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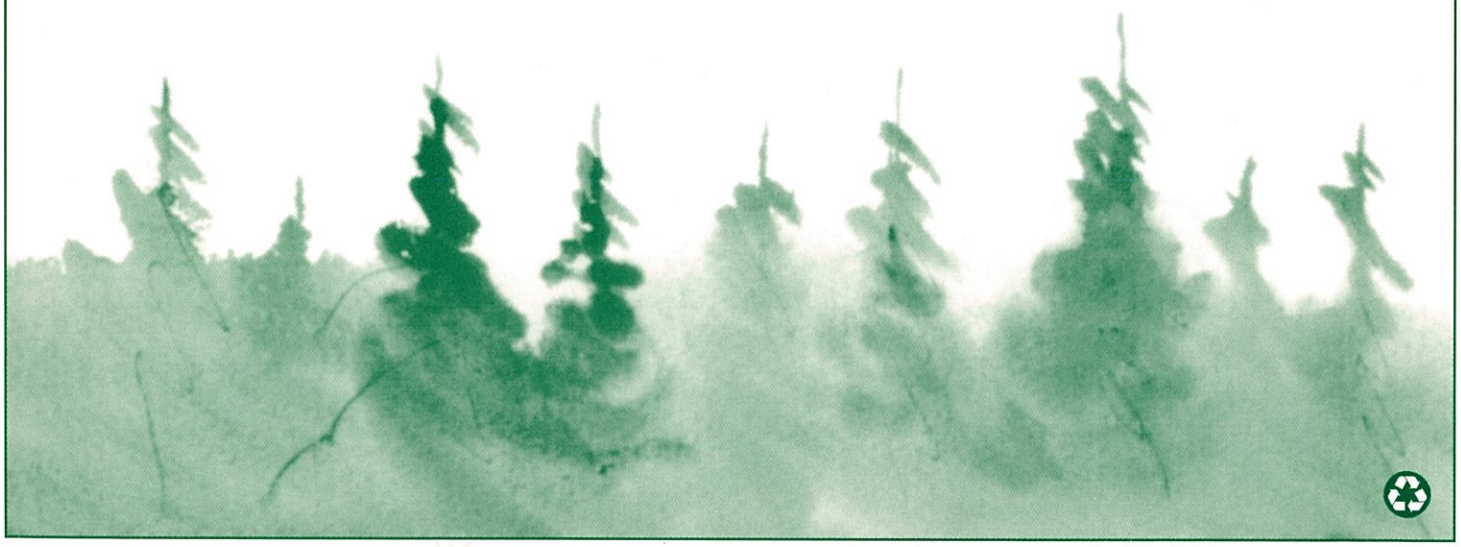
Value-Added Forestry and Aboriginal Communities: The Perfect Fit

STUDY REPORT

August 1997



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EXECUTIVE SUMMARY

> *"A USDA Forest Service study shows that, on average, about 63 percent of a tree can be used to make solid lumber. When engineered wood and other products are made from the remaining wood, more than 95 percent of a tree can be made into useful products"* (Forest Products Journal, 1995).

The primary goal of the National Aboriginal Forestry Association (NAFA) is to promote and support increased Aboriginal involvement in sustainable forest management and related commercial opportunities. NAFA is committed to holistic or multiple-use forestry. This implies the rebuilding and sustainable development of forest resources to serve a multitude of community needs, among them:

- the protection of wildlife and traditional food habitat;
- protection of fur bearers;
- protection of clean and adequate supplies of water;
- establishment of forest areas for recreation and tourism;
- traditional, cultural and spiritual use; and
- the production of fibre for timber, pulp and paper, and other wood by-products.

In support of these issues, NAFA has established the following six objectives.

1. To assist communities in their quest to achieve a standard of land care which is balanced, sustainable and reflective of the traditional knowledge and forest values of Aboriginal Peoples;
2. To facilitate capacity-building in forest management through the development of human resource strategies and models for increased participation in natural resource decision-making;
3. To address the need for Aboriginal forest land rehabilitation and increased Aboriginal control over forest resources through the development of appropriate policy and programming;
4. To ensure that Aboriginal communities are made aware of ways and means by which they can extract the highest value possible from the forest resources they possess on reserve and from tenures they may hold in traditional territories;
5. To support Aboriginal Peoples' aspirations regarding self-empowerment and the exercise of Aboriginal and Treaty rights as they pertain to natural resource management; and
6. To provide a network for information sharing and to act in an advocacy role that seeks out opportunities to promote forestry among and on behalf of Aboriginal Peoples in Canada with government and industry.

This study addresses NAFA's objective to ensure that Aboriginal communities extract the highest value possible from their forest resources. Aboriginal communities have had particular difficulties integrating industrial forestry with their ethics and traditional forest uses which are based on protecting the forest environment's capacity for providing wildlife, food and medicine.

VALUE-ADDED FORESTRY AND ABORIGINAL COMMUNITIES: THE PERFECT FIT

This study will focus on opportunities for Aboriginal people to establish value-added forest-based businesses. This embraces timber and non-timber renewable resources, where the term "value-added" is used to describe products that are more fully manufactured and require more labour resulting in increased revenue from the original raw resource. Commodity products on the other hand, such as 2x4 lumber, are made in large volumes by a number of producers and which are similar or identical in nature. Commodity forest products tend to have less value-added per unit of fibre than value-added products.

The forest industry in Canada focuses primarily on timber harvesting and the semi-processing of products. These semi-finished or near-commodity products are sold regionally or exported mainly to the United States where they may be further manufactured into finished or value-added products. Within the forest sector, there is general recognition that the wood supply will not increase in the coming years as annual allowable cuts are at, near or in excess of their maximum levels. The demand for forest products is projected to increase steadily. Given this increased demand and limited supply, industry analysts agree that opportunities for new products, real growth and employment creation will best be achieved through value-added production.

Roughly 80% of Aboriginal communities in Canada are in productive forest areas. However, only 2% of the Aboriginal labour force is employed in the forest products industry (Statistics Canada, 1991), mainly in silviculture contracting, timber harvesting and small-scale sawmilling, all relatively low in value-added. Only a handful of Aboriginal companies produce forest products that are high in value-added. Nevertheless, there is a wide range of value-added products that are compatible with small-scale enterprises, such as:

- joinery stock;
- door and window frames;
- cabinets;
- flooring;
- housing components for specialty markets, i.e., Japan;
- edge-glued panels for shelving and furniture;
- finger-jointed products;
- mouldings;
- garden furniture;
- canoe paddles, chopsticks and log homes; and
- specialty forest products such as mushrooms

The production of these products is attractive because: a) manufacturers are now seeking new ways to increase revenues in the face of a declining wood supply in some areas of the country; b) they are less capital intensive to establish than commodity production; and c) there exists a market niche for Aboriginal products in Canada and abroad. However, the most significant attraction to value-added products is the potential for job creation. Research has indicated that 4.5 jobs are created in the value-added industry per 500 MFBM as compared to 1 job per 500 MFBM in highly-automated sawmills or in the timber harvesting sector.

VALUE-ADDED FORESTRY AND ABORIGINAL COMMUNITIES: THE PERFECT FIT

Major markets for value-added wood products exist within Canada, the United States, the European Union (EU) and in Pacific-rim countries, primarily Japan. There are no significant barriers to trade in value-added wood products, and international agreements such as the General Agreement on Tariffs and Trade (GATT) and the North American Free Trade Agreement (NAFTA) have resulted in reducing tariff barriers in major markets. In fact, the outlook for the value-added sector is positive for companies able to service niche markets with high quality products. This presents great opportunities for Aboriginal companies since there are also other circumstances that may enable these companies to take advantage of value-added opportunities, such as:

- the implementation of sustainable forest management in which Aboriginal participation is an essential element;
- the rising value of timber;
- co-management;
- an increasing Aboriginal land base resulting from land claims, treaty land entitlement, treaty making and the purchase of private lands;
- forest industry experience which could benefit Aboriginal companies.
- changes in provincial policies, regulations and practices meant to provide more equitable access to Crown lands for Aboriginal peoples to increase their participation in the forest sector.

Given the need and opportunities presented by Aboriginal participation in forest value-added businesses, the National Aboriginal Forestry Association has undertaken this study:

1. To produce a summary of value-added manufacturing in the forest sector;
2. To produce a summary of production and marketing methods;
3. To examine Aboriginal forestry interests and their level of activity and expertise;
4. To identify and evaluate value-added opportunities for Aboriginal people, taking into consideration issues such as their proximity to markets, infrastructure and human resource development requirements;
5. To identify specific markets and value-added products;
6. To present case studies which will provide examples of value-added development; and
7. To develop strategies and recommendations for Aboriginal forest value-added businesses.

The study is structured under the following chapters:

Chapter 1 **Introduction**: provides the pillars for the study which is based on concepts of sustainable development, community economic development, the role of forestry in community economic development and the importance of value-added in the forest industry.

Chapter 2 **Aboriginal Peoples & Forestry in Canada**: traces the historical development and characteristics of Aboriginal forest activities, including the impact of current

government forest policy on these communities.

Chapter 3 **Policies and Programs in Support of Aboriginal Forestry and Value-Added**: examines different policies and programs which have an impact on value-added.

Chapter 4 **The Value-Added Forest Products Industry in Canada**: examines recent trends in Canada's forest products industry and the contribution of the value-added sector, its characteristics, economic performance and future prospects.

Chapter 5 **Market Analysis of Aboriginal Value-Added Forest Industries**: examines the opportunities and requirements for Aboriginal involvement in the value-added forest sector.

Chapter 6 **Case Studies**: examines value-added initiatives for the purpose of identifying size and scale of operations, investment and returns, difficulties encountered and lessons to be learned by Aboriginal entrepreneurs.

Chapter 7 **Strategic Recommendations for Value-Added Forest Industries in Aboriginal Communities**: presents key findings resulting from the study.

1 INTRODUCTION

This study is concerned with the role value-added forest businesses can play in Aboriginal communities' development across Canada. Value-added forest industries tend to be smaller, less capital intensive, more labour intensive and capable of reflecting a wider range of products and values. The nature of value-added businesses fits well with both the limitations and potential of Aboriginal forest-based communities and offers the opportunity to reflect Aboriginal communities' concerns, values and skills.

This study complements an earlier one by the National Aboriginal Forestry Association, *Business Opportunities for Aboriginal Entrepreneurs in the Forest Sector* (Bombay, H and Smith, P, 1997). The *Business Opportunities* study is a comprehensive overview of the pulp and paper, wood products, harvesting/logging, forest management and non-timber sectors by province.

1.1 DEFINITION OF TERMS

The following definitions are meant to clarify the concepts of sustainable development, Aboriginal community economic development, forest-based industrial development and, in particular, value-added in the forest sector. Further definition of technical terms used in this study are defined in Annex A.

Regional or ***Community economic development*** : covers production, employment and incomes in a region or community.

Sustainable Development : Development which meets the social and economic needs of the present generation without compromising the ability of the environment to provide for future generations.

Primary Industry: an industry involved in the extraction and first-stage processing of natural resources.

Secondary Industry: an industry involved in the transformation of materials into semi-finished and finished goods.

Tertiary Industry: an industry involved in the production of services.

Value-Added: in this study the term is used to describe products that are more fully manufactured and require more labour resulting in increased revenue from the original raw resource than commodity products, such as 2x4 lumber, which are made in large volumes by a number of producers and which are similar or identical in nature. Commodity forest products tend to have less value-added per unit of fibre than value-added products. In strict economic terms, "value-added" is the value of output minus the value of inputs. For primary industries in the forest

sector, "value-added" is usually the difference between the value of production at the primary level and the value of production at the secondary level. However, value-added can also pertain to differences in production within primary, secondary and tertiary industries. For example, the production of raw pulp may be considered value-added to unprocessed timber and further value-added would be the production of paper from pulp.

1.2 SUSTAINABLE FOREST MANAGEMENT

Sustainable development has been defined as development which meets the social and economic needs of the present generation without compromising the ability of the environment to provide for future generations. The 1992 United Nations Conference on Environment and Development (UNCED) applied the concept of sustainable development to forest management in Chapter 11 of the Conference's action plan, Agenda 21. As a follow-up, the Canadian Council of Forest Ministers (CCFM) developed criteria and indicators that provide a common understanding of what is meant by sustainable forest management in Canada (CCFM, 1995). The CCFM placed these criteria and indicators in the following context:

1. *The need to manage forests as ecosystems in order to maintain their natural processes;*
2. *The recognition that forests simultaneously provide a wide range of environmental, economic and social benefits to Canadians;*
3. *The view that informed, aware, and a participatory public is important in promoting sustainable forest management; and*
4. *The need for forest management to evolve to reflect the best available knowledge and information.*

Six criteria or values were identified, four of them ecological and two socio-economic:

1) Conservation of Biological Diversity
2) Maintenance and Enhancement of Forest Ecosystem Condition and Productivity
3) Conservation of Soil and Water Resources
4) Forest Ecosystem Contributions to Global Ecological Cycles
5) Multiple Benefits to Society
6) Accepting Society's Responsibility for Sustainable Development

Criteria 5 and 6, the socio-economic criteria, are important to an examination of value-added forestry and Aboriginal communities. Criterion 5, Multiple Benefits to Society, subtitled *"sustaining the flow of benefits from the forest for current and future generations"*, outlines indicators (something to measure to indicate progress to meet a criterion) on productive capacity, competitiveness of resource industries, contribution to the national economy and non-timber values. The rationale for considering such indicators as a measure of sustainable forest management is stated:

> *In order to ensure that resources are conserved while still maintaining a satisfactory flow of benefits, efforts must be made to ensure that extraction is not allowed to exceed the long-term productive capacity of the resource base to provide a wide range of goods and services. Excessive rates of extraction are unsustainable and inconsistent with the concept of sustainable forest development.* (CCFM, 1995)

Criterion 6, Accepting Society's Responsibility for Sustainable Development, sets out "Participation by Aboriginal communities in sustainable forest management" and includes measures such as:

> *6.2.1 Extent of Aboriginal participation in forest-based economic opportunities*
> *6.2.3 Number of Aboriginal communities with a significant forestry component in the economic base and the diversity of forest use at the community level.*

It is important that participation by Aboriginal communities in sustainable forest management has been recognized as an essential element in improving Canada's forest management practices.

1.3 COMMUNITY ECONOMIC DEVELOPMENT

Early assessments of forest communities characterized them as stable and a source of labour for all manner of activity associated with the lumber industry. Aboriginal communities were viewed as a gathering of unskilled and unreliable people and were largely ignored in the context of Canada's industrial development. As a consequence, their communities' development progressed little in comparison with the rise in the fortunes of the Canadian forest industry. Their people were not employed, their traditional lands were used for the broader development of the Canadian economy and their own reserve lands were incorporated into the national mindset of harvesting and sale of raw forest resources.

Everything from social interaction to community spirit and harmony are ingredients of a stable community. When the full spirit and energies of a community are harnessed, often a wide variety of ideas and ventures are created.

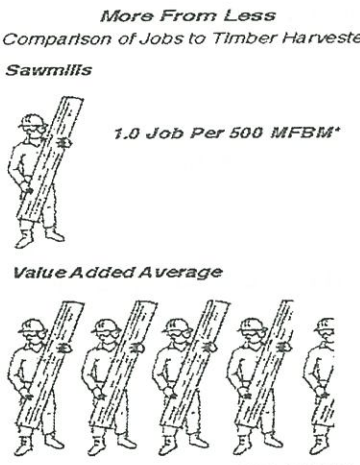
> *"The fundamental function of a rural economic system is to generate value-added from its resources, in either households or larger firms. The combination of labour, land and equipment is the source of improved standards of rural living and for achieving other economic purposes in the system"* (Apediale, 1992).

Diversification and adding value to current commodities would support not only the development of community stability, but would also help a community stay in tune with the changing nature of the forest industry.

In this context, Aboriginal community development was and, in many cases, remains dependent

upon communities and businesses outside their own and upon industrial trends and influences beyond their own control. With the recent changing nature of the forest industry, Aboriginal communities might, in many cases, be expected to fall farther behind and to become less and less self-reliant and healthy.

However, one emerging trend in the forest industry is toward the production of goods which add value to the timber harvested and which is increasingly embracing a broader use of forests. This trend includes the creation of businesses which are smaller in size, less capital intensive and which can produce a wider array of goods and services than can the traditional forest industry. This movement is one which is being dictated by global interests and one which is causing the forest industry in Canada to incorporate increasingly the production of value-added products as part of its mainstream outputs. Governments have realized that the value-added sector of the forest industry can also generate a much larger source of employment and can contribute much more significantly to the concern to do more with Canada's forests while placing less demand on its natural resources.



* MFBM means thousands of board feet measure, which is the equivalent of 1,000 feet in length by 1 foot in width by 1 inch in thickness.

Source: Select Standing Committee on Forests, Energy, Mines and Petroleum Resources, Lumber Remanufacturing in British Columbia (1993)

Some governments have finally realized that it takes *"half a million board feet of lumber production to keep just one job going in today's highly automated sawmills. In the value-added wood products industry the same amount of wood creates a little more than 4.5 jobs"* (M'Gonigle & Parfitt, 1994).

For Aboriginal businesses, the opportunities which the value-added industry can provide are both significant and appropriate to the size and scope of their communities. They can make use of modern technology, as well as traditional knowledge. They can accommodate mixed-use forest interests, including traditional practices. They can be made-at-home solutions to underemployment and revenue generation.

1.4 FORESTRY IN CANADA

Canada's early development was based on the exploitation of the natural resources of its land mass and oceans.

> *"For more than two centuries, the forest products sector has played an integral role in Canada's economic development. Investors were initially attracted by the low cost, abundant, high-quality forest resources; low-cost energy to transform them into forest products; and Canada's proximity to major markets"* (Industry Canada, 1996).

The historic pattern of forest exploitation has been to utilize preferred and easily accessible forest areas before moving on to less accessible and lower-quality species, a system spurred on by increasing demands for forest products. The result has been ruinous exploitation of some of the natural forest resources. In recent years, however, due to concerns about the capability of forests to sustain themselves, there has been an increased emphasis on improved forest management based on sustainable development.

1.4.1 Distribution of Canada's Forests

In 1995, forest lands in Canada covered 418 million hectares (over 1 billion acres), accounting for 45% of Canada's total land area. Table 1shows how these lands are distributed regionally.

Table 1. The Distribution of Canada's Forests

Province	Total Land Area	Forest Land	Forest Land as % of Total
Newfoundland	37.2	22.5	60.4
P.E.I.	0.6	0.3	51.8
Nova Scotia	5.3	3.9	73.6
New Brunswick	7.2	6.1	84.7
Quebec	135.7	83.9	61.8
Ontario	89.1	58.0	65.1
Manitoba	54.8	26.3	50.0
Saskatchewan	57.1	28.8	50.4
Alberta	64.4	38.2	59.3
British Columbia	93.0	60.6	65.2
Yukon	47.9	27.5	57.4
N.W.T.	329.3	61.4	18.6
Canada	921.5	417.6	45.3

Source: The State of Canada's Forests 1995-1996 (Natural Resources Canada).

Well over half of Canada's forest lands are considered "commercial forests," capable of producing a range of both timber and non-timber benefits (The State of Canada's Forest, Natural Resources Canada, 1996).

Over 90% of forest lands are publicly owned--71% by the provinces and 23% by the federal

Table 3 shows the value of both commodity and value-added forest products to Canada's economy.

Table 3. Value of Forest Product Shipments, Exports and Employment

Value of shipments				$57 billion
Exports				$41 billion
Trade Balance				$35 billion
Direct Employment				225,000*
	Shipments	**Exports**	**Employees**	**Establishments**
	($ billions)			(#)
Pulp & Paper	28.2	23.3	66,000	150
Value-Added Paper	7.2	3.2	34,000	500
Wood Products	17.0	12.5	80,000	1,000
Value-Added Wood	4.6	2.1	45,000	1,900
TOTAL	**57.0**	**41.1**	**225,000**	**3,550**

* Does not include 64,000 jobs in forest harvesting and silviculture.

Source: Statistics Canada (cited in Canada's Forest Products Industry, Industry Canada, 1996).

2 ABORIGINAL PEOPLES & FORESTRY IN CANADA

"Aboriginal people have been involved with Canada's forest for centuries. We have always made extensive use of the forests for food, building materials, medicines and religion. As such we had to manage our use of the forests holistically. Unlike todays large forest industry and governments which have become timber manages, we see ourselves still, as forest managers." (Source, unknown elder)

Most Aboriginal Peoples in Canada are forest peoples. Though there were differences between various tribes or Aboriginal nations in their governance, forest-based activities and occupancy, some social and political principles were common to all these nations. As was documented in the *Final Report of the Royal Commission on Aboriginal Peoples* (1996), these principles included stewardship of the earth and a set of responsibilities and obligations governing individuals, the family or clan and the collective. These rules guided behaviour with respect to resource access and use and governed, managed and regulated territorial boundaries and resources. Aboriginal communities have made use of forest resources for building materials, medicines, trapping, food cultivation and gathering and for religious purposes. Aboriginal communities developed a sense of harmony with the forests. However, traditional usage patterns, historical territorial boundaries and the sense of harmony with the forests changed dramatically under the influence of colonization. While the British Royal Proclamation of 1763 recognized Aboriginal Peoples as sovereign nations and the continued use of land and resources was assured for activities such as gathering, hunting, fishing and trapping, the Proclamation did not recognize the extent and the nature of the Aboriginal relationship to land and resources.

2.1 THE HISTORY OF ABORIGINAL COMMUNITIES AND FORESTRY

Over time, the establishment of Indian reserves, policies of assimilation, legislation to control or eliminate traditional forms of resource use and the imposition of European forms of governance, reduced Aboriginal access to resources and thus the relationship to the land was fundamentally altered. The priorities of the Crown were first to satisfy the increasing demand for land by European settlers and later to license larger tracts of land to resource development companies for purposes of economic development and wealth creation of the nation. Over two centuries after the Royal Proclamation of 1763, the economic value of the forest sector to Canada has grown to $448 billion, employing over 880,000 people. While the forest industry has become Canada's largest, it is still largely based on timber extraction and primary processing with much less emphasis on multiple use activities. Even on Indian reserves this "cut-and-sell" orientation exists, despite its contradiction with historical Aboriginal practices of treating the forests as a provider of multiple benefits.

Today the Canadian forestry sector is changing. It is becoming more mechanized with greater concentration and fewer companies controlling the sector. It is having to adapt to increasing

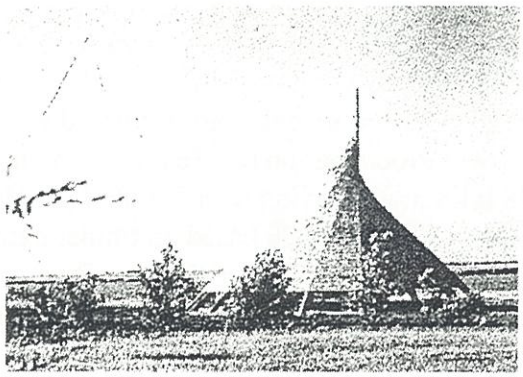
competition from abroad and to new conditions (Canada-U.S. Softwood Lumber Agreement) which affect its growth potential. Finally, the sector is facing challenges from environmentalists and others for reductions to the amount of timber that may be cut and sold. These conditions have caused the beginning of a shift toward more sustainable forest management practices, toward multiple use of some forest lands and toward adding value domestically to timber before it is marketed. Both the history of the forest sector and the indications of trends toward sustainable forest management and value-added production have important implications for Aboriginal Peoples.

2.2 THE POTENTIAL OF FORESTRY FOR ABORIGINAL COMMUNITY ECONOMIC DEVELOPMENT

In Canada, at least 80% of Aboriginal communities are in forested areas. Yet, while nearly one million Canadians are employed in businesses directly and indirectly related to this sector, few forest-based businesses are owned by Aboriginal people. Also, because the value of the industry's output is approximately $448 billion per year and is the largest contributor to Canada's gross domestic product (GDP), it is not surprising that governments have traditionally ignored Aboriginal interests or rights to what lands they have historically used. Even legislation such as the *Indian Act*, governing Indian reserves, recognizes the industrial practice of cutting and selling timber (section 57) rather than managing these limited areas on an integrated resource approach. In fact, the *Act* makes no mention of modern forestry practices such as forest management, reforestation, or environmental protection, nor do its regulations permit an Indian Band to enter into a forest agreement with a province, company, or individual.

To many of the 800 or more Aboriginal communities in Canada which are in forested areas, forestry is the only source of opportunity that they have to achieve self-reliance. Les Reed, in an address to the National Native Forestry Symposium in 1989, captured this importance:

"The forest resource base, in all its richness, offers the only major avenue through which fulfillment will come to many thousands of Indians, both directly and indirectly. This belief is based not just on the realities of economic development, but on a perception that forest related activities correspond with Indian lifestyle and cultural aspirations."



Source: Courtesy of the Canadian Wood Council, Wood Reference Manual Handbook (1995)

VALUE-ADDED FORESTRY AND ABORIGINAL COMMUNITIES: THE PERFECT FIT

In papers written for the World Bank in Washington, Shelton Davis concludes that the forestry sector must be at the forefront of change for many Indian tribes as they attempt to revitalize and transform their economies. His rationale is based on the advantage inherent in integrated and multiple-use forest management which takes into account the unique environmental, cultural, and religious values of Indian peoples. Sustainable forest management, as it is being currently defined, advances that rationale and offers the opportunity to combine traditional cultural values and forest-based environmental knowledge with modern land use and natural resource management systems.

There are an estimated 600,000 Aboriginal people in Canada. Table 4 shows a breakdown of the Aboriginal population by region. Approximately 350,000 or 58% of the total live on reserves (as defined by the *Indian Act*). Many of these communities are situated in appropriate areas of the country to take on a larger role in the forest sector. Also, because 56% of the Aboriginal population is young, the labour force (people from age 18-65) is large, amounting to some 40% of the total population. However, within Aboriginal communities, the unemployment problem is immense with an average rate being of 50%. Currently more than 80,000 jobs are needed just to raise this unemployment rate to that of other Canadians. Should these numbers persist, combined with the relatively high birth rate, it has been estimated that an additional 225,000 jobs will need to be found in the next twenty years. (Royal Commission on Aboriginal Peoples, 1996). Obviously, if no measures are put in place to increase employment opportunities, the already dire situation on many reserves will deteriorate even further.

Table 4. Aboriginal Population by Region

Province	# of First Nations	On-reserve Population	Off-reserve Population	Total Population
Atlantic	31	15,732	8,227	23,959
Quebec	39	41,487	17,153	58,640
Ontario	126	70,434	68,084	138,518
Manitoba	61	60,694	34,419	95,113
Saskatchewan	70	49,176	45,777	94,953
Alberta	43	50,818	25,601	76,419
British Columbia	196	52,046	50,029	102,075
Yukon	16	3,742	3,457	7,199
Northwest Territories	21	10,240	3,758	13,998
Total	603	354,369	256,505	610,874

Source: Indian and Northern Affairs Canada, 1996.

Because of limited economic opportunities and small reserve sizes, the best timber has been logged without any provision for basic forest management. On many reserves, all manner of life which depended upon the forests has been diminished to the point where forest-based opportunities, even for subsistence, are now severely limited. *"The Indian Act can only have the effect of retarding the development of any Band ... that has both the resources and willingness to take on new challenges in government"* (IFABC, 1990). As if to impede sustainable forestry use on reserve land, Indian and Northern Affairs Canada (INAC) explains that it is impossible to set aside a portion of the stumpage monies (derived from logging on reserves) for reforestation and that all such monies must be allotted to Bands' capital accounts. The *Act*'s omission of sustainable forest management also leads to a lack of capacity within Aboriginal communities to carry out such management practices.

In response to the barriers Aboriginal communities face in participating in the forest sector, Aboriginal organizations have formed to deal with these issues. The National Aboriginal Forestry Association (NAFA) and regional organizations such as the First Nations Forestry Association of Nova Scotia, Treaty 3's Mitigonaabe Forest Resources Management and the former Intertribal Forestry Association of British Columbia (IFABC) have and continue to promote and work on Aboriginal forestry issues. The work of these and other organizations, as well as the prominence of Aboriginal issues generally, are slowly moving the Aboriginal forestry agenda forward.

A new governmental attitude is also emerging. The Supreme Court of Canada has reaffirmed the Federal Government's fiduciary duty to ensure that Indian lands are managed for the benefit of Indian people. Several court cases, especially *Apsassin* (1995), not only confirm this duty but have established that the Government must fulfill its fiduciary responsibilities and, if not, is then liable for any negative impacts of not having done so. New too is the First Nation Forestry Program (FNFP). An important feature of this program and to the establishment of its future direction, is the inclusion of Aboriginal representatives, both as part of the National Management Committee and Provincial/Territorial Management Committees which oversee regional funding allocations. At a regional level, a few provinces have also become more responsive, largely because of looming land claims. Some have given the impression that they are prepared to entertain greater involvement of Aboriginal Peoples in forestry policy and planning matters. In British Columbia and Ontario for example, there have been moves to establish task forces to recommend ways and means of increasing Aboriginal participation in the forestry sector.

