  40%

1: Operational Activities
$120.3M  60%

1.1: Tending the Forests
$110.3M  92%

1.2: IRM
$10M  8%

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The sub-program has important relationships to other sub-programs funded under the Agreement, such as new silvicultural systems development (1.4) and resource inventories (1.5).

**Program Assessment**

The operational silviculture sub-program has been achieving its targets over the first half of the FRDA II Agreement. Activities have been executed through normal Ministry of Forests channels of project identification and executed by contractors after competitive bidding. Total physical targets have been exceeded, after two full years of the Agreement term.

Achievement of socio-economic goals appears to be less clear, but general guidelines for economic allocation of resources have been developed and are being used.

Given their "soft" nature, the Integrated Resource Management targets have been more difficult to quantify. Several notable items of progress have been achieved, including methods of wildlife habitat protection during logging. Improved quantification of expected costs and benefits is needed.

**Relevance**

Activities in Sub-program 1.1 are relevant to the sustainable development, employment, community stability and other socio-economic objectives of the Agreement.

There was broad agreement in the interviews conducted that Integrated Resource Management was an important priority for the forest sector. FRDA II management have recognized this priority, by shifting $7.5 million additional funds to this sub-program.

The proposed GIS work also supports general objectives, but appears to fit more logically within sub-program 1.5: Forest Resource Inventory, due to the focus of that sub-program on related issues.

**Achievement of Intended Results/Impacts**

Program 1.1 spans a range of forest treatments and forest types, across the regions of British Columbia. Total physical goals for spacing, fertilizing and pruning, totalling 38,000 hectares for the first two years of the Agreement, have been exceeded.

In some cases it is more difficult to judge, from existing TSA information, whether the underlying socio-economic targets, which have not been quantified, are being achieved.
Our broad approximation of expected results indicates a significant economic gain can be realized from silviculture activities to June 30, 1993, in the order of $46 million. This gain will be in addition to the return of the initial investment plus 4% ROI over the period from treatment to harvest.

Economic employment is provided within stand treatment activities, when appropriate investment criteria are used to allocate program resources, and contracts are let on a competitive basis. For stand treatment projects, a microeconomic framework for analysis was developed, which will lead to expected real returns of at least 4% per annum, on the labour and other costs invested in each treatment.

Our estimates indicate some 569 person-years of direct employment have been created by silviculture activities to date.

Using the regional allocation framework, the FRDA II management team has attempted to balance goals of highest return on investment with goals of region/community stability. Part of the socio-economic work within the Agreement has been allocated to the development of a framework to guide investments on a stand basis. This should assure reasonably efficient use of stand tending funds.

However, the existing British Columbia forest information base should permit a more direct linkage between silviculture investments and expected socio-economic outcomes.

The expected improvements in forest value at time of harvest can be specified through reasonable forecasts. Reduced rotations can also be achieved, thus favourably altering the pattern of commercial wood supply over time. This can enhance economic stability in forest-dependent communities. Results must, of course, be monitored over time, on an operational basis.

Missing links in planning systems, in operational forest monitoring and in official forest estate (timber supply) projection systems prevent the best feasible analysis of actual impacts of the program at present. These gaps are beyond FRDA II to rectify, and relate to all silviculture investments made on public lands in British Columbia. However, they do impact our, and FRDA II’s management, capacity to adequately or fully measure the intended impacts.

We noted that physical silviculture goals are weighed towards the end of the Agreement period. This suggests that if Program 1.1 funding were to be reduced, overall goal achievement, as currently defined, will likely similarly be reduced.

Sub-program 1.2, Integrated Resource Management, presents an even more difficult task in prioritizing projects to achieve the most significant improvements in forest resource sustenance with given resources and in monitoring the results.
There are many accomplishments and definable elements of "progress" through this sub-program, but few defined criteria have been established for monitoring the actual results in British Columbia. Much work will be needed in future to make these definitions in order to use resources economically in this important, complex and rather "soft" field of forest management and, also, to measure impacts.

In general, the targets of the Integrated Resource Management sub-program appear to have been met, within allocated resources.

Based on performance to date and continuing planned funding levels, achievement of overall goals and targets, in both sub-programs, by the end of the Agreement period would appear to be possible.

Appropriateness

In the Tending the Forests sub-program, there are no apparent discrepancies between funding levels and expected results within program allocations. Field activities were allocated through competitive bid procedures and, monitored using existing Ministry of Forests resources.

Integrated Resource Management funding appears reasonable in relation to goals and objectives to be achieved. The Integrated Resource Management field is undergoing rapid change during the course of the Agreement and project activities are "playing catch-up" in many cases. As noted, further work on explicit objectives and sound monitoring systems will be valuable in future to ensure sound resource allocation.

Responsiveness

The original goals of sub-program 1.1 were reduced in 1992-93 as a result of an overall FRDA II budget contraction and in response to increasing pressures to enhance Integrated Resource Management activities in many British Columbia forest areas. The reductions were made selectively, rather than "across the board". For example, stand tending area was reduced by about 10%, fertilized area by about 44%, and pruned area by about 29%.

Although the criteria used are not evident, the re-allocation reflects a reasoned response to the budget reduction and priority shifts. Operational realities and degree of preparation of projects at the time played a major role.

The tending program has also responded to the allocation guidelines being provided through the socio-economic program to achieve a real return on all silviculture investments made through the program. However, the response has been somewhat weakened by continued dialogue in the Regions over expected yields and other parameters of the analysis. New guidelines are planned for release in 1994.
### FRDA II Mid-term accomplishments by region
(Program 1.1: total hectares treated - to June 30, 1993)

<table>
<thead>
<tr>
<th>Region</th>
<th>Surveys</th>
<th>Spacing</th>
<th>Fertilizing</th>
<th>Pruning</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cariboo</td>
<td>749</td>
<td>4,214</td>
<td>0</td>
<td>38</td>
<td>5,001</td>
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<tr>
<td>Kamloops</td>
<td>1,577</td>
<td>3,155</td>
<td>0</td>
<td>414</td>
<td>5,146</td>
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<tr>
<td>Nelson</td>
<td>3,061</td>
<td>4,670</td>
<td>0</td>
<td>452</td>
<td>8,183</td>
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<tr>
<td>Prince George</td>
<td>2,938</td>
<td>4,666</td>
<td>0</td>
<td>20</td>
<td>7,624</td>
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<tr>
<td>Prince Rupert</td>
<td>357</td>
<td>1,786</td>
<td>0</td>
<td>320</td>
<td>2,473</td>
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<tr>
<td>Vancouver</td>
<td>9,228</td>
<td>11,520</td>
<td>10,444</td>
<td>1,633</td>
<td>32,825</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>17,920</strong></td>
<td><strong>30,011</strong></td>
<td><strong>10,444</strong></td>
<td><strong>2,877</strong></td>
<td><strong>61,252</strong></td>
</tr>
</tbody>
</table>

### FRDA II Mid-term employment by region
(Program 1.1 worker days per hectare - to June 30, 1993)

<table>
<thead>
<tr>
<th>Region</th>
<th>Surveys</th>
<th>Spacing</th>
<th>Fertilizing</th>
<th>Pruning</th>
<th>TOTAL</th>
</tr>
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<tr>
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<td>14,749</td>
<td>0</td>
<td>228</td>
<td>15,052</td>
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<td>Kamloops</td>
<td>158</td>
<td>11,043</td>
<td>0</td>
<td>2,484</td>
<td>13,685</td>
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<td>Nelson</td>
<td>306</td>
<td>16,345</td>
<td>0</td>
<td>2,712</td>
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<tr>
<td>Prince George</td>
<td>264</td>
<td>16,331</td>
<td>0</td>
<td>120</td>
<td>16,745</td>
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<tr>
<td>Prince Rupert</td>
<td>37</td>
<td>6,251</td>
<td>0</td>
<td>1,920</td>
<td>8,208</td>
</tr>
<tr>
<td>Vancouver</td>
<td>923</td>
<td>40,320</td>
<td>1,044</td>
<td>9,798</td>
<td>52,085</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,793</strong></td>
<td><strong>105,039</strong></td>
<td><strong>1,044</strong></td>
<td><strong>17,262</strong></td>
<td><strong>125,138</strong></td>
</tr>
</tbody>
</table>

Total person-years 569

Factor

|          | 0.1 | 3.5 | 0.1 | 6.0 |

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$7.5 million has been re-allocated to the important Integrated Resource Management sub-program by adding range and recreation elements to that sub-program. This was a recognition by FRDA II management of the increasing importance of this area, a recognition of the need to better balance priorities and, in part, a response to strong public pressure.

Management Direction

Stand tending programs delivered at the District level are well controlled and reported. Most activities are executed via competitive contracts administered through well-established Ministry of Forests systems and channels of authority.

For operational stand treatment projects, a framework for analysis at the stand level was developed which would lead to expected real returns of at least 4% per annum on each investment/treatment. Unfortunately, agreement has not been reached with all the implementing regions on the consistent application of the framework to program-funded operations. This raises some question of whether stand selections for treatment are all on an economic basis. Some stand treatments are also for IRM reasons which do not generally enter the economic calculations.

In the Integrated Resource Management sub-program financial and achievements reporting by inter-agency groups on new administrative methods and on research-development activities proved more difficult. In the case of Integrated Resource Management projects, management control is exercised through the Habitat Silviculture Protection interim reporting system.

