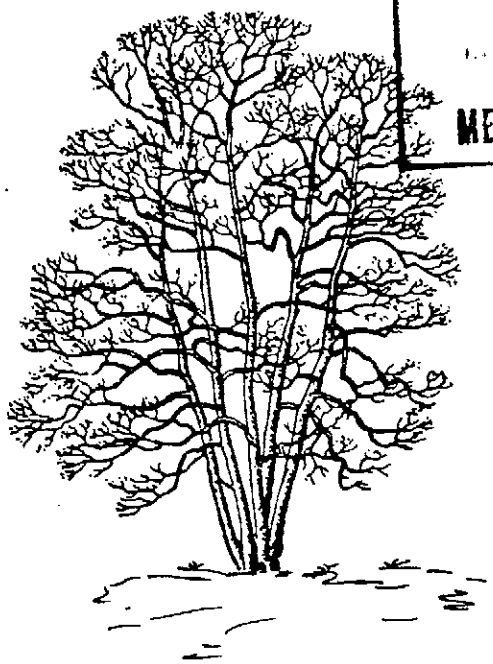
GROUP MANAGEMENT PROJECT VIABILITY STUDY : FINAL REPORT

MacLaren Plansearch

Group Management Project Viability Study

FINAL REPORT

Province Of Nova Scotia,
-Department Of Lands And Forests
And Canada
-Department Of Regional Economic Expansion ,Nova Scotia



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GROUP MANAGEMENT VIABILITY STUDY

1. INTRODUCTION

The Canada/Nova Scotia Subsidiary Agreement for Forestry was signed in 1977. The Forest Management program, one of four programs under the Agreement, had the immediate goal "to increase productivity on all classes of forest land holdings, improve physical access, and reduce diseconomies attributable to fragmentation and scale." The Group Management project was one of five projects defined by the program.

The Group Management project was designed to support "... the creation of group management ventures to overcome the fragmentation and scale problem and to ensure more efficient and cost-effective management of these small holdings." The purpose of the following study is to determine the viability of existing or new groups. Three subject areas of concern have been addressed:

(a) the viability of existing groups,
(b) the viability of groups in general, and
(c) the cost to government to support groups.

For the purpose of this study, it has been assumed that a group is considered to be viable once it has achieved a level of operations where commissions (or profits earned) are sufficient to offset all operating expenses.

2. TERMS OF REFERENCE

The purpose of this study is to determine the viability of the group venture concept as it now exists and to determine if any modifications will enhance the viability of existing or new groups. Three subject areas of concern will be addressed:

- the viability of existing groups;
- the viability of groups in general;
- the cost to government to support groups.

Scope

This study will be done as a sub-project of an overall interim evaluation of the Forestry Subsidiary Agreement including an evaluation of the Group Management of Private Lands project. It is intended to answer some specific questions that the Management Committee of the Agreement has with regard to the group management concept in Nova Scotia. The answers will allow Management to re-design the existing program, if necessary, and/or decide on whether and how to support any new program.

The prime concern is for the financial viability of a group. Currently, their operating expenses are provided by government from the date of creation of the group to the end of the Agreement - a period of up to 5 years. Also the current minimum size criteria to form a group is 1,000 acres. Eight groups have been formed and now have productive acreages of 9500, 1400, 4250, 4300, 6700, 10,000, 2700 and 2400 acres, and most have been in existence for approximately two years with the exception of West Pictou, which has been in operation since 1975.

The consultants will examine whether the current acreages of the groups are too low to allow their operation to be self-supporting and what size produces optimal profits (or least losses). This will entail constructing pro forma profit and loss and cash flow statements for a "typical" group operation of 2,500; 5,000; 7,500; 10,000; 25,000; 50,000; and 100,000 acres and for the existing eight groups (with present and projected productive acreages). For each, the break-even year, the year at which a reasonable return on investment is earned and the level of government assistance required up to the break-even year will be determined. The estimated units of output for each of the years will also be estimated. As part of the analysis, the consultants will determine the year of break-even on operating expenses and the year of break-even on capital and operating expenses. The financial analysis should examine how best government assistance should be applied (ie. to operating expenses or capital requirements.

It is expected that the consultants will use production volume typical of the existing groups and other operations in Nova Scotia using good, but realistic, forest management. Since price will undoubtedly be a significant factor in the profitability of any enterprise, for each acreage the consultants will determine the effect on profit of a 20% and 50% increase in present average prices and 20% and 50% decrease in present average prices.

The consultants will prepare a report, separate from the overall Subsidiary evaluation, giving details of the estimated viability of the existing groups. This will give years to break-even (operations and capital), years to reasonable profit, government subsidy required each year to break-even, estimated long-run profitability and estimated production volumes by product. This examination will take into account both the existing productive acreages and a reasonable growth in bringing more of the designated acreages under production and should be a realistic analysis based on actual costs and experience with forestry rather than theoretic accounting estimates. Prices sensitivity will also be examined.

The consultants will also prepare a similar report for the other suggested acreages and identify if there is a cut-off minimum acreage to produce viable groups at a given price. The consultants will identify the nature and estimated value of the cost economies that result from increased size (e.g. more efficient equipment, reduced per unit overhead).

Report/Reporting

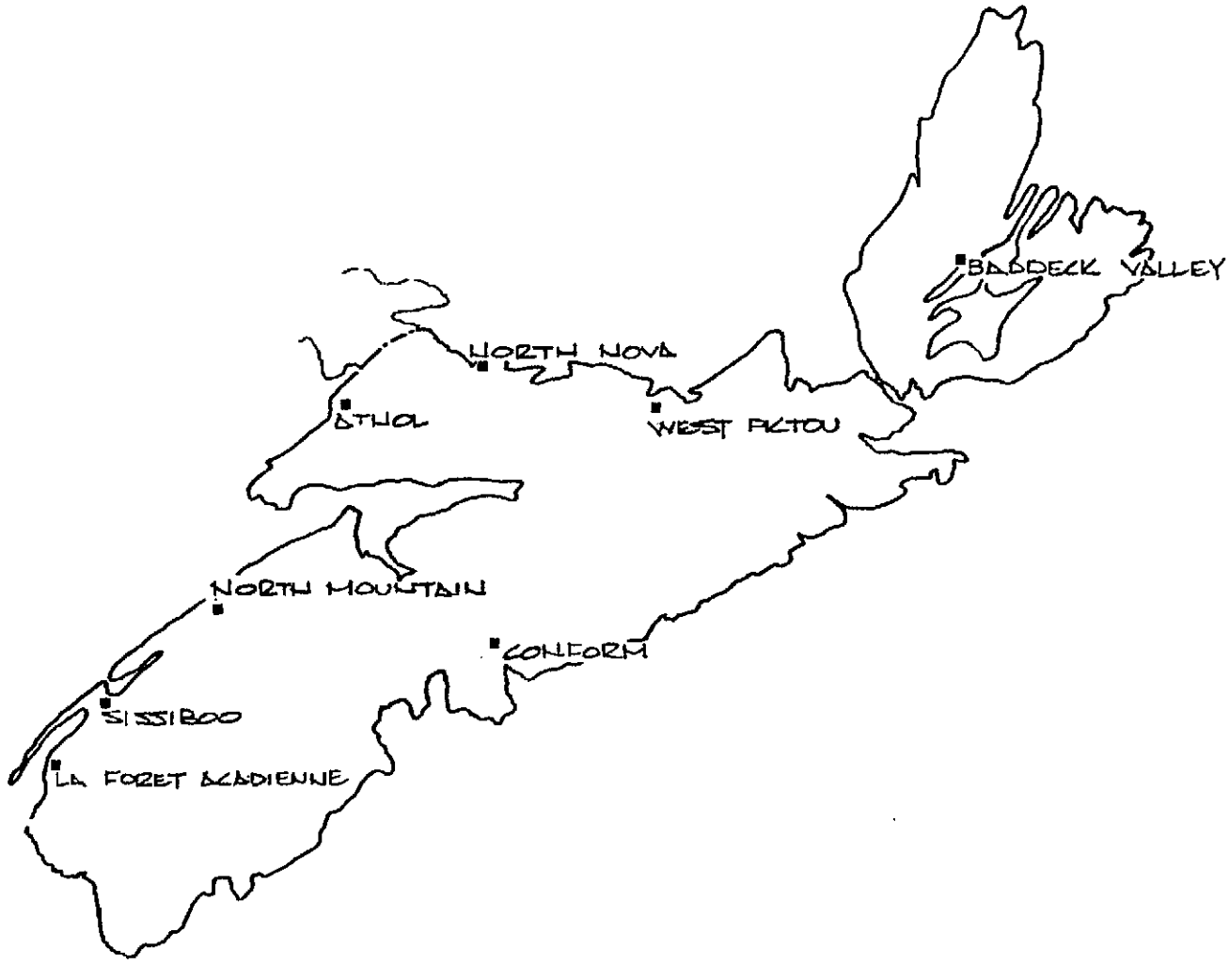
The project will be managed by a Project Team consisting of representatives from the Nova Scotia Department of Lands and Forests, Department of Development and the federal departments of Regional Economic Expansion and the Canadian Forestry Service.

The consultant will be responsible for monthly progress reports and/or briefings with the Project Team.

The consultant must agree that all information gathered, materials collected and reports produced shall be the sole property of the Province of Nova Scotia and the Department of Regional Economic Expansion, and the consultant shall not publish or in any way use said information, material or reports without the expressed and prior approval in writing of the Minister of Lands and Forests.

Timing

A draft final report will be presented to the Project Team no later than two weeks before the final report.



GROUP MANAGEMENT LOCATIONS

3. GROUP MANAGEMENT OF PRIVATE LANDS PROJECT

Objective:

To contribute towards a long-term supply of softwoods for Nova Scotia industry.

Goal:

To increase both timber production and the proportion of total timber which is economically recoverable.

Outputs:

To achieve an immediate increase in the harvest from private lands by facilitating the assembly of mainly small forest holdings into 8 larger operating units by 1978/79.(1)

Inputs:

The total budget for the group management project was originally set at $1,400,000 to be allocated as follows:

Organization and operating of groups	76%
Land acquisition	24%

(1) Project Brief, Nov. 1977.

3.1 PROJECT ACHIEVEMENTS

The response of the forest owners to the group managment concept has exceeded expectations. Forest owners formed groups under this project as follows:

Prior to 1978/1979

(1) West Pictou Forest Owners Ltd.
(2) North Nova Forest Owners Coop Ltd.

During the Fiscal Year 1978/1979

(3) Baddeck Valley Wood Producers Coop Ltd.
(4) La Foret Acadienne Ltee.
(5) North Mountain Woodlands Ltd.
(6) Sissiboo Forest Management Ltd.
(7) Conform Ltd.
(8) Athol Coop Ltd.

(SEE MAP FOR LOCATIONS)

The target of eight groups organized was met within two years. These groups have now been organized according to specific requirements set forth by the project team during the implementation phase of the project. The organization of each group is, in general terms, as follows:

(a) A Board of Directors
The Board is responsible to the shareholders and appoints staff, decides policy, and monitors progress.

(b) One Manager
The Manager reports at regular intervals to the Board. The planning of forestry operations and the marketing of the forest products resulting from these operations are among his major

responsibilities. In addition, the Manager carries out the daily supervision of the Forester; Field Supervisor and Office Supervisor.

(c) One Forester[1]

The major task of the Forester to date has been the preparation of management plans and the associated timber cruising. Because of his intimate knowledge of the properties forming the group, the forester assists the Manager in planning work schedules for the implementation of the recommendations contained in the individual plans.

(d) One Field Supervisor

Daily supervision of forestry crews working on either forest improvement projects or timber harvesting operations is the Field Supervisor's major responsibility.

(e) One Office Supervisor

The Office Supervisor is responsible for all administrative matters asssociated with the day-to-day operation of a group venture - i.e. accounting, bookkeeping, payrolls, typing, banking, filing, etc.

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(1) The exception is West Pictou Forest Owners Ltd., which employs two Foresters but no Field Supervisor. Each Forester is responsible for the management planning and implementation on one-half of the group area.

3.2 COMPARISON OF PROJECTED AND ACTUAL EXPENDITURES

The cost of maintaining the prescribed staff is charged against the operating account except for the field supervisor. The wages and associated payroll costs of the field supervisor are charged against the forest improvement account of the forest management project. The following table shows the projections and expenditures to date for both the operating accounts and forest improvement accounts. (see Table 1)

TABLE 1

GROUP MANAGEMENT PROJECTS

PROJECTED(1), ACTUAL(2) AND ESTIMATED(3)

EXPENDITURES FOR OPERATING AND FOREST IMPROVEMENT COSTS

Year	Projected	Operating (4)		Forest Improvement (5)	
1977-78	$ 83,300	$ 96,625	(Act)	$ 90,267	(Act)
1978-79	400,100	403,735	(Act)	237,835	(Act)
1979-80	454,200	441,817	(Act)	758,296	(Act)
1980-81	438,000	425,000	(Est)	1,270,000	(Est)
1981-82	24,400	470,000	(Est)	1,500,000	(Est)
	1,400,000	1,837,177		3,856,400	

(1) Projected cash flows in the original project brief

(2) Actual, as spent on the basis of project reports (Dwyer)

(3) Estimated, as expected from on-going activities in the groups (Dwyer)

(4) Includes $52,000 advance for operating expenses

(5) Includes $96,000 advance for forest improvement expenses

In spite of the fact that the 24 per cent of the budget originally earmarked for land acquisition was not used for this purpose, a shortfall of $437,177 is now forecasted to occur in the operating account by the end of the Agreement. Actual expenditures over the first 3 years have closely followed the original projected cash flows. Projected expenditures in the project brief for the first 3 years total $937,600 as compared to $942,177 actual which amounts to a difference of only $4,577.

Forest improvement payments for the silvicultural work, road construction and fire pond construction carried out by the group ventures were drawn from the Forest Management on Private Lands account. The original project brief does not show that a specific proportion was earmarked for forest improvement work carried out by the management groups. Therefore a benchmark against which to judge whether targets in silvicultural work were met, exceeded, or not achieved, is not available.