In the private sector, forest companies, such as Apollo Forest Products Ltd. of British Columbia, have been impressed with their working relationship with Aboriginal communities, especially with the attitude and business-like approach taken by such communities. Such positive Aboriginal/industry relations are providing an example to be explored by others.

Over the past two decades a wide range of socio-economic and environmental factors have been brought into play which address how forest management is conducted and how the forest

industry goes about its business. Changes in perspectives on sustainable forest management, the protection of environmental values and equity in the distribution of resources are becoming more evident in forest management legislation and policies in many jurisdictions in Canada. Forest practices, as prescribed in codes of practice and timber management planning manuals, are beginning to respond to demands of the public for integrated resource management. These changes also favour Aboriginal participation.

The achievements in Aboriginal forestry have been further advanced by efforts toward Aboriginal self-government and by court decisions which have begun to define Aboriginal treaty rights in relation to land and resources. Although access to forest resources and the capacity to manage reserve lands is essential, the problems of Aboriginal development rests at the community level and centres on how to best use the resources available to provide the maximum number of jobs. Value-added forest industries are appropriate to address such problems.

2.3 A CHANGING FOREST INDUSTRY & ABORIGINAL VALUES

> *"Forestry policy objectives and community stability have strong historical ties. The management objective of encouraging 'stable communities' is identified in the original legislation establishing the National Forest Service in the U.S. at the turn of the century and continues to be reflected in numerous legislative commitments to sustained-yield forest management over the last ninety years. Maintaining community stability was largely interpreted as attempting to maintain the 'status quo' for single industry forestry towns and towns with a heavy reliance on the forest sector"* (Williamson and Annamraju, 1996).

While this orientation is grounded in the way in which the forest sector has historically functioned and developed in both Canada and the U.S.,

> *"public policy appears to be evolving from maintaining the 'status-quo' ... to facilitating orderly transitions and minimizing the social disharmony and costs associated with sudden or dramatic declines in the economic base of a community that is particularly concentrated in one industrial sector."* (ibid)

While this shift in public policy is important, there are current market and technological forces which can adversely affect community economic development or stability. Market demands require new technologies to minimize costs. Because of the introduction of new technology that can make use of mixed species of trees, processing facilities no longer need to be close to the resource. This has resulted in a shift from rural to urban concentration of the industry with a dramatic impact on the labour force. As a consequence, job growth at the local level has declined, as has the number of forestry-dependent communities. This evolution is most hard felt by rural communities which are heavily reliant upon timber extraction based industries. Given that industry must deal with its "bottom line" and its return on its massive investment, and given

that governments follow rather than lead industry, the chore of dealing with the impacts of changes in the forest industry at the local level is most often left with local people. Their challenge is to create new means by which communities may be either revived or sustained, or grow.

For Aboriginal communities, the job of generating new opportunities and maintaining or reintroducing traditional forest use practices is no simple matter. In Aboriginal communities there may be a strong dependence on the forest for subsistence purposes, which are in themselves economic uses. These and other demands of the forest are as profound as dependence in a wage economy context. (See Table 5). The recognition of the importance of other forest values is not only important to Aboriginal communities, it is liberating. Non-timber uses and cultural and spiritual connections are all uses of the forest which cannot be excluded from forest policy, especially since for Aboriginal Peoples, these values are part of the roots of not only a stable community, but of a culture.

Table 5. The Importance of Forests and Aboriginal Communities' Relationship with Forests

Environmental/Social	Economic	Aboriginal
* 10% of the planet's forest cover (45% of Canada's land mass) * net absorption and storage of carbon by Canadian forests * about 20% of the world's fresh water flows from Canadian forested watersheds * hunting and fishing * over 70 species of mammals and about 300 species of birds live in Canada's forests * 13 million visits to national parks * aesthetics, shade, windbreak, wind reduction	**Forest products:** * value of shipments: $56.3 billion (1995) * contribution to GDP: $19.8 billion (1994) * 369,000 direct forest-based jobs and 511,000 indirect jobs (1995) * wages and salaries: $10 billion (1993) * investment: $7.1 billion (1994) **Tax Revenues** (1989-92) ($billion/year) * federal (excluding GST): $3.4 * provincial & municipal: $2.8 * 350 forest independent communities * other forest-based industries: tourism, outfitting and recreation	* 80% of Aboriginal communities are in forest producing areas * Aboriginal and Treaty rights impacted by the forest industry * 40,000+ Aboriginal trappers * subsistence, commercial and sport fisheries (inland and coastal) * cultural, spiritual and material needs * medicinal, wild rice and other food stuffs * 10,000+ employed in logging and forest industries * reserve lands: 1.4 million hectares of forest lands with $4-600 million potential in timber production

Source: Bombay, H. selected NAFA publications, 1995.

VALUE-ADDED FORESTRY AND ABORIGINAL COMMUNITIES: THE PERFECT FIT

In the forest industry there are a number of trends which add further to the difficulties facing Aboriginal communities. The industry, which has enjoyed a plentiful supply of low cost fibre and hydroelectric power, now faces increasing demands on forest resources. The additional costs of acquiring wood supply will result in higher prices for forest products or reduced profits. Major international agreements, such as the Canada/U.S. Softwood Lumber Agreement, have placed a ceiling on wood exports to the U.S. A new Aboriginal company intending to export softwood lumber products, such as 2x4s, to the U.S. may be ineligible for an export quota under the Agreement. Globalization in the forest sector has resulted in the creation of large multinational corporations which can compete for wood supply and major markets. These conglomerates have the potential for displacing or preventing the formation of many medium/small-scale enterprises which are less able to compete with the same economies of scale.

At the same time as trends such as globalization, cost cutting measures and advanced technology may place barriers to Aboriginal participation in the forest sector, the growing recognition of the need to place more value on a diminishing resource is one that fits well with Aboriginal aspirations for integrated resource use, traditional values and community-based economic development.

3 POLICIES AND PROGRAMS IN SUPPORT OF ABORIGINAL FORESTRY AND VALUE-ADDED

3.1 FEDERAL GOVERNMENT AND NATIONAL PROGRAMS

3.1.1 Federal Government Programming for On-Reserve Forestry

Some attention has been paid in recent years to the deplorable conditions of forests on Indian lands through programs such as the Federal/Provincial Forest Resource Development Agreements (FRDA I - 1985-1990 and FRDA II - 1991-1996), but these programs were directed almost entirely to timber production objectives. The Indian Land component of the FRDAs was the only forestry program for on-reserve lands. Even with its limited term and effort, the program did have its share of successes. *"There had been a significant increase and awareness of sustainable forestry as a result of the program. The program has created an Indian forestry related capacity that did not exist before the program. The majority of the larger forested First Nations reserves have up to date inventories and management plans"* (Cormier, Dubreuil & Duncanson, 1996).

While the FRDA program led to limited improvements, barriers remain to on-reserve reforestation, to access to off-reserve lands and to capacity building. All are part of the mix needed to construct a firm foundation upon which sustainable economic ventures developed by Aboriginal communities may be based. At present, governments are struggling with fiscal and control issues. While the Federal Government continues to divest itself of authority in numerous areas of interest, all under the banner of "partnerships", it is really doing so by transferring responsibility for control to provinces and others, thereby reducing its own expenditures. The alarming feature of this increasingly common approach is that national, custodial or fiduciary obligations are also being transferred in the process. As a consequence, industrial interests have become even more dominant because provincial governments are also cutting forestry programs and transferring responsibilities to industry. The result for First Nations is that they are caught between federal and provincial legislation, and between degraded reserve lands and no access to off-reserve forest lands, the main portion of which are licensed to large forest companies.

The First Nations Forestry Program (FNFP) was launched shortly after the FRDA program's demise in 1995. The program is funded and administered jointly by Indian and Northern Affairs Canada and the Canadian Forest Service. However, like FRDA, the FNFP still does not deal with forestry in a comprehensive manner. The program's main goal is to improve economic conditions on reserves with an emphasis on gaining access to off-reserve resources and building partnerships with forest sector players. Less attention is paid to on-reserve silvicultural operations like reforestation, inventories and management plans. The program provides less monies than the FRDA, on a declining scale over the life of the program and includes a sunset clause that specifies an end to the program in five years, directing First Nations to work toward self-sufficiency in forestry by that time.

3.1.2 Federal Aboriginal Procurement Program

The Government of Canada recently created a new approach to its procurement services which is specifically targeted at Canada's Aboriginal community. The new policy is called the Procurement Strategy for Aboriginal Business (PSAB). Its purpose is to reserve for competition among qualified Aboriginal businesses all contracts that serve a primarily Aboriginal population and that are worth more than $5,000. The Government is also encouraging federal departments to set aside other contracts for competition among Aboriginal businesses whenever practical. To be eligible a firm must be 51% Aboriginal-owned and if the organization has six or more employees, then one third of these employees must be Aboriginal. In the case of a joint venture, the organization must also be 51% Aboriginal-owned.

The Government's intention is to use government procurement to enhance economic growth for Aboriginal businesses in Canada. The Federal Government spends approximately $9 billion annually on goods, services and construction. Approximately 90% of its contracts are worth less than $100,000 and many are awarded locally across Canada. Given the fact that most contracts are small to medium in size, they create a significant market, perfectly suited to the small and medium-sized enterprises which are owned and operated by Aboriginal people. In other cases, where the contracts are larger, there are opportunities for Aboriginal communities, should they choose, to engage in joint ventures and thereby obtain the capacity required to bid on such contracts.

The PSAB represents a significant market opportunity for an array of contracts which cover the entire spectrum of goods and services. However, while the Government of Canada and in particular Indian and Northern Affairs Canada are eager to fully implement this new policy, they must develop a registry of businesses from which the government can then seek bids for contracts. This is currently being developed by INAC and will in the future be far more complete and therefore useful. Yet, while the policy creates an interesting opportunity and the government's efforts to create a registry of qualified businesses is laudable, it is difficult for Aboriginal businesses to become to enthused given that the nature and scope of goods and services procured by Government is unclear. For example, in relation to wood-based products, no database has been assembled which can show the volumes, values, kinds of wood products and related services bought or the location of the purchase. While the total value of all goods, services, and construction bought is approximately $9 billion, how much of this is for wood-based products and services, and from where? Without light being shed on the nature and scope of procurement in this sector, Aboriginal businesses will need to spend considerable time and effort researching this aspect of procurement before knowing whether the effort and expense of sourcing the Government as well as gearing up to meet a particular product or service line is viable.

3.1.3 Federal and National Programs in Support of Value-Added

Federal government support to the forest products industry is co-ordinated by Industry Canada in accordance with the **Forest Industry Policy**. The objective of the Forest Industry Policy is to reorient financial assistance away from support for capacity (production facilities) toward new initiatives related to increased research and development, technology innovation, and international market development and diversification. The policy specifically states "that financial assistance will not be provided by any federal department or agency for new or incremental capacity or modernization using conventional technology in the forest industry". A major issue underlying the policy is the matter of trade with the U.S.A. and their allegations of Canadian subsidies to the industry. This gave rise to the Canada — USA Softwood Lumber Agreement.

However, there are three areas where the Forest Industry Policy of no capital assistance from the government can be excepted. They are:

- small business
- native economic development, and
- regional development

In these three areas of exception assistance may be granted by the federal government through any of its programs if the assistance does not compromise the market of existing producers and does not negatively impact on the labour force of existing producers. As well, assistance provided must be consistent with Canada's international trade obligations.

Given that the intent of the federal policy is not to increase capacity, more wealth from the forest resource must be generated through production efficiencies. This means that the value-added component of output must be maximized. Consistent with the policy, the federal government supports the shift towards higher value-added production through a number of strategic corporate/institutional agreements and partnerships in order to stimulate research and development activity, and to accelerate the commercialization of advanced processes and the production value-added forest outputs.

Within the framework of the Forest Industry Policy, support to value-added forest products is channeled in the following ways:

- joint and cost-shared work with forest companies and industry research institutes for research and development projects. For example, funding is provided to the Pulp and Paper Research Institute of Canada (PAPRICAN) to pursue innovations and international competiveness in the pulp and paper industries.
- with respect to wood products, federal contributions are made to **Forintek Canada** Corporation, Canada's national wood products research institute. Forintek, through its laboratories in Vancouver and Quebec City, conducts research and development and provides services in codes and standards, technology transfer, and training and education for the

Canadian wood products industry. Member forest companies contributions comprise a significant portion of Forintek's operating budget.

- to address needs and opportunities on a regional basis, the federal government initiated the **Cooperative Industry and Market Development Program** (CIMDP). Under the program, assistance is available for industry associations to collaborate with provincial governments in undertaking market development and related activities to encourage and facilitate the stable growth of the manufactured wood products industry; to improve the quality and timeliness of market and technical information; to expand and diversify domestic and international markets; to facilitate interaction between the commodity and manufactured wood products industries; and to encourage better utilization of resources through the production and marketing of manufactured wood products. The implementation of CIMDP has resulted in the establishment of industry associations dedicated to promoting value-added processing. The BC Wood Specialties Group, the Quebec Wood Export Bureau and the Wood Products Group of New Brunswick now play a major role in marketing and further supporting the shift toward value-added production.

Even though the BC Wood Specialties Group lists three First Nation forest enterprises as members, Aboriginal organizations have not generally utilized the existing government/industry programs to any noticeable degree. However, because Aboriginal communities are exempted from the intent of the Forest Industry Policy, they can pursue development opportunities which combine both commodity and value-added elements. As such the existing forest policy framework is conducive to increased Aboriginal participation in the production of value-added goods.

3.2 PROVINCIAL PROGRAMS

Provinces, especially British Columbia and New Brunswick, have realized the need to encourage more value-added business creation in order to meet changing industry conditions, as well as to capture the higher number of jobs per unit of wood that can be created in the value-added sector. Realizing that access to wood is the key, their new policies have enabled the direct access to Crown land and a portion of the annual allowable cut where a value-added enterprise is to be the user of the resource.

3.2.1 British Columbia

Currently in the province the annual allowable cut is just over 72 million cubic metres. The total net merchantable volume of logs and bolts harvested in 1994 was almost 75 million cubic metres. The province has two distinct growing areas: the coast which features old-growth hemlock, western red cedar and Douglas fir, and the Interior where the main species such as spruce, lodgepole pine and fir represent 80% of the total supply. Currently the Minister of Forests is reducing and re-allocating the AAC across the province, creating a small surplus for value-added processing through its Forest Renewal Program and through the Small Business

Forest Enterprise Program. The main objective of the Small Business program is to allow small logging operators and value-added lumber processors direct access to Crown timber. In 1996 the program accounted for over 11% of all Crown timber tenures.

The province of British Columbia, has also implemented a number of other initiatives to promote value added processing. Forest Renewal BC, is encouraging more value-added companies to start up and expand by offering a variety of new programs. These include the **BC Wood Fibre Network**, an electronic bulletin board that offers wood buyers a fast, inexpensive and convenient way of connecting with sellers, and the **Forest Community Business Program**, which provides financing to small- and medium-sized forest-related businesses to expand their current operation or start a new venture. To assist existing businesses with working capital and debt financing for fixed assets, FRBC has established the **Value-Added Finance Program**. Another support program is the **Value-Added Marketing Program** to promote the industry and create new markets across the province and around the world. Support for marketing and skills development has been provided through the **BC Wood Specialty Group** who manage the **Value Added Skills Centre** in Abbotsford and have led trade missions to Japan to raise the profile of BC value added wood products.

The BC Government has also focussed on education and research through its support of the **UBC Centre for Advanced Wood Processing** and the **Kootenay School of the Arts' Industrial Wood Design Program.**

Recognizing value added businesses require a secure supply of raw materials, the province has been experimenting with log sort yards an open log market, whereby sorts are auctioned weekly by sealed tender.

3.2.2 New Brunswick

With an AAC of just over 10 million cubic metres and an annual harvest of about 9 million cubic metres, New Brunswick has chosen to vigorously pursue value-added processing. The province's new value-added policy is intended to create 1800 new jobs by the year 2000. The policy and its related programs stipulate that all new Crown timber allotments will be awarded to value-added mills, be they new small value-added mills or larger, more efficient mills which are capable of creating the economic impact that the government hopes to attain. Any company applying for a new timber allocation must use it for value-added or face the prospect of having their allotment reallocated. The following criteria will be used to evaluate companies' applications for an allotment:

- long-term viability of the project;
- volume and quality of fibre required;
- employee-to-Crown fibre ratio;
- market trends (higher rate for export); and
- product value per m^3 of fibre.

The mills which apply for Crown timber all must possess debarker and chipping facilities and access to a dry kiln (a dry kiln is not defined as value-added). The products considered by the province to be value-added in wood are:

- specialty products (finger-jointing, laminating, veneer and lathing),
- wood components (i.e. window/door frames, furniture),
- composite products (OSB, MDF),
- mouldings, flooring,
- pre-finished material,
- laminated construction beams,
- fencing and fence panels,
- beveled siding,
- fire retardant shingles,
- pallets, boxes, crates, blocks and barrels.

In paper products, the following constitute value-added in the province:

- tissue paper,
- coated paper,
- cardboard containers and construction paper.

3.2.3 Other Provinces and Territories

Newfoundland and Labrador share an AAC of 3 million cubic metres. In 1994 the harvest level was almost 2 million cubic metres, mostly used for pulp wood. There is an additional 300,000 cubic metres which is allotted to sawmills and the balance is used for fuelwood. There is currently no value-added policy in Newfoundland and Labrador, but there is a favourable value-added climate and a desire to create a timber access policy tied to value-added. In the meantime the province is promoting value-added by assisting companies in obtaining pertinent information and necessary market contacts. There is a belief in the province that there is no better way to promote sustainable development than to pursue the maximum return on the available AAC. At present approximately 400,000 cubic metres of timber is available for allocation.

Ontario currently has no policy directly related to value-added. Instead the province has been endeavouring to assist companies with marketing their value-added products through the use of trade missions and by providing as much information as possible on trends and developments in the value-added industry.

Close to 70% of forested land in Nova Scotia is held by private landowners. The majority of the provincial licence agreements are held by primary processing industries, mostly involved in the production of newsprint and wood pulp. Given this situation there is very little the province can do to implement a policy for value-added processing and manufacturing. Instead the provinces has been providing information on value-added processing in an effort to influence a move to value-added production.

In Prince Edward Island, 92% of the forested land is held by private interests. Like Nova Scotia, this implies that government is unable to compel a change toward value-added processing and manufacturing. As in Nova Scotia the province provides information to businesses on value-added markets, trends and opportunities.

In Alberta, new companies interested in value-added must access wood through agreements with other companies which produce raw wood materials. Within existing forest management agreements, the government has created two categories of interest: the first is timber designated for harvest immediately by the licence holder and the second is for timber to be used in secondary manufacturing at a later date. Until such time as a number of value-added ventures are in existence, the province allows, on a case-by-case basis, some of the land designated for secondary manufacturing open for use by companies other than the licence holder. In such cases, wood can be harvested for a period of one year while under agreement with the major licence holder. In the case of pulp and paper, the government's role is one of promoter of benefits associated with value-added processing. In Alberta value-added is being pursued through tax incentives and other similar means.

There are over 55 million cubic metres of productive timber in Quebec, the majority of which is provincially owned. The harvest level for Quebec in 1995 was estimated at just over 36 million cubic metres not including an additional 12 million cubic metres of privately owned timber. There is a surplus of hardwood in the province which has not yet been requested for use. This surplus is open to bidding by TSFMA holders as well as to individual private companies. While Quebec does not have a policy in place for value-added, they are providing assistance in marketing, research and general information.

Most of the timber in Manitoba is under long-term agreements with large companies. The majority of the agreements contain stipulations which state that the licence holder must set aside a portion of the land in their management area for community needs, often Aboriginal communities. This set-aside has been the main source of timber supply for many communities in licensed areas. If a community needs additional timber they must access it through amending current agreements or through short-term tenure arrangements. The province also acts as information provider and marketer for value-added processing and manufacturing.

There is at present no policy in place in Saskatchewan for accessing timber for value-added processing. However, the government is in the process of passing new legislation which will include value-added processing. The legislation is to be tabled as early as April 1998. Unfortunately legislation itself will not specify or guarantee access to a supply of wood. Instead, the legislation will contain regulations similar to those in B.C., where a request for proposals is required and where evaluations are made on a case-by-case basis. The current method of accessing timber is similar to Manitoba. Of great significance is Project Beaver, just started in the northern part of the province, where 44 communities between Green Lake and Laloche are working together to participate in all aspects of forest management, harvesting and

manufacturing. The government and the communities are of the belief that the communities can all work together supporting each other in all aspects of forestry and related manufacturing. The final step left in Project Beaver is to reach agreements with the major licence holders to access adequate timber supply. The communities feel this is reasonable given that the licence holders are currently harvesting only 40% of their allowable cut.

Forest management in the Yukon is relatively new. While a forest industry has been in existence for over 20 years, there is at present no forest policy governing this interest. As a result the three tiers of government—the federal, through the Department of Indian Affairs and Northern Development, the Yukon Territorial Government and First Nations represented by the Council of Yukon First Nations—are now holding consultations leading to the development of a forestry policy. This initiative is being led by the Yukon Forest Commission which has the responsibility of ensuring that all three levels of government participate and have fair input into the process. The Yukon Forest Commission has been charged with assisting in the development of sustainable forest management practices and value-added policies and programs as part of the overall forestry strategy. The intention is to enable each community to set its own conditions, within set parameters, on how the surrounding forest resources will be utilized.

3.3 EDUCATION AND TRAINING IN SUPPORT OF VALUE-ADDED

In order for Aboriginal people to take advantage of opportunities in the value-added forest sector, Aboriginal forestry workers will need to be trained in a wide variety of areas. Such training will range from carpentry to computers and their role in product design and manufacture, to business development and entrepreneurship. Given the increasingly rapid rate of technological change, value-added sector workers may also need to be prepared to undertake periodic on-the-job training throughout their working lives.

In April 1997, the National Aboriginal Forestry Association conducted a preliminary needs assessment for training in the value-added forestry sector. This assessment focused on both the training needs of a small sample of value-added businesses and on existing value-added training and related education programs.

3.3.1 Skills Requirements and Training in Value-Added Firms

Skills Requirements

Of the businesses NAFA surveyed, several of the smaller ones indicated that workers must be flexible and prepared to undertake a variety of jobs requiring different skills. One such example was a case where fork-lift operators are also responsible for shipping and receiving. In most instances workers in such businesses are not rigidly tied to particular job descriptions. This point is strongly underscored by NORDFOR manager Bernt Klasson in his paper on silviculture management, ("Training Today for Tomorrow, 1991) where he stated that forestry workers

"should ... be able to rotate between different jobs such as machinery operator, harvest operator or forwarder. They should be able to work with chainsaws if necessary. They should be able to work with grass cutters or clearing saws, planting, forest assessment, and also act as supervisors for casual forest workers." Unlike the primary industry multi-skilling and job rotation will, in Klasson's view, make work more attractive and thereby help retain skilled people in the value-added industry.

One respondent to the NAFA survey stated that finish carpentry skills were required for those seeking work as installers, while more than one indicated that prior experience with Computer Numerical Control (CNC) machines would be very useful. Such specific CNC skills such as computer-aided drafting (CAD) and computer-aided machining (CAM) are part of the core curriculum at British Columbia's new Value-Added Skills Centre.

While the requirements for different types of labour varies considerably in keeping with the product being produced, almost all firms employ some management-administrative-supervisory staff; a high proportion of general machine operators and/or carpenters, and a small cadre of maintenance staff. Several of the firms surveyed employ design engineers; a number employ a small group of skilled tradespeople; and many employ separate shipping and receiving crews. Two or three of the firms surveyed view machine operators as a distinct category, and one firm even employed specialized labour in such areas as painting and spray-finishing. However, the use of such specialized labour appears to be the exception rather than the rule.

The survey found considerable variation in the amount of formal education required for entry to different positions. Some jobs demand a good deal more technical training in areas such as mathematics and computer skills than do others. Many businesses appear to be prepared to be flexible about an applicant's formal education as long as the applicant possesses basic literacy and numeracy, with some work experience. Above all, an aptitude for the job and a willingness to learn was stressed as the essential requirement for employment. One respondent commented, *"I'll take somebody with Grade 6, so long as he can read a tape measure and is willing to work."* Most firms stated that basic literacy and numeracy were the minimum educational criteria for entry to machine operator or general labour positions in their organizations. Some firms especially larger ones, generally require some high school (Grade 9 or 10), although even these firms appeared to be flexible. *"More experience will make up for less education,"* suggested one such respondent.

Where firms have separate, more highly-skilled categories, jobs in these areas typically require more education and specific skills training. Where an unskilled machine operator's job might require Grade 9 or 10 and a few months of general industrial experience, a skilled operator would ideally possess Grade 11 education or more, two or more years of industrial experience and preferably some specific training related to the machine that he or she will be operating.

Skills most commonly sought by employers include basic literacy, numeracy, social and

communication skills and general problem-solving ability. The ability to work well with others was stressed by a number of the respondents, especially those who are moving toward some type of teamwork approach in their organization. One respondent lamented that a number of individuals with the requisite technical skills had not worked out in his organization simply because they didn't know how to work with others. A few firms commented that they would like to see some computer skills, as well as some general business training for those in administrative and clerical positions. It should be noted that many of the firms surveyed appear to prefer to promote people from within, even to the management level. Some firms would rather hire the 'right' person and train them in the specific skills needed for higher-level work, than to bring in a seemingly suitably trained individual from the outside, only to find that that person was not a good fit. While such terms as "corporate culture" and "organizational fit" were never used, the ideas they convey were evident. Only two of the firms surveyed indicated that they rely entirely on the job market to meet their demands for skilled labour. Such firms are however, in extremely specialized markets, and most of their work requires a high degree of skill.

Training

Training budgets in the value-added businesses surveyed varied widely. Some conduct little or no in-house training and as such, have no assigned training budget. At the opposite end of the training spectrum a very few businesses provide training budgets in the range of $500,000. Most of the firms reported little or no change in their funding for training over the past year. Firms which indicated their training budget would be substantially increased are those which are currently undergoing major growth and organizational change. No firm appears to be expecting its training budget to be cut substantially this year.

In terms of the types of training, most firms conduct on-the-job training. Much of this training described as "core job skill training" is specific to the work which the person in question will be undertaking. Introductory training ranges from an intensive orientation period of up to six months, to a casual "learning the ropes" from a more experienced hand, lasting no longer than one day. One firm in a specialty craft area used a mentoring process, where a new employee is matched with an experienced worker for a period lasting anywhere from one to five years. In this way the new employee is trained in all aspects of the business. In most cases, some degree of on-the-job training is all but universal embracing 90% or more of the hourly work force. In some cases, firms train more selectively, offering training to about 10% of their work force at any given time, depending on the firm's operational requirements. A few firms provide formal trade apprenticeships. In at least one instance, where the firm operates on a team approach, cross-training for different types of jobs was utilized. In yet another instance, the respondent stressed that her firm is trying to create a "learning culture," one in which workers keep on learning throughout their careers.

With respect to training in areas outside of a workers' core job areas, this was most often in areas relating to occupational health and safety, first aid and workplace hazardous materials

information systems (WHMIS). Some non-core training was also provided in such areas as basic literacy, record-keeping and general business practices. Union involvement in training also varied considerably. Some firms reported that their unions have not addressed the issue at all, while others reported quite substantial union involvement. Where unions were involved, training normally focused on safety-related matters (including WHMIS) or basic literacy. In at least one union however, training was provided in basic people management skills.

A few firms use community colleges to provide some of their training. In a number of these cases, there exists an informal partnership arrangement with nearby community colleges. The survey found that in only one case was there a program of financial support provided for employees in support of their taking higher level education at community college.

NAFA's research identified an emerging pattern in the nature of the skills that are demanded by the value-added sector. Business management skills, broadly defined, is one area that will increase in demand. General management and social skills were viewed as important as was business development and marketing skills. This is especially true where firms are growing from purely national to international sales of its products. *"We're looking to develop new markets now, not just to service existing ones,"* said one respondent. Another more specific growth area is finishing. *"Spray-painting something made of wood is quite different from spray-painting a car,"* noted one respondent, who indicated that typical community college and technical courses were not preparing people adequately in this area.

It is not at present clear what type of specific skills training could best meet the needs of firms active in the production of specialty forest products. While this sub-sector of the value-added industry encompasses a large number of different products and services, the rather limited research findings suggests that this sector may be significantly underdeveloped in terms of appropriate skills. The single non-wood firm surveyed indicated that, while business potential in this area certainly exists, such companies require people with business development, marketing and all-around entrepreneurial skills.