Maintaining forest health has been a continuing concern in all treatments and Integrated Resource Management activities. However, it is clear that continuous monitoring should occur, for both physical and economic impacts.

Accomplishments

Results and Impacts

Physical accomplishments by Region, for the period to June 30, 1993, are set out opposite. Total physical goals for spacing, fertilizing and pruning, totalling 38,000 hectares for the first two years of the Agreement, have been exceeded.

In direct employment terms, some 569 person-years of employment has been created, throughout British Columbia. Worker days per hectare, as well as the distribution of employment is set out opposite.
**FRDA II Mid-term estimated total gains by region**  
*(Program 1.1: to June 30, 1993)*  
($000's)

<table>
<thead>
<tr>
<th>Region</th>
<th>Spacing</th>
<th>Fertilizing</th>
<th>Pruning</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cariboo</td>
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<td></td>
<td>$3</td>
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</tr>
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<td>Kamloops</td>
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<tr>
<td>Vancouver</td>
<td>$21,923</td>
<td>$11,791</td>
<td>$1,796</td>
<td>$35,510</td>
</tr>
</tbody>
</table>

**TOTAL**  
$32,519  
$11,791  
$1,912  
$46,222

This table shows expected NPV gain, which is in addition to return of initial investment (treatment cost) plus 4% per annum.
In some cases it is more difficult to judge, from existing summarized management information, whether the underlying socio-economic targets are being achieved. To quantify the expected returns from each silviculture investment, it would be desirable to have available, as a matter of normal practice, operational summaries containing details such as: species and site treated; original stand density; and, post-treatment density. Operational monitoring data from previous treatments would also be desirable (i.e. real results data).

In the absence of most of this data, we have attempted a broad approximation of expected economic results, based on individual stand projections of "average" conditions, in each Region. These projections are based on stand models and value estimates developed in the course of FRDA II work on guidelines for these activities, as outlined in the report titled "Background and Recommendations for Juvenile Spacing Standards in B.C."

We show an estimate of the expected gain from the silviculture investments made in Program 1.1 during the first half of the FRDA II Agreement, in the table opposite. These totals were estimated using expected net returns from medium site stands of typical species in each District. The total additional returns, over costs and social return on investment or economic gain, from the investment in silviculture operations to date is expected to be $46.2 million.

The table also illustrates these estimated net returns by forest region in British Columbia. The higher returns (yields) expected from the higher productivity stands of the South Coast are evident. The regional distribution of effort was made through a combination of financial and socio-economic (e.g. regional employment) objectives.

**Other Accomplishments**

- Worker training manuals for stand tending activities are available and appear to be well done.

- Efficient use of existing non-FRDA II committees and structures for Integrated Resource Management:
  
  - Incremental silviculture projects have been referred to the Ministry of Environment, Lands and Parks for pre-treatment impact analysis.
  
  - The Habitat Silviculture Protection (HSP) Working Group is a good example of needed inter-agency co-operation. 50% of sub-program 1.2, approximately $5 million, goes to this type of work (e.g. grizzly bear habitat and wildlife tree work).
• Range and recreation components are administered by the Sustainable Forest Development Working Group but projects are proposed and carried out by the Ministry of Forests’ Regions. Range management improvements include maintenance projects (weed control) and permanent monitoring plots. In recreation, major products are forest interpretation sites and guidelines for visual landscape management.

☐ A GIS Master Plan of activities has been prepared in three main areas: silviculture and inventory data sharing; short term GIS applications in silviculture; and, a long term data model, including principles and requirements documents.

Findings and Conclusions

Stand Tending

The physical targets for stand tending are being met, on time and within budget.

As the largest and most operational of the FRDA II incremental silviculture activities, this program is expected to generate the most solid, definable socio-economic benefits from the Agreement. A report entitled "Benefits of Incremental Silviculture", seems to have formed the basis for justifying stand tending activities (e.g. 1.4 million m³ of additional wood supply). We believe that the methodology used to support the conclusions in this report is challengeable and that the main benefits of stand treatment are not in extra volume but will be found in enhanced stand values and shortened rotations.

The Sustainable Forest Development Working Group has arranged various studies of juvenile spacing, pruning and fertilization to target stand types in planning programs as well as in current justification of program funding. Guidelines are being developed as a means to ensure that budgets are spent in the most effective manner possible.

At present the stand tending program guidelines utilize cost caps to keep project unit values within reasonable bounds. Cost/benefit studies are used in setting the cap levels. These efforts are positive and important to the ultimate achievement of the socio-economic objectives of these, the largest set of FRDA II investments.
However, allocation of program dollars in British Columbia could be achieved by an effective analysis of both forest level and stand level benefits - this has not been done. Benefits are therefore not reflected in Ministry of Forests timber supply analyses. The most significant social and economic benefits from silviculture investments will be realized only after they are incorporated in the setting of official allowable cuts in British Columbia.

The relationship between the long term silviculture data model and the Resource Inventory Committee process needs clarification. The continuing separation of operational records of silviculture investments from forest inventories and timber supply projections is a major weakness of current management information systems in British Columbia. We recognize this is well beyond FRDA II to resolve, but it does limit the quality of an analysis of the current FRDA II investments. However, progress is being made towards achieving better data through the Forest Resource Inventory sub-program.

7. Management Committee should encourage and support the implementation of stand and forest estate level strategic goal analyses, integration of silviculture records into yield projections and related socio-economic analyses for allocation and efficient use of funding.

8. Operational monitoring data from previous treatments should be collected, summarized and reported at reasonable intervals (i.e. 10 years).

Work is beginning on a "Stand Tending Benefits Plan" which will document stand level responses to tending anticipating eventual input to forest level modelling. Important work on forest data modelling (silviculture and forest inventory) is being conducted outside of the FRDA II mandate. Also, work is ongoing on forest level impacts from stand tending.

We noted that the original Agreement funding did not include a provision for the surveys necessary to find and allocate operational activities, but these activities subsequently have been incorporated.

There is a need to further improve consideration of Integrated Resource Management factors in operational silviculture activities - e.g. habitat, forage and snag recruitment.
Integrated Resource Management

Project targets and general administrative improvement targets are being met.

In this field, the definition of gains and losses due to project activities presents complex challenges. Nevertheless, operational definitions are needed. Prescriptions for extra referrals, additional inspections, etc. are rarely cost-free, and each needs careful analysis in terms of expected benefits.

We believe it would be desirable for FRDA II to support more explicit analysis of expected costs and benefits for allocation and efficient use of funding due to the importance of Integrated Resource Management activities.


In general, it is clear that public communications of Integrated Resource Management initiatives and results is one of the forest sector's critical issues to be addressed in the mid-1990's. FRDA II can contribute further to enhance progress in Integrated Resource Management communications. An increase in the planned contacts between the Working Group and the communications program (2.0) may be required.
1. SUSTAINABLE FOREST DEVELOPMENT
- NEW DIRECTIONS

Program Overview

This portion of program 1 consists of three sub-programs: 1.3: Hardwood Management, 1.4: Silvicultural Systems and 1.5: Forest Resource Inventory.

The goals are to develop increased knowledge of hardwood management, silvicultural systems and forest resource inventories by:

☐ Assessing the strategic relevance of the hardwood resource and developing operational guidelines for its integrated management;

☐ Assessing the range of silvicultural systems that can be applied in British Columbia with the intent of improving, understanding and providing useful guidelines to select and apply the appropriate silvicultural systems alternatives; and,

☐ Designing and implementing an integrated forest resource inventory.

The intent with the New Directions sub-programs is to concentrate on adoption, assimilation and integration of research results and new techniques.

As set out opposite, the five-year budget for this part of program 1 is approximately $10 million, split between the three sub-programs.

Program Assessment

The hardwood management sub-program has achieved important steps towards an effective development strategy for this "new" component of British Columbia forest resources. The timing of strategic reviews, which might have helped set priorities, and the initiation of broad project activities has not been ideal. The potential gains are large in both economic and environmental dimensions.

New silvicultural systems have been explored for many sites and conditions in British Columbia. Refinements of clear-cutting offer much promise, as well as alternative systems. Clearer definition and monitoring of expected costs and benefits should follow initial development and trial of new systems.

Significant progress has been achieved on assessments of existing systems and on the development of new integrated resource inventory standards and data models. Progress has been slower than planned partly because of the extensive interaction required for a multi-agency/multi-department environment to function smoothly.
Program 1: New Directions
Share of Funding

Other FRDA Programs
$189.7M 95%

1: New Directions
$10.3M 5%

1.3: Hardwood Management
$1.5M 15%

1.4: Silviculture Systems
$3.3M 32%

1.5: Forest Resource Inventory
$5.5M 53%
Relevance

Activities are relevant in terms of several Agreement goals and the sub-program goals. For example:

- new industry possibilities and environmental enhancements are available through hardwood management in British Columbia;
- new silvicultural systems will enhance sustenance of all forest-based resources; and,
- improved inventories of all resources are critical to the on-going decision-making process on British Columbia public lands.

Achievement of Intended Results/Impacts

Impacts and benefits are long-term and difficult to define. Planning systems and technical advisory groups are used to ensure goals and objectives are addressed, in each sub-program.