TABLE 2

GROUP MANAGEMENT PROJECT

ACTUAL AND ESTIMATED EXPENDITURES

ON

OPERATING AND FOREST IMPROVEMENT WORK

Year	Operating	Forest Improvement	Total
1977-78	$ 96,625	$ 90,267	$ 186,892 (Act)
1978-79	403,735	237,835	641,570 (Act)
1979-80	441,817	758,298	1,200,115 (Act)
1980-81	425,000	1,270,000	1,695,000 (Est)
1981-82	470,000	1,500,000	1,970,000 (Est)
	1,837,177	3,856,400	5,693,577 (Est)

TABLE 3

GROUP MANAGEMENT PROJECT

DISTRIBUTION OF EXPENDITURES

BETWEEN

OPERATING AND FOREST IMPROVEMENT WORK

(PERCENTAGES)

Year	Operating	Forest Improvement
1977-78	51.7	48.3
1978-79	62.9	37.1
1979-80	36.8	63.2
1980-81	25.0	75.0
1981-82	23.8	76.2

In summary, the total cost to date (end of 1980-81 fiscal year) of the Group Management project amounts to $3,723,577. Most of this money, $2,356,400 or 75.0 per cent has been used for forest improvement work. By the year 1981/82 this proportion is expected to increase to 76.2 per cent.

As management plans come on-stream, the amount of silvicultural work increases, and consequently expenditures on this type of work will increase. Since the cost of field supervision is charged against the forest improvement account, operating costs have not been increasing appreciably, nor are they expected to increase significantly within the duration of the current agreement.

3.3 AREAS PUT UNDER MANAGEMENT

Within the limitations of the above-presented expenditures and the organizational structure outlined, close to 72,000 acres have, to date, been put under management. This acreage is expected to increase to 94,500 acres by the end of the Agreement. The projected increase in the amount of area put under management is somewhat disappointing considering that each group has a management forester. During the first two years, only two foresters were working on management plan preparation, while at the present, the equivalent of eight foresters are working on the preparation of these plans.

TABLE 4
MANAGEMENT PLANS PREPARED

	Number		Area	
Year	Annually	Accumulated	Annually	Accumulated
1977-78	58	58	14,792	14,792
1978-79	57	115	13,431	28,223
1979-80	192	307	22,107	50,330
1980-81	143	450	21,670	72,000
1981-82	200	650	22,500	94,500

One would have expected the annual number of management plans and acreages to have quadrupled by the last three years of the current Agreement. There could be a number of reasons for this not occurring. Among the ones that come immediately to mind could be that the foresters are gradually becoming more and more involved in the implementation aspects of the group ventures. Presently, about 70 per cent of the foresters' time is spent

on management plan preparation. Another reason is that the average size of an individual property brought under management as the membership expands is declining. This trend is shown in the following table.

TABLE 5
AVERAGE SIZE OF PROPERTY BROUGHT
UNDER GROUP MANAGEMENT

Year	Acres
1977-78	255
1978-79	236
1979-80	115
1980-81	151
1981-82	112

The total service area assigned to these groups amounts to 868,000 acres. The actual area available for inclusion in group management within the boundaries of these service areas is 514,500 acres. The difference consists of Crown lands, large company lands and land uses other than forestry. Within the boundaries of the present service areas, it appears possible to increase the area under group management about five and one-half times.

3.4 WORK ACCOMPLISHED

Management plans, however, present only the formal framework within which forest operations are carried out. Among the forestry activities carried out which fall within the range of forestry operations that are supported by this project are road construction, ponds, boundaries and silviculture. Table 6 shows the actual and projected forest improvement activities in miles, numbers and acres.

TABLE 6
GROUP MANAGEMENT
FOREST IMPROVEMENT ACTIVITIES

Year	Road Construction	Ponds	Boundaries	Silviculture
	miles	no.	miles	acres
1977-78(Act)	10	7	4	205
2058-79(Act)	50	6	92	360
1979-80(Act)	76	17	213	1,523
1980-81(Est)	100	40	150	2,500
1981-82(Est)	80	20	200	3,000
	316	90	659	7,588

It is difficult to detect a trend reflecting an increase or decrease in activities, or for that matter, a shift in the type of activity, because of the short time that the Forestry Subsidiary Agreement has been in effect. About all that can be said is that activities in road building and pond construction should peak this year, the miles of boundary line location remain at the same level and the acreage subjected to silvicultural

treatment to continue to increase to 3,000 acres in 1981-1982 from 360 acres in 1978-1979. This is as it should be; once accessibility has been improved and boundaries located, major obstacles to silvicultural activities have been removed.

A gradual shifting away from the services category of forest improvement activities to the silvicultural category can also be discerned if one compares the actual expenditures of the 1979-80 fiscal year with the estimated expenditures for the 1980-81 and the 1981-82 fiscal years. Included in the so-called services category are roads, ponds and boundaries. Included among the silvicultural activities are planting, plantation tending, thinnings, salvage cuts, etc.

TABLE 7

GROUP MANAGEMENT DISTRIBUTION OF EXPENDITURES AMONG THE TWO MAJOR CATEGORIES OF FOREST IMPROVEMENT ACTIVITIES

Year	Services	Silviculture
1979-80	72.5	27.5
1980-81	63.0	37.0
1981-82	58.3	41.7

In the 1979-80 fiscal year, the first year that all eight group ventures were operational, about 72.5 per cent of all expenditures on forest improvement were for roads, ponds and boundaries.

Expenditure on services for the fiscal year of 1980-81 are expected to reduce to 63.0 per cent of the total, and to 58.3 per cent of the total in 1981-82. Emphasis in the services category has been on road construction and maintenance. In the current fiscal year, the distribution of expected expenditures among the various service activities were:

Road Construction and Maintenance	- 65.5%
Boundary Line Surveys and Renewals	- 31.0%
Fire Ponds -	3.7%

Among the silvicultural activities, field supervision and supplies, planting related expenditures, and stand improvement take the lion's share of the budget. In the current fiscal year, the budgeted expenditures were distributed as follows:

Field Supervision -		13.6%
Reforestation		
Site Preparation -	7.4%	
Stock Purchase -	3.7%	
Planting -	6.1%	
		17.2%
Cleaning -		20.5%
Thinning		
Pre-merchantable -	24.4%	
Merchantable -	10.7%	
		35.1%
Stand Conversion -		5.1%
Salvage Cut -		4.3%
Regeneration Cuts -		1.7%
Other		2.5%
		100.0%

All of these practices, excluding field supervision, contribute towards an increase in the allowable cut either by expanding the forest land base (part or all of the planting), increasing the volumes per acre at rotation age (cleaning, pre-merchantable thinnings, conversion cuts) or by capturing mortality (merchantable thinning, salvage cuts, part or all of the regeneration cuts). Most of the expenditures appear to be oriented towards increasing future yields - cleaning and pre-merchantable thinning account for almost 45 per cent of the expenditures for silviculture in the current fiscal year. More than 17 per cent of the budget is devoted to re-stocking unsatisfactorily regenerated forest land, or converting land to forest use from other uses. The major contribution towards an increase in the allowable cut by capturing mortality comes from the merchantable thinnings, stand conversion and salvage cuts which, together, account for about 20 per cent of the expenditures. Common to all these silvicultural operations is road construction for access.

To offset operating costs, the group ventures charge a commission on their sales of primary forest products resulting from either their silvicultural operations or from their harvest cuts. All group ventures charge a commission of 5 per cent on the sales of products from members' woodlots except the West Pictou Forest Owners, which charges a commission of 4 per cent. The contributions to the operating account from commissions during the past, the current, and the next fiscal years, are as follows:

1979-80	$10,167 (Act)
1980-81	$17,700 (Est)
1981-82	$27,000 (Est)

Although the contributions of the commissions have increased, the gap between what is required to make the ventures self-supporting with respect to operating expenditures is still very wide. Contributions from commissions towards offsetting operating costs are about 2.2 per cent of the gross operating expenditures during the past year, 4.0 per cent during the current year, and an estimated 5.4 per cent during the coming year.

Three years, of which only two have been completed, do not make a trend. The low contributions, however, that commissions are making and are expected to make towards self-sufficiency in the operating costs during the balance of the current Subsidiary Agreement, indicate that achieving a significant degree of self-sufficiency for the group ventures will be a difficult task for their directors, managers and foresters. This task is made even more difficult by the fact that these groups are charged with the responsibility of turning around a forestry situtation caused by years of neglect in forest management.

It is obvious that an increase in the sale of primary forest products is the first step in achieving a substantial degree of self-sufficiency. The next part of this report examines, for each group venture, the possibilities of expanding the volume of harvest cut.

4. GROUP VIABILITY

The areas under management by the eight groups are continuously expanding as management plans are completed and agreements between the woodlot owner-applicants and the group's directors are negotiated to a successful conclusion. As a starting point in the analysis of the viability, the expected situation at the end of the current fiscal year (1980-81) has been selected.

Table 8 shows the basic relationship, for each group's service area, between the areas that are expected to be under management by the end of the current Forestry Subsidiary Agreement and the acreage of private forest lands within the boundaries of the service areas that could be attracted to the group stucture.

Table 8 shows that the following expansion can, on the basis of available private forest land, be considered feasible in the near future without a change in the service area boundaries.

Group	Feasible Increase
West Pictou	6.1 times
North Nova	5.2 times
Baddeck	9.2 times
La Foret	7.7 times
North Mountain	5.6 times
Sissiboo	4.6 times
Conform	5.1 times
Athol	2.3 times

TABLE 8

GROUP MANAGEMENT

LAND OWNERSHIP SITUTATION IN SERVICE AREAS[1]

ACRES

Group	Service Area	Possible Area(2) Available for Group Mgmt.	Est. Area(3) Under Group Mgmt.	Est. Crown Lands	Est. Large Comp. Area	Other Lands
West Pictou	230,000	119,700	19,700	1,000	40,000	69,300
North Nova	103,600	74,300	14,300	5,000	8,000	16,300
Baddeck	136,000	89,700	9,700	25,000	5,000	16,300
La Foret	57,000	46,000	6,000	100	nil	10,900
North Mountain	55,600	36,500	6,500	nil	3,400	15,700
Sissiboo	74,500	51,000	11,000	5,700	10,000	7,800
Conform	115,100	62,300	12,300	7,300	27,500	18,000
Athol	97,000	35,000	15,000	24,000	22,000	16,000
Totals	868,800	514,500	94,500	68,100	115,900	170,300

(1) Source: Dave Dwyer

(2) Includes Estimated Area Under Management, 1982

(3) As of 1982

The following sections will compare the amount of forest land needed to achieve self-sufficiency in operating costs with the area available for expansion for each group. At the same time, the degree of self-sufficiency that can be achieved under average conditions has been examined with the following acreages brought under management:

10,000 acres
25,000 acres
50,000 acres
75,000 acres
100,000 acres
125,000 acres

In addition the effects of increases in real price for forest products of 20 per cent and 50 per cent and increases in commission at levels of 2 times and 3 times has also been calculated.

The above analysis has been done within the constraints of good, but realistic forest management. This constraint was extremely difficult to define because of its sensitivity to forest and market conditions. For the purposes of this analysis of group viability it was assumed that the sum of the management plans prepared for each members' properties and made available to the consultant represent the characteristics of good forest management in each group's service area.

The Truro office of the Nova Scotia Department of Lands and Forests made available coded plan and treatment summaries for the following groups:

GROUP	PLAN SUMMARIES FOR
West Pictou	4,500 Acres
Baddeck	2,700 Acres
North Nova	Not Available
La Foret	1,800 Acres
North Mountain	5,000 Acres
Sissiboo	3,800 Acres
Conform	4,100 Acres
Athol	7,900 Acres

Since the plan summaries for North Nova are not available, this group could not be included in this report.

Table 9, 10 and 11 represent the analysis of the available management plans summaries. Table 9 reduces to a 1,000 acres forest land base all the silvicultural activities (including all harvest operations) prescribed by the management forester of each group. Similarly, Table 10 represents the summation of infrastructure requirements per 1,000 acres of forest lands: i.e. roads, boundary lines and ponds. Table 11 depicts the quantities of primary forest products that should be produced per 1000 Acres within the constraints of prescribed forest managment, but not within constraints of markets. All of the estimates are for a five-year period. It is assumed for the purposes of the following analyses that the summaries of management plans made available to the consultant are a representative cross-section of all management plans for a group.

TABLE 9
GROUP MANAGEMENT
FIVE YEARS
EFFORT IN SILVICULTURAL AND HARVEST OPERATIONS PER 1000 ACRES UNDER MANAGEMENT BY GROUP
ACRES

Type of Forestry Operation per M Acres	West Pictou	North Nova	Baddeck	La Foret Acadienne	North Mountain	Sissiboo	Conform	Athol
Re or Afforestation								
Site Preparation	62	not avail.	3	9	48	48	36	50
Planting - Bare Root	83		14	12	53	50	47	52
Container	-		-	-	-	-	-	-
Total Planting	83		14	12	53	50	47	52
Stock Acquisition - No. of Trees	83,000		14,000	12,000	53,000	50,000	47,000	52,000
Tending Operations								
Weeding	-	-	1	5	-	-	-	-
Cleaning	60		32	55	30	81	108	27
Pre-Merchantable Thinning	34		6	50	44	18	12	-
Merchantable Thinning	8		57	173	48	143	78	24
Total Tending	102		96	283	122	242	198	51
Forest Improvement Cuts								
Cutover Clearing	24	-	2	11		1	11	6
Wolf Tree Elimination	15		6	22	8	17	8	3
Crop Tree Release	1		-	-	4	3	-	14
Stand Conversion	23		1	46	19	15	88	7
Salvage Cut	2		5	12	38	6	166	21
Remnant Removal	-		4	16	16	23	31	15
Improvement Cuts	-		114	-	14	21	12	28
Total Improvement	65		132	107	99	86	316	94
Harvest Cuts								
Regeneration - Uniform	10	-	23	42	60	104	21	-
- Initial	12		-	-	-	3	-	-
- Secondary	-		-	-	-	-	-	-
- Final	-		-	-	-	-	-	-
- Strip/Shelterwood	2		-	-	-	-	-	-
- Patch	-		-	-	-	-	-	-
- Strip	-		-	-	-	-	-	-
- Seed-Tree	5		-	-	-	1	-	-
Sub Total Regeneration	29		23	42	60	108	21	0
Clear Cuts - Patch	26	-	30	1	-	-	22	15
- Strip	5		68	7	3	1	1	13
- Complete	72		72	8	8	12	146	57
Sub Total Clear Cuts	103		170	15	11	13	169	85
Selection - Single Tree	22	-	3	75	9	46	61	17
- Group	2		4					
Sub Total Selection	22		7	75	9	46	61	17
Total Harvest Cuts	154	-	200	132	80	167	251	102
Xmas Tree - Cleaning	4	-	5	12	9	31	14	2
- Shearing	-		5	9	-	98	-	-
Total Xmas tree	4		10	21	9	129	14	2
Grand Total Operations	408			555	363	674	826	301