3.3.2 Value-Added Training Institutions

NAFA has recently completed an *Aboriginal Forestry Education and Training Catalogue 1996-97* which describes forestry programs across Canada at the post-secondary and forest worker level. While, the catalogue contains limited information on training programs in the value-added forest sector, NAFA's preliminary needs assessment found that the 'mainstream' bachelor of forestry programs do not appear at present to be placing much emphasis on value-added studies.

Several colleges across Canada offer training in sawmill operations, including Conestoga College in Ontario and the Maritime Forest Ranger School in New Brunswick. The British Columbia Institute of Technology provides a Wood Products Manufacturing Program while Fairview College in Alberta offer courses in Production and Marketing of Woodlot Products as part of its

Woodlot Management program.

Described below are some of the unique value-added training programs offered in British Columbia, the province which has, unlike most, placed considerable emphasis on the value-added sector.

University of British Columbia Wood Products Processing Program

This interdisciplinary program, which may be taken either as a four-year academic or five-year co-op program, combines elements of wood science, business, wood products manufacturing technology and engineering. The co-op option, provides students with 65 weeks of paid experience in industry, as well as eight academic terms of study. Currently about 40 students are enrolled.

Value-Added Skills Centre, Abbotsford, BC

A quite different approach is taken by Forest Renewal's Value-Added Skills Centre in Abbotsford, B.C., which began operations in the fall of 1996. This program, provides courses in the value-added sector in areas that have been identified by industry as being most urgently required. They are targeted at three groups of people: current employees of value-added firms in the province seeking to upgrade their skills; out-of-work forest workers identified by the Forest Renewal Program; and unemployed residents of the province who have a guarantee of work after training. The overall aim of the program is to provide both forestry workers and the industry a smoother transition from the ongoing structural shift from primary to secondary forest production. Current enrollment in the program is 285 students.

As the program description notes, classes are designed to be job-related, and about 80% of the work is hands-on. To receive the master wood machinist certificate, a student must complete 19 one-week courses offered in five different modules: basic wood manufacturing skills, gluing technology, profiling technology; sawing technology and surfacing technology (which emphasizes planing).

All 19 of the courses will be offered at least four times during the 1997 calendar year. Some, such as the basic wood technology, and basic wood machining courses, are to be offered six times or more per year. While the main focus is on courses provided in the Abbotsford area, instructors will also provide them at locations where there is enough of a demand to justify their provision. Grade 12 is recommended for admission to the program, but not required. The Value-Added Skills Centre also provides specific instruction in such skills as operating rip, band and circular saws and three different types of planers. The wood machining basics course includes instruction in such processes as jointing, planing, moulding, lathe turning, routing, shaping, boring, drilling, slicing, sanding, and abrasive planing.

Wood Products Design and Fine Woodworking, Nelson, BC

Two value-added programs are available in Nelson. The Wood Products Design program at the Kootenay School of the Arts Centre for Crafts and Design, and the Fine Woodworking Program at Selkirk College, where emphasis is placed on the design of fine furniture. The Wood Products Design program is a small (18 students) design-based program funded by the Forest Renewal Program and aimed at teaching students how to design office furniture, furnishings, fittings and flooring. The program, which lasts three years, has in its student body graphic designers, interior designers and others with an interest in design of one type or another. A high school diploma and some previous experience are required for admission. The Fine Woodworking program, which is also quite small (20 students), focuses on the design of fine furniture, an emphasis which appears to be lacking in most other North American programs. The program is designed to be completed in nine months, but students can repeat the program if needed. Emphasis is placed on the use of fine wood-working tools and on the finishing process. Those enrolling in the Selkirk program must have successfully completed Grade 11 math and be prepared to undergo a basic skills assessment in reading, writing and math.

3.3.3 International Value-Added Training Programs

It is clear that the experience of other countries has been drawn on quite heavily in developing at least some of the Canadian training programs. For example, the University of British Columbia's Wood Products Processing Program, has drawn on the experience of such well-known European training institutions as F.H. Rosenheim and the Swiss Institute in Biel. Given the extensive use which appears to have been made of these European models, it may be worth examining other value-added training programs for their potential adaptation to Canadian circumstances.

4 THE VALUE-ADDED FOREST PRODUCTS INDUSTRY IN CANADA

The value-added wood industry in Canada is emerging as an increasingly important sector of the forestry industry. As discussed earlier, the forest industry is evolving through significant changes in market interests, global competition, technology, trade agreements and consumer demand. The primary processing industries—dimensional lumber, plywood, OSB, and pulp and paper—have had to adjust to these conditions and have done so by modernizing plant equipment, creating international joint ventures and introducing new companies to produce new products with added value. Large forestry companies are also facing increasing pressure from special interest groups and governments to limit the amount of wood harvested. Consequently, the industry has been compelled to seek methods of using a wider variety of tree species in their wood production and to make more extensive use of their harvest. New companies have emerged and have been vertically integrated using everything from bark to sawdust. This is changing Canada's reputation as a land whose people are known as simply hewers of wood and drawers of water.

Given the enormous size of the operations and costs of primary industries, many entrepreneurs have found their niche in the value-added sector where the start-up costs and the demands for an extensive parcel of forest resources are far less. Also, these value-added companies make use of some skills not used in primary industries. In the case of Aboriginal communities, lower costs and lower volumes of wood suit well the capacities of such communities. The increasing consumer interest in Aboriginal goods also lends itself to the production of value-added products where the Aboriginal content can be promoted or exhibited. Finally, there is demand for a wide variety of value-added wood products from finger-jointed lumber to wreaths. There are numerous products which Aboriginal communities can produce which might suit not only their capacity, but also the attributes of the forests which surround them.

Two different means have been identified for increasing value-added in the forest products industry: 1) incrementally adding value during the primary process; and 2) value-added in secondary manufacturing (Cohen, 1994). Value-added in the primary process can be accomplished through sorting wood products by dimension or species, process control, quality control, choice of grading systems, material handling, packaging and marketing. Value-added secondary manufacturing requires new processing facilities, the production of different products and the targeting of new markets. It has been pointed out (ibid.) that the availability of by-products or waste products from primary processing can form the basis for value-added secondary manufacturing businesses.

Value-added companies have been among the most profitable enterprises in Canada's forest industry. They utilize only a small proportion of the log output from Canada's forests and are generally small- to medium-scale enterprises. In the sections to follow, the performance of these industries during the period 1985-1994 will be examined. This examination will cover characteristics and trends in the value-added segment of the wood products industry, (including

the wooden furniture industry), the paper and allied products industry and the non-timber industry.

4.1 THE VALUE-ADDED WOOD PRODUCTS INDUSTRY

The wood products industry in Canada is very diversified. The Standard Industrial Classification (SIC) lists 13 sub-groups. Of these, seven are further classified as "value-added industries." These industries will be used as the representative value-added group for the wood products industry. The contribution of value-added wood industries for the 10-year period 1985-1994 is shown in Table 6.

Table 6. The Contribution of Value-Added Industries to the Wood Products Industry, 1985-1994

	# of establishments	Value-added wood industries shipments	# employed	# of establishments	Total wood industries shipments	# employed
		($ Million)			($ Million)	
1985	1,199	2,500.3	27,591	3,476	11,121.6	90,988
1986	2,111	3,105.4	32,588	3,578	12,432.6	94,888
1987	n.a.	3,723.1	35,000*	3,424	14,611.0	101,200*
1988	2,252	3,766.7	39,335	3,639	15,322.2	106,992
1989	2,132	4,276.5	41,282	3,380	15,893.2	106,682
1990	2,291	4,138.4	39,485	3,409	14,805.9	98,688
1991	2,077	3,491.0	29,647	3,173	13,165.7	85,212
1992	1,955	3,481.2	29,393	3,014	15,059.8	87,213
1993	1,858	3,883.7	30,158	2,894	19,082.9	92,000
1994	1,795	4.206.8	31,216	2,861	22,906.7	99,201

*Estimated.

Source: Statistics Canada, Wood Industries (annuals).

During the period 1985-1994, the value-added wood industries shipments increased at an average rate of 6% a year, in comparison with the wood products industries which increased at an average rate of 8% a year. The value-added component accounted for 25% of the value of shipments and for nearly 40% of the employment in the industry, indicating that value-added production has a greater labour intensity than the non-value-added wood industries.

VALUE-ADDED FORESTRY AND ABORIGINAL COMMUNITIES: THE PERFECT FIT

The growth in sales of the value-added wood industries for the period 1985-1994 is given in Table 7. It shows that the most important industries in terms of sales volume were wooden doors and windows, kitchen cabinets and bathroom vanities and other millworks, such as beams, laminated wood, flooring and trusses. The industries experiencing the highest growth rate for the period, indicating favourable market conditions, were other millwork, wooden boxes and pallets and kitchen cabinets and bathroom vanities.

Table 7. Value-Added Wood Industries Sales, 1985-1994

SIC #	2541	2542	2543	2549	2561	2581	2599	Total
Product	Prefab Wooden Buildings	Kitchen Cabinets & Bathroom Vanities	Wooden Doors & Windows	Other Millwork	Wooden Boxes & Pallets	Coffins & Caskets	Other Wood Industries	
				($ Million)				
1985	232.9	501.6	810.0	499.9	198.2	41.2	216.5	2,500.3
1986	310.8	624.5	1,022.8	631.1	217.6	43.4	255.2	3,105.4
1987	400.6	757.5	1,253.7	749.8	252.5	44.2	264.8	3,723.1
1988	445.2	823.0	1,244.7	862.8	258.7	49.1	272.8	3,956.3
1989	510.3	900.8	1,322.8	920.7	289.3	49.4	283.2	4,276.5
1990	510.1	943.8	1,238.3	884.7	260.1	42.5	258.9	4,138.4
1991	369.3	793.8	1,056.6	751.0	234.2	48.6	237.5	3,491.0
1992	326.1	830.6	1,043.8	775.4	218.6	50.5	236.2	3,481.2
1993*	340.5	862.2	1,067.4	984.9	243.6	54.9	280.2	3,833.7
1994*	338.0	937.1	1,173.0	1,127.6	273.3	58.7	299.1	4,206.8
Avg. Growth Rate %	4.3	7.2	4.2	9.5	7.3	4.0	3.7	5.7

*Estimated

Source: Statistics Canada, Wood Industries (annuals)

A Price-Waterhouse study (1996) indicated that the return on capital in the forest products industry was 8% in 1994. That same year, value-added industries accounted for about 50% of total forest industries sales. Rates of returns in the value-added wood products averaged about 8%.

4.1.1 The Wooden Furniture Industry

The furniture industry is dealt with separately in the wood products industries by Statistics Canada. Furniture can also be considered a value-added wood industry. There are two furniture industries: wooden household furniture (SIC 2611); and wooden office furniture (SIC 2649). Except for garden furniture, there was little or no growth in the wooden furniture industry during the period 1985-1994.

The wooden furniture industry is a highly competitive and unstable one. The number of establishments in this industry fluctuated extensively from 1985-1994, from 810 enterprises in 1985 to nearly 1,000 enterprises in 1988 and then to a low of 530 enterprises by 1994. Small enterprises, employing less than 50 persons, accounted for nearly 80% of all establishments.

4.2 VALUE-ADDED NON-TIMBER INDUSTRIES

Non-timber forest products, also known as special forest products, encompass a large spectrum of product. However, there are only six categories of non-timber forest products under the SIC: trapping (033), other manufactured goods, which includes Christmas wreathes and other Christmas decorations (3999), wholesale drug sundries and other drugs and toilet preparations, which includes medicinal herbs and wholesale non-prescription (5239), oils (106), fur goods (2495) and horticultural specialties (016). The SIC categories do not cover the entire range of non-timber value-added forest products, but these categories will be used to represent the non-timber industry in this chapter.

The demand for such products is clearly increasing, but a lack of useful data, as well as a measurement of the importance of non-commercial activities, makes it is difficult to assess the full economic importance of this industry. Many of the processing operations associated with non-timber forest products are conducive to small- to medium-sized enterprises. It is estimated that the non-timber forest products industry (other than hunting and trapping) currently contributes about $2 billion to the Canadian economy. Value-added enterprises account for roughly 40% of this amount, or approximately $800 million to Canada's GDP. Employment tied to these sales is estimated to be approximately 6,000 people.

4.2.1 Hunting and Trapping

Hunting and trapping constitute the most significant non-timber use of forests. In a 1991 survey of the importance of Canada's wildlife, Statistics Canada found that approximately 1 in 14 Canadians hunted waterfowl, other birds and small and large mammals. Hunters spent an estimated $1 billion dollars on related expenses such as food and lodging. In 1991 just over 1% of Canadians hunted and trapped small mammals for food, fur for personal use, income or property protection. In a similar survey conducted in 1991 by the U.S. Fish and Wildlife Service, results showed that close to 2 million U.S. citizens came to Canada and spent approximately

$850 million on hunting and fishing activities.

Expenditures on wildlife-related activities have important impacts on Canada's economy. Wildlife-related expenditures contributed $7 billion to Canada's GDP, providing approximately 126,000 jobs and $3 billion in tax revenues. Roughly 1/5 of these amounts can be attributed to hunting which contributes almost $1½ billion to the GDP and approximately 25,000 jobs and $620 million in tax revenues. In trapping, the number of wildlife pelts produced increased from almost one million valued at just over $22 million in 1989, to almost 1½ million valued at $26 million in 1995. Since trapping is an important Aboriginal industry, in which many Aboriginal people find their only source of cash income, it is a significant contributor to Aboriginal community stability. Unfortunately, animal rights activists have adversely affected market demands for pelts and hides, causing enormous problems and hardship for many Aboriginal peoples. While efforts are being taken to counter some of the negative impacts of the animal rights movement, there are other forest-based specialty products which have also been traditionally used by Aboriginal people and which because they now have commercial value could help to replace some of the lost income from trapping.

4.2.2 Horticulture and Agriculture Specialty Forest-Based Products

Products in the area of horticulture include drug sundries and other drugs and toilet preparations which all have increasingly important economic value. In agriculture, the main forest-based specialties are maple products, mushrooms and medicinal herbs, as well as such products as twigs, branches and barks used for decorative purposes.

Maple products production (SIC 0169) increased from over 10 million litres valued at $46 million in 1985, to 21 million litres valued at $106 million in 1994, showing an average annual growth rate of 8% in volume and 10% in value. In 1994 the total production of maple products consisted of just over 21 million litres of maple syrup, 206,000 kilograms of maple sugar, 274,000 kilograms of taffy and 205,000 kilograms of maple butter. These products had wholesale values of approximately $100 million, $2 million, $3 million and $2 million respectively.

Mushroom production (SIC 0161) has experienced significant growth in recent years and shows no sign of abating. In 1994, the latest year for which figures were available for the Nass Valley in B.C., harvesters picked approximately 350,000 pounds of mushrooms and earned close to $4 million. These earnings, however, could be significantly higher if export markets were pursued more vigorously. In Japan, for example, prices can reach as high as $200/pound for pine mushrooms.

The herbal medicine market (SIC 5239-drug sundries and other drugs and toilet preparations) was estimated at $84 million (US) (Thomas and Schumann, 1993). However, the medicinal herb industry, in terms of products sold through health food stores, is difficult to define statistically

because information regarding the size of the market is generally unavailable. However, the U.S. market for alternative health care products, of which herbal medicines are a part, was estimated at $5 billion (US) in 1992. The toilet preparations industry is divided into five sub-categories: shaving preparations, fragrances, hair preparations, dentifrices and cosmetics. The industry also includes establishments involved in the preparation of perfumes, synthetics and essential oils. The value of industry shipments in 1991 was approximately $17 billion (US), with 500 companies producing 20,000 brands. The "prestige" cosmetic and fragrance manufacturers share an $8 billion market. This market has been growing at an annual rate of 10%, resulting in increased demands for oils from needles and wood and sap from balsam fir, white and black spruce and jack pine.

4.3 PRODUCTION METHODS

Methods utilized in producing value-added products vary widely. They range from production methods for finger jointing in a mill operation, to an individual harvesting branches and producing decorations in their home. Non-wood products such as agro-forestry goods also cover a wide range of production methods and yet in instances such as mushroom harvesting and production, can provide a significant income to those involved. While more recognizable means of production are those associated with such things as the manufacture of doors and windows, even these can be produced by buying components from one company, for assembly and sale by another. Runners for patio doors or add-on window panes are such examples. Even planing and edging rough lumber for decks is an example of value-added production. Clearly the methods of production are as varied as the imagination will allow. They will continue to increase in scope as the nature of consumer demand continues to expand.

For anyone wishing to enter the value-added sector, it is first important to know what a given resource of raw material is capable of producing and in what volumes. The next step is to evaluate possible markets for a suitable fit. And the final step is to determine the best combination of equipment and people to maximize your competitive advantage. As a manufacturer you will need to find your niche, and determine the way in which you will penetrate the market. Also, you will need to be fully aware of all the standards, rules and regulations surrounding your product, your cost of production, packaging and shipping, and your margin of profit. If after this examination the production of your chosen product remains viable and provides a reasonable rate of return you will then be in a position to consider producing your product.

For the purpose of this document value-added production is treated in four categories:

1. Value-added at the mill
2. Re-Manufacturing
3. Secondary processing and finishing
4. Specialty product production and non-wood forest products

4.3.1 Value-Added at the Mill

There are numerous activities which occur at the mill which are considered value-added processing.

Kiln drying adds value to green lumber. It is the process in which green lumber ranging in moisture content is placed in a kiln and dried to a specific moisture content. The objective is to dry the lumber while minimizing the amount of wood that is either damaged by over drying or not dried sufficeintly.

Grading is another process at the mill which adds value to the lumber. Grading is undertaken by trained individuals who can analyze wood on a case by case basis in a very brief period of time and then sort it accordingly. Such grading is usually conducted on the basis of selecting particular woods for a particular purpose, client or market.

Pressure treating is commonly used for wood which will be exposed to considerable moisture, such as decks or fences, making the wood useless as a source of food or as a home for insects or fungi. Treatment provides protection to wood products enabling it to last from 30-50 years. The process involves loading stacked lumber into a giant cylinder that may be 30 metres in length. The cylinder is then sealed and a vacuum applied to remove air from both the cylinder and the wood cells. The cylinder is flooded with preservatives and pressurized for up to 10 hours or more, depending on the wood product. As a result of this process, preservative is forced into the wood to create a seal against fungi and insects.

Planing and edging are a very straight forward value-added processes which entails the use of a planer and or an edger to process wood to specific dimensions for specific markets such as decking.

Precision sawing involves the use of a band headrig, resaw, edger or trimmer. Such equipment is used to cut residue wood to specific dimensions for re-manufacturing.

4.3.2 Re-Manufacturing

Although re-manufacturing is the value-added area in which the most jobs can be created, a plant which produces finger-jointed 2x4's employing 40-50 people may range in size from 20,000-40,000 square feet and cost as much as $5 million dollars. Consequently integration or joint ventures with other companies who can provide a source of wood as well as market access is the best and most logical means by which Aboriginal people might enter this industry.

The success of any re-manufacturing plant depends on both the regular supply of raw materials to the plant, as well as the capacity to produce a product to market standards at a competitive price.

Once a regular supply of raw material is established, it may be possible to pursue an opportunity in re-manufacturing. The most common types of machinery required for re-manufacturing are: a dry kiln; a resaw, planer, chopsaw, finger jointer, edge gluing, face gluing and a sander.

The manufacturing facilities vary widely from a simple operation which has a kiln and can resaw lumber to eliminate the unwanted segment, to those which can manufacture finished products such as face-glued posts, finger-jointed 2 x 4s, moulding or window-frames.

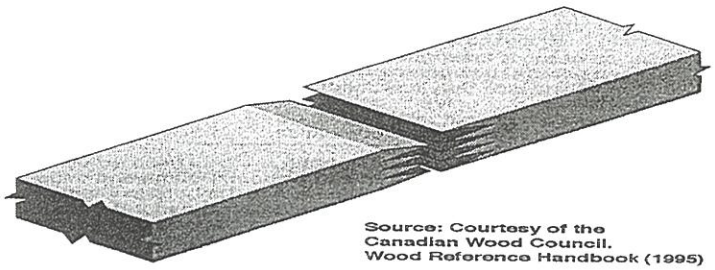
Fingerjoint Lumber

Finger jointing is the process of cutting various lengths of raw lumber such as 2x4s in a way that roughly resembles fingers. The separate pieces with their cut ends are then fitted and glued together like two hands of fingers. Although finger jointing is used in several wood product manufacturing processes, including the horizontal joints for glulam manufacture, the term fingerjoint lumber applies to dimensional lumber. The fingerjoint process allows the removal of strength-reducing defects to produce a product with higher engineering properties. The strength of the joints is controlled by stipulating the quality of wood which must be present in the area of the joint. With fingerjointing, the length of a piece of lumber is not limited by tree size. In fact, the process may result in the production of joists and rafters in lengths of 12 metres or more. Each piece must be comprised of species from the same species group, and strict tolerances are established for the matching of fingers, the quality of the wood, and the mixing and the curing of the adhesive. Depending on the type of fingerjoint lumber being manufactured, edge and flat tests and tension tests are performed on each piece to ensure the joint can meet the design value for the lumber.

In general the process for manufacturing a product such as a finger-jointed 2x4 stud is as follows:

- obtain cut ends from a sawmill that are already kiln dry
- grade and sort ends
- cut to size
- place on finger jointer machine and process
- glue placed on one side and left to dry
- plane final dried 2x4 (not necessary if the blocks are trim ends form previously dressed lumber)
- trim and cut to market specifications
- package and ship to market

Fingerjoint Lumber



Source: Courtesy of the Canadian Wood Council. Wood Reference Handbook (1995)

Finger jointed lumber can be made in a variety of sizes such as 2x4 or 2x6 and cut to various lengths depending on market demands. Various products such as mouldings and window frames can be made from the finger-jointed lumber.

Glulam

Glulam (glue-laminated timber) is a structural timber product manufactured by gluing together individual pieces of dimension lumber under controlled conditions. Laminating is an effective way of using high strength lumber of limited dimension to manufacture large structural pieces in many shapes and sizes. Glulam is used for columns and for beams and frequently for curved members. The lumber used for the manufacture of glulam is a special grade (lamstock) which is purchased directly from lumber mills. It is dried to a maximum moisture content of 15% and it is planed to a closer tolerance than that required for dimensional lumber. All Canadian glulam is manufactured using waterproof adhesives for end jointing and for face bonding and is therefore suitable for both exterior and interior applications.

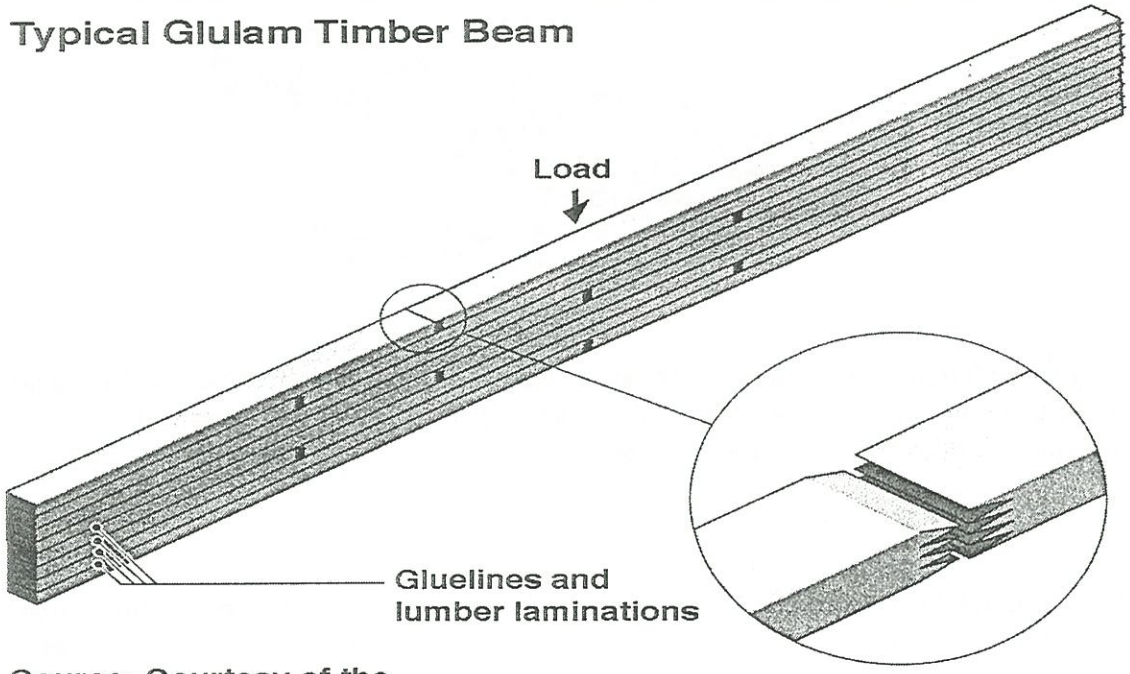
Glulam Manufacturing Process

The manufacturing of glulam structural timber consists of a series of relatively simple steps using carefully selected lumber, structural adhesives, woodworking machinery, test equipment for quality control, skilled personnel and standardized manufacturing methods. Manufacturing consistently high quality glulam requires very close attention to detail at every stage.

The laminating of structural timber consists of:

- special grade of lumber used for glulam, lamstock, is received and stored at the laminating plant under controlled conditions;
- prior to glulam fabrication, all lumber is visually graded for strength properties and mechanically tested for bending stiffness. These two assessments of strength and stiffness are used to determine where a given piece will be situated in a beam or column. This

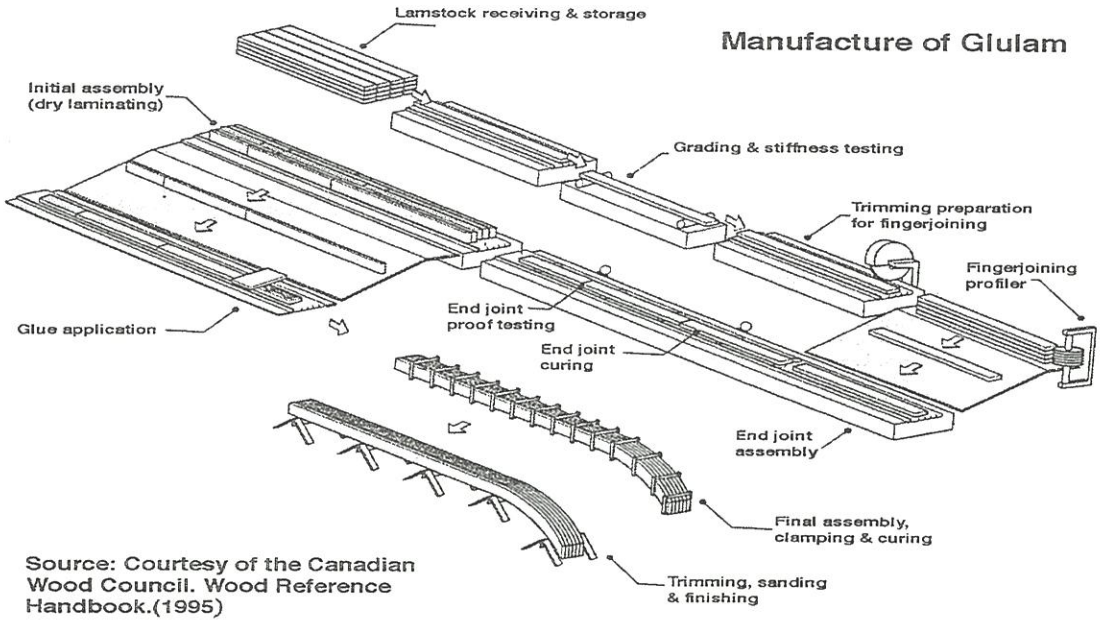
blending of strength characteristics is known as grade combination and ensures consistent performance of the finished product;



Source: Courtesy of the
Canadian Wood Council.
Wood Reference Handbook (1995)

- once graded, the individual pieces of lamstock are joined into full-length laminations of constant grade and each end joint is proof-tested;
- the laminated lengths are arranged according to the required grade combination for the product being manufactured;
- each lamination then moves through a glue applicator applying glue to the end joints (if not pre-glued) and to the faces of the laminations; the amount of glue used is a very controlled process;
- the pieces are re-assembled into the desired configuration at the clamping area. Hydraulic or manually-activated clamps are placed around the member, and are brought into contact with steel jigs which have been pre-anchored to the floor to provide the desired curvature or pattern;
- as pressure is applied, the laminations are adjusted for proper alignment in a level plane to minimize the amount of stock which will be lost when the member is surface-planed to a smooth finish;

- once full clamping pressure is reached, the member is stored at a controlled temperature until the glue is fully cured;
- when glue-curing is complete, the members are moved to the finishing area where basic surface planning, patching, and end trimming is done;
- depending on what the client has ordered, drilling and notching for connections, sanding and staining and varnishing may also be done. Because of specialized equipment and mass production, these functions can usually be performed in the shop cheaper than at the building site;
- as a final step, glulam members are visually inspected and wrapped in readiness for shipping.