Hardwood Management

The hardwood management program in British Columbia is at an early stage, but strategic guidance is being developed under FRDA II, which can be expected to yield significant benefits in future. Three important hardwood species on the British Columbia Coast represent at least 40 million m$^3$ of timber in potential economic inventory; three others in the Interior represent over 400 million m$^3$.

Economic management of these species also offers significant potential for enhanced wildlife habitat, soil conservation and reduced pesticide use in British Columbia.

These initial projects appear to be designed to make a useful contribution to the ultimate realization of these potentials. Goals and objectives in this sub-program appear to have been broadly achieved, and overall goals and objectives should be attainable by the end of the Agreement.

Silvicultural Systems

The silvicultural systems sub-program is one that should have a significant pay-back through the introduction of alternative systems to replace clear cut logging, where appropriate, and through the modification of British Columbia logging systems to conserve the full set of forest and related resources.
Some socio-economic gains are predictable, if these systems help to ease local public and international concerns with British Columbia logging practices through allowable harvest sustenance and market access protection. Effective public communication of progress will be a critical measure to demonstrate whether these gains are being achieved.

As for stand-tending and Integrated Resource Management, the ultimate objective in British Columbia will be to encompass new silviculture methods in forest estate projections, where costs and benefits can be assessed operationally.

Several significant items of progress have been achieved and are presented under Accomplishments. Goals and objectives appear to have been broadly achieved to date, and overall goals and objectives should be attainable by the end of the Agreement.

Forest Resource Inventory

Improved resource information systems were identified as critical to meeting sector objectives, in pre-FRDA II studies. The forest resource inventory sub-program has achieved significant progress on its objectives including the difficult task of adding "other" resources to the traditional timber-oriented systems.

The Resource Inventory Committee (RIC) established under FRDA II, recognizes that the proposed complete inventory system and planned pilot surveys will be a challenge to complete within the FRDA II term. However, major targets are still held as firm. In addition, a new provincial mechanism has been established, with Resource Inventory Committee support, to continue basic inventory improvements.

Appropriateness

Hardwood Management

The strategic studies which have been initiated to foster utilization of British Columbia hardwood resources appear to be appropriate at its current stage of development. Events have been moving very rapidly in this field in the adjacent areas of Alberta and the Pacific North-west States. British Columbia could accelerate its own initiatives to further utilize its hardwood resources.

Resources allocated appear to be reasonable in relation to planned objectives, although Hardwood Management may not be seen as high a priority as appears to be the case in other jurisdictions.
Silvicultural Systems

Objectives, plans and guidelines are being addressed with sufficient resources to cover most areas of research and development identified at present. However, current and proposed funding will not enable all necessary combinations of harvest systems and ecosystems to be investigated. Priorities must be reviewed continuously to ensure they are adequately and appropriately funded.

It would be desirable to develop an explicit framework for analysis and projection of costs and impacts of various proposed new silvicultural systems.

Forest Resource Inventory

Resources allocated for resource inventory improvement appear to be adequate to meet immediate FRDA II targets. Sub-program activities will not achieve the "ultimate" proposed systems of British Columbia resource inventories, which is clearly a wider goal. However, FRDA II will make a significant contribution through continued funding and support over the remaining term of the Agreement.

Responsiveness

Hardwood Management

We found this sub-program to be reasonably responsive. The current Hardwood sub-program’s annual plan brings a shift in emphasis to the preparation of operational guidelines.

Silvicultural Systems

The Ministry of Forests silvicultural systems program presented what amounts to an internal mid-term evaluation by publishing a discussion paper on the Silvicultural Systems Program. Recommendations from this report have been integrated into the program, to ensure the sub-program responds well to changing conditions.

A switch in implementation strategy toward identifying specific research areas (silvicultural system and ecosystem type) and providing results in the form of operational guidelines has been a necessary and beneficial step.
Forest Resource Inventory

Inventory sub-program plans are well articulated and have demonstrated responsiveness to change, indicated by the inclusion of a broadened spectrum of involvement, by a number of groups.

Management Direction

Hardwood Management

The Hardwood sub-program has recently completed a strategic assessment. Draft versions of this assessment support original program plans and intentions.

Use of existing Ministry of Forests structures such as the Hardwood and Vegetation Management Technical Advisory Committee has had several advantages, including:

☐ avoiding duplication of effort;
☐ ensuring integration with existing programs; and,
☐ addressing continuity of staff and use of best suited and interested people.

The evaluation team noted that monitoring of the Hardwood sub-program takes place on an ad-hoc basis and on Working Group tours. Expenditure and progress monitoring is regularly performed.

Silvicultural Systems

The Silvicultural Systems sub-program is controlled within a multi-disciplinary and multi-level administrative and advisory structure that includes permanent Ministry of Forests committees and FRDA II committees. Branch directors’ involvement on the Silvicultural Systems Steering Committee emphasize the importance of the sub-program.

The post-review focus on specific ecosystems helps to avoid waste of resources in trying to address management of systems which are too broad for operational prescriptions.
Forest Resource Inventory

Management control over budgets and spending is complex in the Inventory sub-program, but performance in terms of actions taken is well reported in annual progress reports.

Intermediate reports from task forces have been used to redirect organizational activities and ensure a logical progression towards goals.

Accomplishments

Hardwood Management

☐ Strategic assessment of the hardwood resource, recently completed.

☐ An extensive list of completed and on-going research projects with results in silviculture, ecology, wildlife, forest health and growth and yield in mixed wood and hardwood forests, problem analyses of cottonwood management and interactions of hardwood management with wildlife.

Silvicultural Systems

☐ Discussion paper on Silvicultural Systems Program, which amounts to an internal mid-term evaluation of the sub-program.

☐ Preparation of training materials and silvicultural systems workshop, wildlife interactions seminar and a handbook on wildlife trees.

☐ Ministry of Forests Silvicultural Systems Program Guidelines (partial FRDA funding) provides the current framework for Ministry of Forests’ program planning.

☐ Improved planning process and advisory structure to facilitate inter-agency communication and shared information flows.

Forest Resource Inventory

☐ Inventory sub-program developed through a structured consultative process involving 6 Provincial and 2 Federal Ministries.

☐ Reports, prepared by task forces, on current British Columbia resource inventory systems summarize the inventory information currently being gathered and stored.
Pilot projects for the vegetation inventory used to streamline data acquisition, identify gaps and overlaps, and provide cost information. Future pilots will test designed inventory systems.

Inventory designs and manuals in progress for aquatic fauna, aquatic flora, terrestrial fauna, surficial and bedrock geology, ground water, surface water, marine resources, and cultural and archaeological resources.

Resource Inventory Committee inventory communication efforts include 300 FAST FAX newsletters, regularly distributed, and a television show on the Westland Series.

Findings and Conclusions

Hardwood Management

A strategic assessment of the hardwood resource has been performed and will be used to guide remaining program activities. We noted that the Technical Advisory Committee and government agencies provided input but limited industrial client input was obtained. This could be achieved during the balance of the Agreement.

It was also noted that increased focus could be placed on inventory and growth and yield prediction systems for hardwoods.

10. Management Committee should consider increasing the priority of the Hardwood Management sub-program as current levels of resources limit the achievements that can be gained in this important area.

Silvicultural Systems

The natural divisions between operations, research, government and industry can be overcome in practice with integrated trials. Trials provide an opportunity to enumerate additional costs and benefits to alternative silvicultural systems as well as impacts from these systems. Data collection and case studies emphasizing this approach are important to encourage in order to show benefit, demonstrate impacts, measure performance and attract additional funding.
Regulation in this field is increasing in importance and impact. All levels of government are involved. Improved systems for operational trials, appropriately structured and integrated to include all relevant stakeholders, are urgently needed.

Operations and research can only be bridged by implementing project management guidelines that include technology transfer, extension and reporting requirements and the operational decision making environment.

11. The Silvicultural Systems sub-program Working Group should ensure all silvicultural operational trials include the study and the enumeration of all related costs and benefits and should include explicit consideration of the operational decision making framework.

Significant progress in the silvicultural systems area is particularly important in British Columbia at present, given the existing and likely continuing public pressure with respect to land use issues and traditional logging practices. FRDA II is already achieving progress in this area through its investment in the sub-program. However, given its importance, additional priority in this area may be desirable.

12. Management Committee should consider placing a higher priority on silvicultural systems development.

Forest Resource Inventory

Changes in the Resource Inventory Committee structure have led to better integration of agencies and improved communication. A secretariat is used to handle document archival and distribution.

Management control over budgets and spending is complex in the Forest Resource Inventory sub-program. The attempt to include all or most forest related groups in the work of the Resource Inventory Committee has complicated the core timber inventory problem and delayed the achievement of some objectives. There is still some disagreement over whether the development of an "integrated data model" should delay the design for known needs in timber inventory.
The Resource Inventory Committee program is by nature consultative and deliverables include reports from many committees, sub-committees and task forces. However, the size of some committees, duplication of skill sets within committees, and the propensity of committees to spin-off new sub-committees in an ad-hoc manner may have contributed to delays and high costs.

13. The Forest Resource Inventory sub-program Working Group should clarify and define the resources required to ensure that inventory initiatives already underway are able to be completed within the Agreement timeframe.