TABLE 10

GROUP MANAGEMENT
FIVE YEARS
EFFORT IN SERVICES PER 1000 ACRES UNDER MANAGEMENT BY GROUPS

MILES AND NUMBERS

	West Pictou	North Nova	Baddeck	La Foret Acadienne	North Mountain	Sissiboo	Conform	Athol
Roads - New Construction								
Class A	-	Not	-	-	-	-	-	-
B	-	Avail.	-	-	-	-	-	-
C	-		-	-	-	-	-	-
D	2.0		3.6	5.7	2.4	6.4	5.7	4.7
Total	2.0		3.6	5.7	2.4	6.4	5.7	4.7
- Upagrading								
Class A	-		-	-	-	-	-	-
B	-		-	-	-	-	-	-
C	-		-	-	-	-	-	-
D	.4		-	.5	.1	.3	.9	3.0
Total	.4		-	.5	.1	.3	.9	3.0
- Maintenance								
Class A	-		-	-	-	-	-	-
B	-		-	-	-	-	-	-
C	-		-	-	-	-	-	-
D	-		-	-	-	-	-	-
Total	-		-	-	-	-	-	-
Bridges	-		-	-	-	-	-	-
Boundary Lines Est.	25.6		10.8	46.7	10.0	16.3	5.8	7.8
Boundary Lines Renew.	-		1.1	7.1	6.0	6.3	4.3	2.3
Ponds	2.0		2.0	4.0	2.0	6.0	7.0	5.0

TABLE 11

ESTIMATED PRODUCTION BY GROUP OF ROUNDWOOD AND SAWLOGS PER M ACRES UNDER MANAGEMENT
FIVE YEARS

Type of Forestry Operation	North Mountain				Sissiboo			
	Pulp or Fuelwood		Sawlogs		Pulp of Fuelwood		Sawlogs	
	Softw.	Hardw.	Softw.	Hardw.	Softw.	Hardw.	Softw.	Hardw.
	Cords		MFBM		Cords		MFBM	
Tending Operations								
Merchantable Thinning	26.1	69.8	-	-	22.2	14.2	-	-
Total Tending Operations	26.1	69.8	-	-	22.2	14.2	-	-
Forest Improvement Cuts								
Cutover Clearing	-	-	-	-	-	-	-	-
Wolf Tree Elimination	-	-	-	-	-	-	-	-
Crop Tree Release	-	-	-	-	-	-	-	-
Stand Conversion	19.1	12.9	.9	.9	1.3	1.3	-	-
Salvage Cut	9.5	2.0	-	-	-	1.1	-	-
Remnant Removal	99.8	1.8	-	-	-	-	-	-
Improvement Cuts	-	-	-	-	-	-	-	-
Total Forest Improvement Cuts	128.4	16.7	.9	.9	1.3	2.4	-	-
Harvest Cuts								
Regeneration - Uniform	138.6	20.9	25.4	-	72.8	8.2	37.1	-
- Initial	-	-	-	-	2.1	.2	1.1	-
- Secondary	-	-	-	-	-	-	-	-
- Final	-	-	-	-	-	-	-	-
- Str/Shwood	-	-	-	-	-	-	-	-
- Patch	-	-	-	-	-	-	-	-
- Strip	-	-	-	-	-	-	-	-
- Seed Tree	-	-	-	-	-	-	-	-
Sub Total	138.6	20.9	25.4	-	141.0	51.0	95.0	-
Clear Cuts - Patch	-	-	-	-	-	-	-	-
- Strip	10.2	18.2	-	-	3.7	15.8	42.8	-
- Complete	156.4	31.4	28.6	4.6	36.1	20.5	-	-
Sub Total	166.6	49.6	28.6	4.6	39.8	36.3	42.8	-
Selection - Single Tree	30.5	25.0	24.2	4.6	96.0	157.6	18.7	-
- Group	-	-	-	-	-	-	-	-
Sub Total	30.5	25.0	24.2	4.6	96.0	157.6	18.7	-
Toal Harvest Cuts	335.7	95.5	78.2	9.2	276.8	244.9	156.5	-
Grand Total All Operations	490.2	182.0	79.1	10.1	300.3	261.5	156.5	-

Type of Forestry Operation	Conform				Athol			
	Pulp or Fuelwood		Sawlogs		Pulp of Fuelwood		Sawlogs	
	Softw.	Hardw.	Softw.	Hardw.	Softw.	Hardw.	Softw.	Hardw.
	Cords		MFBM		Cords		MFBM	
Tending Operations								
Merchantable Thinning	31.7	-	-	-	.6	-	1.0	-
Total Tending Operations	31.7	-	-	-	.6	-	1.0	-
Forest Improvement Cuts	-	-	-	-	-	-	-	-
Cutover Clearing	-	-	-	-	-	-	-	-
Wolf Tree Elimination	-	-	-	-	-	-	-	-
Crop Tree Release	-	-	-	-	-	-	-	-
Stand Conversion	106.3	86.3	11.5	34.6	-	-	-	-
Salvage Cut	12.4	-	9.8	-	.4	-	.4	-
Remnant Removal	-	-	-	-	-	-	-	-
Improvement Cuts	-	-	-	-	-	-	-	-
Total Forest Improvement Cuts	118.7	86.3	21.3	34.6	.4	-	.4	-
Harvest Cuts								
Regeneration - Uniform	209.3	-	38.8	-	-	-	-	-
- Initial	-	-	-	-	-	-	-	-
- Secondary	-	-	-	-	-	-	-	-
- Final	-	-	-	-	-	-	-	-
- Str/Shwood	-	-	-	-	-	-	-	-
- Patch	-	-	-	-	-	-	-	-
- Strip	-	-	-	-	-	-	-	-
- Seed Tree	-	-	-	-	-	-	-	-
Sub Total	209.3	-	38.8	-	-	-	-	-
Clear Cuts - Patch	283.9	24.9	12.9	-	11.4	-	7.6	-
- Strip	21.2				35.1	24.1	24.6	-
- Complete	3789.3	1063.7	202.2	3.7	505.8	161.9	132.8	-
Sub Total	4094.4	1088.6	215.1	3.7	552.3	186.0	165.0	-
Selection - Single Tree	483.4	170.2	27.6	6.6	25.9	19.5	18.1	-
- Group	-	-	-	-	-	-	-	-
Sub Total	483.4	170.2	27.6	6.6	25.9	19.5	18.1	-
Toal Harvest Cuts	4,787.1	1,258.8	281.5	10.3	578.2	205.5	183.1	-
Grand Total All Operations	4,937.5	1,345.1	302.8	44.9	579.2	205.5	184.5	-

TABLE 11

ESTIMATED PRODUCTION BY GROUP OF ROUNDWOOD AND SAWLOGS PER M ACRES UNDER MANAGEMENT
FIVE YEARS

Type of Forestry Operation	West Pictou				North Nova			
	Pulp or Fuelwood		Sawlogs		Pulp of Fuelwood		Sawlogs	
	Softw.	Hardw.	Softw.	Hardw.	Softw.	Hardw.	Softw.	Hardw.
	Cords		MFBM		Cords		MFBM	
Tending Operations								
Merchantable Thinning	8.4	-	-	-	Not Available		Not Available	
Total Tending Operations	8.4	-	-	-				
Forest Improvement Cuts								
Cutover Clearing	-	-	-	-				
Wolf Tree Elimination	-	-	-	-				
Crop Tree Release	-	-	-	-				
Stand Conversion	-	6.4	-	-				
Salvage Cut	-	-	-	-				
Remnant Removal	-	-	-	-				
Improvement Cuts	-	-	-	-				
Total Forest Improvement Cuts	-	6.4	-	-				
Harvest Cuts								
Regeneration - Uniform	2.8	.8	3.6	-				
- Initial	3.4	1.0	4.3	-				
- Secondary	-	-	-	-				
- Final	-	-	-	-				
- Str/Shwood	18.0	9.0	.7	-				
- Patch	-	-	-	-				
- Strip	-	-	-	-				
- Seed Tree	175.3	7.1	12.7	1.3				
Sub Total	199.5	17.9	21.3	1.3				
Clear Cuts - Patch	235.1	27.1	.2	-				
- Strip	81.3	35.7	6.2	.4				
- Complete	890.9	527.1	138.9	9.1				
Sub Total	1,207.3	589.9	145.3	9.5				
Selection - Single Tree	75.7	28.2	-	4.4				
- Group	-	-	-	-				
Sub Total	75.7	28.2	-	4.4				
Toal Harvest Cuts	1,482.5	636.0	166.6	10.8				
Grand Total All Operations	1,490.9	642.4	166.6	10.8				

Type of Forestry Operation	Baddeck				La Foret Acadienne			
	Pulp or Fuelwood		Sawlogs		Pulp of Fuelwood		Sawlogs	
	Softw.	Hardw.	Softw.	Hardw.	Softw.	Hardw.	Softw.	Hardw.
	Cords		MFBM		Cords		MFBM	
Tending Operations								
Merchantable Thinning	59.9				61.6	39.4	-	-
Total Tending Operations	59.9				61.6	39.4	-	-
Forest Improvement Cuts								
Cutover Clearing	-	-	-	-	-	-	-	-
Wolf Tree Elimination	-	-	-	-	-	-	-	-
Crop Tree Release	-	-	-	-	-	-	-	-
Stand Conversion	-	-	-	-	77.7	52.7	10.0	-
Salvage Cut	12.0	-	1.1	-	27.7		5.5	-
Remnant Removal	-	-	-	-	-	-	-	-
Improvement Cuts	-	-	-	-	-	-	-	-
Total Forest Improvement Cuts	12.0	-	1.1	-	105.4	52.7	15.5	-
Harvest Cuts								
Regeneration - Uniform	131.1	4.4	26.2	-	29.4	3.3	15.0	-
- Initial	-	-	-	-	-	-	-	-
- Secondary	-	-	-	-	-	-	-	-
- Final	-	-	-	-	-	-	-	-
- Str/Shwood	-	-	-	-	-	-	-	-
- Patch	-	-	-	-	-	-	-	-
- Strip	-	-	-	-	-	-	-	-
- Seed Tree	-	-	-	-	-	-	-	-
Sub Total	131.1	4.4	26.2	-	29.4	3.3	15.0	-
Clear Cuts - Patch	239.6	166.4	194.5	10.2	-			
- Strip	1116.2	156.6	85.6	2.9	112.2	47.2	29.4	-
- Complete	995.3	119.8	220.7	12.4	140.6	5.1	32.7	-
Sub Total	2351.1	442.8	500.8	25.5	252.8	52.3	62.1	-
Selection - Single Tree	5.5	14.6	5.1	16.4	23.3	255.6	58.9	-
- Group	31.0	17.5	7.3	-	-	-	-	-
Sub Total	36.5	32.1	12.4	16.4	23.3	255.6	58.9	-
Toal Harvest Cuts	2518.7	479.3	539.4	41.9	405.5	311.2	136.0	-
Grand Total All Operations	2590.6	479.3	540.5	41.9	572.5	403.3	151.5	-

4.1 WEST PICTOU FOREST OWNERS LTD.

The West Pictou group started its operations in 1975/76 as a pilot project. Currently the group employs a part-time manager, two foresters and a full-time office supervisor. This group is unique among the eight groups, in that it employs two foresters and no field supervisor. The group's area of forest under management is divided in two halves. In each half, one forester has full responsibility for management plan preparation and implementation. According to the manager this organizational approach is improving both the quality of the management plans and forest improvement activities.

4.1.1 The Forest in the Service Area

The distribution between cover types of the forest on the holdings for which management plans have been prepared is as follows:

Softwoods	- 42%
Mixed Woods	- 45%
Hardwoods	- 13%

From Table 9 it can be deduced that the forest management per 1,000 acre block calls for forestry operations on 408 acres over the next five years, or slightly over 40 per cent of the area under management. The distribution of the forestry operations between major

categories was defined as follows:

Reforestation	- 83 acres
Tending	- 102 acres
Forest Improvement	- 65 acres
Harvest Cuts	- 154 acres
Christmas Trees	- 4 acres
	408 acres

In support of these activities, the following services are required (from Table 10):

Construction of New Roads	- 2.0 miles
Upgrading of Old Roads	- .4 miles
Boundary Line Establishment	- 25.6 miles
Boundary Line Renewal	- - miles
Ponds	- 2

At the same time, the 1000 acres should, over the five-year period, produce:

from merchantable thinnings
8.4 cords of softwood pulpwood

from forest improvement cuts
6.4 cords of hardwood pulp or fuelwood

from harvesting operations
1,482.5 cords of softwood pulpwood
636.0 cords of hardwood pulp or fuelwood
166.6 M board feet of softwood sawlogs
10.8 M board feet of hardwood sawlogs

for a total of
1,490.9 cords of softwood pulpwood
642.4 cords of hardwood pulp or fuelwood
166.6 M board feet of softwood sawlogs
10.8 M board feet of hardwood sawlogs

4.1.2 Annual Cut, Gross Revenues and Commissions

As of December 31, 1980, West Pictou Forest Owners had 15,000 acres under forest management. Sales of forest products in 1980 amounted to:

2,239 cords of pulpwood
243 M fmb of sawlog material

On the basis of the analysis of the management plans, 15,000 acres had a prescribed cut that should have produced:

6,400 cords of pulpwood (hardwood and softwood)
532 M fbm of sawlog material (hardwood and softwood)(1)

According to the management plans, 2.9 times as many cords of pulpwood and 2.2 times as many board feet of sawlogs should have been produced without any harm to the timber capital. Consequently, commissions from sales could have been higher by at least 2.2 times had markets been available for the products.

Table 12 shows the amount of pulpwood and sawlog material that should be produced at the selected acreages under management and the corresponding commission at the 4 per cent level maintained by the West Pictou Group. Based on the assumption that market

(1) (1490.9 cd. softwood plus 6424 cd. hardwood) ÷ 5 x 15 = 6400 cds. per year
(166.6 mbf softwood plus 10.8 mbf hardwood) ÷ 5 x 15 = 532 mbf per year

conditions permit full implementation of the prescribed harvest operations, the break-even point between operational costs and earnings from commissions occurs close to 90,000 acres. This would allow an annual sale of approximately 38,400 cords of pulpwood and about 3.2 million board feet of sawlog material. Provided that suggestions to simplify and streamline the production of management plans made in the report, Evaluation of the Forestry Subsidiary Agreement, are followed, the current staff should be able to handle supervision and administration of expanded operations.

At current prices and at double the rate of commission (8%) about 45,000 acres will be required to break-even. Only 30,000 acres will be required to break-even at a 15% rate of commission.