Source: Courtesy of the Canadian Wood Council. Wood Reference Handbook.(1995)

Laminated Veneer Lumber

Laminated veneer lumber (LVL) is a layered composite of wood veneers and adhesive. Once it is fabricated into sheets of various thicknesses and widths, it can be cut at the factory into stock for headers and beams, flanges for prefabricated wood I-joists or for other specific uses. Veneer thicknesses range from 2.5 mm to 4.8 mm and common species are Douglas fir, larch, southern yellow pine and poplar. In LVL, the grain of each layer of veneer runs in the same direction (length-wise) with the result that it is strong when edge-loaded as a beam or face-loaded as a plank. The veneering and gluing process of LVL enables large members to be made from relatively small trees thereby providing for efficient utilization of wood fibre.

LVL Manufacturing Process

LVL is a solid, highly predictable, uniform lumber product because natural defects such as knots,

slope of grain and splits have been dispersed throughout the material or have been removed all together. It is made of dried and graded veneer which is coated with waterproof adhesives, assembled in an arranged pattern and formed into billets by curing in a heated press.

The steps in manufacturing LVL are typically as follows:

- logs are rotary-peeled on a lathe to create veneer sheets from 2.3 mm up to 4.8 mm in thickness. Veneer sheets are generally about 2640 mm long by either 1320 mm or 660 mm wide;
- the veneer sheets are dried, clipped to remove major strength-reducing defects and graded;
- the sheets are cut to the required width for the billet to be produced;
- the individuals veneers are then assembled with the grain of all veneers running in the long direction of the billet;
- end joints between individual pieces of veneer are staggered along the length of the billet to disperse any remaining strength reducing defects;
- the veneer lengths are coated with a waterproof phenol-formaldehyde resin adhesive;
- the assembled billets are subjected simultaneously to pressure to consolidate the veneers and heat to accelerate curing of the adhesive;
- the LVL material is formed into long billets up to 25 m in length;
- once cured, the billets are sawn to custom lengths and widths as desired for the product end use.

Prefabricated Wood I-Joists

The exceptional growth of the wood I-joist industry, and the rapid acceptance of this product in the marketplace, has been driven by the need for a high-quality, dimensionally consistent and stable, lightweight framing member with reliable capacity and predictable performance. It is anticipated that the current estimated production of over 400 million lineal feet of wood I-joists annually will rise to nearly 900 million lineal feet by the year 2005. The many series, sizes and depths of wood I-joists available today reflect their numerous applications and the variety of raw materials from which they are made. Though these products are used in a wide range of structural applications, the term 'joist' is appropriate because their predominant use is as an alternative to sawn lumber floor joists in repetitive light-frame construction. They are particularly useful where long, clear spans are needed, and give designers flexibility in floor plans.

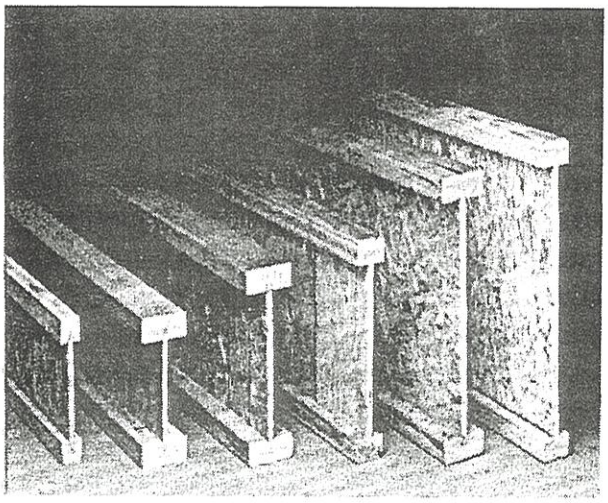
The "I" shape of these products gives a high strength to weight ratio. For example, wood I-joists 244 mm deep and 8 m long weigh between 23 kg and 32 kg, depending of the flange size. This means that they can be installed manually, giving advantages in labour and economy. Factory-pre-punched knock-out holes in the webs facilitate the installation of electrical services. The knockout holes also provide ventilation when the joists are used in a cathedral type ceiling with no attic above. The joint between the flange and the web is a critical element of member strength and is typically protected by patent by each manufacturer.

Wood I-Joist Manufacturing Process

Because manufacturers have patent rights for how their I-joist are assembled, the processes for manufacturing wood I-joists vary considerably throughout the industry. High-volume residential series I-joists are usually fabricated in a fully-automated continuous production line. The product is literally extruded from an assembly machine that accepts flanges and webs at one end and dispenses the finished product on the fly at the other.

As in the manufacture of other engineered wood products, moisture control of the flange and web material is important to ensure optimum gluing conditions and dimensional stability of the finished product. The manufacturing steps are as follows:

- all material must be dry, with a moisture content in the range of at least 8% and no more than 18%. It must also be conditioned to room temperature of at least 10°C;
- prior to assembly, the solid sawn flange material is fingerjointed into long lengths;
- a groove for acceptance of the web is routed into one face of the flange material;
- the web material is cut to the size required to give the appropriate depth to the assembled wood I-joist;
- the web ends that form the web joints are cut or machined as required and the web edges that mate with the flanges are machined, shaped or crimped as required;
- adhesive is spread on the web ends to form glued web joints and adhesive is placed into the flange routs to form a glued flange to web connection;
- the top and bottom flanges are of equal specified lengths and are aligned with one another prior to joint assembly;
- the flanges are pressed onto the long edges of the webs just after the web joints are mated to complete assembly of the joist;
- prior to curing, the assembled joists are cut to specified lengths;
- the joists are generally placed in a low temperature oven or curing environment (21 to 65°C) for a specified period to insure proper cure of the adhesive;
- after curing, the product is inspected and then bundled and wrapped for temporary storage or shipment.



Source: Courtesy of the Canadian Wood Council, Wood Reference Manual Handbook (1995)

4.3.3 Secondary Processing and Finishing

Windows

Windows require the manufacturer to consider several issues before entering the market. First the producer needs to define whether the product will be a specialty window or a commodity window. Next the producer needs to find their niche, and then figure out where the source of wood will be coming from. Once all of these issues have been dealt with a producer can look at producing and marketing their product.

Cabinets

Production will vary depending on commodity or specialty cabinets, or whether you are producing components or finished products. Also, the cabinets may or may not have doors, handles or pre-drilled holes for the addition of fixtures.

Garden Accessories and Furniture

Garden furniture and accessories encompass a wide range of products. Furniture itself may vary widely from high-end finished patio furniture to the more common folding chairs or Adirondack-style chairs often used at cottages. One of the fastest growing segments of the value-added industry is garden furniture and accessories. Products such as pressure-treated decking, stair stringers, railings, garden building materials such as treated 6x6 or 12x12 lumber and fencing are all in demand. Small garden sheds made of wood, docks, planter boxes and bird houses are also continuing to grow in popularity. These are all products which can be made from a wide variety of species of trees and sold to the DIY market, unfinished furniture stores, gardening centres or even through small outlets to cottagers. Woods such as pine, cedar and spruce are common to this industry and require equipment that is less costly to maintain. In rural areas where there is an abundance of cottages, many Aboriginal communities would be perfectly positioned to produce and supply these products to this local market. While this may be a seasonal market in most areas of Canada, it enables the producer to manufacture an entire line of products over winter months in time for the next cottage season. Also, such products can be marketed to more regional interests such as garden and DIY centres in larger communities in time for their spring build-up of gardening merchandise.

Production methods vary depending on the product produced. However, planting boxes, Adirondack chairs, stair stringers and fencing are all relatively simple to produce, most requiring limited equipment and space.

4.3.4 Specialty Non-Timber Forest Products

Within the non-timber sector a wide variety of products are produced normally to meet a niche

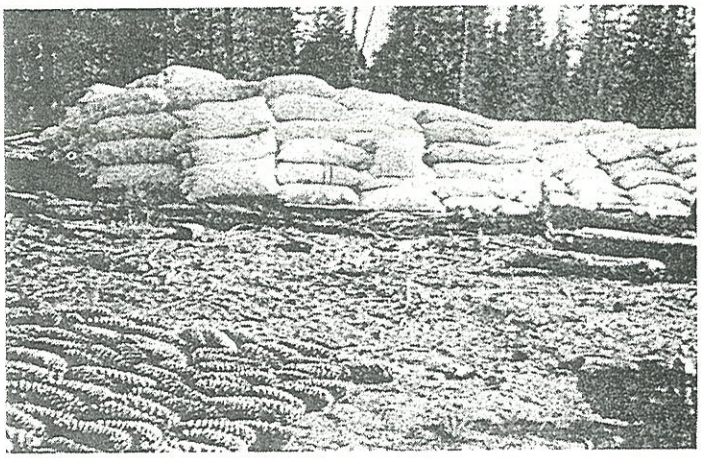
market. These include aromatics, berries and wild fruit, cones and seeds, decorative wood, mushrooms, medicinal and pharmaceutical herbs and specialty products such as wreaths. The following briefly describes production methods associated with these products.

Aromatics and Essential Oils include balsam fir oil, birch oil, cedar leaf oil, hemlock oil and spruce oil. Essential oils can be obtained from cultivated or wild plants including peppermint, spearmint, basil and others. These essential oils are found and used in insect repellants, cosmetics and cooking. Oils found in trees are used in numerous applications including room sprays, talcs and insecticides. The most common tree oil found in the items listed is the oils from a cedar leaf. The main areas of production of cedar leaf oil have been New York, eastern Quebec and southeastern Ontario. Balsam fir oil is used in fragrance formulation especially in detergents, room fresheners, household cleaners and disinfectants. Hemlock and spruce oils are used in household products as well, such as disinfectants, detergents and soaps. Such oil is extracted from the eastern hemlock. Other oils, such as spruce, are extracted from the young branches and adherent leaves of black and white spruce. Equipment used to produce such oils includes a vacuum refining system with a fractionation column. This allows the re-distillation of the oil to remove dark colours and resins or to fractionate the oil into its different constituents. A distillation unit for a very small-scale operation can be obtained for between $5,000-10,000.

Mill By-Products include chips, shavings, sawdust, bark, leaves, excelsior and peat. Most of the chips, shavings and sawdust from pine, cedar, aspen and other woods can be used in animal bedding and litter products. Some of these products have secondary markets such as for compost. The process involved can be conducted either by purchasing the by-products from existing mills and packaging the product for market or, in the case of small operations, by salvaging unused wood from logging operations or wood from thinning procedures. The most common type of wood used for animal bedding is cedar since its properties act as a repellant against ticks and fleas. However, pine is also popular since it is cheaper and easier to access. Bark, wood chips and pine straw have a variety of markets as soil conditioners and as decorative landscape mulching products. Chip shavings can also be used in making a number of secondary wood products such as particleboard, cedar closet board, fireplace logs made of sawdust and wax or starch fuel pellets and moulded products. Shavings can also be used as packing material where there is a need to use all natural products. In order to acquire the highest possible price for products such as sawdust, a dryer machine is needed to convert wet sawdust to dry. Once dried, the price difference is 4 to 5 times higher. The machine which is most widely used for creating shavings is a Jackson Wood Shaving mill which costs around $30,000. However, the complete cost of such an operation, including a building, vehicle and an initial inventory of wood, is in the range of approximately $100,000.

Cones have a wide variety of uses. These include floral wreaths and potpourri products, as part of gift and fragrance items, ornaments and table decorations, as well as in a variety of niche markets such as jewelry and bird feeders. Cones can also be waxed and used as fire starters and decorations. The majority of cone species are marketable but producers must often substitute

Bagged Cones



Source: U.S. Department of Agriculture.
Income Opportunities in Special Forest Products (1993)

new varieties of cones for those in short supply. Hemlock cones are the primary cones used in potpourri market since they have a good shape and are light, while small pine cones are used in wreath production. The process involved for cone harvesting is mostly done by hand. Even damaged cones are used by crushing them and selling this as mulch for landscaping. Cones are usually harvested from the forest floor by raking them from the branches or by laying sheeting beneath the tree and then shaking or beating the branches to cause the cone to fall. Collectors often use boot spurs and a safety belt to climb the trees, as well a portable vacuum backpack. Investing in a small cone cleaning operation can cost about $50,000. Additionally, collectors will often need to pay landowners a few cents per pound for access to the harvest area.

Decorative Wood or "character" wood is another emerging value-added area. The decorative woods and/or tree parts from which marketable items can be crafted include bigleaf maple, cypress knees, diamond willow, hazel whips, juniper, redwood burls and sitka spruce roots. Spalted wood (i.e., wood which has begun to decompose) is in very high demand and includes such species as maple, birch and beech. In this product bacteria often creates "ink lines" or "zone lines" and it is these lines which create the decorative look and hence the demand. The possibilities for decorative wood are extensive. Some of the largest uses are for musical instruments, jewelry boxes and fine crafting tools used by artists, sculptors and craftspeople. Such woods are also used for tabletops, cabinet doors, gun stocks, table legs, candle holders, bowls, cutting boards, vases, birdhouses, carved animals and Christmas ornaments. A company entering the decorative wood business could either purchase wood from the mills already cut or cut it from the forest.

Forest Botanicals are used in the production of a number of medicinal compounds and pharmaceuticals as well as nutritional supplements. Examples of medicinal materials include the balm of gilead buds, balsam gum, birch oil, bitterroot dandelion root, snakeroot, wild garlic, wild ginger, wild mint and wild onion as well as witch hazel bark and leaves. As well, many botanicals are used in foods, cosmetics, dyes, dried florals, as well as many other applications. Harvesting requires at least a one hectare (2-4 acres) stand of a particular plant in order to be economically feasible. The economical harvest level is approximately 500 pounds dry weight. However, production can also include using the unutilized slash material left behind by loggers. By following logging crews, a small operation can often salvage whole plants, bark, roots and

leaves. Once harvested the raw material must be dried. Commercial ventures require a covered heated building for drying by air, solar or mechanical dryers.

Mushrooms: The three most popular mushrooms which have commercial value are the chanterelle, morels and the pine mushroom. The production process can include either ranging and picking wild mushrooms or cultivating mushrooms in a woodlot. The most effective means of producing wild mushrooms is to innoculate logs with mushroom spawns. The logs should be cut from living decay free trees in the dormant season when the wood contains the most stored carbohydrates. The diameter of the logs should be between 3-6 inches (1.2-2.4 cm). Once inoculated, mushrooms will be ready for picking between 6-8 months after inoculation. Harvesting and growing mushrooms is a straight forward and relatively inexpensive process. Commercial production involving about 500 logs may cost in the neighbourhood of $500 for the spawn and for basic equipment including packaging.

5 MARKET ANALYSIS OF ABORIGINAL VALUE-ADDED FOREST INDUSTRIES

This chapter will analyze the market prospects for value-added forest industries by Aboriginal communities. The nature of the marketplace, both domestic and international, marketing and distribution channels for value-added industries, marketing and promotional activities as well as value-added products which can be produced from the forests of Canada will be examined.

5.1 INTRODUCTION

The findings of a number of reports on Aboriginal participation in forest industries have all indicated that:

1) Aboriginal participation is relatively small in relation to the forest resources available;
2) this participation is confined mainly to primary operations (i.e., logging, silviculture);
3) there is little secondary manufacturing or value-added activity undertaken; and
4) there are many obstacles—institutional, cultural and economic—to the greater involvement of Aboriginal people in forestry, with marketing being a major obstacle.

The extent of Aboriginal participation in the forestry industry is affected by population and by the magnitude of forest resources available. The number of reserves by forest size shown in Table 8 gives a percentage distribution:

Table 8. Size of Indian Reserve Forested Lands

Forested Area	# of reserves	%age of total #	Total Area	%age of total area	Average Area/reserve
			(ha)		(ha)
Less than 1,000 ha	2,106	88.9	212,223	15.3	100.7
1,000-9,999 ha	238	10.1	698,560	50.5	2,935.1
10,000 ha &Over	24	1.0	472,905	34.2	19,704.4
TOTAL	2,368	100.0	1,383,688	100.0	584.3

Source: Indian and Northern Affairs Canada, 1996

Only 15% of reserves have more than 5,000 people; the rest have population sizes of 1,000-4,999 people and less than 1,000 evenly divided. The Aboriginal labour force on reserves constitutes about 40% of the population due to the large number of young employable people under 24 years of age. Unemployment levels on reserves are exceptionally high, estimated at about 50% of the labour force. Only about 70,000 people who live on reserves out of the total reserve population

are employed. Of these, about 10% are employed in the forest sector. Their participation in this sector is characterized by the following:

a) The majority are employed in harvesting, reforestation and silviculture; only a small proportion are employed in the value-added forest industries;
b) There are only a handful of Aboriginal-owned or controlled companies operating in the forest sector;
c) Even with First Nation-owned companies, about one-third of the workers are often non-Aboriginal; and
d) Only about 5% of the jobs in the forest sector can be wholly attributable to forestry operations on reserves.

This situation led to the conclusion by the Intertribal Forestry Association of BC (1992) that:

> *"In general, only a small fraction of the overall economic and social returns from timber harvested from native lands go to native people. This is due to:*
> *- a shortage of trained Aboriginal workers;*
> *- the small number of native-owned logging and silvicultural contracting companies;*
> *- the shortage of native-owned businesses taking advantage of the economic spinoff from forestry activities; and*
> *- the limited native involvement in the wood products manufacturing sector."*

Given this state of affairs, it should be apparent that increasing the number of Aboriginal-owned businesses and encouraging their greater involvement in value-added forestry industries is crucial to the development of Aboriginal communities. Lack of marketing knowledge, capital and entrepreneurship constitute the major factors hampering development. In the section to follow, the distribution and marketing of value-added forest products will be examined in order to provide insights into the type of markets that can be useful to Aboriginal entrepreneurs.

5.2 MARKET DEMAND

Markets for value-added wood and non-wood products are divergent in nature. They may range from herbs or mushrooms to furniture, from re-manufactured wood to simple planing or grading of lumber. Markets around the world are being identified or expanding for a significant variety of value-added products. Market trends show no indication of anything other than continued growth both in the value of products purchased and in the expansion of the variety of products demanded.

Relatively new products, such as re-manufactured wood-based house building materials, can in certain house designs use 3/4 less wood than with conventional building materials (MacMillan Bloedel, 1997). These new materials are stronger, simplify the installation of mechanical systems, provide greater use of space in the house and are easier for trades to install. Because of

these attributes, demand for such products is steadily increasing. Products such as those used in the floral and decorating industry or those in the health care and food industries are in many instances not new, but rather are a re-introduction of what forests in the past provided locals for use in their own cooking, decorating and building. Now these old uses have new markets and new potential for local employment. Locals then must rediscover their old uses of many forest products in order to meet these new consumer demands. But today, they must also understand marketplace standards, packaging, pricing and distribution and, most importantly, they must learn how to run an effective business which can be relied upon by the marketplace.

5.2.1 Wood-Based Products

The Canadian tree species with the greatest potential in higher value applications are hemlock, lodgepole pine, Douglas fir, yellow birch, aspen, western red cedar, maple and oak.

At present the principal opportunities that exist for Canada are to add value or re-manufacture raw materials for use in the woodworking industry. The production process begins by upgrading square-edged timber to then be able to further add value. Upgraded products may be laminated and finger-jointed window stock, sized and graded joinery stock and cut-to-size blanks. A wide variety of manufactured products, used primarily for the housing industry, can then be produced and targeted at the building supply or do-it-yourself (DIY) markets.

Building Materials

The Canadian and U.S. housing industries have been the main markets for raw wood building materials. While there is still a demand for building materials, there is an increasing trend in this market towards the use of re-manufactured building products. Consequently, the largest single demand for value-added products is for those targeted at the home building and renovation market. Production of such products can and does present a significant opportunity for Aboriginal entrepreneurs.

Kitchen Cabinets

Manufacturers in Canada and the U.S. use a considerable amount of hardwoods (primarily oak, maple, and cherry) for cabinets and cabinet drawers. Most, if not all, of the wood used is of the best quality. As well, the demand for these woods has been increasing with the decrease in the use of tropical hardwoods. The result has been both in an increase in the price paid for hardwoods such as oak, maple, cherry and basswood, as well as interest in the use of underutilized species such as aspen and white birch.

Coffins and Caskets

Manufacturers of these products tend to use primarily oak for edgings and laminated covers. All

wood is #1 grade and better. As the North American market ages, its sheer size represents a significant market opportunity for coffins and caskets.

Furniture/Cabinet Makers

While the furniture industry is highly fragmented and a number of businesses have been severely affected by the economy of the last few years, there is still a market for a variety of select and better grade materials. Most manufacturers will purchase finished hardwoods (2 or 4 sides dressed) and further mill the raw material themselves. Some manufacturers, given the rising price of many hardwoods, are using other materials, such as birch, for lower end markets in areas such as childrens bedroom furniture.

Garden Furniture

One of the best opportunities for Aboriginal communities may be in the production of garden furniture and accessories. Markets in Canada, the U.S. and around the world are growing steadily. The variety of products, as well as the materials that can be used, suit well small and medium sized producers. It also means that a wide array of businesses can be created making numerous products such as planters, decking, lattice and posts. There is considerable potential in the pressure-treated segment where there is strong demand for step stringers, deck posts, post tops, deck pickets, spindles and handrails. The production of such materials could be done by utilizing lumber or sawmill by-products and by contracting out the pressure-treating process. Also, many large pressure-treating firms outsource (hire outside) the manufacture of such garden products. This approach guarantees the manufacturer of such garden products a market. By working with pressure-treating firms, Aboriginal companies could use this market arrangement until they are confident in going it alone.

Lumber Remanufacturing

There are a number of opportunities be resawing and planing boards, dimension lumber, timbers and cants into value-added building material products. Some examples of these include:

1) Fence boards and panels
2) Fence posts
3) Lattice panels
4) Tongue and groove wall paneling
5) Shiplap and channel siding
6) Canat strips
7) Remanufacturing stock
8) Lathe
9) Pallet and dunnage stock

A wider variety of products can be developed if a chop line is added to the production process. This enables the producer to eliminate defects and thereby yielding shorter length material but of higher value.

Pallet Stock

According to recent reports as much as 40% of all hardwood lumber in the U.S. is turned into pallets. Considering that the U.S. alone produces approximately $6 billion in hardwood lumber, the total value of this market is enormous (about $2.4 billion). A variety of species including birch, spruce, fir, and aspen (only for stringers) can be used.

Log Homes

Growing in popularity are traditional log homes as well as machined log homes. This sector has seen growth in USA markets as well as in Asia and other off-shore countries.

Other Timber Products

There are a wide variety of products which can be produced by Aboriginal companies which utilize less capital intensive methods and which can accommodate various species. Some examples are:

- snow fences-from aspen;
- rulers and yardsticks-from aspen;
- golf tees-from white birch;
- dowels-from white birch;
- doors and floors-from yellow birch, oak and maple;
- mattress frames-from spruce and fir;
- mouldings-from aspen, pine, yellow birch, oak (random widths and lengths)

A wide variety of products may be made to service specific market demands. Those described are therefore a sample of the kinds of products which can be produced.

Arts and Crafts

Canadian Aboriginal arts and crafts are comprised of an array of items produced from a wide range of materials. The most extensive consolidation and marketing in Canada of such art and crafts is found in British Columbia where different Aboriginal products are represented. Virtually every type of art and craft is represented from the soapstone carvings of the Inuit to Haida jewelry. These products are mostly marketed through retail stores catering to the continuous flow of tourists. Outlets for Aboriginal art and crafts can also be found in virtually every city in Canada, again with a wide cross-section of products. In each of these retail stores wooden

products such as masks, boxes, jewelry and even wooden modern art can be found. In the case of the market for wooden art and crafts, it is exceedingly rare to find a retail store that sells only wooden Aboriginal arts and crafts. Retail stores tend to buy a wide variety of products to satisfy a wide range in consumer demand. As a consequence, the market for wooden products is quite small. Individual producers or co-operatives must then seek out a variety of retail stores that may want to carry their products so as to secure a large enough market to make the production business viable. Also, given the nature of the marketplace where higher-end products are preferred, entry into this very competitive business is difficult. Most of the successful producers started out in local markets, perfected their art or craft and slowly expanded their distribution to higher end stores in more distant locations, at higher prices.

In general, co-operatives have not been that successful in marketing their supply of arts and crafts beyond the local level. Many are not familiar with the marketplace and many do not have sufficient resources to aggressively push their products. Others still, do not possess sufficient market information and thereby are unable to guide producers to production of what the market is demanding. In certain cases this has meant that co-operatives have collected a significant supply of product for which they have yet to find a market. The marketplace for arts and crafts, whether in Canada or abroad, demands quality and a regular supply at a price appropriate to what the consumer is prepared to pay and which can accommodate retail mark-ups. Many producers will work an entire season to produce enough product to be shown at trade shows. Increasingly these producers are traveling from one show to the next in order to move an entire line of product and thereafter to return home to produce another line.

Source: Special Forest Products Market Analysis. Canadian Forest Service (1993)

In the marketplace distribution of arts and crafts is conducted primarily through trade shows and retail outlets. Distributors are uncommon in this business because they usually buy in large quantities and warehouse the products until they are sold. Sales agents are even less likely to be useful given that they are usually in the business of moving large quantities of product for a 15-20% commission.

Given the nature of this business, it is not surprising that in foreign markets Canadian Aboriginal art is under-represented. In the U.S., Canadians must compete with American Aboriginal artists in markets which are often very regionalized. However, while this means conducting promotional activities, visiting trade shows and meeting retailers and their sales representatives, it also means that Canadian Aboriginal arts and crafts, uncommon in such markets, can be introduced as new to the foreign market. In a business which revolves around new, unique, exotic and original works, Canadian Aboriginal producers may be able to attract new markets if

popular "North Woods" themes are used and if their products meet the key factors of style, price and image.

New entrants to the market should familiarize themselves with their competitors products and pricing, with the buyers and, in particular, with market demands and trends. To do so, producers or their co-operatives should attend key trade shows and be prepared to either set up shop and sell or to become familiar with the interests of that market. In the U.S. key trade shows are the:

- New York Gift Show
- Atlanta Gift Show
- American Craft Council Show and
- Buyers Markets of American Crafts Show

Of particular importance is the Indian Arts and Crafts Association (IACA). Wholesale markets are held in Denver (spring) and Phoenix (fall). Here some 500-600 buyers assemble to purchase Aboriginal arts and crafts (contact IACA, Albuquerque, New Mexico, ph: 505-265-9149, fax: 505-265-8251). In other corners of the globe, market opportunities also exist for Aboriginal arts and crafts. In Europe, German and Italian customers hold a particular fascination for North American Aboriginal art. Again, while it may be difficult to sell only wooden products into these markets, if they were attached to a wider array of arts and crafts and as part of a larger marketing effort, there may be some continuing sales potential. However, in these markets, demand is for higher end, one-of-a-kind products, from producers who can guarantee a regular supply of such goods. Given the great distance to these markets as well as the associated shipping costs, extensive market research should first be conducted. A good starting point for such research is the German and Italian Embassies in Canada and the Department of Foreign Affairs and International Trade in Ottawa.

Source: Special Forest Products Market Analysis. Canadian Forest Service (1993)

Finally, while not entirely art, opportunities exist for wood products such as headboards for beds, furniture and garden accessories which bear Aboriginal motifs. To market these successfully however, samples will need to be made and promoted to potential buyers before any significant production could commence. In the case of Central America, Asia, the South Pacific and other regions, where such products are made, their market penetration has been significant. Outlets such as home decorating stores, specialty stores and even some large retail chains now carry products bearing various Indigenous motifs. Mirrors, doors, coffee tables, beds and wall decorations, among others, with such designs have become popular home decorating items either inside the home or in the garden. Canadian Aboriginal people could produce such products and market them under the "North Woods-Canadian Aboriginal" theme.

5.2.2 Specialty Forest Products or Non-Wood Forest Products

Non-wood forest products (NWFP) consist of goods of a biological origin other than wood, as well as services derived from forests and allied land use (FAO, 1995). Non-timber forest products such as native plants have played as important a role as animals to many Aboriginal Peoples. Most Aboriginal Peoples, by the very conduct of their lifestyles, were forest managers not timber managers.

Non-wood products are now in increasing demand. Products for the health industry, for cosmetics, for decoration and for the food industry are all being sought after. Products such as bear grass is now one of the fastest growing materials used by the floral and crafts greenery industry. Primarily used for dried floral arrangements, it continues to grow in popularity. Mushrooms are in increasing demand in numerous corners of the globe where nearly 400 species have market potential.

Successful special forest product companies can be run out of a garage or an old barn. They are labour intensive businesses that benefit from people working together. Markets in Mexico, China, Taiwan, Japan, Korea, Germany, France, the U.S. and others exist for such special forest products. Immediate markets exist in China for herbal plants and mushrooms. The ethnic communities in North America also represent an enormous market opportunity for such forest products. For example, the largest concentration of Koreans outside of Korea is in the U.S. Therefore the buying preferences which are evident in Korea also exist in the U.S.