A sound, complete and current forest resource inventory is currently a particularly important priority within British Columbia’s forest sector. Public pressures and changing government priorities have led to significant land use initiatives, which require a sound forest resource inventory. This must include data and information about non timber resources (e.g. wildlife, aquatic resources, biodiversity and soils). FRDA II, in combination with other initiatives, is already achieving progress in this area. However, given its importance, additional priority in this area may be desirable.

14. Management Committee should consider providing more support to developing the forest resource inventory area.
Program 2: Communications and Extension
Share of Funding

Other FRDA Programs
$183M 91.5%

2: Communications and Extension
$17M 8.5%

2.2: Forest Extension & Technology Transfer
$10.3M 61%

2.1: Public Information & Forest Education
$6.7M 39%

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2. COMMUNICATIONS AND EXTENSION

_program overview_

The objectives and activities of Program 2: Communications and Extension are divided into those related to:

☐ 2.1. Public Information and Forestry Education; and,

☐ 2.2. Forestry Extension, including forest worker training, and Technology Transfer.

The program is the focal point for the communications and extension activities of all the other FRDA II programs.

As set out opposite, the five-year program budget is $17 million.

_program assessment_

Program 2 has been very active in pursuing many good communications and extension initiatives, as identified under Accomplishments. Program performance may be improved by following more pro-active sub-program strategic plans and by formally monitoring activities.

_relevance_

The Program activities are relevant within the context of FRDA II. They ensure the Program makes research and technologies, resulting from FRDA II projects, available to forestry practitioners. In addition, the public is informed and educated on forestry issues so that it may play an active role in appreciating and managing the forest resource.

Program 2 was not intended to directly address provincial public perception concerns associated with specific issues (e.g. the controversy over Clayoquot Sound). These issues are the jurisdiction of the Ministry of Forests. However, FRDA II is participating in funding efforts to address public perception issues in international markets.
Achievement of Intended Results/Impacts

The activities of the Program through to the Agreement’s mid-point appear to be extensive and, for the most part, supportive of the Program’s objectives. A number of important and beneficial results have been achieved, some of which are set out in the section on Accomplishments. However, Program management cannot determine precisely how effective the activities are, and what their true impacts will be, as an appropriate measurement framework has not been developed.

Following its current approach, the Program’s goals through to conclusion of the Agreement period are likely to continue to support the Agreement objectives.

Appropriateness

Given its role and its chosen delivery mechanisms, funding and resources appeared adequate. Management for sub-program 2.1 has chosen to channel most of its resources for increasing general public awareness about forestry issues through the Green Gold Grant project. While this project appears to have been effective at encouraging community-level involvement, it is not part of a structured project plan, centred around specific awareness objectives which are targeted at key audiences. A more pro-active approach, similar to that being used for forest education activities, would have to be based upon an assessment of public perceptions or levels of awareness by region and subject. However, such a focussed and more directed general awareness activity may require additional resources to administer and may require re-allocation of planned funds from the Green Gold Grant project.

While other Program 2 activities appeared to receive appropriate resources, in the absence of adequate monitoring, management cannot fully determine if, in fact, efforts and funds are being spent in the most appropriate manner.

Responsiveness

The program largely supports other FRDA II programs, and has been responsive to their overall needs. However, in allocating funds for public awareness and extension activities, the program has not been pro-active in selecting projects which directly address specific, identified needs.

On an overall basis, FRDA II has been responsive to the international image issues and concerns, by contributing funding towards addressing those public perception issues.
Management Direction

Sub-program 2.1 has developed a comprehensive communications strategy for general public awareness and public information on FRDA II. However, the sub-program has not fully implemented the plan, especially where it calls for identification of information needs and the evaluation of the success and impacts of communication efforts, possibly through the use of surveys.

Extension projects are not directed by an overall strategy or plan, based upon a needs analysis. However, Forestry Education activities and forest worker training efforts have been based upon needs identification surveys.

Working Groups and program-level advisory committees provide direction for several of Program 2’s activities. Neither these committees, nor program management adequately monitor the effectiveness and impacts of their projects.

Accomplishments

Public Information and Forestry Education

☐ Strong working relationship with the Ministry of Education in developing and distributing material including:
  • The Tree Book (reprinted under FRDA II); and,
  • Project Wild module on forestry.

☐ 259 Green Gold Grants distributed in the first two and one half years to non-profit groups.

☐ Internal media relations document What’s What has been very well received and used by federal and provincial staff.

☐ Renewal, a publication, has been dedicated to informing industry, academic and government stakeholders of FRDA II activities.

Forestry Extension and Technology Transfer

☐ Publications, including FRDA II publications, 45 reports, 31 memos and one book.

☐ Trade shows and conferences, including: The Chetwynd Forestry Conference 92; a major display of FRDA II accomplishments for Demo ’92; and, displays and support to Wood Expo ’92, CIF ’92 and FIS ’93.
Establishment of a new sub-program advisory committee of industry stakeholders to provide accreditation and certification of forest programs and workers (currently being established).

Findings and Conclusions

Program 2 has been very active to date, as evidenced by the extract of accomplishments above. Many projects appear to have been well received by the public and industry.

One activity which has been particularly well received is Forestry Education. Based on a survey and needs analysis, with input from the Forest Education Advisory Committee, Sub-program 2.1 has developed an action plan to promote forestry education in the school system. While this plan is relatively recent (March, 1993), FRDA II has already developed effective working relationships with the Ministry of Education which will facilitate the plan’s implementation through the remainder of the Agreement.

While the Green Gold Grant project has yielded creative, local forestry awareness events and has significantly improved relations between the governments and special interest groups (especially at the Provincial Forest District office level), it does not, in itself, constitute a pro-active public awareness initiative. The Grants rely on proposals from organizations for a variety of projects. It is difficult, using such a mechanism to focus communication efforts around specific awareness needs and geographical emphases.

15. To increase its focus and effectiveness in delivering public awareness programs, the Working Group of the Public Information and Forestry Education sub-program should conduct a needs analysis based upon any existing survey results, if still relevant, or undertake a new and more current public awareness survey.

16. The Working Group of the Public Information and Forestry Education sub-program should ensure that a public information needs analysis dictates the strategic emphasis, forms the basis of a focussed public awareness plan and highlights projects which complement existing successful initiatives already in place.
Extension activities under sub-program 2.2 are coordinated by the Extension and Technology Transfer Working Group, comprised of representatives from regions, industry, consulting firms, Ministry of Forests’ Silviculture and Research Branches, and members with backgrounds in topical areas. This Working Group allocates extension funds based on broad qualifying criteria and on the quality of proposals received from researchers wishing to disseminate their findings. However, the Working Group does not have a defined plan to establish priorities for extension projects based upon not only research priorities, but also specific identified extension needs.

In the absence of a strategy to allocate extension funds, extension efforts may lack focus, weakening the overall impact of the information being disseminated. Further, research projects with potentially positive implications may not be identified for extension activities if no proposal is submitted, or may not receive any or adequate funding if the proposal, as presented, is mediocre, despite having conceptual merit.

17. The Education and Technology Transfer Working Group should ensure activities are guided and prioritized by a strategic plan and that the Group plays a more proactive role in soliciting proposals that support the strategic priorities.

Monitoring and evaluation of the sub-programs and activities in Program 2 could be improved to ensure objectives are achieved in the most effective way possible. Although there are plans to evaluate performance in future, to date, neither program management nor the various committees within Program 2 reported using a formal framework for evaluating the effectiveness or impacts of their projects.

While the Program has many projects which seem to be good initiatives, without ongoing monitoring of project effectiveness, management cannot fully assess if, in fact, effort and funds are being spent appropriately. This is recognized by Program management.

18. The Communications and Extension Program’s Working Groups should institute a formal evaluation framework to monitor and assess the effectiveness and impacts of its projects, such as the use of participant feedback or limited public surveys.

Program 2 partially relies on material from other programs within FRDA II for many of its communications and extension initiatives. However, staff in the other programs do not always recognize the importance of communicating the results of their activities. As a consequence, the Program’s staff have had difficulty extracting information from and coordinating communication efforts between the other FRDA II Programs and frequently have had to devote resources to attend meetings to obtain the information.
We recognize that the Communications and Extension Program of FRDA II differs from how these communications and extension activities were conducted under FRDA I. We concur with consolidating them into a separate overall program. However, we are concerned that there is an absence of adequate mechanisms in place to ensure all programs’ activities and project results are assembled and disseminated to the relevant audiences in a timely and complete manner.

19. The Secretariat should implement guidelines to all Working Groups emphasizing the importance of communicating the results of their projects through a coordinated, common focal point - the Communications and Extension Program.
3. RESEARCH IN SUSTAINABLE FOREST DEVELOPMENT

Program Overview

This program consists of five sub-programs: 3.1 Forest Renewal; 3.2 Growth and Yield and Stand Tending; 3.3 Integrated Resource Management; 3.4 Forest Protection; and, 3.5 Advanced Forest Technologies.

The overall goal of the program is to assist in providing information and technology needed for progressive forest resource management, thereby strengthening the scientific basis for sustainable development.

As set out opposite, the five-year program budget is approximately $23 million, split between the 5 sub-programs.

Program Assessment

The research program is achieving project targets on an individual basis, and attempting to integrate them within sub-programs through Technical Advisory Committees. Progress appears to be satisfactory.

A more explicit over-all strategy and means of appraising expected costs and benefits would improve the research focus and demonstrate clearly the value of the research projects in promoting sustainable development.