When real price increases by 20 per cent, the required acreage for a break-even point is about 59,400 acres. Doubling the commission at the same price level lowers the required acreage to about 29,800 acres, while tripling the commission lowers the required acreage to about 19,800 acres. (See Table 13)

At a 50 per cent real price increase, but with no increase in commission, the required acreage to break-even is 47,600 acres. At the same price level but with a doubling of the commission, the required acreage will be reduced to 23,800 acres while tripling the commission brings the required acreage down to 15,800 acres. (See Table 13)

TABLE 12

GROUP MANAGEMENT

WEST PICTOU FOREST OWNERS

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

ASSUMING MARKET CONDITIONS PERMIT FULL IMPLEMENTATION OF MANAGEMENT PLANS

Area Under Management	Actual Cut		Potential Cut		Potential Revenues at 1980 Prices (roadside)	Potential Commission At the current Rate of 4%	Commission as % of 1980 Operating Cost		
Acres	Cords	MFBM	Cords	MFBM	$,000	$,000	4%	8%	12%
10,000									
15,000	2,239	243	4,400	531	250,	10,	16.8	38.6	50.4
25,000			10,667	885	417,	17,	28.0	56.1	84.2
50,000			21,333	1,770	835,	33,	56.1	112.2	168.4
75,000			32,000	2,655	1,252,	50,	84.2	168.4	252.6
100,000			42,667	3,540	1,669,	67,	112.2	224.4	336.6
125,000			53,333	4,425	2,087,	83,	140.3	280.6	420.9

TABLE 13

GROUP MANAGEMENT

WEST PICTOU FOREST OWNERS

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

AT

DIFFERENT LEVELS OF PRICE INCREASES AND COMMISSIONS

Area Under Management	Gross Revenues At Current Prices	Gross Revenues with Increases in Real Prices of		Commission at 20% Real Price Increase of a % of Oper. Cost Current			Commission at 50% Real Price Increase as a % of Oper. Cost Current		
		20%	50%						
Acres	$,000	$,000	$,000	4%	8%	12%	4%	8%	12%
10,000		Not Applicable							
15,000	250,	300,	376,	25.2	50.4	75.6	31.6	63.1	94.7
25,000	417,	589,	626,	49.5	99.0	118.8	52.5	105.0	157.5
50,000	835,	1,002,	1,252,	84.2	168.3	252.6	105.2	210.4	315.6
75,000	1,252,	1,502,	1,878,	126.2	252.5	378.6	157.8	315.6	473.4
100,000	1,669,	2,003,	2,504,	168.3	336.6	504.9	210.4	420.8	631.2
125,000	2,087,	2,504,	3,756,	210.9	420.8	631.2	263.0	526.0	789.0

4.2 NORTH NOVA

Summaries of management plans are not available.

4.3 BADDECK VALLEY WOOD PRODUCERS

The Baddeck Vally Wood Producers' Agreement was signed in 1978 but actual operations did not start until the 1979/1980 fiscal year. The group initially experienced serious business management problems forcing the Board of Directors to temporarily take an active part in the day-to-day conduct of affairs. The group attempted to operate its own mechnaical equipment and purchased a tractor and scarifier in 1978. Owning and operating costs proved to be too costly for the group and the equipment was sold. All mechanical harvesting equipment is now rented under contract. Because of the spruce budworm infestations in the group's service area, road construction to facilitate salvage of overmature balsam fir has priority among the group's approved activities.

Currently the group, which is estimated to have 7,200 acres under management, employs one manager, one forester and one office supervisor. The manager doubles up as the field supervisor. Woodlots in the area average about 153 acres. There is a significant number of ungranted crown woodlots in the service area which causes problems in boundry surveys resulting in high costs for this activity. Steep hillsides bordering the Baddeck Valley and the North Shore also have a significant impact on operating costs.

4.3.1 The Forest in the Service Area

The distribution between cover types of the forest on the holdings under group management is as follows:

Softwoods	- 57%
Mixed Woods	- 29%
Hardwoods	- 14%

Forest Management plans indicate that forestry operations will take place on 452 acres per 1000 acres put under management. These operations are categorized as follows:

Reforestation	- 14 Acres
Tending	- 96 Acres
Forest Improvement	- 132 Acres
Harvest Cuts	- 200 Acres
Christmas Trees	- 10 Acres
	452 Acres (from Table 9)

From Table 10, it can be deduced that the following services will be required to support these activities:

Construction of New Roads	- 3.6 Miles
Boundary Line Establishment	- 10.8 Miles
Boundary Line Renewal	- 1.1 Miles
Ponds	- 2

The Baddeck Vally Group, with the implementation of the five-year management plan, should produce on each 1000 acres:

From Merchantable Thinnings
59.9 cords of softwood and hardwood pulpwood

From Forest Improvement Cuts

12.0 cords of softwood pulpwood

1.1 M board feet of softwood sawlogs

From Harvesting Operations

2518.7 cords of softwood pulpwood

479.3 cords of hardwood pulp or fuelwood

539.4 M board feet of softwood sawlogs

41.9 M board feet of hardwood sawlogs

For a Total of

2590.6 cords of softwood pulpwood

479.3 cords of hardwood pulp or fuelwood

540.5 M board feet of softwood sawlogs

41.9 M board feet of hardwood sawlogs

4.3.2 Annual Cut, Gross Revenues and Commissions

During 1980, the Baddeck Valley Wood Producers produced:

150.0 cords of fuelwood

2,005.0 cords of softwood pulpwood

120.0 cords of 8-foot softwood sawlogs for a local stud mill

On the basis of the management plan summaries provided,[a] management area of 7,200 acres should have produced in prescribed cuts:

3,730.0 cords of softwood pulpwood

600.0 cords of hardwood pulpwood or fuelwood

779.0 M board feet of softwood sawlogs

60.0 M board feet of hardwood sawlogs

The actual output of sawlogs, pulpwood and fuelwood falls short of the prescribed cut. The group expects to increase its output for the 1981-82 fiscal year to:

225.0 cords of fuelwood
3,250.0 cords of softwood pulpwood
750.0 cords of 8-foot softwood sawlogs

This projected increase in output is due to the efforts of the Nova Scotia Woodlot Owners Associations which has recently become the bargaining agent for Cape Breton Island. Apparently the association has been successful in increasing the quota for the Baddeck Valley Group for contracts with Nova Scotia Forest Industries. The softwood pulpwood cut could be increased by 15% while the hardwood fuelwood production could be increased more than three times. The managment of the group is currently exploring the feasibility of providing fuelwood for the heating of institutional buildings such as small schools or hospitals.

Table 14 shows the amounts of pulpwood and sawlog material that should be produced at the selected acreages under management and the corresponding commissions at the 5% levels could be earned if the percentages were increased to 10 and 15% of gross revneues assuming market conditions allow full implementation of the prescribed harvest operations. The break-even point between operational costs and earnings from commissions occurs at 40,200 acres. With a little over 40,000 acres under management about 49,360 cords of pulpwood material and about 4.7 million board feet of sawlogs would be the prescribed cut.

This would require a full-time field supervisor and such a step in staff expansion would increase the required acreage to about 50,000 acres.

Doubling the commission would reduce the required acreage to 20,100 acres if no increase in real prices occurred. Increasing the commission rate to 15% of gross revenues decreases the required acreage to about 13,400 acres.

When the real price increases by 20 percent the required acreage for a break-even point at a 5% commission is 33,510 acres. At the same real price increase but with a 10% commission would require 16,700 acres and at a 15% commission, the break-even acreage drops to 11,150 acres. (See Table 15)

At a 50% real price increase and a 5% commission 26,800 acres will suffice to break-even. At double the rate of commission 13,400 acres would make the group self-sustaining in operating cost. When the commission is increased to 15% only 8,940 acres will be required. (See Table 15)

TABLE 14

GROUP MANAGEMENT

BADDECK VALLEY WOOD PRODUCERS

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

ASSUMING MARKET CONDITIONS PERMIT FULL IMPLEMENTATION OF MANAGEMENT PLANS

Area Under Management	Actual Cut		Potential Cut		Potential Revenues at 1980 Prices (roadside)	Potential Commission At the current Rate of 5%	Commission as % of 1980 Operating Cost		
Acres	Cords	MFBM	Cords	MFBM	$,000	$,000	5%	10%	15%
							%	%	%
2,700	2155	48.3	1,657.7	314.6	82,	4,	6.7	13.4	20.1
10,000			6,139.8	1,165.2	305,	15,	24.9	49.8	74.7
25,000			15,349.5	2,913.0	762,	38,	62.2	124.4	186.6
50,000			30,699.0	5,826.0	1,524,	76,	124.4	248.8	373.2
75,000			46,048.5	8,739.0	2,286,	114,	186.6	373.2	559.8
100,000			61,398.0	11,652.0	3,048,	152,	248.8	497.6	746.4
125,000			76,747.5	14,565.0	3,810,	191,	311.0	622.0	933.0

TABLE 15

GROUP MANAGEMENT

BADDECK VALLEY WOOD PRODUCERS

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

AT

DIFFERENT LEVELS OF PRICE INCREASES AND COMMISSIONS

Area Under Management	Gross Revenues At Current Prices	Gross Revenues with Increases in Real Prices of		Commission at 20% Real Price Increase of a % of Oper. Cost			Commission at 50% Real Price Increase as a % of Oper. Cost		
		20%	50%	5%	10%	15%	5%	10%	15%
Acres	$,000	$,000	$,000	%	%	%	%	%	%
2,700	82,	99,	123,	8.1	16.2	24.3	10.1	20.2	30.3
10,000	305,	366,	457,	29.9	59.8	89.7	37.3	74.6	111.9
25,000	762,	915	1,143,	74.6	149.2	223.8	93.3	186.6	279.9
50,000	1,524,	1,829,	2,286,	149.3	298.6	447.9	186.6	373.2	559.8
75,000	5,286,	2,744,	3,429,	223.9	447.8	671.7	279.9	559.8	839.7
100,000	3,048,	3,658,	4,573,	298.6	597.2	895.8	373.2	746.4	1,119.6
125,000	3,810,	4,573,	5,716,	373.2	746.4	1,119.6	466.5	933.0	1,399.5

4.4 LA FORET ACADIENNE LTEE

The Acadienne forestry group started operation in 1979/1980 with an experienced manager field-supervisor, a forester, and an office supervisor.

4.4.1 The Forest in the Service Area

The distribtuion of the forest cover types under management is listed by the group as follows:

Softwoods	- 37.7%
Mixed Woods	- 48.7%
Hardwoods	- 13.6%

Woodlots in the area are small, about 80 acres on the average, extremely long and narrow which, compounded by little land consolidation, makes them difficult to fit into rational management plans.

On the basis of the management plans prepared to date, it appears that during a 5-year period, about 555 acres per 1000 will be undergoing some form of silvicultural treatment or harvest cut. The distribution of these activities follows the following pattern:

Reforestation	12 acres
Tending	283 acres
Forest Imrpovement	107 acres
Harvest Cuts	132 acres
Christmas Trees	21 acres
Total	555 acres (from Table 9)

During the same 5-year period, the following services are required for the 1000 acres:

Construction of New Roads	- 5.7 miles
Upgrading of Old Roads	- .5 miles
Boundary Line Establishment	- 46.7 miles
Boundary Line Renewal	- 7.1 miles
Ponds	- 4 (from Table 10)

Implementation of the management plans will produce, per 1,000 acres, over the 5-year period:

from merchantable thinnings
- 61.6 cords of softwood pulp
- 39.4 cords of hardwood pulp or fuelwood

from forest improvement cuts
- 105.4 cords of softwood pulp
- 52.7 cords of hardwood pulp or fuelwood
- 15.5 M fbm of softwood sawlogs

from harvest cuts
- 405.5 cords of softwood pulp
- 311.2 cords of hardwood pulp or fuelwood
- 136.0 M fbm of softwood sawlogs

for a total cut of
- 572.5 cords of softwood pulp
- 403.3 cords of hardwood pulp or fuelwood
- 151.5 M fbm of softwood sawlogs (from Table 11)

4.4.2 Annual Cut, Gross Revenues and Commissions

During 1980, the Acadienne group produced:
- 269.9 cords of softwood pulp
- 217.1 cords of fuelwood
- 67.2 M fbm of sawlogs

In addition, 237 fence posts and close to 850 Christmas trees were sold.

According to the management plan the 4,000 acres under management have a prescribed cut that would permit the sale of:

458.0 cords of softwood pulp
322.6 cords of hardwood pulp or fuelwood
121.2 M fbm of softwood sawlogs

Again, as is the case in the West Pictou group, market conditions appear to have been a constraint. By taking advantage of overseas markets, the Acadienne Group has been able to sell 59 per cent of prescribed pulpwood cut. In addition it seems to have developed a market for its hardwood by selling 67 per cent of the available hardwood as fuelwood. Of the softwood sawlogs, 55.4 per cent has been sold during the past year. The group has also developed a market for fence posts and Christmas trees. In 1980, the group managed to generate $1,267 in commissions or almost 2.4 per cent of their operating costs of $53,860.

Table 16 shows that under current price conditions and current rates of commissions, the group has to expand its area under management to about 109,900 acres. With present staff, and on the basis of current management plans, the group would then expect to cut and sell about 21,450 cords of roundwood and 3.3 million board feet of sawlogs. Doubling the rate of commission reduces the required acreage to 54,950 acres. Tripling the commission brings the required acreage down to about 36,640 acres.

A real price increase of 20 per cent, coupled with the current level of commission on sales, lowers the required acreage necessary to meet forecasted operating cost to 91,600 acres (Table 17). Doubling the commission at this price level lowers the required "break-even" acreage to 45,800 acres and an increase of 3 times lowers this acreage to 30,500.