Until recently, modern science and governments have overlooked the importance of special forest products because most were used for rural subsistence or local markets. As a consequence they went unrecorded in official statistics which focus on nationally traded goods. Also, governments have organized themselves around product lines such as forests, timber, agriculture, food stuffs and horticulture, categories which do not recognize the importance of non-wood forest products. Finally, modern forestry favoured timber and large-scale industry and regarded non-timber as incidental. However, when the potential of all non-wood forest products including eco-tourism are taken into account, not only in revenue generation but also in employment creation, these products offer a significant potential.

In the case of Canada's Aboriginal Peoples, the non-wood forest products industry might be the industry where they have a competitive advantage in knowledge and insight needed to ensure the growth of the industry. Development of such businesses based on traditional knowledge and usage of these plants might well enable not only their own communities to benefit but may also help others to see how to make better use of the natural resources which surround them.

> "You can not solve the problem with the same mindset that created the problem" A.E. Einstein

5.3 MARKETS

Canada is the largest lumber exporter in the world and has a 50% share of total exports. Consequently, Canada is known the world over for its lumber and building products. Recently, value-added products have been seen as a growth sector in which an increasing number of Canadian companies are becoming involved. Markets for value-added products often start locally and become much more complex the farther from home a business ventures. In certain cases there may be sales potential for similar products in a single market, while in other cases a product may be completely rejected because of simple nuances or tradition. Consequently, marketing is a complicated business that many small companies cannot easily grasp without extensive trial and error. Since experience counts in marketing, the most effective way to get your product through distribution channels to the market and finally to the customer, is never simple.

The major markets for building materials and value-added products include the following.

5.3.1 Canada

For Aboriginal companies and individuals, the Canadian market represents the best starting point in which to sell value-added products. Whether this is from larger scale operations such as finger-joint production or smaller operations producing garden accessories, or non-wood forest products, the Canadian market represents all of the attributes and opportunities suitable to small and medium size businesses. Local marketing provides a quicker turn around between production and cash received for sales. This enables the producer to pay off costs faster and to keep costs associated with shipping, duties, tariffs and marketing lower. It also enables the producer to spend more time on perfecting production and quality at the early stages of business start-up.

While the Canadian market can never absorb all of the value-added products from a large-scale effort made by all producers, especially by large forest interests, the market is relatively open to a steady supply of Canadian-made, appropriately priced, quality value-added products. The Do-It-Yourself (DIY) market in Canada is expanding as is the demand for re-manufactured building and renovation materials. The non-wood sector is under-serviced with domestic products, as are other areas such as garden furniture and accessories. Canada, because it is in its infancy in the value-added industry, still imports a considerable volume of value-added goods from abroad. Even where a joint venture arrangement may be made with a larger company and where the value-added products may be destined for export, the sale by an Aboriginal company to their joint venture partner can constitute a domestic or local market. In such cases, this vertical marketing enables the Aboriginal producer to let the joint venture partner focus and worry about the foreign market. Such an arrangement may in time not satisfy the Aboriginal producer's interest for market expansion and sales growth and so the initial agreements reached must be conducted with one eye on the immediate future and another on the longer term. Once skills are

developed, quality and availability of supply can be assured, once debts are reduced and there is confidence in growing, markets farther afield within Canada or abroad can be pursued.

Immediate markets exist in Canada for most value-added products. In virtually every corner of the nation there is a growing DIY market. The demand in Canada from ethnic markets, health food and related stores is increasing for non-wood, medicinal, food and cosmetic products or their base compounds. Garden furniture, related building materials and accessories are increasing in demand even though seasonal. Opportunities for use of a variety of tree species not normally used in the past, such as alder, aspen and birch, exist for the production of a wide variety of value-added products. Opportunities for sales to retailers and wholesalers exist for products which many Aboriginal communities could readily produce but which may not have been previously apparent. Birch bark candle holders, pine plant holders, dowels, bear grass for the floral and craft market, aspen golf tees as well as a wide array of forest plants, including mushrooms, all have an immediate Canadian market.

The Federal Government: A $9 Billion Dollar Market

As explained earlier, the Federal Government has recently created a new program for the procurement of goods and services from Canadian Aboriginal people. The Ministry of Public Works and Government Services Canada is responsible for the procurement of approximately 65% of bulk purchases such as wood products bought by the Federal Government. However, while this Canadian market may be significant, recent analysis conducted by NAFA indicates that data is not collected in a way which provides a clear picture of the products being purchased. If an Aboriginal company wished to make and sell wooden doors, the Government data does not show whether it purchases wooden or steel doors. It does not show whether the doors purchased are solid, hollow, vinyl clad or otherwise. The same problem is true in almost every category where one might wish to obtain data specifically on wood-based products such as desks, windows or furniture.

Another 35% of bulk purchases is purchased by other ministries across Canada. In relation to these purchases, data is even more difficult to acquire. Also INAC provides millions of dollars per year to Band Councils, a good portion of which is for their communities to buy goods and services. It is unclear whether these monies are part of the Government's $9 billion in procurement, and what exactly these monies are spent on. While potential may exist for one Aboriginal group to service another's demand for wood products, it is difficult to do so without better information on the nature of the opportunity.

The Procurement Strategy for Aboriginal Business (PSAB), mentioned in Chapter 3, may help Aboriginal companies to access the federal government market. Yet for the PSAB to become truly effective, and for it to meet its objectives of enhancing economic benefits for Aboriginal businesses, research and data development are urgently needed. If greater clarity on the nature of this potential market is not provided, Aboriginal businesses may either miss the market

opportunity with bad timing or simply never know that one existed. It is important for such data analysis and development to be conducted if Government wishes to reach its own targets in the time they themselves have specified. INAC, for example, now purchases 7-8% of its total goods and services from Aboriginal businesses, representing about $6 million annually. By the year 2000 INAC has targeted procurement of 15-20% at a value of $12-15 million. This is double its present buying levels in only two and half years.

While the procurement picture is unclear, given that the amount of money spent on procurement is significant and given that this potential market is relatively stable, it represents an important area of opportunity for many Aboriginal businesses. At the local level where regional offices of the federal government may be found, contact with the federal procurement officers should be made in order to investigate the potential procurement demands for wood products and services. These officers are in most cases good to work with because they will know best what is bought where and for how much. They can also be very helpful in registering for the PSAB, in identifying upcoming procurement opportunities and in helping the bidder with the finer points of bid preparation and submission.

When examining local procurement, assessments should be made of the nature of the products bought, the frequency of such procurement, the volumes purchased and the price paid. By knowing such information it is then possible to determine whether to consider producing such products and to determine the level of quality and price at which they will need to be made and sold.

The federal government is a market well worth assessing. It could be a stable starting point from which local production meets a local demand. Once having done so expansion beyond this local level could then be considered.

5.3.2 Europe

Due to European Union restrictions imposed in 1993, green or unseasoned lumber from Canada was not permitted into Europe to control the pinewood nematode. All lumber, except for western red cedar, must be either heat treated or kiln dried prior to shipment to Europe. With most European sellers offering unseasoned wood, most Canadian wood has been uncompetitive since kiln dried or heat treated wood products are sold at lower prices. Consequently, construction grade wood exports from Canada to Europe have dwindled ten-fold in just four years. The major market demand remaining for Canadian woods has been for the higher grades of clear lumber or value-added and finished wood products.

France

France is beginning to benefit from its reforestation program which commenced some 40 years ago. It is now such a significant producer of hardwood and pine that it satisfies 75% of its

domestic demand for coniferous species and 85% of its deciduous sawlog demand. In the French market there is little confidence in Canada for its quality and service capability for value-added products. Quality in terms of grading is the primary issue given that Canadian grading is not on par with Nordic competitors. There are limited opportunities for the following:

- door frames;
- shutter stock to replace Nordic spruce and fir (though these shutters are increasingly being made of plastic)
- parquet flooring and paneling strips;
- hemlock veneer.

Germany

Germany is the second largest importer of wood products in Europe. While there are numerous opportunities in Germany they invariably exist due to exchange rates (breakpoints appear to be DM 1.50/dollar). Should Canadian interests wish to export to Germany they must be prepared to compete with Finland and Sweden for higher-end products and with Russia for lower-end products, all of whom can truck their products to market. Also, Germany has moved to just-in-time purchasing practices. This implies that Canadian producers face both shorter delivery times and increased competition with the Nordic countries, since those countries have cheaper and quicker transportation arrangements.

Germany provides, however, an important opportunity in a variety of areas, one of which is the DIY market. Germany is one of the strongest players in this sector satisfying a continually increasing demand for a wide variety of do-it-yourself products. Given that the DIY market normally represents bulk orders of lower-end products and the consequent need to produce large amounts of product, careful consideration of this potential opportunity should be taken.

Opportunities exist for:

- maple flooring and other light-coloured wood products
- mixed laminate such as hemlock-spruce-hemlock
- western red cedar garden furniture, shingles and shakes in small quantities to southern Germany
- spruce and pine of 28 mm x 90 mm in clears (which cannot be acquired from Finland).
- window and door stock.

Italy

Italy is the largest importer of hardwood in Europe. Its principle suppliers are the Nordic countries, Austria and Russia. Because Italy is important in Europe for its furniture manufacturing and woodworking, there is a constant demand for quality woods especially

hardwoods. Given that Italy is the European country farthest away from the Nordic countries, competitive shipping for Canada provides enhanced opportunities.

Opportunities in Italy exist for:

- window lamstock and blanks especially of Douglas fir as well as hemlock;
- pallet stock but competition with Austria, South Africa and Chile exists;
- hardwood dimensional stock (including hard maple, yellow birch, white birch and possibly aspen);
- high quality garden furniture (wester red cedar, in some cases as much as 4-5 containers a month).

United Kingdom

Over the last several years, Canada has been successful in penetrating the UK value-added market. Generally, Canadian opportunities exist for high quality clear grade raw material for the UK woodworking industry. However, competition exists from the Nordic countries for knotty and near-clear grades because of proximity and from others such as the U.S. who ship oak to Malaysia and Taiwan for manufacture into kitchen cupboard doors for export to the DIY market in the UK.

Opportunities in the United Kingdom exist for:

- flooring and sub-flooring;
- kiln-dried dimensional lumber;
- various DIY products including garden furniture, gazebos, related building material and accessories;
- clear lumber components and industrial remanufacturing stock.

Netherlands

In the Netherlands the DIY market is growing at a rate of 5% per year. In 1994 this industry represented $3.7 billion in value. Of this amount 88% of the products sold were imported. While not all DIY products are wooden materials, it is estimated that 25% of the total value was in building products alone.

Opportunities in the Netherlands exist for:

- laminated and finger-jointed window stock;
- cupboard doors;
- garden furniture related building materials and accessories.

Europe Conclusion

In general, Europe is dominated by exports form the Nordic countries and to a lesser extent Russia. Sweden was the first to enter the European value-added market and continues to expand on its position. Canada generally has a good reputation in Europe as a supplier of quality products but has not been able to remain competitive in construction grade materials since 1993. For Aboriginal suppliers at their early stages of entry into the value-added industry, the European market, except for highly unique products targeted at niche markets, may be too distant to service effectively and too expensive.

5.3.3 United States

The United States represents the largest, most easily accessible, and greatest volume potential as an export market for Canadian value-added products. Canada supplies 97% of the U.S.'s import needs for lumber. The U.S. is a major importer of value-added products covering the entire spectrum of the industry's output. Engineered wood products, garden furniture, ready-to assemble (RTA) furniture, wooden windows and doors, each represent millions of dollars in opportunity. While competition from Asia and Mexico exists for certain U.S. regions in certain product lines, Canada still remains a major player in the value-added industry. In the southwestern U.S., for example, Canada fills 30% of the market demand for doors ($49 million US) and 79% of the demand for wooden windows ($30 million US). In this region Canada is also the number one exporter of furniture parts. In the Tri-State region, Canada holds a 14% share of the millwork exports, exceeded in large measure by Mexico at 49%. However, given the fact that the region is a major importer and in close proximity to Canadian producers, if products are priced competitively, it could prove to be a very profitable market.

The U.S. has experienced considerable growth in the garden furniture industry (39%), fencing industry (14%) and in the cabinet industry (14%). It is anticipated that strong growth will also continue in the demand for ready-to-assemble furniture parts (10-15%) where a new market through outsourcing is evolving, (example, IKEA RTA furniture). The most common products bought are cut-to-size blanks, mouldings, rounds and dowels, drawer fronts, cabinet doors and edge-glued panels.

Opportunities exist in the U.S. for a wide range of value-added products both in the wood and non-wood sectors. Because of relative ease of shipment, as well as greater familiarity with the country and its market trends, the U.S. represents Canada's best export market opportunity for value-added products. For Aboriginal businesses, next to Canada, the U.S. is the market with the greatest potential to absorb their production and is the easiest market in which to gain experience and do business.

5.3.4 Japan

Canada supplies 50% of Japan's total lumber imports. Canada has a very close relationship with Japan in the 2x4 construction materials housing market supplying over 80% of this market in dimensional lumber. Hemlock suppliers play a large role in Japan's largest wooden housing segment — the traditional home or the post-and-beam housing market. Japan is known as one of the most demanding wood products markets in the world and will pay a substantial premium for high quality building materials. A major concern is the lack of presence in value-added building products supplied to Japan. Canada represents a small portion of this market and is seeking to increase its market share. Other than lumber, Canada exports primarily log homes, some kitchen cabinets, doors, windows and flooring to Japan. The Japanese housing market is becoming one of the largest in the world. The Japanese government is helping stimulate an even greater demand by offering lower interest rates, revisions to building codes and changes to land taxes. At the same time, Japanese estimates indicate that by the year 2000 construction labourers and craftsmen will decline in number by about 45%. This decline, combined with projections in housing demand, indicates that within ten years it will take over two years to complete a house from the date of order. As a consequence, Japanese builders are increasingly seeking labour-and time-saving building materials. The implications are for a steady and strong growth in value-added building materials of all kinds.

Canada, however, still trails U.S. and European competitors in Japan. For Aboriginal suppliers, while the market is significant, it demands a considerable investment of time and money to successfully market value-added products and to compete effectively with U.S. and European suppliers. There are also numerous non-tariff barriers such as culture and business practices which one must learn and respect to be successful. This situation suggests that Aboriginal companies may be better served by supplying other companies which already service Japan, and let them worry over the rigours of marketing in Japan.

5.3.5 Niche Markets

A niche market has been defined as a specialty market in which a company can provide a service or product which it can produce or provide better than any other company.

According to Dr. Jean Mater of Mater Engineering (1992), there are ten steps in developing a niche market:

1. List possible niche markets which are suited to your company. Look specifically for: a local or regional industry which may have special needs or requirements, changes in consumer needs and/or preferences, customers with technical problems, new regulatory regimes, under-served or unserved markets, gaps in price categories, spin-off products and the special needs of distribution channels.

2. Identify raw materials and determine where the supply of wood is coming from. For example, some of the wood may be waste from sawmills or low value wood which once transformed will have value. Thinnings, branches and biomass also provide a supply of raw materials for value-added production. Other sources of raw material include what has been termed urban waste, such as discarded pallets and wood refuse. Finally, another source would be underutilized species.

3. Make a preliminary shortlist of niches using what was found in numbers 1 and 2. Once this list has been completed, learn as much as possible about their markets, investment requirements, entry timeliness, reasonable risks and economies of scale.

4. Identify your company's weaknesses and strengths. Do the niche markets match the qualifications your management and their interests and do they have the specialized equipment and other resources necessary for the survival of the business? Also, can you potentially utilize unused plant space, and convert it over for value-added processing?

5. Identify the factors in the niche that meet company objectives, and determine the company willingness to commit to meeting the requirements. Market size, growth rate, potential profitability, ease of entry, technology changes, minimum regulatory restrictions, minimum competition and opportunity for export are some of the criteria which might be considered for selecting a niche. Also does your company have the necessary finances, marketing know-how and technological competence to make it work? As well, do you have an executive who is willing to dedicate the time required to develop the niche market?

6. Narrow the preliminary list of niches by matching market requirements with company ability and willingness to meet these requirements. List the preliminary niche markets on one side and the company objectives and criteria on the other. Compare the two sides and see which niche best suits your company. If the investment is too high for one niche market then scratch it from the list.

7. Learn from other companies the critical areas for success with these niche products. Determine what success depends on. For example, is it dependent on service, design or other factors?

8. Decide how to strengthen your company's competitive position in critical areas. First there is a need to determine the strengths and weaknesses of the competition and then determine where there is a hole that you can fill, for example, distribution or marketing and/or the service that other company offers. Can your company be better at providing what the customer wants?

9. Ask for advice from either a staff person who has experience in the particular market, a consultant, suppliers or distributors or even another firm which you may be considering for a

mutually beneficial joint venture.

10. Keep alert to the fate of products out in the market. The market and consumers themselves will more than likely determine the type of product you produce; what started out as one type of product may end up being a completely different product in the end. The example given by Dr. Mater was one of an entrepreneur who designed a toy with large wheels for children and the buyers were the grandparents. However, people saw the toy as a massager so the entrepreneur shifted the marketing scheme from toys to men's gifts and produced a line of massagers for men. This is an example of how the market determines the product line and the marketing strategy involved.

Although this is a somewhat generic approach to marketing wood products, every case is different and requires substantial experience, market knowledge and an understanding of the various demands of customers in differing segments of the market.

5.4 MARKETING

Marketing is often one of the most significant weaknesses of businesses and this is also true for Aboriginal businesses. Many Aboriginal interests have explained that even with products with which they are intimately familiar, they simply do not know how to connect their products to enough customers to make an ongoing business viable. In fact, most Canadian forest products companies have focused on selling commodities at any price and have not considered marketing as being that important. This lack of marketing knowledge and expertise by the larger companies has opened up significant opportunities for smaller producers and sellers, to develop strong market presences in niche markets in Canada, the USA and around the world. If you don't know your market or your customer, you need to find someone who can assist you in all or part of this important area of work. Successful companies know who they are selling to and what their customers want from them.

Selling a product, even to wholesalers, requires meeting the buyer, promoting the virtues of the product, revisiting the buyer, advertising and following-up with the buyer to ensure satisfaction and to secure further sales. Marketing may also require the production of sample products to show the buyer, or the production of printed materials both for promotional purposes and to explain the workings or benefits of your product.

> For all businesses the old saying is true "Early to bed, early to rise, work long hours, and advertise."

While there are different aspects to marketing such as personal selling, advertising and promotion, they are all interrelated and necessary for selling a product.

5.4.1 Personal Selling

Personal selling means meeting face-to-face with a buyer and promoting and selling a product. While some refer to the buyer as the consumer, the buyer may be a retailer or even a wholesaler. Whether consumer, retailer or wholesaler, each must be convinced to buy a product. The seller must be totally familiar with the product and how it was made, as well as its virtues or benefits over another similar product. Product samples, printed materials, a thorough knowledge of the buyer and appreciation for buyers' costs and assurances of production volumes and delivery times are all essential. Once initial contact has been made with a prospective buyer, follow-up with faxes or phone-calls in order to close the sale will be required. This is a time-consuming and sometimes costly exercise, but an essential part of any successful value-added business venture.

Given the potential size of most Aboriginal value-added businesses, as well as the nature of the products, such face-to-face selling will in the early stages of the business become the most important marketing aspect. Such an effort is not only important for product sales, it is also provides information the salesperson can return with to improve the product. Market information, opinions on style, quality and price and required volumes for committed sales can improve the product, production methods, pricing, timing of delivery and production volumes.

Marketing must serve two functions: the first, to sell your product and the second, to help make it better, cheaper or better suited to the demands and trends of the market. Hence, not only are your chosen marketing people moving your product; they must be your market eyes and ears.

5.4.2 Advertising

Not all of the potential Aboriginal value-added businesses will need an extensive advertising program. Some, especially in the early stages and for those selling locally, may require no advertising. This may change as product demand and capacity to produce greater volumes increase. Advertising is more important when moving a greater volume of goods and for services than it may be for selling products to a local market where face-to-face contact with buyers is possible. At a local level, advertising may be more a matter of the holding of a sale or be the act of showing a product to a local market (e.g. placing finished garden furniture outside of a retail outlet for the consuming public to see). Advertising can be an expensive undertaking. Newspaper or radio ads may not be appropriate to the market for a particular product. It is important to examine how others with similar products have advertised.

5.4.3 Sales Promotion

The major goals of successful sales promotion are to:

- stabilize sales;
- stimulate demand for products or service;

- communicate information about the product and its availability to potential customers;
- inform customers about the distinguishing qualities of the product;
- enhance the value of the product through attaching status to it or other elements which appeal to consumers;
- reduce fluctuations in demand and protect market position;
- create brand identity and build a positive company image.

According to Dr. Mater (1992), there are ten questions to answer when designing a promotion strategy:

1. What is the target market to be reached by the strategy?
2. Who are the persons and their positions in each customer target company to whom promotion should be directed?
3. What is the size of the market and number of customer firms to be reached?
4. What are the factors that influence the buyers in the targeted companies?
5. What are the objectives of personal selling, advertising and sales promotion in influencing these buyers?
6. What is the specific message to be communicated to the buyers?
7. What is the best means of carrying the intended message about the product?
8. What are the budget requirements for the promotional mix?
9. How effective is the strategy?
10. How effectively can the promotion reach potential customers?

5.4.4 Marketing Tips

There are twelve steps which are key to a successful enterprise in the value-added sector:

1. Start with products for which there is a local market. This will enable quicker sales and the ability to repay costs faster.

2. In the case of non-wood products, improve harvesting techniques and reduce post-harvest losses (i.e. storage).

3. Improve product competitiveness by reducing production costs, or by creating your own niche markets, or through improving resource management (i.e. improve yields).

4. Adopt a simple strategy; avoid complex marketing and production.

5. Start with one product and diversify slowly.

6. Diversify markets for each product.

7. Add value locally, for example, through processing and packaging, or by producing labels to serve different languages of different target markets.

8. Study available technology for improvements.

9. Know the required quality standards of your market.

10. Organize with other producers for collective strength for such things as storage, transport and negotiations.

11. Appeal to the environmentally-minded consumer with the quality of your product focusing on such things as harvest impact assessments or uniqueness.

12. Know all of your costs and price your product competitively.

Selling a product requires that the producer understands the value that a consumer attaches to the product. Therefore study your market, get to know your buyer and be prepared to be flexible when it comes to the changing moods of the marketplace.

5.5 DISTRIBUTION CHANNELS

Distribution, the final step in the marketing process, has been considered the science of making products available to consumers when and where they want them. It is the physical movement and transfer of ownership of a product from manufacturer to consumer. Without a means of getting a product to the end consumer (a successful distribution system), product design and differentiation, positioning to attract targeted customers, as well as product promotion are pointless.

There are variations in distribution channels, which have been classified as being one-step, two-step or three-step. The one-step distribution channel is characterized by the movement of a product from the manufacturer to the retailer/end-user (consumer); the two-step is from the manufacturer to the distributor/wholesaler and then to the retailer/end-user; and the three-step is from the manufacturer through sales representatives or brokers to the distributor/wholesaler and finally the retailer/end-user. The process is largely determined by the size of the producing firm and the size of the market for the products produced. Generally, steps one and two are the distribution channels relevant to small-and medium-sized firms, and step three to medium-and-large-sized firms. These distribution channels are those most commonly associated with the domestic market, because exporting usually adds one or more steps to the process.

5.5.1 Distribution Costs

The one-step process is most prevalent in Canada owing to the large number of small firms in the

value-added forest industry, particularly in the wood product, furniture and non-timber industries. Distribution channels affect revenue to the firm as well as costs at the market, since there are costs added on with every stage of the distribution channel, as shown:

	Mark-Up	
	%	Average
Manufacturers Level	10-50	30
Wholesale Level	15-30	27
Retail Level	27-33	30

Based on the average of these ranges, consumer prices for value-added products can be as much as 100% or more higher than their production cost. Variations in markup are a function of the marketing costs and financial risks that the manufacturer, distributor, office wholesaler, and retailer assume. Markups are also a function of the degree of influence that each player has over his respective customer. For example, if a supplier is one of only a few selling to many different buyers his markup will be high. If, on the other hand, the supplier is one of many selling to many buyers his influence over the market will be limited as will his mark up. The most vulnerable position of any supplier is one where many are supplying only a few customers. Typically the North American forest products industry is a many-to-many relationship with only few one-to-many opportunities.

5.5.2 Choosing the Best Way to Distribute a Product

Manufacturers look for distribution channels which best meet their customer needs. Most manufacturers of hardwood dimensional components tend to market directly to the finisher, such as a cabinet maker, without any middleman. Manufacturers of consumer housewares usually utilize a middleman. These middlemen can be wholesalers, agents or brokers. There are numerous small manufacturers who utilize wholesalers to reach retailers. Wholesalers act as an extension of your sales department. They may buy lumber from a mill and sell it directly to lumber yards or builder dealers.

There are distinct differences between distributing industrial wood products and distributing consumer wood products. They differ in four major ways.

- In the case of industrial products, 75% of manufacturers sell directly to consumers while less than 5% of consumer products are sold directly;
- The types of middlemen used for industrial products: can be wholesalers, drop shippers, manufacturers' representatives and agents or commissioned salesman. For consumer wood products the middlemen are usually retail stores and major warehouses.

- The choice of channels are limited for industrial wood. Distribution channels for consumer products can include many more avenues, such as mail order catalogues, direct mail database and cable TV.
- The final difference between the two product industries is the level of service associated with the product itself. In the industrial wood sector, service is everything, and all members of the channels are responsible for customer satisfaction. In the consumer wood products chain, no one distributor or retailer offers service for the product; customers are usually referred back to the manufacturer. This is changing somewhat today with the expansion of the DIY market and stores which provide service and technical assistance in order to attract more customers.

Whether you are in the industrial market or the consumer market, the choice of distribution channels is crucial. There are four main factors to consider when selecting distribution channels, they are:

- the customer segment for which the product is targeted;
- your firm itself and its characteristics;
- the product; and
- distributor co-operation.

Customer segmentation increasingly requires manufacturer-to-buyer sales. This is especially true when the customers are clustered in one part of the country and where direct distribution can be used to service buyers that are in small numbers but placing large orders. While consumer products tend to use middlemen, the trend is changing somewhat with the increasing number of self-service, mail order distribution channels. A general rule which applies to consumer products is that the more standardized the product, the more middlemen are involved. Also, the lower the unit value of the product, the more middlemen are involved. With regard to the firm and its characteristics, a company with its own financial, management and marketing staff is less likely to use middlemen. A financially strong company may wish to control its own marketing in order to eliminate the cost of the middleman, as well as to link itself directly with its customers. A company with such in-house marketing can better control design, manufacture, brand, price, promotion, purchasing, stocking, displaying, selling, delivery and, for the most part, financing.

The use of middlemen or distributors, however, offers some companies the ability to focus on the work they do best, manufacturing. The companies which benefit the most from a distributor are the smaller ones which cannot support a full sales staff. Distributors can also provide technical support which many small manufacturers lack, in exchange for the manufacturer yielding some degree of contact with its customers. Wholesalers can, on occasion, provide relief to small manufacturers from cash flow problems, because the wholesaler usually pays for products upon shipment rather than paying when they themselves receive monies from their clientele.

Middlemen, whether they are wholesalers, distributors or agents, are important to the distribution channels. Each functions under a set of business rules which determines how they are paid.

There are merchant wholesalers and agents, brokers or manufacturers' representatives. A merchant wholesaler can provide support to small companies, especially those with limited financial resources or experience by reducing training costs, supporting a sales force or warehousing since the wholesaler stores the product on their own site. They are also able to provide market information to the manufacturer, helping to keep the manufacturer in tune with market demands and trends. The major differences between wholesalers and independent manufacturers' representatives or agents are that wholesalers take possession of the product while agents do not; wholesalers mark up the cost from the manufacturer to make their money, while agents work on a fixed commission on the products sold; wholesalers provide customer credit, agents do not; wholesalers pay for storage and inventory as well as delivery, agents do not; wholesalers have a sales force and promote products, while agents only match buyers with sellers. However, agents help the manufacturer eliminate the cost of training an entire sales force, give direct and immediate access to the market and provide manufacturers greater marketing flexibility by using their contacts, knowledge and familiarity with the market to expand the sales of the products.

5.6 CONCLUSION

Marketing is a critical area of importance to any successful value-added business. It begins with market research even before you have a product. It is the business of both selling and collecting market information which connects the manufacturer to the demands and trends of the marketplace. It is a field filled with numerous specialists in advertising, planning, promotion and research. For many Aboriginal businesses who lack in-house marketing expertise, it may be necessary to hire a marketing specialist with specific product knowledge. This is especially critical if you are venturing outside the local market and are entering a new market or a larger, more competitive one. An important element of the contract with any outside specialist would be the requirement to work with Aboriginal staff in order to build in-house expertise.