Relevance

The development of new information and technologies to increase forest productivity, while safeguarding underlying resources (soil, water, atmosphere, biodiversity), is critical to meeting the objectives of the FRDA II Agreement.

Research and development has been a key part of the traditional federal role in forestry in Canada and is also an important element in British Columbia provincial forestry programs. Therefore, this program entails important elements of federal-provincial cooperation and coordination in the sector.

The project list shows a broad coverage of sustainable forest development issues. However, a clear, common and integrated program strategy is not evident. The research work is relevant and is conducted by staff from Natural Resources Canada and the British Columbia Ministry of Forests, within separate streams.
Program 3: Research share of funding

Other FRDA Programs
$176.8M 88%

3: Research
$23.2M 12%

3.1: Forest Renewal
$3.9M 17%

3.2: Growth & Yield & Stand Tending
$6.6M 28%

3.3: IRM
$5.9M 25%

3.4: Forest Protection
$3.6M 16%

3.5: Advanced Forest Technologies
$3.2M 14%

Deloitte & Touche
Achievement of Intended Results/Impacts

The program appears to be meeting its objectives to the mid-term and is on track, given performance to date, to achieve its overall targets by the end of the Agreement. The FRDA II Agreement has supported increased levels of research which has had a significant impact on real problems facing the forestry sector in British Columbia.

Both Natural Resources Canada and the Ministry of Forests research managers monitor goal achievement for each project under their charge. The real effectiveness of the R&D program can only be measured through extension of results to field managers and real applications of technologies and methods over time.

To evaluate results, especially in technology transfer of research results, this program should be considered, in part, together with Program 2: Communications and Extension. Program 2 provides funding for communications initiatives such as symposia, FRDA II memos and newsletters. With this approach, FRDA II has a greater emphasis on extension and technology transfer. There are some indications that delivery will be improved with this approach over that adopted in FRDA I, where there was no separate program for communication and extension.

However, it is difficult to be specific on evidence that initiatives have improved practice, as research generally "reaches practitioners by diffusion", over time. Natural Resources Canada and Ministry of Forests staff are involved in the greater community through adjunct professorships, workshops and courses such as those offered by the Silviculture Institute of British Columbia. These links bring the research to the users but are largely undocumented.

While systems are in place for technology transfer and extension within each agency, the general impression gained is that inadequate resources are devoted to this aspect of the R&D chain in British Columbia. This problem is, of course, not limited to the FRDA II-funded projects, but given their importance in the research operating budgets of the respective governments, the general problem also applies to FRDA II.

The final review of FRDA I recommended that explicit resources be provided to fund direct extension activities (field visits) by researchers involved with each important project line. Part of the objective was to place the whole embodied expertise and experience of the researcher at the disposal of the field forester and vice-versa. This critical type of communication cannot generally be achieved solely through publications, or information bulletins.
Appropriateness

An appropriate level of funding is being provided to fulfil planned projects. The degree of program reliance upon the respective governments’ research staffing, and conversely, the degree of reliance of government research staff on FRDA II money, to provide operating funds (money to go to the field and conduct research) appears questionable. Both research streams (federal and provincial) appear uncertain of their future, given the anticipated shut-down of FRDA II funding in 1996. Given the nature of research, there is a need for continuity of funding not provided in FRDA II-type agreements.

The appropriateness of the project mix to the objectives and to the funding levels is difficult to appraise in the absence of a defined strategy or an evaluation framework for research. Notwithstanding, the federal and provincial "packages" defined by program managers appear to tackle many of the important issues in British Columbia forest management.

Responsiveness

The project list is responsive to the needs of the sector, due no doubt to the normal Research planning streams of the respective governments. However, the degree of dependence upon existing staff and programs provides cause for some concern. The total coverage and the flexibility of response provided with this approach is open to question.

Universities and other contractors suggest that the research activities are designed to support existing programs, not answer particular, or new, questions. This issue cannot be appropriately addressed in the absence of a strategic plan for the whole FRDA II research effort, as agreed strategic research priorities are not clear.

Management Direction

Management within Natural Resources Canada and the Ministry of Forests have effectively managed FRDA II resources, within their constraints. A more visible strategic plan over-all would be highly desirable. For example, links to previous FRDA I-funded research programs are not clearly stated, although no doubt many exist.

Management at both governments have been usefully supported through the use of Technical Advisory Committees in each Sub-Program. Existing Technical Advisory Committees are used for scrutiny of FRDA II project plans and budget allocations to projects. These groups are used to identify overlaps and gaps in the program.
The Research program has strengthened links between Natural Resources Canada and the Ministry of Forests that are critical to total forestry and environment program design and execution in British Columbia.

Some inter-agency difficulties in tracking costs have been encountered, but have not been damaging to effective program management.

Budget reductions have not had a severe impact to date, but will leave projects lacking funding after FRDA II is over. No change in goals with shrinking budgets may be a further indication of relatively soft objectives over-all.

**Accomplishments**

- Montane Alternative Silvicultural Systems (MASS) project is a major co-operative investigation of management options in the important Coastal Western Hemlock zone. The MASS project is a good example of communication and co-operation with industry and other clients. The project is a blend of operational harvesting and research activities.

- Old Growth Strategy project aims to guide decisions on direction and funding for research in this important field. Biodiversity Guidelines, gap analyses of protected systems and Old Growth definitions will provide important scientific guidance to pressured land-use decision-makers.

- On-going West Arm Demonstration Forest project aims to deliver management strategies for part of the southern interior.

- A Growth and Yield Field Experiments: Five Year Plan was developed.

- A research tour for the Working Group members and project leaders provided opportunities for gaining insight on current projects. This information is useful in providing ideas or possibilities for on-going and further co-operation between projects.

- FRDA II Research Memos in the areas of Growth and Yield, Integrated Resource Management and Hardwood Management list projects with descriptions and anticipated benefits.

**Findings and Conclusions**

Program 3 provides an effective research program, largely within the goals, constraints and technical resources of the existing Natural Resources Canada and Ministry of Forests programs.
The many research projects appear to be appropriately managed within their normal federal and provincial agency streams. However, a focus on technology transfer and extension is necessary to reach the many technical users and the general public.

The question of whether the program serves the objectives of the Agreement fully remains a little too open, given the focus on existing federal and provincial programs. However, the timing of program start-up and the nature of the final negotiations on incrementability, nature of FRDA II support and program direction and strategy seems to have left research managers with little room to manoeuvre.

The advantages of federal-provincial communication through the many technical fields involved in research can hardly be over-stressed, especially given the opportunities for missed communications, misunderstandings and wrong scientific conclusions over the last few years in British Columbia.

Linkages within program 3 and between sub-programs 3.1 and 1.3 (Hardwood Management) are reported to be working well. The use of Technical Advisory Groups and the many links and overlaps between them help in evaluating projects, their relative priorities and their problems.

On an overall basis, the FRDA II research initiatives have been, and will continue to be, extremely important and valuable to the forestry sector in British Columbia. However, to ensure focus of research efforts in the areas of greatest strategic importance, an agreed strategic direction is necessary.

20. The Research program should focus significant attention on a few critical management issues during the latter half of the FRDA II Agreement:

- strategic directions for research and an integrated project plan needed to reach strategic goals;

- technology transfer and extension of research results;

- the technical role(s) and funding plans of important agencies in British Columbia forestry research in the post-FRDA II environment; and,

- the role and funding plans of universities, other institutions and contractors.
To be able to clearly demonstrate the value of research conducted under FRDA II, it is important that the final FRDA II evaluators have the necessary information to be able to make sound assessments. Such summary information is not routinely available.

21. Management of the Research Program should ensure a summary is prepared for the Program outlining costs, expected physical results, expected socio-economic impacts and related factors suitable for final program evaluation.

Given the long-term nature of a large portion of research, there is a need for continuity of funding not provided in FRDA II-type agreements. Designating and specifying ongoing research priorities, before the end of the Agreement, would ensure important research areas are clearly labelled for consideration of funding after the end of the Agreement.

22. Management of the Research Program should identify and prioritize the research areas where continuous funding is particularly important beyond FRDA II, well before the end of the Agreement period.
4. SMALL-SCALE FORESTRY

Program Overview

This Program consists of four sub-programs: 4.1 Private Woodlands; 4.2 Municipal Woodlands; 4.3 First Nations Woodlands; and, 4.4 Federal Woodlands.

The Program aim is to deliver forest management advice and funding to small-scale forestry land owners with the objectives of improved forest awareness, fostering a forest management ethic and providing an incremental supply of timber to the economy of the province. Defined goals are 4,000 hectares of planting and 10,000 hectares of spacing over the term of the Agreement.

As set out opposite, the five-year Program budget is $21 million, split between the 4 sub-programs.

Program Assessment

The Program has achieved some definable targets on each segment of the "small scale" land holding types in British Columbia. However, the purpose and related effectiveness criteria do not appear to be clearly defined for all projects.

The appropriate degree of public service to, and private investment in, forestry on these lands has not been systematically addressed in British Columbia sector plans and strategies, or in FRDA II program allocations. The low activity levels in Municipal and Federal Woodlands holdings could be the subject of further analysis.