With real prices increases of 50 per cent and without an increase in commission on sales, 73,200 acres will be required to produce sufficient wood. Doubling the commission at this price level requires 36,600 acres under management while increasing the commission three times would bring the required management area down to 24,400 acres. (see Table 17)

TABLE 16

GROUP MANAGEMENT

LA FORET ACADIENNE

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

ASSUMING MARKET CONDITIONS PERMIT FULL IMPLEMENTATION OF MANAGEMENT PLANS

Area Under Management	Actual Cut		Potential Cut		Potential Gross Revenues at 1980 Prices (roadside)	Potential Commission at the current Rate of 5%	Commission as of 1980 Operating Cost		
	Cords	Mfbm	Cords	Mfbm			5%	10%	15%
Acres					$,000	$,000	%	%	%
4,000	487.0	67.2	780.6	121.2	39,	2,	3.6	9.2	10.8
10,000			1,951.5	303.0	98,	5,	9.1	18.2	27.3
25,000			4,878.8	757.5	245,	12,	22.7	45.4	68.1
50,000			9,757.5	1,515.0	490,	25,	45.5	91.0	135.5
75,000			14,636.3	2,272.5	735,	37,	68.3	136.6	204.9
100,000			19,515.0	3,030.0	981,	49,	91.0	182.0	273.0
125,000			24,393.8	3,787.5	1,226,	61,	113.8	227.6	341.4

TABLE 17

GROUP MANAGEMENT

LA FORET ACADIENNE

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

AT

DIFFERENT LEVELS OF PRICE INCREASES AND COMMISSIONS

Area Under Management	Gross Revenues At Current Prices	Gross Revenues with Increases in Real Prices of		Commission at 20% Real Price Increase of a % of Oper. Cost			Commission at 50% Real Price Increase as a % of Oper. Cost		
		20%	50%	5%	10%	15%	5%	10%	15%
Acres	$,000	$,000	$,000	%	%	%	%	%	%
4,000(Act)	25,	-	-	-	-	-	-	-	-
10,000	98,	117,	147,	10.9	21.8	32.8	13.6	27.3	40.9
25,000	245,	294,	368,	27.3	54.6	81.9	34.1	68.3	102.4
50,000	490,	588,	735,	54.6	109.2	163.8	68.3	136.5	204.8
75,000	735,	882,	1,103,	81.9	163.8	245.7	102.4	204.8	307.2
100,000	981,	1,177,	1,471,	108:5	217.0	325.4	136.5	273.0	409.5
125,000	1,226,	1,471,	1,838,	136.5	273.0	409.5	170.7	341.4	512.1

4.5 NORTH MOUNTAIN WOODLANDS LTD.

This group operates in the smallest service area; it is only 55,000 acres. The group commenced operations in 1977-1978 but did not formally sign an agreement with the Province until 1978-1979. North Mountain Woodlands operates with a staff of four including a manager, forester, field supervisor and bookkeeper. It is one of two groups that have ventured into acquiring mechanized logging equipment. Originally it purchased a skidder which was later traded for a forwarder. It also is unique in that it is the only group to have carried out a market survey which was published on September 14, 1979.

4.5.1 The Forests in the Service Area

The distribution between cover types of the forests on small holdings under group management is listed as follows:

Softwoods	42.7%
Mixed Woods	40.2%
Hardwoods	17.1%

Forest management plans for the next five years, call for operations on 363 acres of every 1,000 acres put under management. The distribution between major activities is scheduled as follows:

Reforestation	53 acres
Tending	122 acres
Forest Improvement	99 acres
Harvest Cuts	80 acres
Christmas Trees	9 acres
	363 acres
	(from Table 9)

From Table 10 it can be deduced that the following infrastructure is required over the next 5 years.

Construction of New Roads	2.4 miles
Upgrading of Old Roads	.1 miles
Boundary Line Establishment	10.0 miles
Boundary Line Renewal	6.0 miles
Ponds	2
	(from Table 10)

Implementation of the prescribed management practices on each 1000 acre block would produce over the next five years:

from merchantable thinnings
- 26.1 cords of softwood pulpwood
- 69.8 cords of hardwood pulp or fuelwood

from forest improvement cuts
- 128.4 cords of softwood pulpwood
- 16.7 cords of hardwood pulp or fuelwood
- .9 M fbm of softwood sawlogs
- .9 M fbm of hardwood sawlogs

from harvest cuts
- 335.7 cords of softwood pulpwood
- 95.5 cords of hardwood pulp or fuelwood
- 78.2 M fbm of softwood sawlogs
- 9.2 M fbm of hardwood sawlogs

for a total of

490.2 cords of softwood pulpwood
182.0 cords of hardwood pulp or fuelwood
79.1 M fbm of softwood sawlogs
10.1 M fbm of hardwood sawlogs

(from Table 11)

4.5.2 Annual Cut, Gross Revenues and Commissions

At the end of the 1980 fiscal year this group was reported to have 4,000 acres under management. During the 1980-81 fiscal year, the sale of forest products from their land amounted to:

379 cords of pulpwood
373 cords of fuelwood
32 M fbm of softwood sawlogs

On the basis of the prescribed operations laid out in the management plans for the 4000 acres there appears to have been a potential annual harvest of:

392 cords of softwood pulp
146 cords of hardwood pulp or fuelwood
71 M fbm of sawlog material

Although North Mountain Woodlands managed to conduct harvesting operations as planned with respect to the softwood pulp, the group cut and sold only 42 per cent of the estimated available sawlogs and exceeded the planned cut of hardwood fuelwood 2.6 times. This should not adversely effect the planned management since low grade hardwoods were cut as fuelwood. The foregoing sales represent a sale exceeding $21,000. The 5 per cent commission ($1050) earned by the North Mountain

Group on these sales accounted for only 1.7 per cent of the annual operating cost of $61,764.

Table 18 shows the cordage of round wood and board feet of sawlogs that could be produced at different acreages under management, together with the commissions earned if the management plans were fully implemented. It is further assumed that market conditions permit full implementation of the prescribed silvicultural and harvesting operations, Table 18 shows that more than 175,000 similarily stocked acres would have to be put under management to enable the cutting and sale of enough wood to enable commissions to offset operating expenses. The area needed was estimated to be 190,800 acres. At a 10% rate of commission half and at 15% rate of commission one-third of the area would be required to break-even.

When an increase in real prices of 20 per cent occurs and commissions are stable (see Table 19) the break-even point where commissions equal operational expenses falls at 159,100 acres. When commissions are doubled or tripled the required acreage under management drops to 79,600 acres and 53,100 acres respectively.

When real prices increase by 50 per cent but commissions are held at 5 per cent, it would require 127,300 acres under management to produce enough wood to meet costs. When the commission is doubled, the required management area will be 63,600 acres and a three-fold increase in commission accompanied by a 50 per cent increase in real prices will require a management area of only 42,400 acres. (see Table 19)

TABLE 18

GROUP MANAGEMENT

NORTH MOUNTAIN

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

ASSUMING MARKET CONDITIONS PERMIT FULL IMPLEMENTATION OF MANAGEMENT PLANS

Area Under Management	Actual Cut		Potential Cut		Potential Gross Revenues at 1980 Prices (roadside)	Potential Commission at the Current Rate of 5%	Commission as of 1980 Operating Cost		
	Cords	Mfbm	Cords	Mfbm			5%	10%	15%
Acres					$,000	$,000	%	%	%
4,000	752.0	32	536	71	26,	1,	2.1	4.2	6.3
10,000			1,340	178	65,	3,	5.2	10.4	15.6
25,000			3,350	445	162,	8,	13.1	26.2	39.3
50,000			6,700	890	324,	16,	26.2	52.4	78.6
75,000			10,050	1,335	485,	24,	39.3	78.6	117.9
100,000			13,400	1,780	647,	32,	52.4	104.8	157.2
125,000			16,750	2,225	809,	40,	65.5	131.0	196.6
150,000			20,100	2,670	971,	49,	78.6	157.2	235.8
175,000			23,450	3,115	1,132,	57,	91.7	183.4	275.1

TABLE 19

GROUP MANAGEMENT

NORTH MOUNTAIN

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

AT

DIFFERENT LEVELS OF PRICE INCREASES AND COMMISSIONS

Area Under Management	Gross Revenues At Current Prices	Gross Revenues with Increases in Real Prices of		Commission at 20% Real Price Increase as a % of Oper. Cost			Commission at 50% Real Price Increase as a % of Oper. Cost		
		20%	50%	5%	10%	15%	5%	10%	15%
Acres	$,000	$,000	$,000	%	%	%	%	%	%
10,000	65,	78,	97,	6.3	12.6	18.9	7.9	15.7	23.6
25,000	162,	194,	243,	15.7	31.4	47.1	19.7	39.3	58.9
50,000	324,	388,	485,	31.4	62.8	94.2	39.3	78.6	117.8
75,000	485,	582,	728,	47.1	94.2	141.3	58.9	117.8	176.8
100,000	647,	776,	971,	62.8	125.6	188.4	78.6	157.1	235.7
125,000	809,	971,	1,213,	78.6	157.2	235.8	98.2	196.4	294.6
150,000	971,	1,165,	1,456,	94.3	188.6	282.9	117.8	235.7	353.5
175,000	1,132,	1,359,	1,698,	110.0	220.0	330.0	137.5	275.0	412.5

4.6 SISSIBOO FOREST MANAGEMENT LTD.

The Sissiboo Group started operations in 1979-1980 and has expanded to approximately 6,700 acres of which approximately 75 per cent can be considered productive forest land.

4.6.1 The Forest in the Service Area

The distribtuion between cover types of the forests on the small holdings in the group's management area is recorded as follows:

Softwoods	34.8%
Mixed Woods	37.0%
Hardwoods	28.2%

Forest management plans for the next 5 years identify silvicultural or harvesting operations on 674 of every 1,000 acres put under management. The major categories are:

Reforestation	50 acres
Tending	242 acres
Forest Improvement	86 acres
Harvest Cuts	167 acres
Christmas Trees	129 acres
	674 acres

(from Table 9)

Areas to be treated are over estimated since a substantial amount of Christmas tree shearing was planned. Whether this included areas on which cleaning was to be done is not clear from the information provided. (see Table 9)

According to the summation of management plans the following services are to be provided over a 5-year period for each 1000 acres:

Construction of New Roads	6.4 miles
Upgrading of Old Roads	.3 miles
Boundary Line Establishment	16.3 miles
Boundary Line Renewal	6.3 miles
Ponds	6

(see Table 10)

Over the next five years implementation of the prescribed silvicultural and harvesting operations on each 1000 acres would produce:

from merchantable thinnings
- 22.2 cords of softwood pulpwood
- 14.2 cords of hardwood pulp or fuelwood

from forest improvement cuts
- 1.3 cords of softwood pulpwood
- 2.4 cords of hardwood pulp or fuelwood

from harvest cuts
- 276.8 cords of softwood pulpwood
- 244.9 cords of hardwood pulp of fuelwood
- 156.5 M fbm of softwood sawlogs

for a total of
- 300.3 cords of softwood pulpwood
- 261.5 cords of hardwood pulp or fuelwood
- 156.5 M fbm of softwood sawlogs

(from Table 11)

4.6.2 Annual Cut, Gross Revenues and Commissions

At the end of the 1980 fiscal year the group reported 4,960 productive acres of forest land under management. From these acres, the following quantities of forest

products had been cut and sold during the year:

430.6 cords of pulpwood
234.9 cords of fuelwood
119.5 M fbm of sawlog material

If market conditions had permitted full implementation of prescribed operations, the management area should have produced

297.9 cords of softwood pulpwood
258.5 cords of hardwood pulp or fuelwood
155.2 M fbm of sawlog material

The group came reasonably close to harvesting and selling all the wood raw material that could be obtained within the constraints of prescribed management. The total reported value of the wood sold is $26,971. At a commission rate on sales of 5 per cent the group was only able to meet 2.8 per cent of its operating expenses of $48,200.

Tabulated in Table 20 are the amounts of wood that could be produced by expanding this management area. The table shows that at current prices, current rates of commission, and within current forest management constraints, the group will have to expand its management area to almost 137,700 acres for the operating costs to be covered by earned commissions.

At 10% rate of commission with no real price increases 68,850 acres would be sufficient to break-even. Increasing the rate of commission to 15% means that a break-even in operating costs will be reached when 45,900 acres are put under management.

A real price increase of 20 per cent, at the same rate of commission, would need a management area of 114,800 acres to be large enough to meet operating expenses. Doubling and tripling the commission would reduce the required management area to 57,300 and 38,200 acres respectively. (see Table 21)

An increase in real prices of 50 per cent, at present rates of commission, would require an area of 91,800 acres under management. A management area of 46,000 acres would be sufficient to meet operating expenses when commissions are doubled and 30,600 acres can produce enough wood to meet operating expenses when commissions are tripled. (see Table 21)

TABLE 27

ESTIMATED ANNUAL GROWTH RATES IN SIZE OF MANAGEMENT AREA

ACRES ADDED PER YEAR

GROUP	1980-81	AFTER 1981
West Pictou	2,880	5,760
North Nova	1,630	3,260
Baddeck	2,480	5,960
La Foret	1,600	3,200
North Mountain	1,500	3,000
Sissiboo	3,000	6,000
Conform	3,000	6,000
Athol	3,000	6,000

TABLE 28

NUMBER OF YEARS REQUIRED TO ACHIEVE SELF-SUFFICIENCY
WITH
NO INCREASES IN REAL PRICES
OR IN
RATES OF COMMISSION

GROUP	YEARS ELAPSED UNTIL SELF-SUFFICIENCY
West Pictou	13 - 14 years
North Nova	N/A
Baddeck Valley	7 - 8 years
La Foret	32 - 33 years
North Mountain	61 - 62 years
Sissiboo	21 - 22 years
Conform	3 - 4 years
Athol	20 - 21 years

4.7 CONFORM LTD.

This group, established in 1978, has one of the most active and experienced board of directors. Consequently it has proceeded further along the road of equipment purchase than any of the other groups. A forwarder has recently been purchased in addition to the skidder purchased in 1979.

4.7.1 Forest Conditions in the Service Area

Conform Ltd. has close to 8,200 acres under management with the forest cover distributed as follows:

Softwood	66.6%
Mixed Wood	22.8%
Hardwood	10.6%

According to the present five-year management plans, for every 1,000 acres put under management, 826 acres will be subjected to some form of forestry operation.