Constant evaluation of the market before and after production is underway and sales have been made is needed to ensure familiarity with market developments and trends and necessary for production and marketing plan adjustments. Innovative marketing must be explored, such as producing labeling in the language of the target market or promoting products in a way which appeals to customers' particular interest (i.e. Aboriginally-made, "North Woods" products, or made with wood from a sustained forest). In today's markets, manufacturers are constantly looking for a distinguishing feature that will give them an edge in the marketplace.

Aboriginal businesses can find good opportunities in the value-added sector. While access to a source of wood will be a challenge for some, the current climate of more businesses wanting to work with Aboriginal businesses is not only encouraging, it also creates an immediate market for certain products. Also, the increasing interest of consumers for Aboriginally-produced products, such as furnishings with Aboriginal motifs and wild food products, creates a market opportunity unique to Aboriginal producers. Finally, the demand for products historically used by Aboriginal

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Peoples, such as foods or medicines, enables Aboriginal groups to use their traditional knowledge in productive and meaningful ways, as well as to preserve and protect this knowledge.

It is evident that Aboriginal groups have in many instances only the forests upon which to depend for their self-reliance. However, entry into the value-added sector clearly means doing more with less, reintroducing old ways of mixed-use forestry and traditional knowledge, while creating companies which are small-to-medium in size and which generate both revenue and employment for Aboriginal People at home.

6 CASE STUDIES

The following case studies are presented in this document in order to show how First Nations have succeeded and might succeed in developing successful value-added forest industries. These examples are intended to help show how these businesses were developed, the nature and scope of their initiative, as well as the lessons learned. It is hoped that others may learn from these cases in order to develop their own value-added businesses. With the contacts provided in each case, it is also hoped that greater communication will help to ensure First Nations' success in value-added enterprises.

6.1 THE NAK'AZDLI FIRST NATION, TL'OH FOREST PRODUCTS

6.1.1 Background

The Nak'Azdli First Nation is a member of the Carrier-Sekani Tribal Council and is situated in central British Columbia, about a 1½-hour drive from Prince George. In 1993 the Nak'Azdli First Nation and a local non-Aboriginal company, Apollo Forest Products Ltd., formed a joint-venture sharing equally in a new finger joint and I-joist company called Tl'oh Forest Products Incorporated. The company grew from a great desire within the First Nation to develop its own economic interests and to engage its people in meaningful employment on their own reserve. Some short 10 years after the process of examining what might be undertaken by the First Nation, where at the time there was no economic activity, Tl'oh Forest Products now employs 60 First Nation members in the processing plant and a further 10 people in the field in timber cruising and logging.

6.1.2 Introduction

As is the case with many Aboriginal peoples, the Nak'Azdli, until the 1990's, lived on a reserve that had no economic activity of any kind. Unemployment was nearly 50% and even for those who were successful enough to find a job, wages were low and the future dim. Yet while this was the case on-reserve, all around them, on the very lands they had been using and are still using for traditional activities, existed large-scale and successful lumber operations employing hundreds of people. There was even an access road which was used by these lumber companies which passed right through the reserve. For years the Nak'Azdli people had to stand by and witness the harvesting of the forest, the disrespectful use of their land and the growth and prosperity of companies and non-Aboriginal people all around them.

In 1987 the Chief of the Nak'Azdli First Nation, Leonard Thomas, and councillors met to discuss the deplorable situation of their reserve. While they knew that their reserve was in an entirely unhealthy situation, they also realized that the only way in which they could improve the current situation was to engage in some type of forest-based economic activity. They were also aware that, even though there were numerous successful lumber and harvesting operations in the

vicinity of the reserve, few of these operations employed First Nation residents. Canadian Forest Products for example, the largest licence holder in the Nak'Azdli traditional territory, had less than 1% First Nation members in their employ. On reserve, unskilled youth comprised a large portion of the population and were almost entirely unemployed. Clearly, employment that provided some sense of longevity was desperately needed. The main problems encountered by the First Nation were that they did not have the financial resources, forest-based business skills and a supply of timber to initiate a meaningful venture. Leonard Thomas and Harold Prince, the current Chief, realized that despite their lack of money and business skills it was up to them and the other councillors to pull the Nak'Azdli people out of the situation that they were in.

In the 1980's, there were 3 lumber mills in the vicinity. Apollo Forest Products had 100 employees of which only two were Aboriginal. While the Nak'Azdli realized the severity of this situation and were negotiating for a concession of 2,000 cubic metres of wood, the provincial government kept refusing the request on the grounds of their lack of experience and the fact that the First Nation did not possess a lumber mill.

In 1992, the government began advertising for the issuance of small-business timber licences on lands near the reserve. As in the past, it appeared that the new licences would be given to existing forestry companies, and that once again, only trickle-down benefits would be all that accrued to the First Nation. This time, however, there was a difference. The road that would service the new licence area and which had been used by non-Aboriginal interests for years, passed directly through the reserve. While First Nation members had watched logging trucks access this road before, nothing had been done in protest. Realizing the importance of this access, First Nation leaders organized a protest, blocking the road. The aim was to bring attention to their cause and to endeavor to bring stakeholders to the table to negotiate. Within six hours, public officials agreed to discuss the situation and to consider Nak'Azdli interest in the licence bidding process. Numerous meetings with the province and others ensued. The province indicated they might provide the Nak'Azdli the licence if they were able to establish a joint-venture with a company that possessed a local mill.

On the strength of their accomplishments, the Nak'Azdli approached four companies in the area to propose a partnership to bid on the licence. Bids from three companies were then prepared and provided to the First Nation. The Nak'Azdli, however, wanted something different in the bids. Not only did they want an equal partnership, they also wanted a new operation (mill) to be established on the reserve and they wanted bids to address the need for 75% of the employees to come from the Reserve. For the first time the Nak'Azdli were actively pursuing a major economic venture for the community. A sense of future and promise had begun to filter through the reserve.

6.1.3 The Business

Once bids for a partnership were secured, meetings and negotiations took place and the difficult

task of finding the right partner commenced. The First Nation leadership knew they were inexperienced in such matters and knew that they could not operate on gut instinct alone. To offset their inexperience, the First Nation hired an outside consultant, Mr. Greg Taylor, to provide them much needed technical and business expertise.

While each of the bids were somewhat different, they all come with their own merits. That of Apollo Forest Products Ltd., however, provided something different. It addressed the desires of

> "*When we entered into the partnership, 75% First Nation participation was one of the goals of the Nak'Azdli First Nation. We had no problem with that. The operation is built on Indian reserve land. We wanted to be a part of their community. We wanted them to have pride in the operation.*" Scott Shettell; General Manager, Apollo Forest products Ltd.

the Nak'Azdli for a mill to be established on the reserve and it respected their interest for 75% of the employment to come from the First Nation. But further, the Nak'Azdli found the attitude of Apollo officials, mainly their respect for the Nak'Azdli's sense of community, made it easy to work with them. While the Apollo bid provided elements that were somewhat harder to swallow, such as loan repayment schedules, the attitude and the respect for Nak'Azdli interests demonstrated by officials of Apollo won the day and Tl'oh Forest Products Incorporated was born.

Tl'oh Forest Products is a finger joint and I-joist mill that provides approximately 50,000 board feet a day using planer trim ends from other mills. A Nak'Azdli run company, Nak-Al-Koh Timber, ships logs to a sawmill owned and operated by Apollo Forest Products. In return, Apollo provides the planer trim ends and economy lumber from their mill to the finger joint mill owned by Tl'oh Forest Products. Everything, including ownership, is split 50/50 between Apollo and the Nak'Azdli (Treaty News, September 1996)*[1]

With this joint-venture the Nak'Azdli have an equal share in a new business, they would eventually have a role in management of the plant, they retained full ownership of the timber licence and they could hire their own people both at the plant and in forest management. The Nak'Azdli had managed to offset their lack of experience by developing a joint-venture with an experienced company, while at the same time, providing an enormous boost to the economy of the reserve.

[1]* The Board of Directors is shared equally by Apollo and the Nak'Azdli. Because Apollo has a lengthy history, senior management of the plant rests with Apollo until such time as First Nation members are trained and experienced enough to take over.

> *"The Nak'Azdli have the lead role in the mill. The small business licence is under the First Nation's name. . . . . although we are in a 50/50 partnership, the mill is still considered Nak'Azdli's mill. It is on our reserve, and our people have the first priority. It is identifiable as our mill."* Harold Prince

The new company (Nak'Azdli Koh Timber Ltd.) was established to apply for the Bid Proposal Timber Sale under B.C.'s Small Business Forest Program and to utilize the entire estimated volume of 477,785 m^3 authorized for harvest. The timber would permit the establishment of a state-of-the-art value-added manufacturing operation in Fort St. James on the Nak'Azdli First Nation reserve. Not only was this accomplishment important for First Nation self-reliance, it was also important as a step in the progress toward the settlement of outstanding treaty claims.

The company has as its objective to contract on a priority basis with First Nation logging contractors for all aspects of timber harvesting and to supply logs for processing to the Apollo sawmill. Technical support is to be made available from Apollo.

Tl'oh Forest Products, the Nak'Azdli/Apollo joint-venture, is the plant operation built on the reserve. Its current purpose is to produce finger joint two-by-fours and engineered I-joists. The plant itself is some 40,000 square feet in size and had an original price tag of $5.3 million. Its primary product was to be wood I-beams, one of the new engineered lumber products that is a substitute for traditional wide-width dimensional lumber used in wood frame construction, including floor and roof systems for residential and non-residential construction. The secondary product was to be 9-foot length finger joint studs. The I-joists production was established under a licence agreement between NASCOR Incorporated and an Apollo marketing company. The agreement enabled Tl'oh to be the first and sole producer in Northern B.C. and the second in all of B.C. There are only two other "brands"of wood I-beams being produced, of which NASCOR is the second largest manufacturer. The attractive element to this agreement is that NASCOR joists have building code approval and proven market acceptance.

Wood I-beams are becoming a preferred substitute for conventional wide-width dimension lumber joists because of their significant advantages which include: uniform size and strength, stronger and less expensive than most other joists, interfaces with conventional building materials and systems, cost effective in use and installation, dimensionally stable, lighter and easier to handle than dimension lumber joists, purchase includes computerized joist layout plan and yields more economical floor and roof systems because of longer spans and greater on centre spacing.

The licence agreement between Tl'oh and NASCOR guarantees Tl'oh the exclusive manufacturing right in northern B.C., without the intrusion of other NASCOR licensed manufacturers. The licence provided Tl'oh the authority to market in northern Alberta, north and northwestern BC and the Lower Mainland of B.C. A distinct advantage for Tl'oh is that it would be able to produce its own cord lumber in the form of the finger joint output.

While the Nak'al Koh Timber logging activities were to provide one job in cruising, layout and supervision and 9 jobs in logging and hauling, the main benefit of the Timber Sale Licence to Nak'Azdli First Nation was to be the establishment of employment at the Tl'oh Forest Products value-added plant.

The goal at Tl'oh Forest Products was, and still is, to ensure First Nation employment is truly fostered throughout the organization from managers to supervisors, tradesmen, production workers, machine operators and custodial staff. The less physically demanding work in the Tl'oh plant also meant that there would be job opportunities for women.

However, despite the partnership, the market potential and the great promise provided by the new company, the Nak'Azdli had yet to raise the money and build the plant. While the original activities to find the right partner, develop a sales agreement and bid for the timber licence began in 1992/93, it would be another 2 years before the plant actually opened. The licencing agreement was slow and the search for money even slower. Meetings, planning, training plan development and negotiations became the order of the day. The First Nation had on a few occasions asked for ministerial approval to transfer monies from one First Nation account to another while financial support in such cases as training worked its way slowly through the bureaucracy. Allowances were provided instead to cut and sell timber before the value-added plant was established in order to use these revenues for part of the financing of the plant. Apollo itself had also to be negotiated with to loan money to the First Nation for plant construction. Even federal government offices outside of regional ones with which the band had previously

worked had to be met with to secure much needed monies. In all, because of the length of time taken with licencing and with securing the financial resources, the plant opening fell almost a year behind original deadlines. Because of these delays, Apollo itself imposed new conditions which resulted in even further negotiations. Finally, after extensive work on fundraising and site preparation and construction, the mill finally opened on December 12, 1995. Tl'oh Forest Products had become a reality, training was provided, production commenced and, in the first year of operation, the First Nation had repaid $1.8 million of its loans.

6.1.4 Today

The Nak'Azdli had accomplished what for years it had been saying should be done. It had done so despite the odds and its people have been provided a future.

> *"Through economic benefits we realize our self-reliance. A joint venture between corporations and First Nations who have been progressive in developing their business attitude and expertise, and who have been active in trying to promote training and education with their membership, is probably the most successful way to raise the economic viability of the First Nation community. It provides pride and loyalty and people work a lot harder when they feel that they have a stake in an organization of their own."* (Shettell)

The Nak'Azdli still are working hard to enlarge upon their success. Training is being provided, not just in plant skills, but also in life skills. Forest management activities are recognizing increasingly the need to embrace other uses such as hunting and trapping, as well as of conservation (e.g. buffer zones near rivers). Also the First Nation is looking forward to senior management positions being filled by First Nation members. Nak'Azdli Directors of Tl'oh are themselves becoming more familiar with their business and are taking on more authority over the direction of the company.

Today, a little over a year from start-up, Tl'oh is near reaching its targets for finger joints and new markets are being pursued. Short-term loans with Apollo and with the Royal Bank have been paid ahead of schedule and, most importantly, there is a new sense of pride and future in the First Nation.

But perhaps most important of all, new businesses beyond Tl'oh, have been created. The Nak'Azdli First Nation purchased Mount Pope Building Supply Ltd. which presently employs 6

First Nation members. They also operate the Petro Canada Gas Bar, which employees 28 full- and part-time First Nation members. Nak'Azdli Construction is owned by the First Nation and provides seasonal construction employment. The First Nation took over the Saint Maria Goretti School and commenced operating it in September 1994. Koodeen Trucking and 3 silviculture contracting businesses are owned and operated by Nak'Azdli First Nation members.

There is a growing interest and ability to participate in the wage economy being demonstrated by Nak'Azdli First Nation members. A new level of capacity and a new feeling of entrepreneurship have been created, all from the vision of a few.

6.1.5 Lessons Learned

1. In the view of Leonard Thomas perhaps the most important factor in the success of any joint-venture is the structure of the agreement. The deal has to be fair and it has to be practical, but it also has to recognize the aspirations of both partners. In the case of the Nak'Azdli this meant the construction of the plant on the reserve. It had to be recognized as a Nak'Azdli plant, a factor in the evolution toward community self-reliance. It had to address community employment needs as well as training and education, not just in work skills but also in life skills. The Nak'Azdli had also to relate to a broader community and to recognize that by working with non-Aboriginal People their success would have a much better chance of being sustained.

> According to Shettell, *"as negotiations went ahead to put the partnership together we were impressed with the attitude and business-like approach (of the Nak'Azdli)... We are very pleased with our working relationship. It is probably one of the best joint ventures in the province"*. Chief Prince says that the partnership is very good. *"The head people are very positive and optimistic; they worked very hard. We want to make it a model plan for other Aboriginal Peoples"*.

2. While the First Nation is seeking even further economic opportunities, it is holding steadfast to its original plans and targets for Tl'oh. The First Nation is aware of other opportunities for value-added products but their focus is on the finger joint and I-beam production interests.

3. Any new Aboriginal venture, and it is certainly true of Tl'oh, must endeavor to accommodate, within reason, traditional practices. If a trapper wishes to undertake his/her

annual trapping, then the human resource plans of the company should be flexible in this regard. Tl'oh provides such recognition in their planning which speaks directly to the issue of sustainable cultural development.

4. The lesson to be learned by industry and governments is that Aboriginal groups can work with non-Aboriginal interests when the partnership is respectful of the needs and aspirations and circumstances of Aboriginal Peoples. The Nak'Azdli is a case in point and could be used as an example to others, both Aboriginal and non-Aboriginal alike.

5. Tl'oh began with a vision of a few First Nation members who possessed the fortitude to create a business despite a lack of experience and money. What has emerged is not only a new business on the reserve, but also a new spirit of entrepreneurship. New non-forest interests have been created and a new sense of future has been established. The community is now far more self-reliant than ever before and its people, especially its youth, have promise. The new value-added company, while important in itself, has been a catalyst for a whole new beginning, where jobs, pride and community stability have emerged.

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6.2 VALUE-ADDED SOFTWOOD SPECIALTY PRODUCTS FOR ENGLAND

The following case study is presented as written in the Newfoundland Government report entitled "Evaluation of Development Opportunities of the Secondary Wood Products Industry of Newfoundland" (Brudel Engineering, 1995). It is presented here because it provides a complete picture of an offshore/export opportunity.

6.2.1 Overview

The market opportunities discussed in the following paragraphs relate to the manufacture of value-added softwood specialty products for sale to markets in England.

Although specialty products can be manufactured using a variety of different hardwoods and softwood species, the following discussion concentrates on those products that might be manufactured using Newfoundland spruce and fir lumber.

For the purpose of this report, "specialty wood products" is a label given to those products that are used for non-structural purposes. Included in this category are the following items: flooring, window frames/sashes, paneling, mouldings and many visually-graded finished products. Within the broad spectrum of "specialty wood products" we have chosen, for simplicity, to concentrate on paneling products.

6.2.2 Markets

The British construction market is dominated by extensive use of brick, concrete and other traditional non-wood materials for both structural and exterior finishes. However, wood in all of its forms is highly accepted for use in doors, windows, stairs, flooring, mouldings, interior paneling and other decorative forms.

Britain's annual wood requirement is approximately 10 million cubic metres of which 80% is imported. Specialty wood product consumption is thought to be 2.5 million cubic metres or 25% of the total wood consumption. Trade sources suggest that as much as 90% of specialty wood products are produced within England.

The low import penetration of the "high end" or "specialty" lumber forms is indicative of a very large and diversified domestic wood processing industry specializing in new design and replication of a wide variety of traditional forms of wood products. Although this installed capacity will be difficult for a Newfoundland producer to overcome, the DIY market is thriving and increasingly the public is purchasing ready-to-use finished wood materials for self-installation. It is to this market that the panel products described below would be targeted.

Over the last decade, the DIY market has experienced major growth. There has occurred a

displacement of the small specialty shops such as ironmongers and local timber merchants by large outlet chain stores. These stores sell a complete range of building, gardening, garden furniture and decorative products to the general public and smaller building and renovating contractors.

6.2.3 Product Description

Panels

The following paragraphs concentrate on the manufacture and marketing of "panel products". Specifically, "V-Matched" panel products for interior use are discussed.

Although the total market demand for this product within Britain is not known with any certainty, a representative of Taylor Maxwell Timber Ltd. (Mr. Alistar Brown) has assured us that there would be no difficulty for his firm to move between 1 and 2 million fbm of this product annually.

The above product is manufactured from spruce or fir lumber with a moisture content of between 10-12%. The material used in its manufacture must be solid knot material with no loose knots being accepted. The product is sold on a 12.5 mm x 100 mm count despite the fact that its overall dimensions measure 9 mm x 95 mm. The lengths required are: 1.8 m (71 in.), 2.1 m (83 in.), 2.4 m (95 in.) and 2.7 m (106 in.), although the 1.8 and 2.4 metre lengths are the most desirable.

The finished product is to be bundled to length into bundles of six pieces. The customer's own label is placed on the top panel and then the bundle is shrink wrapped (as opposed to spiral wrapped). Once wrapped, the bundles are (must be) palletized (144 bundles to the pallet).

By-Products

Two marketable by-products are anticipated from the manufacture of the panel products: bed frame stock and industrial shorts. Both of these products will be sold to the mainland through brokers.

6.2.4 Distribution Channel

The panel product would be sold directly to the DIY buyer and delivered to Leeds, England. In the case of the above product, Taylor Maxwell Timber Ltd. would demand a 6.5-7% commission, depending upon financing arrangements chosen by the supplier. It should be noted that, unlike a lumber broker who traditionally takes a 3-4% commission for commodity lumber products, a timber agent, such as Taylor Maxwell Timber Ltd., moves smaller-sized parcels of lumber into higher-end markets at an understandably higher rate of commission.

6.2.5 Pricing

Although the selling price is something that would be negotiated between the producer and the buyer (the DIY purchaser), a Taylor Maxwell Timber Ltd. representative has suggested that the current price is in the range of £220 per cubic metre (£1 sterling=$2.15 Cdn). This price would be a delivered price to Leeds, England, inclusive of the 4% duty which is chargeable in the UK.

6.2.6 Operational Review

Raw Material

The raw material used in the manufacture of the "v-matched" panel product is a select grade of spruce and fir lumber. This grade, once again, does not have to be clear but must contain only a few knots and those must be small and solid.

The source of this raw material can be any sawmill sawing lumber between 6-10 ten feet in length. Both 1"x4" and 2"x4" material would be acceptable. It should be noted that the study team has chosen the finished product based on its excellent match with the available lumber supply in Newfoundland (in terms of length and cross-sectional dimension).

This product would be sorted separately at the greenchain of the sawmills, piled and transported to the processing facility. The price one could expect to pay for such a product from the various sawmills throughout Newfoundland would be in the range of $300 per Mfbm for those lengths less than 8 feet and $475 per Mfbm for those lengths longer than 8 feet (prices, f.o.b. buyers facility).

The paragraphs below describe in detail the major steps in processing raw lumber products into panel product and associated by-products.

Sorting at Green Chain

The high grade 1- and 2-inch nominal lumber will be sorted at the greenchain of the sawmill by a sawmill employee. This lumber can be "square-piled" without stickers, if it can be delivered to the central facility within one or two weeks from its manufacture. Any longer holding times would require that the lumber be stacked using lathe every tier.

Grading Sorting and Stacking

Upon receipt of the lumber, the central facility must immediately grade the lumber. This can be done manually with two people who break down the incoming packages and re-pile them into one of three piles: spruce accepts, fir accepts and rejects. This process would be identical for both the 1- and 2-inch lumber.

When piling the lumber into one of the three categories, stickers should be placed between each tier of lumber, which will accelerate the air and kiln drying of the lumber. It is recommended that 3/4" thick stickers should be used for this step.

The 2-inch thick spruce and fir accepts will be further processed into panel products, while the rejects will be processed into industrial shorts. The 1-inch spruce and fir accepts will be processed into panel products and the rejects will be processed into bed-frame material.

Air Drying

Air drying will be an important step in determining the overall quality of the finished product, whether it be a panel product or bed frame stock. Air drying is required to equalize the variation in moisture content of the green lumber and to reduce dry kiln time and associated costs.

The length of time required for air drying would largely depend upon the incoming moisture content of the lumber and the atmospheric conditions while drying. As a rule of thumb, it is recommended that the moisture content of the lumber be between 25-30% prior to kiln drying. This would require that the lumber air dry for an estimated 2 and 3 months, spruce and fir respectively, prior to kiln drying.

Kiln Drying

The kiln drying of lumber would be accomplished in a conventional steam kiln. The lumber would be dried to a moisture content of between 10-12%. The spruce and fir lumber would be dried separately, reflecting the different schedules required for each.

Multi-Rip Operation (2-inch lumber)

Unlike the 1-inch lumber, the 2-inch will first be processed on a two-head band rip saw prior to entry into a moulder for profiling. The incoming thickness of the 2-inch lumber is expected to be 1-3/4" or 44.45 mm. Many mills in Newfoundland are not sawing to such a small target size and this dimension may be as high as 50.80 mm. In any event, with a 1/8" (3.175 mm) thick bandsaw, three pieces of panel stock can easily be made from this nominal 2-inch piece of lumber.

Profiling 2-inch Lumber

The 2-inch lumber, once ripped into three 12.7 mm-thick pieces on the multi rip bandsaws, will be processed on an 8-head moulder to machine the required profile onto the board.

Profiling 1-inch lumber

The 1-inch lumber will be processed directly into the moulder where it can be profiled and ripped into two pieces all in the same pass through the machine.

Trimming Panels

Once profiled, both the panels made from the 2-inch stock and the 1-inch stock must be precision end trimmed (P.E.T.) to the specified lengths (1.8 2.1, 2.4 or 2.4 metres). This step is accomplished on a two-saw trimmer.

Trimming Non-Panel Stock

Industrial Blanks: The rejected 2-inch lumber will be precision end trimmed into varying lengths depending upon market demand and the length of the stock. It is important to maximize the number of pieces that can be cut from the original stock. Therefore, the plant management should secure markets for industrial blanks that best maximize the recovery based on their raw material supplies. Some of the common lengths sold in the industrial market are 12, 24, 36, 48, 50 and 60 inches. Markets for many combination of lengths exist; it will be management's responsibility to match the market requirements with their raw material lengths to ensure the best recovery is obtained.

Bed Frame Stock: As in the case with industrial blanks, the bed frame stock will be processed on the precision end trimmer in order to accurately cut the stock to the lengths required by the marketplace.

6.2.7 Labour Requirements

The proposed facility would require 11 full-time employees, assuming full production. The number of positions and their titles include:

- office/plant manager (1)
- office clerk (1)
- fork lift operator (1)
- sorting, grading, and drying (2)
- manufacturing floor-ripping and profiling (2)
- manufacturing floor-trimming and packaging (3)
- manufacturing floor-palletizing and shipping (1)
- Total (11)

6.2.8 Equipment and Building

The total facility will require approximately 6.5 acres. The buildings required are as follows:

- office
- sorting/piling shed
- drying sheds
- dry kiln
- manufacturing facility
- storage facility

The equipment required is as follows:

- mobile fork lift
- two-head Baker bandsaw
- an eight-head moulder
- plastic wrapping machine

6.2.9 Production Capabilities

The study team estimates that the facility would have the capability of processing 10,000 board feet or 24 cubic metres of finished product per eight hour day. During a year consisting of 50 weeks of operational time, it is anticipated that the facility could process as much as 2,500 Mfbm or 6,000 cubic metres of finished product.

6.2.10 Financial Analysis

Estimated Capital Cost: The total capital cost of the proposed facility is estimated to be $1.1 million, including land, buildings, kilns, equipment and forklift. A breakdown of the capital cost estimate is provided below.

land	$5,000
office	15,000
office equipment	10,000
pre-drying sheds 5@160 feet long	80,000
package dry kiln, capacity of 43,000 Fbm	145,000
boiler facility, 125 hp, light oil	125,000
two-head Baker band saw	25,000
eight-head moulder	195,000
precision end trim table	25,000
shrink wrapping machine	20,000
mobile forklift	70,000
Manufacturing Building, 3750 sq. ft.	187,500
Storage shed, 2,500 sq. ft.	75,000
Construction costs	125,000
GRAND TOTAL	$1,102,500

Estimates of Revenues

It is estimated that the total annual production will be 2.5 million board feet of finished product. However, this total includes revenue from the sales of three different products as described below:

Product	Volume (Fbm)	Value ($/Mfbm)	Revenue
Panel Products	1,750,000	$1,117	$1,954,750
Bed Frame Products	375,000	$400	$150,000
Industrial Components	375,000	$300	$112,500
Total	2,500,000		$2,217,250

Estimate of Expenses

The expenses associated with the manufacture of panel products and their resultant by-products are comprised of the following items:

- raw material
- labour
- utilities
- transportation
- spare parts and maintenance
- fuel and lube
- financing

The paragraphs below provide the study team's estimates of the anticipated expenses associated with each of the categories above.

Raw Material Costs: can be categorized into four different categories. Each of these categories would involve a different price reflecting the products current market value. The table below provides a description of each raw material category, the anticipated raw material volume mix and an anticipate price for each category (f.o.b. plant).

Product Description	Volume (FBM)	Price (Per MFBM)
2" Select-84" and longer	437,500	$475.00
2" Select-83" and shorter	1,312,500	$300.00

Product Description	Volume (FBM)	Price (Per MFBM)
1" Select-84" and longer	437,500	$425.00
1" Select-83" and shorter	1,312,500	$300.00
Total (avg.)	3,500,000	($343.75)

As described above, the total volume of raw material to be purchased would be approximately 3,500,000 fbm which reflects a 2,500,000 fbm volume of finished product sales assuming a recovery of 75%.

Therefore the total raw material cost per annum is estimated to be $1,203,125.

Labour Costs: As discussed earlier, the total number of persons to be employed by the facility is estimated at 11. Assuming an average salary, including benefits, to be $25,000 for each of the hourly employees (10 in total) and a salary of $40,000 for the plant owner/manager, the total annual gross labour cost would be $290,000.

Financing Costs

The total cost of financing the proposed facility and its operation will be made up of two items: the cost of financing the capital costs and the cost of financing the working capital. For the purpose of this analysis, it has been assumed that the investor will invest 25% of the fixed capital and 50% of the working capital totals and that bank financing at a rate of 10% will be used to finance the balance. It is also assumed that the term loan (for capital costs) will be paid back over a period of 15 years.