Relevance

Program 4 allocations are highly relevant to Agreement objectives. In general, provincial ownership of 90% plus of British Columbia forest resources places the "other" forest lands in a relatively minor position in total. However, within a few sub-regions of the province the private woodlands are important in total forest production potential.

This group of woodlands has also been historically important in the federal role in the sector. Through this Program, the federal government has been able to advance sound forest management and contribute to forest sector infrastructure and awareness in areas unregulated by the province.

The new imperatives of resource negotiations with First Nations has placed a new and critical dimension on the definition of these "small scale" initiatives. The FRDA II Program can hope to lay some significant groundwork for expanded forestry responsibilities and activities by aboriginal groups.
Program 4: Small-Scale Forestry Share of Funding

- Other FRDA Programs: $179M (90%)
- 4.1: Private Woodlands: $11.6M (55%)
- 4.2: Municipal Woodlands: $0.7M (3.5%)
- 4.3: Indian Woodlands: $8M (38%)
- 4.4: Federal Woodlands: $0.7M (3.5%)

Deloitte & Touche
Achievement of Intended Results/Impacts

The Program is working towards the targets established for actions/treatments on these lands within individual sub-programs: private; municipal; First Nations; and, federal woodlands. FRDA I experience was used to allocate budgets to individual sub-programs and activities.

Participation by federal and municipal forest-holders has been lower than planned.

Progress on meeting Program goals such as public information, heightened forest awareness and client contacts are outlined under Accomplishments.

Existing clients (FRDA I projects) are followed-up to ensure results are realized from previous funding efforts. This is also important to FRDA II which is concerned with long-term effects. It raises concerns for FRDA II work which may have no opportunity for continuing funding, after the end of the Agreement, in 1996.

A significant difficulty exists in planning and in subsequently evaluating projects/sub-programs in that Program staff cannot readily predict the level and nature of client needs and requests for funding in any of these "other" land tenures.

Appropriateness

The unpredictable level of sub-programs leaves open the question of appropriate levels of funding. However, funding appears to have been reasonable in relation to activities to date. Important information was collected under the FRDA I Agreement regarding the size, location and productivity of these lands. However, this information has not been built into a strategy for realizing the economic forest potential of these lands, or the role of the FRDA II funding in achieving such targets.

Field management controls and evaluation/monitoring systems are limited to the term of the Agreement, except on municipal and federal lands. There is a heavy reliance on the general expectation that individual owners will, with technical guidance, allocate resources adequately and profitably.

Responsiveness

The Program must respond to requests from individual and group owners and has developed a flexible system for the purpose. Program activities have responded well to changes in funding, staff availability and to client needs.

Expressions of concern regarding allocations in the Native Woodlands Program led to new management structures. Increased participation has been gained, but some flexibility may have been lost.
Management Direction

The Program efficiently delivers its services through innovative project management arrangements, notably the use of contract woodlands forestry services.

The management group responded successfully to re-organize the Native Woodlands sub-program, including increased involvement of a Native steering committee in allocation/spending decisions. Some extra delays have ensued, but natives are more actively controlling management of the sub-program.

Accomplishments

☐ Small-Scale Forestry has 1,611 files, which includes 479 completed projects, 421 ongoing, 368 pending and 343 rejected or withdrawn applications.

☐ A subset of the above for private lands are 1,296 files, including 373 completed, 320 ongoing, 309 pending and 294 rejected or pending. All of these contacts, including those rejected, include a woodland forester visit. These visits are judged to be very valuable in meeting Program goals such as public information and heightened forest awareness.

☐ 2,500 names on mailing list, but some of these are government and other non-clients. No foreseeable difficulty in attaining stated goals of client contacts. The position is similar with the Native Program.

☐ Distribution of 3,000 additional copies of the forest woodlot manual, which has been well received.

☐ Several Native educational institutions have been involved in Program delivery. The Nicola Valley Institute of Technology trains Native forestry technicians and provides an introduction to natural resources management course to Bands.

☐ Internal Program guidelines as well as First Nations and Small-Scale Forestry public guidelines produced and distributed.

Findings and Conclusions

The Small-Scale Forestry Program is important as a vehicle for improved public awareness of the sector potentials, as well as for the specific outputs from these lands.
An economic study to document the merits of investing in private woodlands forestry was scheduled for 1993 but delayed until 1994, while the terms of reference are researched and prepared.

Woodlot associations are recognized as potentially efficient deliverers of services but these associations are presently not well organized to deliver these services. They also overlap with Ministry of Forests woodlot licensee holders and do not currently appear to be interested in education or expanding membership to other private forest land holders.

The current, and potentially improved, structuring of these various lands into effective production and marketing groupings needs further attention - cooperatives, associations and hybrids with provincially allocated "woodlots" have been tried elsewhere and could benefit from analysis within the British Columbia framework.

Nonetheless, Program 4 has allocated resources within its constraints and has provided innovative support systems to each individual/group tenure.

The Program was managed, in large part, through the existing (FRDA I) Natural Resources Canada internal program. Staffing limitations at times hampered efficient use of Program funds (e.g. extension services delayed). The post-FRDA II environment contains many more such uncertainties.

23. Management of the Small-Scale Forestry Program should provide resources for reflection and analysis during the remainder of the Agreement, specifically to:

- define the production potential of these lands operationally;

- examine with Natural Resources Canada and the Ministry of Forests the role of these lands in sector futures (setting aside the issue of ultimate treaty dispositions at this stage);

- examine objectives and constraints within new or expected fiscal realities;

- review the impacts of Programs to date; and,

- define a more focused Program plan for the balance of the Agreement, incorporating the elements above.
To expand the available information on the potential of small-scale forestry and on the benefits of addressing it on a wider basis within British Columbia, better ways of collecting appropriate information are required.

24. Management in the Small-Scale Forestry Program should ensure all woodland foresters' reports include project benefits, in terms of goals - hectares, cubic meters, employment, Annual Allowable Cut impact, etc.
5. OPPORTUNITY IDENTIFICATION

Program Overview

Program 5, Opportunity Identification, provides information on opportunities in new markets and products for the British Columbia forest sector. Based on the opportunities identified, the Program has established activities which are intended to help the forest sector respond effectively, within the changing local and global environments.

As set out opposite, the five-year Program budget is approximately $3 million.

Program Assessment

The program has improved basic definitions and data, including opportunities and challenges, regarding the "secondary processing" or "value-added" segments of the British Columbia forestry sector. This is a significant achievement, as information systems have been weak on this diverse, valuable and rapidly changing portion of the industry. However the best path to further growth and improvements in performance remains unclear. Further strategic analysis is needed.

Program resources have either been inadequate to achieve all of the original ambitious objectives or overly ambitious in their expectations. While the program managers have responded to available opportunities, some revisions of approach, strategy and narrowing of scope may be appropriate.

Relevance

The Program is highly relevant to the broad goals of the Agreement. Identifying and pursuing new opportunities, in light of increased competitive pressures and rising domestic factor costs, is critical to sustaining a healthy forest industry in British Columbia. The focus on high-value (secondary manufacture) products stresses opportunities which do not necessarily require increased forest harvest.

Achievement of Intended Results/Impacts

Program 5 has made substantial progress towards meeting some of its stated objectives, although original objectives may have been too ambitious. Increased focus and a narrowing of scope may be necessary.

The lack of a formal evaluation framework, incorporating focussed strategic priorities, hampers the assessment of the total or relative success of each initiative and the total Program. This small program covers an extremely wide range of projects.
Program 5: Opportunity Identification
Share of Funding

Other FRDA Programs
$196.6M 98%

5: Opportunity Identification
$3.4M 2%

5: Opportunity Identification
$3.4M 100%

Deloitte & Touche
Appropriateness

Program management accepted the relatively low level of resourcing and attempted to design appropriate projects to meet the Program objectives. In general, total Program resources appear to be inadequate to address the ambitious program objectives.

Responsiveness

Management has at first focused on what it determined to be the greatest needs of the Forest Sector in terms of new markets and products. Also, the Program responded to perceived opportunities, e.g. to arrange a major forest sector conference which focused on future opportunities for the sector. Through this conference, the Program successfully supplemented other efforts which were underway to establish a British Columbia Forest Sector Strategy Committee.

Management Direction

Program managers have been responding well to events and general trends and have made significant contributions, but the British Columbia forest sector needs a more structured and formal approach to strategic leadership.

A focussed strategic program plan, together with project evaluations, will be a valuable mechanism to focus efforts over the remainder of the Agreement period.

Accomplishments

☐ Completed a quantitative study on the structure and significance of British Columbia secondary wood products.

☐ Completed an analysis of the financial performance of the British Columbia secondary wood products industry, based on primary data.

☐ Completed the collection of data for a secondary wood product manufacturers’ directory.

☐ Completed the following discussion papers for the forest sector "Summit Conference":
  • The Wood Products Sector in British Columbia;
  • The Pulp and Paper Sector in British Columbia;
  • The Tertiary Component of the Forestry Sector in British Columbia;
  • A Strategic Framework for Growth in British Columbia’s Forest Sector: Vision 2010; and,
"Rising to the Challenge" - a discussion paper towards a Forest Sector Strategy for British Columbia.

Completed the design, development and delivery of the Forest Summit Conference. This conference ultimately resulted in the establishment of the Forest Sector Strategy Committee.

Completed a publication of proceedings from the international conference on Wood Product Demand.