The distribution of the acreage among the various categories of forestry activities is as follows:

Reforestation	47 acres
Tending Operations	198 acres
Forest Improvement Cuts	316 acres
Harvest Cuts	251 acres
Christmas Tree Cleaning	14 acres
Total	826 acres
	(from Table 9)

TABLE 20

GROUP MANAGEMENT

SISSIBOO

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

ASSUMING MARKET CONDITIONS PERMIT FULL IMPLEMENTATION OF MANAGEMENT PLANS

Area Under Management	Actual Cut		Potential Cut		Potential Gross Revenues at 1980 Prices (roadside)	Potential Commission at the Current Rate of 5%	Commission as % of 1980 Operating Cost		
	Cords	MFBM	Cords	MFBM			5%	10%	15%
Acres					$,000	$,000	%	%	%
4,960	685.5	119.5	556.4	155.2	35,	2,	3.6	7.2	10.8
10,000			1,121.8	313.0	70,	4,	7.3	14.6	21.9
25,000			2,804.5	782.5	175,	9,	18.2	36.4	54.6
50,000			5,609.0	1,565.0	350,	18,	36.3	72.6	108.9
75,000			8,413.5	2,347.5	525,	26,	54.5	109.0	163.5
100,000			11,218.0	3,130.0	700,	35,	72.6	145.2	217.8
125,000			14,022.5	3,912.5	875,	44,	90.8	181.6	272.4

TABLE 21

GROUP MANAGEMENT

SISSIBOO

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

AT

DIFFERENT LEVELS OF PRICE INCREASES AND COMMISSIONS

Area Under Management	Gross Revenues At Current Prices	Gross Revenues with Increases in Real Prices of		Commission at 20% Real Price Increase of a % of Oper. Cost			Commission at 50% Real Price Increase as a % of Oper. Cost		
		20%	50%	5%	10%	15%	5%	10%	15%
Acres	$,000	$,000	$,000	%	%	%	%	%	%
4,960	35,	42,	52,	4.3	8.6	12.9	5.4	10.8	16.2
10,000	70,	84,	105,	8.7	17.4	26.1	10.9	21.8	32.7
25,000	175,	210,	263,	21.8	43.6	65.4	27.2	54.4	81.6
50,000	350,	420,	525,	43.6	87.2	130.8	54.5	109.0	163.5
75,000	525,	630,	788,	65.4	130.8	196.2	81.7	163.4	245.1
100,000	700,	840,	1,050,	87.1	174.2	261.3	108.9	217.8	326.7
125,000	875,	1,050,	1,313,	108.9	217.8	326.7	136.2	272.4	408.6

Conform's requirements for services to support the forestry operations on the above acreages are:

Construction of New Roads	5.7 miles
Upgrading of Old Roads	0.9 miles
Boundary Line Establishment	5.8 miles
Boundary Line Renewal	4.3 miles
Ponds	7

During this five-year period Conform expects to produce, market conditions permitting, from every 1,000 acres under management the following amounts of wood:

from merchantable thinnings

31.7 cords of softwood pulpwood

from forest improvement cuts

118.7 cords of softwood pulpwood
86.3 cords of hardwood pulp or fuelwood
21.3 M fbm of softwood sawlogs
34.6 M fbm of hardwood sawlogs

from harvesting operations

4,787.1 cords of softwood pulpwood
1,258.8 cords of hardwood pulp or fuelwood
281.5 M fbm of softwood sawlogs
10.3 M fbm of hardwood sawlogs

for a total of

4,937.5 cords of softwood pulpwood
1,345.1 cords of hardwood pulp or fuelwood
302.8 M fbm of softwood sawlogs
44.9 M fbm of hardwood sawlogs

(from Table 11)

4.7.2 Annual Cut, Gross Revenues and Commissions

During the 1980-81 fiscal year Conform Ltd. cut and sold:

2,264 cords of pulpwood
75 cords of fuelwood
174 M fbm of sawlog material

The potential cut from 8,200 acres, based on the prescriptions of the management plans, was estimated to be:

8,097 cords of softwood pulp
2,206 cords of hardwood pulp
570 M fbm of sawlog material

In spite of having the most experienced staff Conform Ltd. could not overcome adverse market conditions and managed to sell only about 23 per cent of its potential in pulp and fuelwood and 30 per cent of its potential in sawlogs. In absolute terms, however, gross sales are the highest of any of the groups and amounted to $87,935. The 5-per-cent commission earned amounted to $4,395, representing 7.4 per cent of the operating costs incurred by its staff of four.

Table 22 shows that Conform Ltd. could become self-sufficient in its operations at a size of 26,480 similarly stocked acres. The potential cut with this acreage under management would be about 33,280 cords of pulp and fuelwood and 1.8 million board feet of sawlog material. Should Conform Ltd. require an increase in supervisory staff, operating expenses would rise about 20 per cent and the required acreage to break-even would be 35,710 acres. Doubling the rate of commission would reduce the latter acreage to 17,855 acres. Similarily, a 15% increase in the rate of commission would reduce the acreage to about 11,900.

As can be expected, a 20 per cent increase in real price, even when commissions are held at the current rate of 5 per cent, reduces the required management area drastically; to about 22,100 acres. Doubling the commission combined with a real prices increase of 20 per cent would make the group self-sufficient with only 3,000 additional acres and if commissions were tripled the Company would be self sufficient now. (see Table 23)

With a 50 per cent increase in real price and maintaining commissions at current rates, 17,700 acres would be required to achieve self-sufficiency while doubling the commission with this price increase would result in a required management area of 8,900 acres. This is only marginally above the current management area of 8,200 acres. With a 50 per cent increase in real price and a tripling of commissions Conform would already have achieved self-sufficiency. (see Table 23)

TABLE 22

GROUP MANAGEMENT

CONFORM LTD.

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

ASSUMING MARKET CONDITIONS PERMIT FULL IMPLEMENTATION OF MANAGEMENT PLANS

Area Under Management	Actual Cut		Potential Cut		Potential Gross Revenues at 1980 Prices (roadside)	Potential Commission at the Current Rate of 5%	Commission as % of 1980 Operating Cost		
	Cords	MFBM	Cords	MFBM			5%	10%	15%
Acres					$,000	$	%	%	%
8,200	2,339	174	10,303	570	366,	18,304	31.0	62.0	93.0
10,000			12,565	695	446,	22,322	37.8	75.6	113.4
25,000			31,412	1,738	1,116,	55,806	94.4	188.8	283.2
50,000			62,825	3,475	2,232,	111,612	188.8	377.6	566.4
75,000			94,238	5,212	3,348,	167,418	283.2	566.4	849.6
100,000			125,650	6,950	4,447,	223,225	377.6	755.2	1132.8

TABLE 23

GROUP MANAGEMENT

CONFORM LTD.

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

AT

DIFFERENT LEVELS OF PRICE INCREASES AND COMMISSIONS

Area Under Management	Gross Revenues At Current Prices	Gross Revenues with Increases in Real Prices of		Commission at 20% Real Price Increase as a % of Oper. Cost			Commission at 50% Real Price Increase as a % of Oper. Cost		
		20%	50%	5%	10%	15%	5%	10%	15%
Acres	$,000	$,000	$,000	%	%	%	%	%	%
8,200	366,	439,	549,	37.2	74.4	111.5	46.5	92.9	139.4
10,000	446,	536,	670,	45.3	90.6	135.9	56.6	113.2	169.8
25,000	1,116,	1,339,	1,674,	113.2	226.4	339.6	141.6	283.2	424.8
50,000	2,232,	2,679,	3,348,	226.6	453.2	679.6	283.2	566.4	849.6
75,000	3,348,	4,018,	5,023,	339.9	679.8	1,019.7	424.8	849.6	1,274.4
100,000	4,447,	5,357,	6,697,	453.2	906.4	1,812.8	566.5	1,132.9	1,699.4

4.8 ATHOL COOP LTD.

This group was established in 1978. The group's notable achievement was the building of 5.2 miles of a Class C road, the so-called "West Maccon River Road". This road crosses about 22 properties of which 15 belong to members of the Coop. With the addition of Class D roads a considerable number of other properties belonging to Coop members would be made accessible.

4.8.1 The Forests in the Service Area

The estimated area under management is slightly over 9,800 acres. The distribution of cover types on this acreage was as follows:

Softwoods	- 55%
Mixed Woods	- 21%
Hardwoods	- 24%

For every 1,000 acres under management during the next five years about 301 acres of forest land will undergo a forestry operation of one form or another. The pattern of forestry operations is as follows:

Reforestation	52 acres
Tending	51 acres
Forest Improvement Cuts	94 acres
Harvest Cuts	102 acres
Christmas Tree Cleaning	2 acres
	301 acres

(see Table 9)

The services required on 1,000 acres during the five-year period amount to the following:

Construction of New Roads	4.7 miles
Upgrading of Old Roads	3.0 miles
Boundary Line Establishemnt	7.8 miles
Boundary Line Renewal	2.3 miles
Ponds	5

(see Table 10)

The potential 5-year cut that should come from each 1,000 acres under management amounts to:

from merchantable thinnings

.6 cords of softwood pulpwood

1.0 M fbm of softwood sawlogs

from forest improvement cuts

.4 cords of softwood pulpwood

.4 cords of softwood sawlogs

from harvest cuts

578.2 cords of softwood pulpwood

205.5 cords of hardwood pulp or fuelwood

183.1 M fbm of softwood sawlogs

for a total of

579.2 cords of softwood pulpwood

205.5 cords of hardwood pulp or fuelwood

184.5 M fbm of softwood sawlogs

(see Table 11)

4.8.2 Annual Cut, Gross Revenues and Commissions

During the past fiscal year the Athol Coop cut and sold:

510 cords of pulpwood

102 cords of fuelwood

250 M fbm of sawlog material

If market conditions had permitted full implementation of the management plans, the actual cut should have been:

1135 cords of softwood pulpwood
403 cords of hardwood fuel or pulpwood
362 M fbm of softwood sawlogs

It appears that last year the Coop achieved, about 25 per cent of its potential in fuelwood sales, 45 per cent of its potential in pulpwood sales and 69 per cent of its potential in sawlog sales. A 5-per-cent commission on gross revenues of $42,342 contributed 4.1 per cent of the money required for operations.

Table 24 shows that to break-even while maintaining current staff levels, the Coop has to put more than 125,000 similar acres under management to generate the required production of primary forest products. The required acreage was estimated to be about 128,700 acres. With no increase in real prices but a doubling of the rate of commission would reduce the acreage to 62,500. At a 15 % rate of commission approximately 41,700 acres would suffice to break-even.

A real price increase of 20 per cent and holding the commission of 5 per cent of sales, would require a break-even management area of 107,300 acres. If, at the same time, the rate of commissions was doubled to 10 per cent, the required management area to break-even can be reduced to 53,600 acres. A management area of 35,800 acres would produce enough wood to break-even on operating expenses if the commission rate was increased to 15 per cent. (see Table 25)

TABLE 24

GROUP MANAGEMENT

ATHOL

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

ASSUMING MARKET CONDITIONS PERMIT FULL IMPLEMENTATION OF MANAGEMENT PLANS

Area Under Management	Actual Cut		Potential Cut		Potential Gross Revenues at 1980 Prices (roadside)	Potential Commission at the Current Rate of 5%	Commission as % of 1980 Operating Cost		
	Cords	MFBM	Cords	MFBM			5%	10%	15%
Acres					$,000	$,000	%	%	%
9,800	612	250	1,538	362	80,	4,	7.7	15.4	23.1
10,000			1,569	369	81,	4,	7.8	15.6	23.4
25,000			3,923	923	202,	10,	19.4	38.8	58.2
50,000			7,845	1,845	404,	20,	38.8	77.6	116.4
75,000			11,767	2,767	606,	30,	58.3	116.6	174.9
100,000			15,690	3,690	808,	40,	77.7	155.4	233.1
125,000			19,612	4,612	1,010,	51,	97.1	194.2	291.3

TABLE 25

GROUP MANAGEMENT

ATHOL

ANNUAL GROSS REVENUES AND COMMISSIONS EARNED

AT

DIFFERENT LEVELS OF PRICE INCREASES AND COMMISSIONS

Area Under Management	Gross Revenues At Current Prices	Gross Revenues with Increases in Real Prices of		Commission at 20% Real Price Increase as a % of Oper. Cost			Commission at 50% Real Price Increase as a % of Oper. Cost		
		20%	50%	5%	10%	15%	5%	10%	15%
Acres	$,000	$,000	$,000	%	%	%	%	%	%
9,800	80,	96,	120,	9.2	18.4	27.6	11.5	23.0	34.5
10,000	81,	97,	121,	9.3	18.6	27.9	11.7	23.3	35.0
25,000	202,	242,	303,	23.3	46.6	69.9	29.1	58.3	87.4
50,000	404,	485,	606,	46.6	93.2	139.8	58.3	116.5	174.8
75,000	606,	727,	909,	69.9	139.8	209.7	87.4	174.8	262.1
100,000	808,	970,	1,212,	93.2	186.4	279.6	116.5	233.1	349.6
125,000	1,018,	1,223,	1,516,	116.5	233.0	349.5	145.7	291.3	437.0

4.9 "BREAK-EVEN" MANAGEMENT AREAS

Table 26 provides a listing of the acreage required by each group to break-even at current conditions and two levels of increase in real prices each with three different commissions. It should be noted that up to this point it has been assumed that no increases in operational expenditures will occur (i.e. the same staff is expected to cope with the increased workload).

From the table it can be seen that the area available for management to the West Pictou Group is large enough for the group to become self-sufficient even under present conditions of price and commission.

It appears that the service area assigned to the Baddeck Group is large enough to achieve self-sufficiency at current prices and current commission rates. This statement should be treated with caution however. The management plan summaries do not show how much of the prescribed clear cuts are in fact the cutting of overmature or budworm infested timber. The rate of clearcutting appears to be high. It is questionable whether this rate of production can be sustained in perpetuity.

La Foret Acadienne Group has enough land in its service area to become self-sufficient only if there is a 20 per cent increase in real price accompanied by at least a doubling of the present commission rate. If the real price is increased by 50 per cent, the commission must still be increased, but not necessarily doubled.

Under no circumstances will the North Mountain Group be able to reach self-sufficiency within the limits of its service area. There would have to be at least a doubling of the area available for management to this group before it could become self-sufficient.

The Sissiboo Group is in a somewhat better position. It could become self-sufficient if there was a 20 per cent increase in real price accompanied by more than a 10 per cent commission rate or a 50 per cent increase in real price and almost double the commission.

Conform Ltd., because of its apparently superior forest conditions relative to the other groups, can easily become self-sufficient at present price and commission rates with the acreage presently available for management. The rate of prescribed cutting evident from the provided management plan summaries appears to be a high. There is some doubt whether this rate of cutting is sustainable. The service area,however, is large enough to achieve self-sufficiency in operational cost.

The Athol Group will have difficulty in becoming self-sufficient within the bounds of the area available to it for management. Without an increase in service area, this group can achieve self-sufficiency only under the circumstance of a real price increase of 20 per cent or 50 per cent and a commission rate in excess of 10 per cent.

In summary, the West Pictou, Conform, Baddeck and Athol groups have a sufficient service area; La Foret Acadienne, the Sissiboo and Athol groups can achieve self-sufficiency only if real price and the commission rate is increased; and the North Mountain group service area must be increased if it is to become self-sufficient. No data is available for the North Nova group.

5. ACHIEVING VIABILITY

The real question is when can the existing groups achieve viability. This means achieving a level of operations at which the sale of primary forest products, cut according to prescribed silvicultural and harvesting operations, will generate enough commission income to offset operating expenses.

In theory, the AAC should increase as a result of the silvicultural work undertaken by each group. In the absence of natural disasters this may be calculated. Although time constraints did not permit the consultant to under take this exercise, it would suggest that the potential viability of each group should be related to the proposed forest inventory at selected time periods in the future.

