



Small Tenure Holders and Small Wood  
Manufacturers Working Together:  
*A Study of Joining Forces to Add Value  
in the Kootenay Boundary*

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# **Executive Summary**

## **Introduction**

The Small Forest Tenure Capacity Building in the Kootenay-Boundary Region, a report issued in May 2022 by local small-scale forestry stakeholders, provided insights into the challenges faced by small forest operators in the current market. Throughout the report, small wood manufacturers stated that the lack of consistent fibre was a barrier to increasing capacity. Additionally, there are few incentives for small tenure holders to provide fibre to small wood manufacturers and indeed several disincentives (including lack of trust) to doing so.

## **Purpose**

This study explores the feasibility of a business relationship, whether launched under a formal or informal partnership, between small tenure holders and small wood manufacturers that will stabilise the fibre supply for manufacturing operations and increase revenues for small tenure holders.

## **Desired Solution**

This venture, referred to herein as a “business relationship” or “mill partnership,” would operate under an agreement whereby small tenure holders commit fibre to small manufacturers who then manufacture wood products from the fibre and share sales profits from said fibre according to a predetermined rate schedule with the small tenure holders. This study does not focus on the structural elements of any agreement or business venture between parties and does not recommend either a formal or informal structure. Indeed, it could take the format of any of the following types of business relationships:

1. Partnership
2. Limited partnership
3. LLC
4. Cooperative
5. Corporation

This study explores the economic and technical feasibility of a business relationship with the understanding that it would not be possible without a formal agreement between partners. A business relationship offers a solution to the problem of insufficient fibre supply within small mills. It would:

- Provide participating small wood manufacturers with a consistent fibre supply, allowing them to increase capacity and build their businesses;
- Incentivize and engage small tenure holders through profit-sharing of wood products manufactured with their fibre; and
- Enhance the sustainability of small wood manufacturers who struggle to obtain needed fibre to build their businesses.

## **Sources**

Authors relied on data captured from interviews with small tenure holders and small wood manufacturers in the Small Forest Tenure Capacity Building Report to guide the development of this model. They researched similar products and discussed the project with key individuals such

as industry stakeholders, participants in current and previous cooperative projects, and the Small Forest Tenure network.

## **Findings**

The value provided by a business relationship reaches beyond the small tenure holder and small wood manufacturer partners. The project:

1. Strengthens connections between small tenure holders and small wood manufacturers and increases confidence in fibre supply;
2. Facilitates the growth of small wood manufacturers and increases their ability to commit to long-term planning of their businesses and growth in capacity due to a consistent fibre supply; and
3. Adds revenue streams to small tenure holder participants who gain not only log sales revenues but also profit sharing of manufactured wood products.

## **Business Explanation**

### **Purpose**

The purpose of this project is to explore the feasibility of a business relationship between small forest tenure holders and small wood manufacturers. The specific organizational structure is outside of the scope of this study and will remain undefined. However, the project would involve a partnership between fibre suppliers and small wood manufacturers and operate as a for-profit venture by its partners.

### **Target Population**

The target population for this study are small tenure holders and small wood manufacturers in the Kootenay Boundary region. However, the same concepts discussed in the paper could also be used to strengthen small scale forestry throughout BC.

### **Product**

The mill partnership is a business relationship between small tenure holders and small wood manufacturers. Small tenure holders will provide a consistent supply of high value fibre to small wood manufacturers who will use the fibre to grow capacity and reach new markets.

### **Product Objectives**

The mill partnership is a ground-up approach to accomplish the following objectives:

1. Increase profitability for small forest tenure holders and small wood manufacturers
2. Capture more value from logs
3. Stabilize wood fibre supply for small wood manufacturers
4. Open new and expand existing markets for small wood manufacturer products

### **Rationale**

Most small forest tenure holders and small wood manufacturers believe that the current log and lumber industry favors large producers. Small wood manufacturers state that in the current market they are neither able to compete with the major producers nor consistently obtain the fibre needed to grow their businesses. This project proposes the exploration of a business

relationship, one that could begin as an elementary partnership to build confidence and trust in the initiative and progress towards a formal or informal business relationship as a solution to this barrier.

## **Features**

Although organizational structures vary, a business relationship typically addresses:

1. Purpose
2. Ownership Shares
3. Liability
4. Distribution of profit
5. Financing and
6. Tax status.

Small tenure holders are very familiar with the amount and type of fibre in their standing timber inventories that they can produce in a given year. Small wood manufacturers know what type of fibre they need to manufacture and sell wood products. A business relationship would dedicate raw fibre supply to a mill with the capacity to produce saleable wood products, a favourable foundation for a mill partnership.