Based on the above assumptions, a term loan requirement of $825,000 (75% of total capital outlay) and a line of credit requirement of $250,000 (50% of total working capital required), the total annual financing cost is estimated to be $147,059 comprised of $122,059 in interest and principle payments on the term loan and $25,000 interest payments on the line of credit.

Utility Costs: would be comprised of power and telephone costs. The study team has estimated these costs to be $30,000 and $6,000 respectively.

Transportation Costs: Since the study team has estimated raw material costs f.o.b. facility, the only cost of transportation to be considered for this analysis is the cost of transporting the material from the facility, through Halifax, to Leeds, England. The table below provides the study team's estimate of transportation cost for each of the three finished products.

Product	Destination	Volume (Mfbm)	Transportation Cost $/Mfbm	Annual Cost ($)
Paneling	Leeds U.K.	1,750,000	$170	297,500
Bed Frame	Toronto	375,000	$80	30,000
Industrial Shorts	Toronto	375,000	$80	30,000
Total		2,500,000		357,500

Maintenance Costs: estimated at $30,000 annually.

Fuel and Lube: costs would include fuel for the forklift and light oil for the dry kiln. The total fuel and lube estimate is $55,000 annually.

Cash Flow and Net Present Value Analysis

Cash Flow from Operations: At production levels of 2,500,000 board feet per year, the annual after-tax cash flow is projected at $83,125 during year one. This cash flow is expected to increase continually throughout the life of the project, reflecting a progressively lower capital repayment each year.

Net Present Value Analysis: The present value of the projected cash flows from operations, discounted at a 13% discount rate, has been calculated at $785,135. Given that the initial investment (in both fixed and working capital) is to be $525,000, the project is forecasted to be highly profitable. Described in another manner, the initial investment of $525,000 would yield a 19.5% return after tax annually.

6.3 EEL GROUND FIRST NATION, STRAIGHT ARROW SPECIALIZED LUMBER PRODUCTS

6.3.1 Background

The Eel Ground First Nation is located on Highway 425 approximately 6 kilometres southwest of Miramichi City (formally the towns of Newcastle and Chatham) in the Province of New Brunswick. Eel Ground First Nation consists of two major forested tracts (IR#2 and IR#8), both of which are federal "Indian Reserve" lands. The largest concentration of First Nation members lives in Eel Ground IR#2 along the banks of the Miramichi River. A small concentration of First Nation members are located at the Big Hole Tract (Eel Ground IR#8) along the Northwest Miramichi River.

Eel Ground First Nation IR#2 was first set aside in 1789, under a license of occupation issued to Chief John Julien and the MicMac peoples of the Miramichi. This license stated that the area of the reserve was 1,228 hectares; however, there was an amendment in 1845 which showed the reserve area to be approximately 1,533 hectares. Sale of land by the Province of New Brunswick between 1848 and 1853 resulted in IR#2 being reduced to its present day size of 1,073 hectares.

In 1896 both Eel Ground and the Red Bank First Nations divided the Big Hole Tract, IR#8 (3,604 hectares) into two equal parts. Eel Ground was also granted the Renous tract (IR#12). After this transaction was completed, the land base for Eel Ground increased from the original licenses of occupation to a present day total of 2,833 hectares. These tracts of land have been intensively logged for fuelwood, pulp and lumber for over a century-and-a-half by both Aboriginal people and Europeans. This use resulted in a gradual depletion of forest reserves and left the forest in a severely degraded state.

Since 1990, a forest management plan, developed in the late 1980's, began to be implemented on 2,800 hectares of Eel Ground's forest land with funding for silviculture obtained through the reserve land program of the Cooperation Agreement on Forestry Development, a federal-provincial resource development agreement (FRDA). As a result of the plan's implementation, unrestricted logging has been stopped and a wide range of planned forest management activities were initiated, such as pre-commercial thinning, semi-commercial thinning, residual removal, road building, protection and enhancement project. One area that has seen substantial development has been business development, particularly in the value-added sector through the creation of Straight Arrow Specialized Lumber Products.

6.3.2 Introduction

Most of the people of Eel Ground are descendants of the Miramichi Tribe which occupied the Northwest and Little Southwest branches of the Miramichi River. Throughout the Miramichi River basin campsites ranging from 10-500 metres in length lined the river banks near the best

fishing pools and in close proximity to good hunting and gathering grounds. Forest lands and resources were used over the seasons for a wide varieties of purposes from canoe building to construction of fish smoke houses and drying racks, to winter trapping and wood carving. By the 1790s lumbering, shipbuilding and the salmon fishery had become the focus of life introduced by the Europeans on the Miramichi. Between 1800 and early 1940, the MicMac were placed on reservations with very little forested land at their disposal. This lack of resources threatened their very way of life. In 1941 a pulp and paper mill, known today as Repap New Brunswick, was developed 2 kilometres east of Eel Ground. This meant economic opportunities for the Eel Ground First Nation. Also during this time, larger, more efficient and more demanding sawmills were created. Harvesting of primary forest products increased to levels far beyond the capacity of the land. At that time the forest provided softwood logs (spruce, fir, pine and cedar), hardwood logs (white birch, yellow birch and maple), softwood and hardwood pulp (spruce, fir, white pine, jack pine and poplar) and firewood (maple, birch, ash and beech). During the 1970's and early 80's, virtually all commercial timber harvesting at Eel Ground was for the production of softwood pulp. Between 1986-1989, senior First Nation officials hired several forest consulting groups to address the severe depletion of Eel Ground forested lands. The main result was the development of a long-term forest management plan to restore their forest land to productive capacity. One of the business needs identified in that plan was a technical and business development support system to ensure the success of the management plan. Several objectives were outlined, including:

1. A transfer of "how-to" technology to a business.
2. Market development.
3. Scheduling of forestry activities.
4. Reporting of forestry activities to the appropriate agencies.
5. Plan of action for contractual work (forwarding, transportation, road work, site preparation, supervision and follow-ups).
6. Plan of action in purchasing of equipment (wood workers equipment, planting and fire equipment).
7. Development, monitoring and evaluation of all forestry activities (training, treatments, infrastructure and block delineation).
8. Monitoring work under progress, and liaison with funding agencies.
9. On-site overseeing of work activities in coordination with the managers.
10. Capacity-building in both forest and human resources for business ventures.

The primary purpose of the forest management plan was to address three community forestry goals:

1) community empowerment,
2) sustainable forestry, and
3) community economic development.

After eight years the community is beginning to see results. There is now a long-term plan to

manage the forest resource; wood is being profitably harvested and sold in increasing amounts to customers. Thirdly, there has been an opportunity to provide employment and training for a number of reserve people, particularly young people. The Eel Ground Forest Management Program has become a national model for similar projects carried out by other First Nations, in the region with training and guidance being provided by Eel Ground forest management staff.

Since 1990, the number of full-time forestry related positions at Eel Ground has jumped from 11 to 40—a significant step toward achieving self sufficiency in a community of 708 people (390 of whom live on reserve). Success has not come cheap, however. Eel Ground has relied heavily on external funding to implement its management plan. For example, activities such as pre-commercial thinning have been 100% subsidized, an activity agreed to by the federal government because they realized they have a responsibility to restore the land that was degraded as a result of past poor management.

During the 1989-1995 period, Eel Ground increased its forestry revenues from $16,000 to $500,000 through a wide range of funding sources, training contracts, industrial contracts and business development. In order to continue to increase its economic returns, Eel Ground has gradually become getting involved in other aspects of wood processing. One of these areas is value-added. In 1995, Straight Arrow Specialized Lumber Products was formed. This is the first value-added production mill for a First Nation community in the Atlantic Region.

With the cancellation of the federal-provincial resource development agreements in 1995, the future of Eel Ground's forest management plan and sawmill business was uncertain. Today Eel Ground is in a survival mode because the new federal First Nation Forestry Program (FNFP) does not fund forest management planning activities to the same extent as the old program. Silvicultural activities designed to restore degraded land and improve timber production are no longer program priorities. Because of this, other sources of wood to supply the sawmill will be needed. Also, the federal government has made only a five-year commitment to the FNFP with a declining level of funding over that period. While the program has promoted sound objectives such as capacity building for sustainable forest management, the program, because of its short term, does not address long-term sustainability of Eel Ground's natural resources.

6.3.3 Straight Arrow Specialized Lumber Products

In 1992 a value-added sawmill venture was proposed as an extension of the Eel Ground forestry program. Even though Eel Ground was selling wood from its forest area as a result of improved timber production through its forest management activities, the products were limited to firewood, pulp wood or as raw material for lumber production. It became evident that wood sold for lumber production (primarily cedar) could be turned into lumber by the same people who cut it. It was apparent that if a portion of wood harvested could be made into useful lumber, then revenue from the same amount of wood could be increased by as much as 500%. What wasn't obvious was that a portion of the wood being sold as pulpwood and firewood could also be

turned into lumber. The plan was for the same people who were cutting the wood to select the highest economic use for the wood to maximize economic and environmental benefits. Wood would still be sold as pulpwood or firewood but only when there is not another higher level use.

This project was based on the assumption that there will be a strong renovation/building industry for the balance of this decade and that the sawmill will be able to produce value-added, finished products required by this market. A business plan for this venture was completed in mid-1994 by CASE consultants. The project consisted of a sawmill building with an air drying shed, a drying kiln, a delivery vehicle and a mobile sawmill which included the relevant machinery and equipment. The building was constructed on a hectare of land supplied by the Eel Ground First Nation and was to house various equipment, a drying room and an office, and a small show area for retail sales.

Several direct benefits were identified with the development of the sawmill business, including:

1. The sawmill project would be a natural extension to Eel Ground's Forest Management Program, giving the community more control over the future of their woodland resources and increased control over their own future.

2. The project would generate profits which could be reinvested in the Forestry Program. This would bring the forestry program a step closer to being self-sustaining.

3. The project would provide skills training and employment for up to 6 First Nations people. An added benefit would be the opportunity to employ young people and generally improve the feeling of self worth of Eel Ground people.

4. The project would be a logical step in the development of a vertically integrated businesses. The successful management of the sawmill could lead to the development of a woodworking business and then a craft business, and

5. The launch of the Straight Arrow Specialized Lumber Products could be a catalyst for the development of similar operations at other First Nations in Atlantic Canada.

Value-added production was viewed as the best focus for developing forest-based businesses. In 1994 the Premier of New Brunswick, Premier McKenna stated: *"It is time that government and financial institutions focus on and support businesses that promote value-added products."*

The business plan concluded that to continue to supply wood for current contracts and for the proposed sawmill, an additional 330 cords would be needed during the first year (1995), increasing to 750 cords by the third year. It was predicted that the improved revenue realized by increasing production and the maximized use of wood could be reinvested in forest management activities.

Initially the sawmill would utilize wood cut from within Eel Ground's forest area. However, to meet the predicted need for increased wood volume, Eel Ground would need to secure access to wood fiber both from Crown and privately-owned lands. During the planning stage, the sawmill project received endorsements from the area's main license holder, Repap New Brunswick, and a verbal commitment that wood from Repap would be directed to the Eel Ground sawmill. This has not occurred as yet, but the sawmill has been successful in purchasing its needed lumber from private owners and other First Nations. The business plan also proposed that wood be selectively cut on demand for the sawmill, dried and then delivered to the customer. It was calculated that cutting wood into boards or posts near where the trees were harvested would be efficient and cost effective, helping to make the mill costs competitive. For example should a lumber yard require cedar for decking, then the sawmill could find the trees, cut, saw, dry and deliver the lumber within a matter of days.

Initial Project Costs

Complete Sawmill Unit	$36,871.00
Delivery Truck	25,000.00
Flat Bed	2,710.00
Sawmill Building	30,000.00
Dehumidification Kiln	2,352.00
Drying Chamber	750.00
Machinery and Equipment	5,000.00
Site Improvement/Landscaping	12,000.00
Log Loader and Installation	11,750.00
Sub Total	**$126,433.00**
Value of Land	$9,000.00
Project Total	**$135,433.00**

SECONDARY PROJECT COSTS
(in third year subject to business proposal)

Warehouse	$30,000.00
Yard expansion	15,000.00
Loader/forklift	12,000.00
Water & sewage upgrading	3,000.00
Total	**$60,000.00**

Product Development

The sawmill has been providing the following species products since 1995:

Hardwoods:	
Birds-Eye Maple	Approximately 1% of productive capacity.
Maple	Approximately 10% of productive capacity.
Ash	Approximately 2% of productive capacity.
Birch	Approximately 5% of productive capacity.
Poplar (aspen)	Approximately 82% of productive capacity.
Softwoods:	
Pine	Approximately 15% of productive capacity.
Spruce	Approximately 20% of productive capacity.
Fir	Approximately 5% of productive capacity.
Cedar	Approximately 60% of productive capacity.

Although not limited to any particular use, lumber output has been used for various specialty requirements. Some specialized hardwood has also been sold to clients working in the craft/woodcarving industry who require specialized raw materials.

The value-added lumber products produced by Straight Arrow include:

1. Beams
2. Staging
3. Posts
4. Wide boards, both square-edged tongue-and-groove and V-joint (all from softwoods), including 1x6, 1x12, 2x8, 2x10 and 2x12.
5. Cedar logs for cottages
6. Decking
7. Kiln-dried lumber
8. Custom-made lawn furniture: swings, chairs, picnic tables, garbage bins and round tables.

Other products have included softwood construction lumber, such as 1x2s, 2x6s, lattice and rough and planed lumber.

Marketing

Four different markets were targeted to ensure that Straight Arrow diversifies and thereby is not be dependent on a single source for revenue. The target markets include retail lumber yards in the Miramichi area, the woodcarving/craft and taxidermy industries, other First Nations in the area and cutting services to private woodlot owners. Training and consulting, as a result of the experience gained by Eel Ground First Nation in both forest management planning and sawmill

operations was seen as a further spin-off activity. Each target area is treated separately to help plan marketing and to launch each segment of the business in an organized manner. The operation of the sawmill is critical however, for without an operating infrastructure and an organized marketing program, the project would have had significant difficulties.

The targets during the first three years of business are as follows:

TARGET MARKET	1995-96	1996-97	1997-98	TOTAL
Retail Lumber Yards	$45,000	$75,000	$85,000	$205,000
Woodcarving/craft/taxidermy	$15,000	$25,000	$25,000	$65,000
Other First Nations	$30,000	$55,000	$75,000	$160,000
Cutting Service to Woodlot Owners	$15,000	$25,000	$40,000	$80,000
Training & Consulting	$15,000	$15,000	$30,000	$60,000
TOTAL	$120,000	$195,000	$255,000	$570,000

Retail Lumber Yards in the Miramichi Area

There are about 10 lumber yards selling product to the local building trade (the do-it-yourself and professional markets). Of these, the four largest in the immediate area were targeted as customers for sawmill products. These lumber yards are delighted to have a reliable local supply of quality specialty woods. As an indication of the demand for specialty lumber, Lockharts in Chatham Head, now assured of reliable supplies, will build model decks, stairs and other products thereby assuring increased sales of Eel Ground specialty lumber. Creating customers in the retail lumber yard sector has been relatively easy given that these businesses currently have a supply problem. As long as the sawmill can produce quality products with an efficient, on-time delivery system at the right price, demand will continue. At present many builders cannot get the specialty products that they want and are forced to settle for substitutes.

At present there are a few suppliers providing products that the Eel Ground sawmill has produces, but these competitors are not viewed as a problem because they are not organized to provide the full range of products that Straight Arrow can offer. Further, the lumber yard clients prefer to deal with suppliers such as Eel Ground who do not retail their products and are therefore not in competition with the yards.

To reach and maintain the lumber yard market there has been a regular personal calling program since January 1995 which involves a regular monthly follow-up to establish and maintain Straight Arrow's relationship with the customer.

Woodcarving, Wood Craft and Taxidermy

Straight Arrow has be a supplier to the wood carving, wood craft and taxidermy industries in Atlantic Canada and Maine. This market has not been fully developed but the potential for continuous growth is there. The New Brunswick Crafts Council has about 220 members of whom about 15% are involved in wood carving. While the number of carvers in not high, the potential sales to each is substantial. For example, a single piece of usable 4x4x8 Birds-Eye Maple commands a price of between $500-$700. By establishing this small value-added market, Straight Arrow has added to its revenues. To reach the woodcarving industry, the first step was to contact the craft associations in New Brunswick, Prince Edward Island, Nova Scotia and Maine. These associations have been helpful in providing us with their membership lists. Unfortunately most of these associations cannot identify woodcarvers as a segment of their membership lists. Also it is evident that most woodcarvers do not belong to the craft associations. To reach the full market, it has been necessary to attend a series of craft shows and personally approach woodcarvers, a very time-consuming and expensive process. To be effective in reaching a wider market, it is important to run a series of advertisements in craft publications. To reach the taxidermist market, a direct mail program using names obtained from yellow pages was started in the Spring of 1996.

First Nations in the Area

The Sawmill has also been selling specialty lumber directly to residents of local First Nations at prices lower than those offered by established lumber yards (tax free plus 10% off retail). Lumber is in high demand among First Nation communities for building construction. The on-reserve sales is primarily cedar used for such projects as baby barns and decks. Cedar for a single new deck results in a sale of $5,000, so it is easy to see why this business is becoming a success. While the number of potential customers is not large, the fact that it is a dedicated customer base is attractive. The marketing campaign has been directed to all First Nations within a one-hour drive. The approach taken to attract this market was through personal contact with the leadership of each First Nation. As a way of getting some initial exposure, Straight Arrow hosted a series of demonstrations/open houses for people from each First Nation and in particular to school children to show students how a sawmill is operated.

Cutting Services to Woodlot Owners

Straight Arrow can now provide woodlot owners, including other First Nations, a cutting and lumber sawing service on a fee-for-service basis. In Northumberland County there are over 3,500 private woodlot owners, including First Nations. Some woodlot owners have their wood cut for firewood or pulpwood. Others prefer to have their wood used for personal construction and it is these customers the sawmill has targeted.

At present there are three mobile sawmills operating in the Miramichi area, all of older

technology. While these mills create competition, the market size is sufficient to support a new unit, particularly one that approaches the market in an organized way such as does Straight Arrow. The basic charge for the unit and crew is $45/hour or $175/Mfbm, a price which matches the competition. The average assignment lasts about one week, bringing in $450/day and grossing about $2,500 weekly. About 50% of the costs go to wages for the cutters, with the remaining $1,250 accruing to Straight Arrow. The service has resulted in 8 new jobs in the first year and is projected to increase to 28 in the third year. The service is promoted through the woodlot association in Northumberland County and in large display adds placed in the local newspaper.

Training and Consulting

Once the new mill was established, the knowledge acquired started to be passed on to other First Nations who have an interest in developing similar opportunities by using their own forest resources. In this regard Eel Ground provides other First Nations training in Integrated Resource Management. Fees of up to $15,000 can be received for each training session based on length and content. It is recognized that training for First Nations is best provided by other First Nation organizations. Eel Ground has provided leadership in Atlantic Canada in forest management and operations. There has been no need to launch a formal promotion program for Eel Ground's training and consulting services as the number of interested clients are small and communications are good. What has helped is to keep people informed and aware of possibilities, through a monthly newsletter to forestry people at each First Nation.

6.3.4 Today

Straight Arrow is on the road to success. The new project has led to greater opportunities for Eel Ground because trees harvested on reserve are also processed on reserve. Logs are turned into lumber and the lumber is used to create a woodworking industry on the reserve. The output from the woodworking shop is used as part of a craft industry. The development of a linked series of business activities makes good sense for Eel Ground.

Because of Eel Grounds success an expansion estimated to cost $60,000 was planned for 1998, but was completed in 1996 with the construction of a new warehouse, expansion of the wood yard and the purchasing of additional equipment (fork lift).

In addition to sales from the sawmill, there has been a considerable auxiliary benefit in training and employment in all Eel Ground ventures at all levels. The skills related to the production of specialty lumber have been refined over the past two years, and these skills are offered to other First Nations in Atlantic Canada resulting in the Eel Ground Forest Management Program being viewed as a model for other similar projects.

6.3.5 Lessons Learned

1. Diversity in markets and products has protected Straight Arrow from volatile lumber prices which affect customer demand. Straight Arrow has an advantage because it supplies several specialty woods and only on demand. Selling specialty products has helped to avoid competition with local established lumber yards.

2. Training is key to the success of Straight Arrow. From the beginning it was felt that the people involved in Eel Ground's successful Forest Management Program should also be involved in this "next step". An obstacle that needed to be overcome at the beginning was the acquisition of new skills and the establishment of appropriate training programs, internal operating systems and marketing programs. In any management situation it is important to provide continuous training so that the success of the enterprise is not dependent on one individual. In the case Straight Arrow, a management team was developed to oversee the business. Outside specialists have thereby be able to pass on their knowledge and experience and to create a local business management capacity.

3. Eel Ground has learned to slowly build its resources—both forest and human—and benefit from them. From the development of a long-term forest management plan to address the degradation of Eel Ground's forest lands to the sale of timber for lumber, pulp and firewood to the successful establishment of Straight Arrow Specialized Lumber Products, Eel Ground has taken small steps, building its expertise. The next logical step is the development of a small-scale woodworking facility which could make custom products such as baby barns and bird houses. This would create additional employment, maximize utilization of the wood being cut, and once again become a catalyst to similar developments on other First Nations.

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6.4 ABORIGINAL PARTICIPATION AND VALUE ADDED IN THE FOREST INDUSTRY: A CASE STUDY OF THE WILLIAMS LAKE AREA

6.4.1 Introduction

This paper examines two issues which have been accorded some priority in forest management policy in British Columbia. First, the provincial government has committed to involve Aboriginal Peoples in natural resource management decision-making and to ensure that they are partners in all respects. This objective is based on governmental recognition of Aboriginal rights, as evidenced in the B.C. treaty-making process and international commitments made to protect biodiversity and promote sustainable forestry. Secondly, policy initiatives are being implemented to increase value-added processing to maximize wealth generation and employment opportunities in the forest sector.

It is not the intent of this case study to evaluate or comment on the effectiveness of policy in these two areas, but rather to describe the current situation on these two issues in a given geographic area. However, it is implied that Aboriginal participation and value-added processing are not mutually exclusive objectives and that significant results in these two areas could be achieved simultaneously through appropriate policy co-ordination.

For purposes of analysis, this paper examines the Williams Lake area in the central interior of British Columbia. Williams Lake is forest sector dependent and the area has a proportionately high Aboriginal population.

6.4.2 An Overview of the Williams Lake Area

The population of Williams Lake and immediate surrounding valley, a radius of about 10 kilometres, totals 22,000. This amount represents a tripling of the population over the past thirty years. The rural population and towns within the Cariboo-Chilcotin region, including Williams Lake, have a combined population estimated at 62,000.

Williams Lake is the main distribution and supply centre for the Cariboo-Chilcotin region. It has ample transportation corridors and is accessible by road (Highway 97, Highway 20 to the Chilcotins and Bella Coola), rail (BC Railway) and air (Air BC and Northern Thunderbird Air-NTA). Williams Lake also has charter services, ferry services from Bella Coola, bus service (charter and tours), taxi, city transit, trucking (including 20 logging truck firms), courier, communications, utility services/water/sewage, municipal services and ample shopping and recreation facilities.

The Ministry of Forests has both its Cariboo Forest Regional office and Williams Lake District office in Williams Lake. Other district offices within the Cariboo Forest Region are the Chilcotin Forest District (Alexis Creek), Horsefly Forest District, Quesnel Forest District and the

100 Mile House Forest District.

6.4.3 Value-Added within the Regional Economy

The strong industrial base of Williams Lake is stabilized by the lumber, agriculture (beef production), mining and tourism sectors. The lumber industry has been the main economic activity for the past thirty years. There are seven operating sawmills and one plywood plant in Williams Lake. Seventy percent of the employment depends directly or indirectly on the forest industry. Primary producers with large commodity mills employ 3,117 people and nine value-added or re-manufacturing plants collectively employ 325 people. Over the past thirty years the number of industrial plants have increased from 16 to 31 and the value of manufactured products has increased from $26 million to more than $300 million.

Riverside Forest Products Ltd., Timber West, Lignum, West Fraser and Weldwood are some of the large forest companies which operate sawmills in the Williams Lake area. "*Although many primary producers now practice value-added strategies in their mills, there are some whose "corporate culture" does not permit them to add value to their basic commodity products*" (R.W. Stevens, 1997). Nonetheless, these large commodity producers have a vested interest in encouraging local value-added producers and that interest can include fibre exchanges, manufacturing assistance, residue supply and the sharing of markets and market intelligence.

As in other parts of the province, value-added plant operators in Williams Lake are typically small in scale and, unlike the primary sector, do not have assured licences to harvest timber. The Small Business Forest Enterprise Program (SBFEP) uses Section 16.1 of B.C.'s Forest Act to make timber available. However, that timber is allocated for a limited time, and is only awarded to the winner of a value-added competition which causes over valuation of the resource in some cases. To obtain wood supply, value-added operators work closely with primary mills in Williams Lake and those as far away as Prince George, 100 Mile House and Bella Coola.

Table 1 summarizes the value-added producers in the Williams Lake area.

Table 1. Value-Added Producers in the Williams Lake area

Company	Product	Employees
Chimney Creek Lumber Co. Ltd	SFP planed lumber. Some T&G pine, siding and pine flooring	1
Durfeld Log Construction Williams Lake	Custom log homes. This company specializes in post and beam kit homes using traditional English and European building methods. They also provide design services. They have plans for expansion into Aboriginal Structural design (mainly Coastal Design) because of their markets: Whistler Mountain, Colorado, Europe and Japan. Future plans include: Joint ventures with First Nations, log home curriculum development and Certified Training Programs.	Mill: 4 Log & Timber: 10
Hill & Son Custom Planing Ltd.	Custom Planing - boards	9
Jackpine Forest Products Ltd.	Finger jointing, window and door components, specialty products.	150
Pal & Son And Pal Lumber Co. Ltd.	Custom lath, cleats, grape stakes, pallet stock and other related items.	21
Pioneer Log Homes	Custom Built Log Homes - Hand Crafted marketed in USA, Europe and Canada.	25
Westech Wood Products	Agricultural boxes and furniture components	45
Williams Lake Cedar Products	Pine and cedar panelling, pine laminates and laminated window stock.	60

Though no precise information is available on markets for value-added products alone, the Cariboo Lumber Manufacturers Association, which includes some value-added producers, estimates that 66% of their members' products is exported to the USA, 26% is distributed domestically and 8% is exported to other countries. Niche marketing is a known characteristic of value-added processing. For example, Williams Lake Cedar Products produces laminated window stock solely for export to Italy.

Value-added processing has as an integral goal—complete utilization of the wood resource. Past forest industry disposal practices for residues, such as land filling and beehive burning, are not socially or environmentally acceptable. The industry in Williams Lake has taken steps to implement alternatives. To utilize wood waste from the sawmills, North West Energy Corporation produces wood fired electricity which is sold to BC Hydro. Construction of the $150 million Williams Lake Generating Station was completed in 1993. Each year it consumes over 600,000 tons of wood waste from local sawmills to generate 65 MW of electricity. The plant is the largest biomass power plant in North America. The diversion of wood residue from the local sawmills has resulted in the closure of beehive burners reducing particular emissions by over 95%, thereby solving a severe and long standing local air pollution problem.

Further utilization of wood residue is envisaged in the newly proposed Williams Lake Fibreboard Plant. Construction on the $230 million plant, to employ approximately 160 people, had an anticipated completion date of Fall 1997. However, the City of Williams Lake is uncertain as to a specific completion date at this time. This plant will utilize white wood waste as well as wood chips to produce medium density fibreboard.

6.4.4 Industry Partnerships in Support of Value-Added

A notable characteristic in the value-added sector is the need to form partnerships and working arrangements with other industry players. In addition to fibre exchange agreements with primary producers, co-operation between companies occurs with respect to drying, custom processing and finishing to fully utilize an operator's specialized facilities. Very few value-added processors are completely stand-alone. More often than not, value-added producers in Williams Lake perform some of their functions outside of the Williams Lake area, be it marketing, finishing or packaging. Companies simply contract out certain aspects of their processing. Jackpine Forest Products, being a somewhat larger company, is an exception, employing 150 people in Williams Lake and 50 people in the Vancouver area who preform finishing and marketing duties.

Industry associations play a major role in facilitating co-operation among their members and in representing their collective views on sector issues. The Cariboo Lumber Manufacturers Association provides a range of services for the primary sawmill commodity sector in the region and serves as a conduit to provincial and national organizations with similar mandates. Support has begun to materialize for the value added sector as well. The Central Interior Wood Processors Association, based in Prince George, but serving all of the Central Interior including the Cariboo-Chilcotin region, was established in 1992. The Association's mandate is to disseminate information on market trends, technologies and financing, to represent members and to liaise with other industry associations organized provincially or nationally to promote certain categories of value-added wood products, such as the Canadian Institute of Treated Wood. The CIWPA became a registered society as a result of the need which arose from the report of the Select Standing Committee on Fibre Supply for Value-Added. They are partially funded from the Forest Renewal BC program and have carried out studies on issues such as "Impact of

Stumpage on Value-Added Operators."