TABLE 26

ACRES REQUIRED

TO ACHIEVE A BREAK-EVEN BETWEEN REVENUES

AND PROPOSED FIXED OPERATING EXPENDITURES

ASSUMING

INCREASES IN REAL PRICES AND COMMISSIONS

Assumption	1 West Pictou	2 North Nova	3 Baddeck	4 La Foret	5 North Mountain	6 Sissiboo	7 Conform	8 Athol
No Increase in Real Price Current Commission	90,000		50,000	109,900	190,800	137,700	26,480	128,700
Double Commission	45,000	Not	25,000	54,950	95,400	68,850	13,240	64,350
Triple commission	30,000	Avail	16,670	36,680	63,600	45,900	8,830	42,900
20% Increase in Real price Current Commission	59,400		33,510	91,600	159,100	114,800	22,100	107,300
Double Commission	29,800	Not	16,700	45,800	79,600	57,300	11,000	53,600
Triple Commission	19,800	Avail	11,510	30,500	53,100	38,200	7,400	35,800
50% Increase in Real Price Current Commission	47,600		26,800	73,200	127,300	91,800	17,700	85,800
Double Commission	23,800	Not	13,400	36,600	63,600	46,000	8,900	42,900
Triple Commission	15,900	Avail	8,940	24,400	42,400	30,600	5,900	28,600
Possible Area Available For Group Mgt.	119,700	74,300	89,700	46,000	36,500	51,000	62,300	35,000

5.1 THE RATE OF GROWTH IN MANAGEMENT AREAS

Table 27 shows the estimated rate of growth in acres per year for the different group management areas. The additions expected to occur in 1981-82 are based on the assumptions that:

(a) the last 2 years' average for the preparation of management plans can be maintained in 1982, and

(b) the same size of management staff is kept (i.e. silvicultural work and harvest cuts are contracted out)

The rate at which additional acreages come under management has been doubled for subsequent years. Two assumptions led to this decision:

(a) that within 1 year a simplified management plan will be adopted, and

(b) that once an individual plan comes up for renewal after 5 years, it be incorporated in a management plan for a continuous block. More and more continuous blocks will be created over time. For the purposes of management planning these should be treated as a unit rather than as individual properties.

Table 28 shows how many years it will apparently take a group to become self-sufficient; i.e. to reach the required management area size. It is assumed that during these periods of growth, no increases in real prices occur and no changes are made in the rate of commission.

Of the seven groups examined, only West Pictou, Conform and Baddeck Valley can achieve self-sufficiency in the foreseeable future. Under the most favourable market conditions, Conform could achieve self-sufficiency in three to four years, Baddeck in seven to eight years, while for West Pictou it would take another 13-14 years to achieve self-sufficiency. In each case self-sufficiency can be achieved without an adjustment to service area boundaries.

The outlook for the other four remaining groups, La Foret, North Mountain, Sissiboo, and Athol, is discouraging. Without any changes in real prices for forest products and no changes in commissions, and assuming that all prescribed harvest cuts are carried out, the times required become unrealistically long. The widely distributed time periods result from the differences in forest conditions and in the approaches taken towards rectifying these conditions. For North Mountain it will take more than 60 years to become self-sufficient; in the case of La Foret at least 32 years, while both Sissiboo and Athol will require at least 20 years. Moreover, all four will require substantial adjustments to their boundaries to acquire the necessary forest land through expanded membership.

5.2 COST OF CONTINUED OPERATION OF THE GROUPS

Table 29 shows the annual costs of silviculture, roads, boundaries and ponds per 1000 acres put under management within each group. These estimates are based on:

(a) the various treatment areas derived from the management plan summaries,

(b) the maximum rates for silviculture, roads, ponds, and boundaries applicable, and

(c) the assumption that full implementation of the management plan recommendations is achieved on schedule.

The results of Table 29 can be summarized as follows:

COST PER M ACRES OF FOREST MANAGEMENT[1]

West Pictou	$ 17,740
North Nova	Not Avail
Baddeck Valley	21,510
La Foret Acadienne	36,960
North Mountain	17,270
Sissiboo	33,940
Conform	28,150
Athol	19,920

(1) As specified in the management plans

TABLE 29

GROUP MANAGEMENT

ANNUAL COST ($ PER 1,000)ACRES OF SILVICULTURE AND SERVICES[1]

Operation	West Pictou	North Nova	Baddeck	La Foret	North Mountain	Sissiboo	Conform	Athol
Reforestation	4,320	-	670	620	2,930	2,810	2,460	2,020
Tending	3,520	-	8,960	10,660	4,440	9,100	7,200	1,880
Forest Improvement	830	-	2,000	1,400	1,670	1,230	3,670	1,380
Christmas Trees	140	-	-	540	310	2,620	480	70
Total Silviculture	8,810	-	11,630	13,220	9,350	15,760	13,810	5,350
Roads	2,000	-	7,140	11,310	4,760	12,700	11,110	11,310
Boundary Lines	6,260	-	2,660	11,630	2,760	4,280	1,830	2,260
Ponds	400	-	80	800	400	1,200	1,400	1,000
Total Services	8,660	-	9,880	23,740	7,920	18,180	14,340	14,570
Grand Total	17,470		21,510	36,960	17,270	33,940	28,150	19,920

(1) Assuming full implementation of management plans

Forest conditions and land-use patterns are exerting a strong influence on cost. Groups with forest conditions demanding a substantial effort in silviculture, such as La Foret and Sissiboo, require the highest dollar input per year. Unfortunately small properties typically have the poorest forest conditions and require the greatest amount of effort and dollars for boundary lines and roads.

The potential gross revenues per 1,000 acres, assuming market conditions permit full implementation of prescribed harvest cuts, can be summarized as follows:

Groups	Potential Gross Revenues[1]
West Pictou	$ 16,690
North Nova	-
Baddeck Valley	30,480
La Foret Acadienne	9,805
North Mountain	6,470
Sissiboo	7,000
Conform	44,645
Athol	8,080

Based on the projected rate of growth from Table 27, the cost of continued operation of each group over the next ten years has been estimated. The total cost to government is assumed to be the total cost of silviculture plus the cost of services (roads, ponds, boundary lines, etc.) plus the costs of operating the office minus the amount earned in commissions. A rate of 4 per cent in commissions was used for West Pictou and 5 per cent for all others.

(1) Based on 1981 prices

The resulting estimates of total costs for each group are shown in Tables 30 through 36. The bulk of the gross revenue is paid out to the logging crews. As far as can be determined 15 per cent of the roadside price of pulpwood, and 35 per cent of the roadside price of sawlogs, goes to the forest owner as stumpage. Depending on the mix of products logged, between 60 and 80 per cent, of gross revenues is paid out in wages and salaries to the loggers. It has been the practice in the past to incorporate the cost of field supervision in the claims for silviculture.

The costs to the government of expanding the groups to sizes that can presumably enable these groups to achieve self-sufficiency will increase drastically over the next 10 years.

Tables 30-36 indicate that if the prescribed forest management practices are adhered to, the cost to government over the next 10 years will increase at the following rate:

West Pictou	4.2 times
Baddeck Valley	5.2 times
La Foret	5.1 times
North Mountain	3.9 times
Sissiboo	6.7 times
Conform	5.0 times
Athol	4.4 times

These costs can be summarized follows:

COST TO GOVERNMENT

Thousands of dollars per year

	Year 1	Year 5	Year 10
West Pictou	275.9	663.1	1,147.0
Baddeck Valley	254.7	731.2	1,326.7
La Foret	258.1	724.9	1,308.4
North Mountain	155.0	358.3	612.5
Sissiboo	315.6	1,121.7	2,129.4
Conform	349.4	971.4	1,749.0
Athol	301.8	770.2	1,355.7

TABLE 30

GROUP MANAGEMENT

COSTS OF CONTINUED DEVELOPMENT

WEST PICTOU

Year	1	2	3	4	5	6	7	8	9	10
Acres Under Management	12,880	18,640	24,400	30,160	35,920	41,680	47,440	53,200	58,960	64,720
				CONSTANT DOLLARS (1980)						
Cost of Silviculture	113,472	164,218	214,964	265,710	316,455	367,201	417,946	468,692	519,438	570,183
Cost of Services	111,541	161,422	211,304	261,185	311,067	360,949	410,830	460,712	510,594	560,475
Operating Cost	59,510	59,510	59,510	59,510	59,510	59,510	59,510	59,510	59,510	59,510
Sub Total	284,523	385,150	485,778	586,405	687,032	787,660	888,286	988,914	1,089,542	1,190,168
Gross Revenues from Sales	214,967	311,101	407,236	503,370	599,504	695,639	791,774	887,908	984,042	1,080,176
Commission (4% of Sales)	8,599	12,444	16,289	20,135	23,980	27,826	31,671	35,516	39,362	43,207
Defecit or Surplus Commission - Operating Cost	-50,911	-47,066	-43,221	-39,375	-35,530	-31,684	-27,839	-23,994	-20,148	-16,303
Total Cost to Government	275,924	372,706	469,489	566,270	663,052	759,835	856,615	953,398	1,050,180	1,146,961

TABLE 31

GROUP MANAGEMENT

COSTS OF CONTINUED DEVELOPMENT

BADDECK VALLEY

Year	1	2	3	4	5	6	7	8	9	10
Acres Under Management	9,680	15,640	21,600	27,560	33,520	39,480	45,440	51,400	57,360	63,320
				CONSTANT DOLLARS (1980)						
Cost of Silviculture	112,578	181,893	251,208	320,523	389,838	459,152	528,467	597,782	667,097	736,412
Cost of Services	95,638	154,523	213,408	272,293	331,178	390,062	448,947	507,832	566,717	625,602
Operating Cost	61,230	61,230	61,230	61,230	61,230	61,230	61,230	61,230	61,230	61,230
Sub Total	269,446	397,646	525,846	654,046	782,246	910,444	1,038,644	1,166,844	1,295,044	1,423,244
Gross Revenues from Sales	295,046	476,707	658,368	840,029	1021,690	1203,350	1,385,011	1,566,672	1,748,333	1,929,994
Commission (5% of Sales)	14,752	23,835	32,918	42,001	51,085	60,168	69,251	78,334	87,417	96,500
Defecit or Surplus Commission - Operating Cost	-46,478	-37,395	-28,312	-19,229	-10,145	-1,062	8,021	17,104	26,187	35,270
Total Cost to Government	254,694	373,811	492,928	612,045	731,161	850,276	969,393	1,088,510	1,207,627	1,326,744

TABLE 34

GROUP MANAGEMENT

COSTS OF CONTINUED DEVELOPMENT

SISSIBOO

Year	1	2	3	4	5	6	7	8	9	10
Acres Under Management	7,960	13,960	19,960	25,960	31,960	37,960	43,960	49,960	55,960	61,960
					CONSTANT DOLLARS (1980)					
Cost of Silviculture	125,450	220,010	314,570	409,130	53 1,017,353	1,126,433				
Operating Cost	48,200	48,200	48,200	48,200	48,200	48,200	48,200	48,200	48,200	48,200
Sub Total	318,363	522,003	725,643	929,283	1,132,923	1,336,563	1,540,203	1,743,843	1,947,483	2,151,123
Gross Revenues from Sales	56,720	97,720	139,720	181,720	223,720	265,720	307,720	349,720	391,720	433,720
Commission (5% of Sales)	2,786	4,886	6,986	9,086	11,186	13,286	15,386	17,486	19,586	21,686
Defecit or Surplus Commission - Operating	-45,414	-43,314	-41,214	-39,114	-37,014	-34,914	-32,814	-30,714	-28,614	-26,514
Total Cost to Government	315,577	517,117	718,657	920,197	1,121,737	1,323,277	1,524,817	1,726,357	1,927,897	2,129,437

TABLE 35

GROUP MANAGEMENT

COSTS OF CONTINUED DEVELOPMENT

CONFORM

Year	1	2	3	4	5	6	7	8	9	10
Acres Under Management	11,200	17,200	23,200	29,200	35,200	41,200	47,200	53,200	59,200	65,200
					CONSTANT DOLLARS (1980)					
Cost of Silviculture	154,672	237,532	320,392	403,252	486,112	568,972	651,832	734,692	817,552	900,412
Cost of Services	169,608	246,648	332,688	418,728	504,768	590,808	676,848	762,888	848,928	934,968
Operating Cost	59,110	59,110	59,110	59,110	59,110	59,110	59,110	59,110	59,110	59,110
Sub Total	374,390	543,290	712,190	881,090	1049,990	1218,890	1,387,790	1,556,690	1,725,590	1,894,490
Gross Revenues from Sales	500,024	767,894	1035,764	1303,634	1571,504	1839,374	2,107,244	2,375,114	2,642,984	2,910,584
Commission (5% of Sales)	25,001	38,395	51,788	65,182	78,575	91,969	105,362	118,756	132,149	145,529
Defecit or Surplus Commission - Operating Cost	-34,109	-20,715	- 7,322	+6,072	+19,465	+32,859	+46,252	+59,646	+73,039	+86,419
Total Cost to Government	349,389	504,895	660,402	815,908	971,415	1126,921	1,282,428	1,437,934	1,593,441	1,748,961

TABLE 32

GROUP MANAGEMENT

COSTS OF CONTINUED DEVELOPMENT

LA FORET ACADIENNE

Year	1	2	3	4	5	6	7	8	9	10
Acres Under Management	5,600	8,800	12,000	15,200	18,400	21,600	24,800	28,000	31,200	34,400
					CONSTANT DOLLARS (1980)					
Cost of Silviculture	74,032	116,336	158,640	200,944	243,248	285,552	327,856	370,160	412,464	454,768
Cost of Services	132,944	208,912	284,880	360,848	436,816	512,784	588,752	664,720	740,688	816,656
Operating Cost	53,900	53,900	53,900	53,900	53,900	53,900	53,900	53,900	53,900	53,900
Sub Total	260,876	379,148	497,420	615,692	733,964	852,236	970,508	1,088,780	1,207,052	1,325,324
Gross Revenues from Sales	54,908	86,284	117,660	149,036	180,412	211,788	243,164	274,540	305,915	337,292
Commission (5% of Sales)	2,745	4,314	5,883	7,452	9,021	10,589	12,158	13,727	15,296	16,865
Defecit or Surplus Commission - Operating Cost	-51,155	-49,586	-48,017	-46,448	-44,879	-43,311	-41,742	-40,173	-38,604	-37,035
Total Cost to Government	258,131	374,834	491,537	608,240	724,943	841,647	958,350	1,075,053	1,191,756	1,308,459