## **Strengths**

1. Participation of small tenure holders will help to increase available fibre supply.
2. Profit distribution encourages member use of service or product.
3. Versatile organizational structure can involve two partners, a multi-stakeholder partnership or take on partial components of a cooperative.

## **Weaknesses**

1. Raising capital can be a challenge.
2. Data from the Small Forest Tenure Capacity Building Report shows that small tenure holders typically no longer harvest timber annually.<sup>1</sup> As a result, the practice of cutting every 5-years has become the norm, a trend that has a negative impact on the small-scale manufacturers' relationships with small tenure holders, their wood supply and their ability to acquire consistent fibre.<sup>2</sup>

## **Opportunities**

1. Potential to obtain greater revenue from high-value logs.
2. Potential to create greater stability for the partnership.
3. Small tenure holders and small wood manufacturers share a vision of strong communities and a strong local economy and thus are well-positioned to work together in a business relationship.

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<sup>1</sup> <https://www.nakuspcommunityforest.com/special-projects/>

<sup>2</sup> One of the only forms of tenure available to small scale loggers is the Small Scale Salvage Program. Over time this program has become less economic due to a number of factors, including high stumpage rates vs. small volumes, permitting effort and cost, lack of governmental capacity, competition for timber supply, and timber value vs. costs to harvest. This used to be the rearing ground for small loggers but is no longer economically viable.

## Threats

1. Some participants in the Small Forest Tenures Capacity Building project report that lack of trust can be a barrier.
2. Major producers might see this type of project as a threat to their own fibre supply and could try to limit the participation of small tenure holders through various means.

## Business Model: Mill Partnership

This study explores a collaborative partnership based on a business relationship between small tenure holders who supply raw fibre and small wood manufacturers who produce wood products.

## Stage of Development

The mill partnership is currently in the idea stage. This feasibility study is the first step in exploring the idea's potential. Its formation requires that a small group or individual businesses comprised of small forest tenure holders and small wood manufacturers work together in a business relationship. A sample timeline for development is below.

Milestone	Completion By:
Complete feasibility study	March 2023
Engage small wood manufacturers interested in committing resources to project	April-May 2023
Engage small forest tenure holders committed to providing fibre	April-May 2023
Establish operational structure	June-July 2023
Formalize agreements	August 2023
Determine need for funding	August 2023
Apply for funding as necessary	September- November 2023
Establish "float" to cover costs	December 2023
Increased outreach and marketing to expand small wood manufacturers sales	January 2024
Project launch	February 2024

## Legal Restrictions and Rights

Legal rights and restrictions will be determined by the type of business relationship and how it is organized and operated.

## Insurance Requirements

The following types of insurance for the business relationship should be considered:

- Commercial General Liability Policy
- Product Liability
- Professional Liability Policy
- Business Property
- Workers Compensation
- Transit
- Cybersecurity
- Business Interruption



## **Trends Related to Product or Service**

Critical trends to consider:

1. The small forest tenure cadre is an aging population, with many principal operators nearing retirement in their sixties or even seventies.
2. The forestry industry is guided by provincial regulations and guidelines which currently prioritize value over volume.
3. The Province is helping the forestry sector retrofit and develop new, sustainable value-added business lines that reduce dependency on old growth logging and make innovative use of biomaterials.

## **Relationship to geographic area**

### **Economic/social impact**

Potential economic/social impacts of this project are:

1. Increased capacity among small wood manufacturers
2. Increased sustainability of small wood manufacturer operations
3. Increased employment in small wood manufacturing
4. Generating greater value from a portion of small tenure holders fibre supply

From participant data compiled in the Small Forest Tenure Capacity Building Report it was determined the employment associated with the small wood manufacturers was full-time, measured in terms of 1374m<sup>3</sup> per full-time equivalents.

### **Environmental impact on surrounding areas**

Potential environmental impacts are:

1. reduced transportation of logs and goods as connections between sellers/buyers are made closer to home.

## **Market Analysis**

### **Industry Description**

#### **Size, scope**

The forest sector in British Columbia (BC) is a foundational industry that supports economic activity in all regions of the province. The industry:

1. Employs more than 50,000 British Columbians directly
2. Supports up to 100,000 jobs throughout the province
  - a. half are located in the Lower Mainland and Southwest Region.
3. Generated \$13.3 billion in GDP in 2019, with:
  - a. \$4.8 billion derived from forestry, logging and support activities,
  - b. \$5.5 billion from wood products manufacturing, and
  - c. \$3 billion from pulp and paper manufacturing.
4. Contributed approximately \$8.4 billion in labour income
5. Makes up 29% of BC's total exports, equal to \$11.5 billion.<sup>3</sup>

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<sup>3</sup> 2020 BC Forest Sector – Statistics Summary. Retrieved 02/28/2023 from, [PowerPoint Presentation \(gov.bc.ca\)](#)

## Competition

### Industry concentration description

1. Five major companies control approximately half of B.C.'s forest tenures and associated annual allowable cut (AAC).
2. Small forest tenure holders makeup only 7% of the Provincial AAC.
3. Small wood manufacturers compete against major producers for fibre supply.