Completed an examination of the impact of harvesting and handling practices on quantity and quality of timber delivered at the mill.

Completed an analysis of factors influencing Japanese demand for dimensional lumber.

Initiated the design of a project to develop estimates of volumes and quality of wood for secondary manufacturing.

Findings and Conclusions

Program 5 is appropriately a dynamic and entrepreneurial program with a significant list of accomplishments, given the resources allocated to the Program. The Program managers have delivered important initiatives and responded successfully to opportunities which emerged during the first two and one-half years, e.g. Summit Conference and Forest Sector Strategy Committee.

Few issues are more critical to the British Columbia forest sector in the short and medium term than the lack of strategic direction. Existing structures in the sector demand a comprehensive, explicit public-private process to develop a strategy. Program 5 has made a valuable contribution to current strategic sector initiatives.

Program 5 is currently reviewing its planned role in an effort to respond further to the initiatives of, and the issues surrounding, the new Forest Sector Strategy Committee.

25: Management Committee should consider further supporting current initiatives outside FRDA II to develop a long-term forest sector strategic "roadmap", even though these critical initiatives extent beyond the parameters of the Agreement.
The major reservation regarding Program 5 is that there is no focussed strategy for the Program. Without a more structured approach to managing the Program, there is a risk that the individual projects will not adequately support Agreement goals, even with a good program of work. There is also a risk that limited resources will not be directed in the most effective way possible.

The efficiency of the small Working Group has the disadvantage of potentially missing opportunities, questions and innovations in the important forestry sector futures area. Planning and management may potentially be improved through the addition of staff from outside the respective governments.

A few inter-related steps are suggested to improve focus of the Program:

26. The Opportunity Identification Working Group should consider expanding its membership to include advisory representatives from the forest industries, while continuing to consult with contractors and consultants on Program development.

27. An expanded Opportunity Identification Working Group should develop a focused and prioritized program-strategic plan which addresses the main identified issues and defines projects operationally.

28. Management Committee should consider increasing the priority of the Opportunity Identification Program or, alternatively, direct a challenge of the broad scope of its activities, given current and expected levels of funding.
6. ECONOMIC AND SOCIAL ANALYSIS

Program Overview

Program 6 aims to develop information and methods which will enable improved assessments of the economic and social benefits which result from activities, projects and programs in British Columbia’s forest management. There is an ultimate goal of maximization of net benefits from forest management investments, while accounting for broader goals of progressive forest resources management, to achieve truly sustainable development.

In addition to relevant background studies, Program 6 provides economic analysis services to other programs under the FRDA II Agreement.

The Program has been divided into three general activities:

- Development of baseline information on the current state of the forest sector;
- Strategic studies leading to improved processes of sector analysis; and,
- Operational studies to guide economic silviculture investments.

As set out opposite, the five-year Program budget is approximately $2 million.

Program Assessment

This important program has achieved many of its targets to date, in spite of lags in activity due to staffing and other constraints. Program managers appear to have focussed clearly on targets within the federal and provincial "streams" of activities.

Program design appears to have been too ambitious for allocated funding.

Relevance

The Economic and Social Analysis Program is highly relevant to the major goals of the Agreement. Expansion of this type of activity received strong support in the final FRDA I evaluation and in the federal/provincial analyses and consultations during the inter-agreement period leading up to FRDA II.

Federal/provincial jurisdictional issues have historically limited cooperation in socio-economic analysis of the sector - at least, in part, because policy recommendations are often warranted or implied in economic conclusions. The structure of Program 6, essentially one federal and one provincial program, reflects these historic issues. It is unfortunate that closer integration of "federal" and "provincial" components did not appear at the outset. However, the Program is attempting to focus on important issues in a relevant and integrated manner.
Program 6: Economic & Social Analysis
Share of Funding

Other FRDA Programs
$197.9M 99%

6: Economic & Social Analysis
$2.1M 1%

6: Economic & Social Analysis
$2.1M 100%
Achievement of Intended Results/Impacts

Natural Resources Canada and the Ministry of Forests have been working co-operatively to deliver the Program, essentially in two separate streams. As illustrated in Accomplishments, some progress on achieving objectives has been attained. Projects follow Program objectives and appear to have been economically delivered.

There appears to have been some problems caused by ambitious Program design, in relation to the resources allocated. The consequence is that overall Program goals and objectives may not be attainable by the end of the Agreement term.

Appropriateness

In the light of pre-Agreement assessments of priorities, the allocation of only 1% of FRDA II resources to this Program is puzzling. Responses have been appropriate within Program means but the original intent and objectives seem to have been under-funded.

For example, the ability to respond to socio-economic questions from other programs has been negatively affected by a lack of resources in the Program. Reliance on internal staffing, in combination with various internal "freezes" and hiring delays during the first two years, has led to some delays in projects. The significant accomplishments of the Program should have rapid extension to the wider forest sector community, but this has not always been the case.

These questions of the priority and scope of this Program deserve further attention during the balance of the Agreement.

Responsiveness

The small Working Group which manages this Program appeared to have responded well to demands and to have worked effectively within the many federal-provincial sensitivities in this field. However, the size and membership of the Working Group does not adequately open the Program to external advice and consultation from other important participants (e.g. industry, consultants and universities).

Management Direction

The Program is well laid out and has a sense of direction, within the three general activities. The small Working Group has provided efficient Program delivery within its constraints.
Accomplishments

☐ Baseline Information:

- review study completed of historic product prices (FRDA II Report 207);
- review study of input/output multipliers for sector (Dobie/Statscan - in press); and,
- survey design and sample survey of public attitudes on wilderness values (Ministry of Forests analysis in progress).

☐ Strategic Studies:

- analysis of trade-offs between timber development/production and the environment through ATLAS model (UBC - in press);
- strategic analysis of risks accompanying silviculture options, including flexibility and relative product price shifts (Simons - in press); and,
- review of long-term silviculture planning processes and product goal-setting in Pacific Northwest-USA, Southern USA, Scandinavia, South America and New Zealand (Ministry of Forests working paper).

☐ Operational Studies:

- spatial simulation of silvicultural treatments and impacts on value and volume of wood supply - West Arm Demonstration Forest (Ministry of Forests/UBC working paper complete);
- spatial forest estate simulation for Chilliwack Forest District to demonstrate the impact of silvicultural treatments on value and volume of wood supply (Ministry of Forests/UBC working paper); and,
- upgrade of SYLVER model to analyze commercial thinning and fertilization in terms of volume, value and ROI (Ministry of Forests working paper).
Findings and Conclusions

The Economic and Social Analysis Program has been well managed, within its constraints. The Program appears to be under-funded, in relation to both ambitious Program and Agreement goals.

29. Management Committee should consider increasing the priority of the Economic and Social Analysis Program or, alternatively, its scope should be narrowed and strategically focused.

Natural Resources Canada and the Ministry of Forests have been working cooperatively to deliver the Program. However, in effect there are two separate programs. This may limit communication and implementation of innovations. Although this has frequently been the case in federal-provincial forestry, due to jurisdictional issues, perhaps in the emerging reality of fiscal constraint, environmental emphasis and other changes, improved relationships can evolve in forest sector socio-economics.

The efficiency of the small Working Group may have the countering disadvantage of missing potential questions, ideas and innovations in this important and sensitive field. The functions of Program definition, management and monitoring could be improved through the addition of staff from outside the two governments, particularly if the Program can attract additional resources.

30. The Economic and Social Analysis Working Group should consider the addition of external representatives as advisors to the Program.

The existing FRDA II publications chain may have been limiting for this Program’s effort to extend results to a wide audience in the forest sector and beyond.

31. Objectives, methods and funding of publications and communications from the Economic and Social Analysis Program should be reviewed by the Management Committee and the Secretariat.
7. COORDINATION, IMPLEMENTATION AND EVALUATION

**Program Overview**

Coordination, Implementation and Evaluation is the administrative Program of FRDA II, carried out by the Secretariat, acting in their capacity as the Working Group responsible for implementing the Program. Activities covered by this Program include coordinating and communicating with the other program Working Groups, ensuring administrative procedures are followed, supporting the Management Committee, and coordinating audits and evaluations required under the Agreement.

As set out opposite, the five-year Program budget is $2.7 million.

**Program Assessment**

In general, Program 7 appears to be fulfilling its defined administrative and coordinating role successfully. The Secretariat’s jurisdiction has recently been strengthened, through two of the Management Committee members working more closely with them, giving them the capacity and legitimacy to challenge Working Group plans, priorities and initiatives.

**Relevance**

Program 7 is relevant, as administration is important for the success of the Agreement implementation. Monitoring, accountability and coordination could be strengthened if the Secretariat’s mandate, discussed under Findings and Conclusions, is resolved.

**Achievement of Intended Results/Impacts**

The Program has been successful in developing guidelines and administrative procedures for FRDA II, and has been active in coordinating meetings, maintaining records and liaising between the Management Committee and the Working Groups.

Following its current, and recently strengthened approach, the Program’s goals for the remainder of the Agreement period are likely be to achieved.