6.4.5 Aboriginal Participation in the Forest Industry

Demographics and Employment

There are 15 First Nations in the Cariboo Forest Region. They are comprised of Shuswap, Chilcotin and Carrier people. The three tribal groups are affiliated with the Cariboo Tribal Council (Canim Lake, Canoe Creek, Soda Creek and Williams Lake Bands), Tsilhqot'In National Government (Redstone, Alexis Creek, Nemiah Valley, Stone, and Anaham Bands) and Carrier Chilcotin Tribal Council (Ulkatcho, Nazko, Kluskus, Toosey and Redbluff Bands); Alkali Lake remains independent. The Aboriginal population, consisting mainly of the First Nation communities described above, is approximately 8,000 which is about 13% of the total Cariboo Chilcotin regional population. Williams Lake houses the offices of three Tribal Councils and as well is the home of hundreds of off-reserve Aboriginal people.

Of the First Nation population approximately 3,500 would be 19 years old and up to 90 years old. About 3,000—about 90%of the age group 19 years and older—would represent the work force. Generally, First Nation communities in the Cariboo Forest Region, have unemployment rates ranging from 65-90%, depending on the availability of seasonal employment.

Many of the Aboriginal people in the Cariboo Forest Region have skills related to forestry. Over the years, seasonal work has been found in logging, fire unit crews, silviculture operations and some of the more fortunate have acquired more permanent employment in the sawmills. (Further research is required to obtain reliable data.) With respect to value-added processing, Aboriginal people are untrained except to the extent that carpentry and sawmill skills can be adapted through further training.

Aboriginal Participation in Value Added

As mentioned earlier, the main source of timber for value-added processors are fibre exchange agreements and short term 16.1 licences. Examples of value-added companies in Williams Lake and Aboriginal forest companies within the region that hold, or have held, 16.1 licenses, are shown in Table 2.

Table 2. Forest Companies in the Williams Lake Area with 16.1 Licenses

FOREST DISTRICT	LICENSEE	AAC (M3)	TERM
Quesnel	Xat'sull Dev. Corp*	42151/5yrs	Jan 95-Jan 2000
Quesnel	Wiliams Lake Cedar Prod	111610/5yrs	Jul 95-Jul 2000
Quesnel	Bryan Reid*	12625/5yrs	Oct 90-Oct 95 EXPIRED
Quesnel	Nazko Resource Manage*	20000/5yrs	EXPIRED
Quesnel	Bryan Reid*	21029/5yrs	EXPIRED
Williams Lake FD3	Wms Lk Cedar Products	105820/5yrs	Jun 94-Jun 99
Williams Lake FD3	Wms Lk Cedar Products	31340/5yrs	Jun 94-Jun 99
Williams Lake FD3	Northern Shuswap Dev C*	31340/5yrs	Jun 94-Jun 99
Williams Lake FD3	Bryan Reid*	37759/5yrs	Aug 94-Aug 99
Williams Lake FD3	Jackpine Forest Products	60000/4yrs	Nov 94-Nov 98
Williams Lake FD3	Jackpine Forest Products	50534/5yrs	Jul 95-Jul 2000
Williams Lake FD3	Jackpine Forest Products	46868/3yrs	Aug 95-Jul 98
Williams Lake FD2	Durfeld Log Construction	32179/3yrs	Aug 95-Aug 98
Williams Lake	Jackpine Forest Products	166372/5yrs	Jan 90-Jan 95 EXPIRED
Williams Lake	Jackpine Forest Products	187300	Jan 90-Jan 95 EXPIRED
Williams Lake	Westech Wood Products	127194/5yrs	Jan 90-Jan 95 EXPIRED
Williams Lake	Northern Shuswap Dev C*	22230/2yrs	Jul 93-Jul 95 EXPIRED

* Aboriginal-owned or Aboriginal joint venture company licensee.

The only First Nation-owned value-added wood processing enterprises in the Williams Lake Forest District are the log home construction company owned by the Soda Creek Band and a remanufacturing plant owned by the Williams Lake Band.

Soda Creek Log Homes (Soda Creek Band) employs up to 12 full-time workers. In 1996/1997 the company completed 11 log structures. The buildings are finished or unfinished homes, offices, resorts and pavilions. The company uses only pine logs blended with masonry and offers interior finishing as part of the product line. A recent Forest Renewal BC training program enabled the business to improve the variety of skills and enhance the specialized skills of Soda Creek Log Home employees. Soda Creek Log Homes obtained their timber supply from the

Quesnel Forest District through its subsidiary company, the Xat'sull Development Corporation for a volume and term as follows: 42151 M3 for 5 years from January 1995 to January 2000.

The Williams Lake Band leases an industrial site to Pioneer Log Homes. Bryan Reid owns the company and hires First Nations employees for log peeling and log home assembly. Training is provided through training funds from the Williams Lake Band. Mr. Reid obtains his own log supply as needed through a variety of sources.

Sugar Cane Wood Products of the Williams Lake Band produces pallet stock. (Pallets are small wooden stages that are used for moving and stacking goods with forklifts.) The company owns a facility on the Sugar Cane Reserve and employs eight to ten people full-time and others seasonally or to fulfill specific purchase orders. Some spruce, pine and fir is purchased from Lignum and other wood supply is obtained form the Williams Lake Corporation. The company, however, does have its own wood supply in the form of a wood lot and timber sale license with a volume and term of 31,340 m^3 for 5 years from June 1994 to June 1999. Their product is mainly marketed in the US and Canada and they have not explored any other markets.

Sugar Cane Wood Product Ltd. is undertaking a Forest Renewal BC funded feasibility study to consider expansion of their operation to also produce finger joint blocks and stud grade 2x4 and 2x6 lumber. The wood supply currently held in the form of a wood lot and timber sale license would be insufficient to sustain an expanded operation.

Sugar Cane has found constraints in capital for marketing, equipment and expansion. There is a lack of management and marketing expertise. Their present capital requirements are to retool the mill, explore markets, expand operations and train the workforce in management and marketing. For strengths, the Williams Lake Band have found that they have a willing and able workforce with some skills and experience for this type of enterprise.

The only other value-added operation in the region is with **Nazko Resource Management** who have an office located in Quesnel. The Nazko First Nation in the Cariboo Forest region are just starting their finger joint and a chop saw operation. Nazko Resource Management obtained a two-year supply of wood through a timber sale license which is now expired.

One of the better known Aboriginal enterprises is **West Chilcotin Forest Products**. This joint venture company owns a commodity sawmill with a wood supply of 240,000 m3. This is a three-party joint venture with the Ulkatcho First Nation, Carrier Lumber and the local community of Anahim Lake. They have been operating for about 3 years now and are planning to expand into value-added activity in the future.

6.4.6 Lessons Learned

First Nations in the Williams Lake area view value-added processing as a means by which longer

term job creation can be realized. They caution, however, that their possible acceptance of 16.1 licenses and financial support for feasibility studies and business start-up should not implicate broader issues such as land claims and treaty negotiations.

The Tsilhqot'ln National Government has concern with the provincial and federal government policies concerning Aboriginal people. TNG has taken the position that the stumpage from the sale of logs should go into Forest Renewal BC for distribution to strengthen local communities, including Aboriginal communities. They feel that the 6 Chilcotin Bands and Tsilhqot'ln National Government itself has not received the full benefits that FRBC could offer. They would like to see more programs offered on a larger scale by the FRBC.

Although TNG has received some funding to create employment for their community members, they would like the FRBC to offer more value-added initiatives to Aboriginal people. The value-added economy would only add to their goals to become self sufficient. They feel that there is sufficient wood supply in the Caribou Forest Region for value-added projects and that access to tenure would make the value-added economy more feasible for them. They urge the FRBC to be more lenient and open to submissions from the 6 Chilcotin Bands for opportunities with Forest Renewal BC.

In a survey carried out with the Williams Lake Band, it was stated that they have initiated discussion on joint ventures but have not fully committed themselves to this approach. Their view is that joint ventures are not always beneficial to First Nations and often do not address the needs of the community.

In the case of the Canim Lake Band proposal to become partners with a local oriented strand board operation, it was found to be too costly and out of reach. However, joint ventures such as this would provide employment in the management and technical field for Aboriginal people.

Value-added processing offers First Nations opportunities which correspond well to the need for community-based development. To survive in the business, Aboriginal people require expertise in areas of product development, marketing and relationships development with other industry players. Aboriginal organizations need to become involved in industry networks and partnerships. Following the example of Durfeld Logging, there needs to be more initiatives for joint ventures, training and opportunities to pursue Aboriginal Design Marketing. As was stated in an interview with Durfeld, there is no "certified" training for value-added, especially in custom log home building.

7 STRATEGIC RECOMMENDATIONS FOR VALUE-ADDED FOREST INDUSTRIES IN ABORIGINAL COMMUNITIES

7.1 PRODUCT DEVELOPMENT

Within Canada's value-added forest industry there is a heavy dependence on the primary forest sector for a supply of wood. In many cases, such as in the production of value-added housing materials, there is also a heavy dependence on the primary forest sector for market access. As value-added markets expand, particularly in the housing and home renovation industry, the dominance of Canada's primary forest sector will also expand. The increasing involvement of Canada's large forest companies, as well as the increasing trend of various businesses to outsource the production of components, will dictate the nature and scope of value-added production and marketing. While some value-added manufacturing creates an opportunity for First Nations to go it alone, such as with the manufacture of products such as garden furniture and accessories, various specialty forest products or products unique to Aboriginal peoples (Aboriginal motifs), there is a need to consider joint-venture arrangements with non-Aboriginal businesses. Joint ventures can provide the mechanism from which a supply of wood can be accessed, needed expertise acquired and market access secured.

RECOMMENDATION 1

Aboriginal communities should evaluate their strengths and weaknesses, including local and traditional knowledge, in order to determine the practicality of producing particular value-added products.

RECOMMENDATION 2

Aboriginal communities should explore opportunities for joint ventures with non-Aboriginal businesses, especially those which can lead to on-reserve employment and revenue generation.

RECOMMENDATION 3

Aboriginal communities should examine their potential to produce products unique to them. Products which include Aboriginal motifs or traditional designs or ones which employ the use of traditional as well as scientific knowledge should be pursued.

In several communities in Canada, as shown by the case study on Williams Lake BC, there is an increasing relationship between forest companies. The companies are producing many more products with the whole tree, from dimensional lumber to components such as slabs for cabinet doors to wood chips for pulp or for landscaping or sawdust for garden mulch. These companies benefit from each other by exchanging wood fibre, one company buying waste materials from

another for the production of a value-added product.

RECOMMENDATION 4

Aboriginal communities should develop regional projects to visit communities such as Williams Lake to help them see first-hand how such communities function and how the various value-added products are made. Aboriginal communities would then be much better informed about the range of products which could be manufactured and the required skills, equipment, materials and capital needed.

The demand for specialty value-added products is extensive and increasing, covering a wide range of products. Some of this demand is for decorative products and some is for health food, medicinals or other agro-forestry products. In many cases, the demand is for products which Aboriginal peoples have produced for centuries. Value-added market demands have generated a wide range of opportunities particularly suited to production by Aboriginal firms.

RECOMMENDATION 5

Aboriginal communities should be more active in their creative capacity and in the use of traditional knowledge and practices in order to develop specialty value-added forest products.

7.2 MARKETING

Marketing is an essential part of any business. Market research is the first step on the road to the creation of any new business or product. Ongoing market analysis is also needed so that trends in the marketplace and shifts in consumer preference can be identified and incorporated into production plans at the plant. Many Aboriginal groups have expressed, however, that they lack experience and skills in marketing and in entrepreneurship in general. As a result, they are uncertain about how to start a new business or are unfamiliar with the demand for products which they might produce.

In Canada, as in other countries, there is a significant amount of attention paid to exports to foreign markets. So much so, in fact, that this often clouds markets which exist at home. Many value-added products require niche markets. While some may be foreign markets, many are local. Local markets are often the best starting market for an Aboriginal business's value-added product. Even if their products are being sold by a joint-venture partner abroad, the products are provided to the partner locally and no further marketing by the Aboriginal supplier is required. Local markets provide a faster return of money from the sale of goods produced. This enables the producer to pay off debts faster and to spend less time and money on long-distance and expensive marketing efforts. In Canada, virtually every segment of the value-added sector is open to the supply of "made in Canada" products. Consequently, local or regional market opportunities exist in Canada for almost any product Aboriginal communities might wish to

produce.

RECOMMENDATION 6

Aboriginal communities should examine the various marketplaces for value-added products, particularly those which are local or regional and identify the skills they will need to meet these opportunities.

RECOMMENDATION 7

Where Aboriginal groups have found they lack the necessary marketing skills to identify or meet market opportunities, they should hire outside specialists to help fill this gap and to provide a mentoring role in order to develop their own marketing capacity. Government programs should be approached for support for such initiatives.

Many Aboriginal groups have expressed a lack of confidence in developing businesses on their own because of underdeveloped entrepreneurial skills. Also, many are not familiar with the successes of other Aboriginal groups in the value-added sector and are then unfamiliar with the lessons which such successes might provide.

RECOMMENDATION 8

A series of marketing workshops should be set up in most Provinces of Canada to accelerate the learning curve for Aboriginal groups in the selling, marketing and identifying quality control issues related to value-added manufacturing. Such workshops should include selected international marketing consultants and representatives of key industry associations. These workshops could be followed by funded field visits to selected wood products markets and trade shows in the USA and in off-shore countries.

RECOMMENDATION 9

Aboriginal communities should develop new mechanisms for marketing value-added products, to build marketing knowledge and experience, to provide greater strength in negotiating market access and sales and that can constitute a type of marketing board to represent Aboriginal interests in the value-added sector.

7.3 GOVERNMENT POLICY AND PROGRAMS

Governments are increasingly interested in the value-added sector and yet only two provinces in Canada are involved in any significant way. The Federal Government has been somewhat supportive with financial resources for research and marketing, yet their forest concerns are still largely with the primary industry and the export of raw lumber. Also, government programs or

policies which do support directly the value-added industry invariably do not recognize all aspects of the sector and the potential for production by Aboriginal businesses of a wide array of wood and non-wood products. Also, some government managers, either because of a restriction to their mandates or because of a genuine lack of business understanding, have not developed polices or programs which can address in a more thorough way training and information in areas such as marketing, skills development, identification of standards and the acquisition of wood and capital. Government programs often deal with one or the other of these aspects such as market research but rarely in a comprehensive manner. For many Aboriginal groups starting a business requires providing attention to all aspects and developing new capacity in each area.

While no one department of government might be able to address the array of needs in each area of Aboriginal forest-based business development, there are a number of federal and provincial departments that do deal with one or more concerns such as training, market research or standards. Unfortunately, there is little linkage between these departments in relation to the value-added sector. In some cases such as the ministries of agriculture, where their programs and expertise would be useful for value-added agro-forestry products, no connection at all is made to the ongoing development of forestry policy and programming.

RECOMMENDATION 10

Government policies and programs in the value-added forest sector need to be far more comprehensive. They must attend to all aspects of the forest as well as key issues such as access to wood. Governments must deal with the value-added sector on the basis of its many uses and thereby its significant employment and revenue-generating potential.

RECOMMENDATION 11

Government lead agencies, such as Indian and Northern Affairs Canada, should better co-ordinate efforts with relevant programs in other departments. In the value-added forest sector this includes both federal and provincial departments, as well as at federal-level ministries such as the Canadian Forestry Service (CFS), Industry Canada (both Aboriginal Business Canada and the Forest Industries Branch), Human Resources Development Canada, Canadian Standards Board, Agriculture Canada, Foreign Affairs and International Trade and Environment Canada.

There is a great need in Aboriginal communities for institutional development, training and capacity building. Both federal and provincial governments possess training programs which could be targeted at the needs of Aboriginal communities in the value-added sector, but this needs to be part of an overall national strategy.

Institutional capacity building has been recognized as the primary means to achieve Aboriginal economic development and self-sufficiency. Aboriginal organizations, not government agencies,

are better able to address Aboriginal Peoples' aspirations. Capacity building has been recognized as crucial in Aboriginal development by both the Royal Commission on Aboriginal Peoples and the federal First Nation Forestry Program (FNFP).

The FNFP has as one of its main goals *"to enhance the capacity of First Nations to operate and participate in forest-based businesses, thereby increasing the number and size of such businesses and long-term jobs in forestry for First Nation members."* However, the program has a meager budget which falls far short of meeting its goals.

The Royal Commission on Aboriginal Peoples recommended in relation to lands and resources that "*... the federal government, in keeping with the goal of Aboriginal nation building, give continuing financial and logistical support to Aboriginal peoples' regional and national forest resources associations*" and also:

> *2.5.13 Aboriginal governments, with the financial and technical support of federal, provincial and territorial governments, undertake to strengthen their capacity to manage and develop lands and resources. This requires in particular*
> *(a) establishing or strengthening, as appropriate, Aboriginal institutions for the management and development of Aboriginal lands and resources;*
> *(b) identifying the knowledge and skills requirements needed to staff such institutions;*
> *(c) undertaking urgent measures in education, training and work experience to prepare Aboriginal personnel in these areas;*
> *(d) enlisting communities in dedicated efforts to support and sustain their people in acquiring the necessary education, training and work experience; and*
> *(e) seconding personnel from other governments and agencies so that these institutions can exercise their mandates.*

RECOMMENDATION 12

Human Resources Development Canada should, in co-operation with other relevant government departments and Aboriginal organizations, develop a national forest sector training strategy for Aboriginal communities with value-added as a major component.

RECOMMENDATION 13

In keeping with the Royal Commission on Aboriginal Peoples' recommendations on lands and resources and with the goals of the First Nation Forestry Program, government lead departments should provide adequate financial support for the development of Aboriginal institutional capacity in the forest sector in which value-added will be a key component.

7.4 ABORIGINAL COMMUNITIES

Where Aboriginal communities have participated in the value-added sector, the positive impacts have been significant. Not only has on-reserve employment been created and skills developed, but other new businesses have started as spin-offs from the value-added enterprise and from a new spirit of entrepreneurship. Value-added products can range from the complex, such as house building materials, to the less complex, such as bedding material for animals or pine cones for the decorative industry. More creative products, such as furniture with carved Aboriginal motifs, can also be produced. Whatever the product, the sector can contribute far more than primary logging and milling. This sector makes better use of the whole tree and a more diversified and sustainable use of the forest. However, many Aboriginal groups are unfamiliar with the nature and scope of value-added production and with the opportunities which might be waiting.

RECOMMENDATION 14

The First Nation Forestry Program and Indian and Northern Affairs Canada, in collaboration with key Aboriginal forestry organizations, should call for and hold a conference on value-added forestry. The purpose of such an event would be to generate discussion and the exchange of information and to make this industry and its opportunities better known to Aboriginal communities in Canada. The secondary purpose of such a conference would be the joint development of an Aboriginal value-added forestry strategy.

ANNEX A

DEFINITIONS

Annual Allowable Cut (AAC)
The volume of wood that can be harvested in any one year from any area of forest under a sustained yield management regime.

Boreal Forest
The boreal forest is circumpolar in the northern hemisphere. It consists of a vegetation type dominated by coniferous trees, especially black and white spruce, balsam fir, or larch, interspersed with deciduous broad-leaved species, such as aspen and birch. Recent research indicates points to the importance of the boreal forest as the single most important biome on Earth for maintaining planetary climatic systems.

Chipping Facilities
A chipping station can be either stationary or portable. A stationary unit has lower unit production costs due to higher productivity. A typical chipping station will require a debarker, a chipper and storage bins. Chipping stations produce wood chips which are usually consumed by the pulp industry which is the largest customer for wood chips.

Dimensional Lumber Mills
A dimension mill produce lumber sawn into 2" thickness for the standard construction market. The lumber produced by a dimension sawmill is considered a commodity and there is very little difference between the quality of the product of one mill versus that of another. These mills are highly automated and require less labour per unit of output.

Establishments
The smallest unit capable of reporting certain specified input and output data; usually a plant or mill.

Fuel Pellets
Wood fuel pellets are made form waste wood fibre such as sawdust, fines and shavings. The residue should be as "bark free" as possible to reduce the ash component. The process involved to produce wood pellets includes residue storage and handling, drying and pulverising, pellet production and cooling, product handling, packaging and storage. They are a relatively low energy fuel which competes with other forms of available energy such as fuelwood.

Fuelwood
Fuelwood consists of pieces of a log which are used for heating. It is harvested by households across Canada as well as by commercial harvesters. All that is required is a chainsaw and a truck.

Gross National Product
The total value at current prices of goods produced and services rendered by the people and enterprises of a country during a given period of time, usually one year, plus the value of foreign investments. GDP is the total value of goods produced and services rendered by the people and

enterprises of a country in one year.

Hardwoods
This term typically refers to wood of broad leafed trees, most of which are Angiosperms and deciduous. Angiosperm include any member of the phylum Anthophyta, also termed in some classifications schemes, the Angiospermophyta (the flowering plant) which includes grass and trees. Hardwood timbers have a more complex cell structure than softwoods, including the presence of vessels, and are considered to be a more highly evolved plant form.

Harvesting/Logging
The cutting and removal of mature trees of commercial value, in contrast to cutting and removal of immature trees, which are thinnings, or merely the cutting of immature trees as a thinning treatment without their removal. Within harvesting there are a group of activities which are involved, there is *Bucking* the cutting up of a tree or log into shorter pieces; *Bunching* the skidding and assembly of two or more logs at a time, *Chipping* the act of breaking r cutting up trees into pieces of wood of a predetermined size, *Debarking* the removal of the trees outer bark, *Delimbing* the removal of branches, *Felling* the cutting down or uprooting of standing trees, *Forwarding* the movement of forest products from the stump to the landing, *Loading* picking up of trees or logs from the ground and loading them onto a vehicle capable of transporting them to their point of manufacture or an intermediate transfer point, *Piling* the picking up of logs or trees and piling them on top of each other so that the logs are parallel to one another and that their ends are in the same vertical plane, *Skidding,* removal of trees or logs from the stump to a deck or landing by trailing them on the ground, *Topping,* the cutting off of the top of a tree at a predetermined minimum diameter, and *Yarding* which is the initial hauling of a log from the stump to a collection point, either by skidding or by cable system.

Laminated Veneer Lumber(LVL)
LVL is an engineered wood product which begins as a veneer peel. These peels are placed longitudinally and result in a product that can be cut into dimension sizes. Its primary uses are in beams and headers in housing and light industrial construction and it is also used in the manufacture of I-joists used in flooring systems.

Medium Density Fibreboard (MDF)
MDF is a reconstituted panel product made from wood fibre that is refined into small fibres and glued together into sheets between 2-30 mm thick. It has shorter fibre lengths than OSB or particleboard. It is made from residues from mills, such as sawdust and shavings, coupled with wood chips. By processing the fibres, adding resin, wax and then drying and pressing, various sizes of panels are produced. It is primarily used in furniture, mouldings, cabinet making and millwork.

Mini Mills
These are small portable sawmill. Mini mills produce rough lumber of specific size for further

manufacturing and large dimension lumber as well.

Non-Timber
Non-timber products include mushrooms, medicinal plants, hunting, fishing, gathering and trapping and natural foods as well as tourism and recreation.

Oriented Strandboard (OSB)
OSB is an engineered wood product made primarily from poplar and white birch. It is used in structural applications such as sheathing and flooring and combined with a number of other engineered products to produce joists and other composites. The process involved requires small diameter trees and lower quality wood fibre, yet it costs less to produce than other traditional veneered products. It is made of four pressed layers of glued wood flakes. The outer layers are aligned lengthwise, inner cores horizontal, giving dimensional stability.

Other Engineered Wood Products
Include things like reconstituted 2x4s. These are wood products which are treated and processed in manners that increase their structural durability. They are able to compete with steel beams, etc.

Paper and Allied Industries
Paper and allied industries by Standard Industrial Classification include: pulp industry; newsprint industry; paperboard industry; building board industry (fibreboard), this industry will be moved to wood industries in this years classification; other paper industries, this includes establishments engaged in fine, specialty and sanitary papers; asphalt roofing industry; folding carton and set up box industry; corrugated box industry; paper bag industry; coated and treated paper industry; stationary paper products industry; paper consumer products industry; and other converted paper products industries.

Plywood
Softwood plywood is a general purpose construction material, usually available in 4'X8' sheets. It is produced by placing a log on a lathe and peeling it to produce a veneer. The veneers are then placed perpendicular to each other, glued and pressed into sheets of various thickness

Pulp and Paper
The pulp and paper sector would include products such as pulp, newsprint, paperboard, building board, and other paper products, also it would incorporate other allied products such as asphalt roofing shingles, paper box and bags, i.e. folding carton and set up boxes, corrugated boxes, and paper bags. The industry will also represent other converted papers as well i.e. coated and treated paper, stationery paper, paper consumer products, and other converted paper products.

Remanufacturing Mills
These mills purchase lumber and then manufacture finished or semi-finished lumber products.

They can include a wide variety of facilities. There are some simple operations with a kiln and the ability to resaw the lumber to meet different specifications. Other mills have the ability to produce final products such as glued fence posts. Remanufactured lumber products include things like: fencing, prefabricated house components, laminated posts and cutstock for windows and doors.

Silviculture
The theory and practice of controlling the establishment, composition, growth, and quality of forest stands to achieve the objectives of management. Silviculture is not forest management. It consists of actions taken at the level of individual stands to renew and enhance the forest crop to meet stand management objectives for timber, wildlife, recreation, landscape design, preservation, and water yield.

Softwood
Refers to the wood of coniferous trees, although a few hardwood trees have physically soft wood (i.e. balsa, cottonwood). Softwood timber also has a simpler cell structure than hardwood. These are trees that have green leaves or needles which are retained throughout the season with no marked period of leaf shedding.

Specialty Sawmills
Produces lumber of special sizes, such as metric sizes for Japanese and European markets

Stocked
Stocking is a qualitative expression of the adequacy of tree cover on an area, in terms of crown closure, number of trees, basal area, or volume in relation to preestablished norm. An area can be fully stocked, which is productive forest land stocked with merchantable trees. These trees are such that at rotation age they will produce a timber stand that occupies the potentially productive ground.

Tenure Agreements
A kind of right or title by which (esp. real) property is held for a period of time for certain purpose.

Traditional Territories
Lands outside of Reserve areas which First Nations have Aboriginal treaty rights to for hunting, trapping, and gathering.

Understocked
Defines the condition when a plantation of trees fails to meet the minimum requirements for number of well spaced trees per hectare, and, an area containing fewer individuals of a species, or fewer species of a biota than it is capable of containing under given environmental conditions.

Value-added processing

This is the process of adding value to a product by further processing it. It is the move form a volume-based manufacturing process to a value-oriented industry of specialized products. Examples of value-added wood products include items such as: joinery stock, windows, doors, kitchen cabinets, flooring and mouldings. Value-added pulp and paper products include things like: packaging, diapers, coated papers, tissue, business papers and stationery, and other consumer paper products.

Wood Industries

Wood industries by Standard Industrial Classification include: shingle and shake industry; sawmill and planning industry (except shingles and shakes); hardwood veneer and plywood industry; softwood veneer and plywood industry; prefabricated wooden buildings industry; wooden kitchen cabinet and bathroom vanity industry; wooden door and window industry; other millwork industries; wooden box and pallet industry; coffin and casket industry; wood preservation industry (treated wood); particleboard industry; wafer board industry (includes OSB); other wood industries

Wood Products

Wood products include lumber, plywood, shingles and shakes, veneer, particle board, oriented strandboard, and converted or value-added products such as, manufactured housing, doors, windows, kitchen cabinets, hardwood flooring and wood pallets. These are not all of the commodities produced in the wood products group, however we feel that they represent a large enough sample for our purpose of definition.

ANNEX B

MEASUREMENTS

The following conversion factors were used throughout the preparation of this wood supply analysis.

Distance: 1 mile = 1.60934 kilometers

Area: 1 ha =2.47 acres

Volume: 1 cunit = 1.2 cords

1 cord = 2.41 m^3 (solid wood)

1 cord = 3.625 m^3 (stacked wood)

1 Mfbm = 5.13 m^3

Weight: 1 ton Po = 1.1123 m^3

1 m^3 Po = 1,798 lb

= 0.899 ton

1 ton Mh, Bw and By = 0.9842 m^3

1 m^3Mh, Bw and By = 2,032 lb

= 1.106 ton

1 Bone Dry Ton = 2.4067 m^3 Softwood Residue

1 Bone Dry Ton = 3.4530 m^3 Hardwood Residue

Moisture Content:

Jack Pine	34% wet weight	51% dry weight
White Pine	47% wet weight	90% dry weight
Black Spruce	43% wet weight	77% dry weight
White Spruce	35% wet weight	55% dry weight

ANNEX C

FURTHER READING

The following is a selection of recommended documents for further reading on value-added.

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