TABLE 33

GROUP MANAGEMENT

COSTS OF CONTINUED DEVELOPMENT

NORTH MOUNTAIN

Year	1	2	3	4	5	6	7	8	9	10
Acres Under Management	5,500	8,500	11,500	14,500	17,500	20,500	23,500	26,500	29,500	32,500
					CONSTANT DOLLARS (1980)					
Cost of Silviculture	51,425	79,475	107,525	135,575	163,625	191,675	219,725	247,775	266,475	303,875
Cost of Services	43,560	67,320	91,080	114,840	138,600	102,360	186,120	209,880	233,640	257,400
Operating Cost	61,760	61,760	61,760	61,760	61,760	61,760	61,760	61,760	61,760	61,760
Sub Total	156,745	208,555	260,315	312,175	363,985	415,795	467,605	519,415	561,875	623,035
Gross Revenues from Sales	35,585	54,995	77,405	93,815	113,225	132,635	152,045	171,455	190,865	210,275
Commission (5% of Sales)	1,779	2,750	3,870	4,691	5,661	6,632	7,602	8,573	9,543	10,514
Defecit or Surplus Commission - Operating Cost	-59,981	-59,010	-57,890	-57,069	-56,099	-55,128	-54,158	-53,187	-52,217	-51,246
Total Cost to Government	154,966	205,805	256,495	307,484	358,324	409,163	460,003	510,842	552,332	612,521

TABLE 36

GROUP MANAGEMENT

COSTS OF CONTINUED DEVELOPMENT

ATHOL

Year	1	2	3	4	5	6	7	8	9	10
Acres Under Management	12,800	18,800	24,800	30,800	36,800	42,800	48,800	54,800	60,800	66,800
					CONSTANT DOLLARS (1980)					
Cost of Silviculture	68,480	100,580	132,680	164,780	196,880	228,980	261,080	293,180	325,280	357,380
Cost of Services	186,496	273,916	361,336	448,756	536,176	623,596	711,016	798,436	885,856	973,276
Operating Cost	52,025	52,025	52,025	52,025	52,025	52,025	52,025	52,025	52,025	52,025
Sub Total	307,001	426,521	546,041	665,561	785,081	904,601	1,024,121	1,143,641	1,263,161	1,382,681
Gross Revenues from Sales	103,424	151,904	200,834	248,864	297,344	345,824	394,304	442,784	491,264	539,744
Commission (5% of Sales)	5,171	7,595	10,019	12,443	14,867	17,291	19,715	22,139	24,563	26,987
Defecit or Surplus Commission - Operating Cost	-46,854	-44,430	-42,006	-39,582	-37,158	-34,734	-32,310	-29,886	-27,462	-25,038
Total Cost to Government	301,830	418,926	536,022	653,118	770,214	903,310	1,004,406	1,121,502	1,238,598	1,355,694

5.3 CONCLUSION

The foregoing escalating costs illustrate the inherent dilemma of expanding the groups towards self-sufficiency in operating cost. To achieve self-sufficiency the groups have to expand their sales of forest products. Expanded sales of forest products require expanded acreages. Expanding management areas bring rapidly escalating costs in silviculture and services. This is particularly the case for groups with below-average forest conditions and smaller than average properties.

Furthermore, the present internal financial arrangements do not promote group efficiency. The benefits of increased efficiency in logging operations go primarily to the woodlot owner who provided the wood. Future benefits from today's silviculture will also accrue primarily to the owner so long as the groups' earned income is dependant solely on a percentage of sales.

6. RECOMMENDATIONS

The Group Management project is an integral part of the forest management program. As quoted in the introduction "the immediate goal of this program is to increase productivity on all classes of forest land holdings, improve physical access and reduce diseconomies attributable to fragmentation and scale".

To achieve this goal a number of projects were designed of which group management is one.

The groups are, because of their organizational structure, expected to make a significant contribution to the production of industrial roundwood. The groups, organized as either limited companies or as cooperatives, are expected to bring greater efficiency to forest management than can be expected from the small, individual private forest owner.

The contribution the groups are expected to make to the provincial forest economy can be separated into three distinct tasks. One, the groups are expected to contribute to the provincial economy over the short-term by increasing the harvest of mature timber from the members' properties. Two, the groups are also expected to increase future yields of timber per acre by instituting sound silvicultural practices today. And three, the groups, by the blocking of small holdings, are expected to remove the diseconomies of scale that accompany individual woodlots, in particular with respect to harvesting and marketing.

In the following recommendations four cost centres have been addressed:

. Operating Cost

Operating costs represent the cost of maintaining the group offices including the salaries and wages of the group manager, the forester, the office manager and normal overhead expenses associated with management.

. Infrastructure Costs

The cost of infrastructure is considered to include:

- road construction and upgrading, including bridges, culverts, etc.
- boundary line establishment and renewal
- fire ponds

. Silviculture Cost

Major silvicultural activities are:

- reforestation
- tending (thinnings)
- improvement cuts, salvage cuts, wolf tree elimination, remnant removal, etc.

. Harvesting Cost

Included among timber harvesting operations are:

- regeneration cuts
- clearcuts
- selection cuts

6.1 OPERATING COST

Operating costs should be more closely related to the number of members served and acres under management, therefore; it is recommended that a formula be devised which reflects the above relationship. This can be based on the experience gained in the operation of these offices to date. The formula should take into consideration future savings that can be gained from the recommended[1] simplification of management planning procedures and the preparation of management plans for blocks rather than individual properties. Furthermore, no formal management plans should be prepared for properties below a specified size of 50 acres.

It is suggested that the per-member grant be constant for all properties up to 100 acres, but, for each additional 50 acres the grant should be increased. Finally it is put forward that the grant per member be discontinued after a member has been associated with the group for ten years.

The purpose behind the above recommendations is to provide the groups with the incentive to continually add new members and acreages to dilute costs through "blocking" and to increase their timber producing potential.

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(1) See evaluation of forest management program.

The specific time limitation is suggested because it will force the group to review their policies on stumpage payments, commission rates and logging practices. Contributions of government must decrease and eventually cease all together, therefore thought must be given to group self-sufficiency, when office operating expenses have to come from profits (or commissions) earned.

6.2 INFRASTRUCTURE COSTS

As was the case in operating cost it is recommended that the cost of constructing roads, bridges, and ponds, running of property lines, and allied services be related to new membership acreage. It is suggested that the minimum recognized property size be 50 acres. Grants should be incremental in 25-acre blocks and paid to the group over a period of two years following the new membership. It will be the group management's responsibility to apply the "Infrastructure Grant" in areas of high priority. This freedom of action is of particular importance in relation to the construction of roads.

In addition it is recommended that the cost of the maintenance of the road system and boundary lines not be included in the grant system. The maintenance of the infrastructure must come from profits or commissions earned from timber harvesting operations.

6.3 SILVICULTURE COST

The present range of silvicultural practices should be reviewed to determine the relative contribution each one of these practices makes toward increased future yields. Those with the highest pay-offs should be favoured in future management. Practices with low pay-offs could perhaps be eliminated from the roster of practices eligible for grants.

Concurrent with review of silvicultural practices the relationship between silviculture and timber harvesting should be examined. It appears that at present the group management foresters do not pay sufficient attention to the economic merits of the silvicultural recommendations.

As stated previously, the determination of the optimum combination of silviculture and timber harvesting requires the analysis of data which are not readily available. It is recommended, however, that a limit be placed on the amount of money that can be spent on silviculture and furthermore, that this limit should be tied in to the amount or acreage of timber harvested over a specified period of time.

For example the harvest and sale of an X amount of timber would allow the spending of a Y amount of dollars on silviculture. Such an approach would encourage the groups to make every effort to cut and sell their prescribed cut.

The relationship between the effort in prescribed silviculture and the effort in prescribed harvesting does not have to be, nor should it be, the same for each group. Groups that have below-average forest conditions, obviously will have, according to their managemnt plans, less timber to cut relative to the other groups. At the same time, the forests making up their management area, require more silvicultural effort than the others.

Management planning in each one of the groups has advanced far enough that an acceptable rationale for specific money allocation for silviculture, based on the groups's 5-year plans and achievement in prescribed cutting can be arrived at. Not only should the amount of silviculture permitted be closely related to performance in timber harvesting, it should also be gradually reduced in harmony with improving forest conditions.

It is therefore proposed that a specified time limit be put on the eligibility of each property for grants in silviculture. A period of 30 - 50 years, depending on the mixture of softwood to hardwood stands, and more or less corresponding to one-half a rotation, is suggested. During the last one-third of eligibility of a property a declining scale, calculated to reach a pre-determined minimum level, is recommended to be applied.

It is further recommended that low-interest loans be made available for silvicultural purposes. Any group that wishes to invest more in silviculture than permitted under the grant system should be allowed to do so.

It is not envisaged that great use will be made at the outset of the opportunity to borrow money for timber growing purposes. It can be expected, however, that properties that have been under management for 20 to 30 years, will be supporting vigorously growing and well stocked forests. In such stands additional efforts in silviculture could pay off handsomely over the short-term. A good example of such a possibility would be the practice of fertilization shortly before the end of the rotation.

Lastly, it is recommended that along with the cancellation of silvicultural practices of doubtful value, Christmas tree cleaning or shearing should be excluded from silvicultural grants. Instead, the growing of Christmas trees may qualify for low-interest loans.

6.4 HARVESTING COST

To achieve a higher degree of self-sufficiency commensurate with prescribed cuts and increasing size of management area, the groups have to step up their efforts in the cutting and selling of timber. It is doubtful, however, whether the present system of low commissions and stumpage payments is sufficiently rewarding to the group as a whole to strive for greater efficiency in their logging and marketing practices.

It is therefore recommended that the relationship between stumpage payments, logging costs, and commission payments be thoroughly reviewed. Perhaps members ought to be reminded of the fact that by joining a group they also joined a business venture. Any business starting out forsakes high initial dividends to its shareholders to achieve higher returns in the future.

6.5 ADDITIONAL RECOMMENDATIONS

In addition to recommendations strictly pertaining to the cost structure of the groups, a number of recommendations have been developed related to increased protection of the forest, expansion of service area, income from outside the service area, and the formation of new groups.

6.5.1 Protection of the Group Forests

Because of investments in silviculture a higher effort in protection against fire seems to be warranted. The least expensive and most practical solution would be to make available to the groups adequate supplies of hand tools for fire fighting. These can be stored either at the group management office, or at members' properties which are strategically located within the groups' service areas.

6.5.2 Expansion of Service Area

A number of service areas need to be expanded if groups are to create management areas of a size that permits them to become more self-sufficient. The prospects of adjusting service area boundaries where needed should be examined and specific recommendations prepared. Furthermore, small, unalienated crown lands, should, where possible, be leased to groups to be managed by them on behalf of the crown.

6.5.3 Other Sources of Income

Groups currently operating in too small a service area should examine the economic prospects of hiring out their silvicultural crew(s) beyond their service area. These crews could work on properties that have been provided with management plans prepared by Nova Scotia Lands and Forests. Not only would such a step help to increase the group income, it would also be an excellent method of advertising the group prior to the approval of an expanded service area.

6.5.4 Formation of New Groups

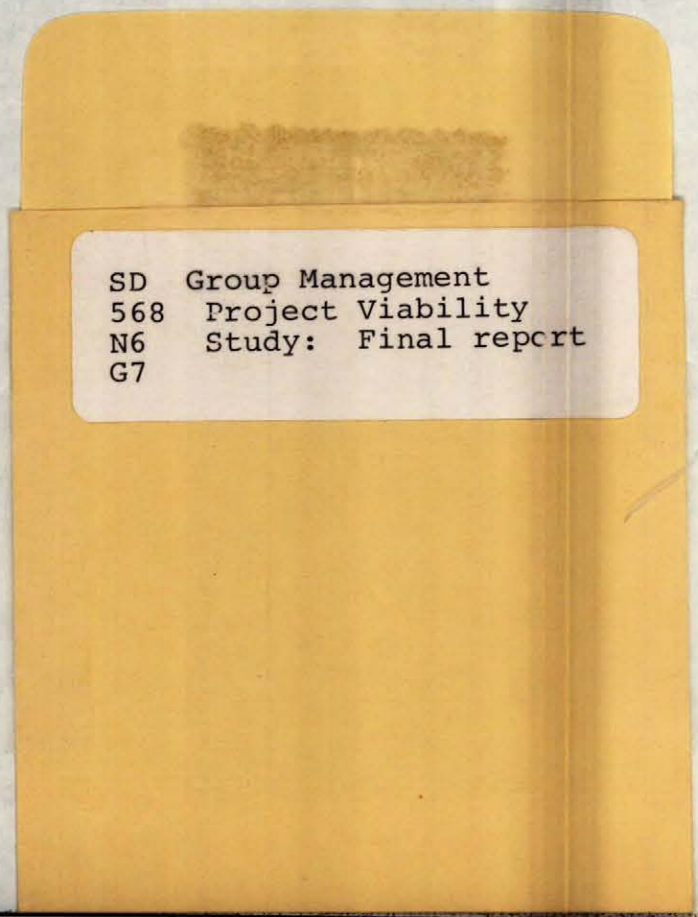
It is recommended that the prospects to achieve viability within new service areas be thoroughly tested prior to formally establishing a new group. Experience to date has shown that forest conditions, land-use patterns, and the average size of the property, are of enormous importance in determining the number of years it takes a group to become viable.

On the basis of the information collected to date by Lands and Forests, a model could be developed against which the prospects of viability of a group could be tested. Only groups that meet certain specified criteria with respect to viability should be given approval for formation. In other areas it should be accepted that the prospects for private forestry within the framework of a group are low. Private forestry in those areas should be dealt with on individual basis.

6.5.5 Business Attitudes

Finally it does seem appropriate to suggest a concerted effort to achieve a more business-like approach to the conduct of forest management by the groups. The foundation of this has already been laid by the province through the establishment of appropriately staffed group management offices. However the development of skills does not take place without encouragement and cross fertilization. If is therefore recommended that annual courses/reunions/meetings be held for each level of staff employed by the groups.

The benefits that would arise from meetings or seminars designed for members of all groups should also be reviewed. The exchange of personal experiences would be invaluable and in addition it would offer Lands and Forests an opportunity to overcome a common erroneous attitude of owners - that they are in this project, not for monetary gain, but to help the province produce more wood.



7. CONCLUSION

The principle behind the Group Management project is sound. Unfortunately, the viability of most of the groups to maintain their present structure and become self-sustaining is not only a long-term proposition, but for some a virtual impossibility. Furthermore, should the project be maintained in its present format the costs to the two levels of government will, over the short-term of only 10 years, become prohibitive - in excess of one million 1980 constant dollars per year per group.

As a result certain recommendations have been made. They are designed to promote the long and short-term goals of the program and to increase the self-sufficiency of the group on a predetermined time horizon. Most of the recommendations will require some further confirmation from studies that can be based on existing information from the individual groups.

We are convinced that the Group Management project can create viable self-supporting forest management groups and, subject to the proposed recommendations, should be continued as a vital project should a second Forestry Subsidiary Agreement be signed.

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