** Appropriateness**

Given the administrative functions of the Program, management indicated it is satisfied with the funding it receives. The allocation of staff resources to the Program appear to be reasonable given its currently defined functions.
Program 7: Coordination, Implementation & Evaluation
Share of Funding

Other FRDA Programs
$197.3M 99%

7: Coordination, Implementation & Evaluation
$2.7M 100%

Deloitte & Touche
Responsiveness

The Program reacts to Management Committee initiatives and the administrative functions of the other programs, and in that respect, has been responsive to their needs. For example, it has adapted budgets and other administrative matters arising out of the requirements to extend the Agreement from a four-year to a five-year term.

Management Direction

Management direction within Program 7 appears satisfactory. The Program could play a strengthened role in monitoring, accountability and coordination of other programs if the management structure concerns discussed below are addressed and resolved. The recent initiative whereby two members of the Management Committee are working closely with the Secretariat will assist in this regard.

Accomplishments

☐ Developed a framework for implementing FRDA II, in accordance with the Agreement and the financial legislation of both governments.

☐ Developed guidelines for the Agreement, including terms of reference for the Management Committee, Secretariat, Working Group committees and the Advisory Committee.

☐ Coordinated the five-year and annual planning processes.

☐ Produced annual and quarterly reports, and coordinated two annual audits of the programs and activities.

☐ Initiated the mid-term evaluation of FRDA II.

Findings and Conclusions

The Secretariat generally has been successful in achieving the objectives of the Program, by influencing the diverse Working Groups through policies and procedures to coordinate and obtain reports, financial and other information, etc.

As discussed previously in this report, the management structure of the Agrément has not resulted in the optimum combination of Working Group empowerment with overall Agreement-level steering and direction-setting. This is the result of a structure whereby the Working Groups report directly to the Management Committee, without any clear and defined intermediate link to challenge and coordinate their specific implementation activities and initiatives.
Given the overseeing and direction-setting responsibility of the Management Committee, this has resulted in considerable, Working Group autonomy, in terms of specific Program priorities and initiatives, albeit within the broad Agreement framework.

The Secretariat’s current mandate does not incorporate the responsibility and authority to challenge Working Groups’ priorities and operational direction-setting. Consequently it cannot provide a detailed review and challenge of Working Groups’ plans, performance and project funding allocations.

We understand this issue is being addressed, through two of the Management Committee members becoming more directly involved and hands-on in their interactions with the Working Groups, and by working more closely with the Secretariat resources. Recommendation 2, under Management Structure in Section IV, advocates that this approach be continued.

A variation to this could be to formally redefine the Secretariat’s role and provide it with the authority and responsibility to oversee and challenge Working Group plans, priorities and initiatives prior to presenting them to the Management Committee, thereby extending their mandate beyond the current coordinating and administration activities. While this may be a consideration for a future agreement, at this stage in the current Agreement, formally redefining the Secretariat’s mandate now may not be appropriate, given the initiatives already implemented.

Currently, financial information is captured on a number of systems in both Natural Resources Canada and the Ministry of Forests. The Secretariat expressed concerns over the efficiency, consistency and timeliness of managing information from different systems, the difficulty obtaining financial information by project and the loose tie between Working Group commitments (spending authorities) and expenditures. Also, measuring and tracking the extent to which Program objectives and non-financial goals are achieved is not well supported by current independent information systems and sources.

As FRDA II is a temporary agreement, information is tracked through the existing systems of both levels of government. Defining and developing specific and common information systems, unique to the needs of the Agreement is not likely a prudent investment over the remaining period of FRDA II. However, in future agreements, such an investment in common and shared information systems and databases, combined with quantifiable agreement objectives and goals would be worth serious consideration.
VI RECOMMENDATIONS

This section consolidates the recommendations presented in the other sections of our report. For ease of reference, we have identified the report section number and sub-section heading where the recommendation can be found.

IV FRDA II IMPACTS

1. The Management Committee should direct an increased emphasis on the definition of costs, benefits and impacts, in all programs, over the remaining term of the Agreement.

IV MANAGEMENT FRAMEWORK

2. For the remaining term of FRDA II, and in future agreements, selected members of the Management Committee should continue to participate in a hands-on manner by working more closely with the Working Groups and the Secretariat.

3. The Advisory Committee should focus more on communicating FRDA II initiatives to stakeholders and, in turn, providing feedback to Management Committee on stakeholders' interests, anxieties and concerns.

4. In future agreements of this nature, an Advisory Committee would be more effective if it is constituted at the initial design stages of the Agreement, has a clear mandate and is seen as an integral component of the agreement's overall framework - not as managers of the agreement objectives, but rather, as challengers and advisors to the process during direction and goal setting.

5. To improve accountability, clear and measurable output or result-oriented performance measures should be established at two levels: at the individual (significant) project level; and, at the program level.
6. The two Management Committee members, working in conjunction with the Secretariat, should perform a critical review of annual plans including significant new project initiatives to ensure consistency with overall Agreement priorities and with other program initiatives.

V 1. SUSTAINABLE FOREST DEVELOPMENT

OPERATIONAL ACTIVITIES

7. Management Committee should encourage and support the implementation of stand and forest estate level strategic goal analyses, integration of silviculture records into yield projections and related socio-economic analyses for allocation and efficient use of funding.

8. Operational monitoring data from previous treatments should be collected, summarized and reported at reasonable intervals (i.e. 10 years).


NEW DIRECTIONS

10. Management Committee should consider increasing the priority of the Hardwood Management sub-program as current levels of resources limit the achievements that can be gained in this important area.

11. The Silvicultural Systems sub-program Working Group should ensure all silvicultural operational trials include the study and the enumeration of all related costs and benefits and should include explicit consideration of the operational decision making framework.
12. Management Committee should consider placing a higher priority on silvicultural systems development.

13. The Forest Resource Inventory sub-program Working Group should clarify and define the resources required to ensure that inventory initiatives already underway are able to be completed within the Agreement timeframe.

14. Management Committee should consider providing more support to developing the forest resource inventory area.

2. COMMUNICATIONS AND EXTENSION

15. To increase its focus and effectiveness in delivering public awareness programs, the Working Group of the Public Information and Forestry Education sub-program should conduct a needs analysis based upon any existing survey results, if still relevant, or undertake a new and more current public awareness survey.

16. The Working Group of the Public Information and Forestry Education sub-program should ensure that a public information needs analysis dictates the strategic emphasis, forms the basis of a focussed public awareness plan and highlights projects which complement existing successful initiatives already in place.

17. The Education and Technology Transfer Working Group should ensure activities are guided and prioritized by a strategic plan and that the Group plays a more proactive role in soliciting proposals that support the strategic priorities.

18. The Communications and Extension Program’s Working Groups should institute a formal evaluation framework to monitor and assess the effectiveness and impacts of its projects, such as the use of participant feedback or limited public surveys.
19. The Secretariat should implement guidelines to all Working Groups emphasizing the importance of communicating the results of their projects through a coordinated, common focal point - the Communications and Extension Program.

3. RESEARCH IN SUSTAINABLE FOREST DEVELOPMENT

20. The Research program should focus significant attention on a few critical management issues during the latter half of the FRDA II Agreement:

☐ strategic directions for research and an integrated project plan needed to reach strategic goals;

☐ technology transfer and extension of research results;

☐ the technical role(s) and funding plans of important agencies in British Columbia forestry research in the post-FRDA II environment; and,

☐ the role and funding plans of universities, other institutions and contractors.

21. Management of the Research Program should ensure a summary is prepared for the Program outlining costs, expected physical results, expected socio-economic impacts and related factors suitable for final program evaluation.

22. Management of the Research Program should identify and prioritize the research areas where continuous funding is particularly important beyond FRDA II, well before the end of the Agreement period.
4. SMALL-SCALE FORESTRY

23. Management of the Small-Scale Forestry Program should provide resources for reflection and analysis during the remainder of the Agreement, specifically to:

☐ define the production potential of these lands operationally;

☐ examine with Natural Resources Canada and the Ministry of Forests the role of these lands in sector futures (setting aside the issue of ultimate treaty dispositions at this stage);

☐ examine objectives and constraints within new or expected fiscal realities;

☐ review the impacts of Programs to date; and,

☐ define a more focused Program plan for the balance of the Agreement, incorporating the elements above.

24. Management in the Small-Scale Forestry Program should ensure all woodland foresters' reports include project benefits, in terms of goals - hectares, cubic meters, employment, Annual Allowable Cut impact, etc.

5. OPPORTUNITY IDENTIFICATION

25. Management Committee should consider further supporting current initiatives outside FRDA II to develop a long-term forest sector strategic "roadmap", even though these critical initiatives extent beyond the parameters of the Agreement.
26. The Opportunity Identification Working Group should consider expanding its membership to include advisory representatives from the forest industries, while continuing to consult with contractors and consultants on Program development.

27. An expanded Opportunity Identification Working Group should develop a focused and prioritized program-strategic plan which addresses the main identified issues and defines projects operationally.

28. Management Committee should consider increasing the priority of the Opportunity Identification Program or, alternatively, direct a challenge of the broad scope of its activities, given current and expected levels of funding.

6. ECONOMIC AND SOCIAL ANALYSIS

29. Management Committee should consider increasing the priority of the Economic and Social Analysis Program or, alternatively, its scope should be narrowed and strategically focused.

30. The Economic and Social Analysis Working Group should consider the addition of external representatives as advisors to the Program.

31. Objectives, methods and funding of publications and communications from the Economic and Social Analysis Program should be reviewed by the Management Committee and the Secretariat.