### Barriers to entry of new competitors

There are no major barriers that would prevent the creation of a business relationship between small tenure holders and small wood manufacturers. Here are a few potential sources to consider as barriers to entry:

Potential barriers	Solutions
Economies of scale if too big (risking reaction from major producers) or too small (forcing cost disadvantage)	Focus on lumber commodity markets outside of the major producers' spheres of influence
Product differentiation	Bring different products to market and find an effective marketing position
Capital requirements	Share financial resources to leverage existing investments
Access to distribution channels (can be locked up by major producers)	Focus on lumber commodity markets outside of the major producers' spheres of influence
Cost disadvantages independent of scale	Use co-op members' proprietary product technology, access to raw materials, favourable locations and government subsidies

### Concentration and competitive advantage

Control of the BC tenure system by the few large-scale producers limits the marketplace and the opportunity for small wood manufacturers to increase their capacity. The competitive advantages of a mill partnership are limited against the major producers by economies of scale and a sustainable cash flow to acquire fibre. A business relationship that focuses on the production of wood products outside of the scope of major producers would be more competitive. This includes wood products that are rare or hard to find and which could command a higher price as a supply source for a marketplace that is not saturated. This would also support the mill partnership's ability to pay more for high-value logs and sustain itself.

In competition with other small mills, the mill partnership will have several advantages:

1. wood manufacturers receive an increased supply of fiber, allowing the development of a steady product line and customer base.
2. wood manufacturers can focus on business-to-business and business-to-consumer relations leading to price competitiveness.
3. wood manufacturers have the ability to sell wood products at a discount as compared to products coming from complex and more expensive supply chains.
4. small tenure holders can obtain higher revenues for high-value logs from the business relationship.

**Concentration of power:** Through a shared model, the mill partnership will strengthen bargaining power and facilitate a more even distribution of workload, reducing the need for small wood manufacturers to spend time and efforts on log supply, allowing them to focus on sawmilling and manufacturing.

## **Market Potential**

### **Service market**

The proposed business relationship is a specialized service for both small tenure holders and small wood manufacturers. Depending on the initial business relationship strategy, small wood manufacturers, solely or in conjunction with other manufacturers, will partner with a small tenure holder(s) to capture logs that would typically go to major producers. Small tenure holder partners would have a designated market for their high-value logs, while small wood manufacturers would receive the fibre needed for sustaining and growing operations.

### **Demand trends**

Globally, the timber and wood product market is projected to grow at a compound annual growth rate (CAGR) of 6.11%.<sup>4</sup> The Canadian secondary wood products CAGR is estimated to be 2% over this same time period.<sup>5</sup>

Locally, increasing numbers of construction projects throughout BC and abroad indicate a rising demand. Additionally, the changing climate and new Provincial regulations to address it, demand a reduction of energy consumption in construction and a consumer shift to timber and wood products to mitigate the environmental impact from other material use in construction.

The BC governments has a market priority to position BC as a leader in wood use by:

- Growing the culture of living and building with wood in BC.
- Maximize the use of wood in public and private projects.
- Strengthen BC's capability and competitiveness.
- Accelerate adoption of wood products and building systems.

These conditions create an opportunity for a business relationship to supply a specialty wood market outside of the traditional commodity lumber market. For example in BC there are a wide range of timber products that are not part of the commodity lumber market and are not readily available at local lumber yards. The mill partnership could fill this gap, making uncommon, unique or custom cut timber products available to various end users. There is potential in the demand for these products by individuals or businesses, including homeowners, DIY, home builders, contractors, construction or woodworkers, who cannot find such products or custom cut services within their local lumber yards.

Potential end-users within BC are numerous:

- 25,000 + construction companies

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<sup>4</sup> Retrieved 03/20/23 from, [Wood Products Market Size, Trends and Global Forecast To 2032 \(thebusinessresearchcompany.com\)](https://www.thebusinessresearchcompany.com)

<sup>5</sup> Retrieved 03/20/23 from, [Canada Secondary Wood Products Market Growth and Forecast 2022-2027 \(imargroup.com\)](https://www.imargroup.com)

- 989 building material and supply retailers
- 2,014,830 households in BC; 67% of which are owner-occupied and 33% of which have renters living in them.

## Technical Feasibility

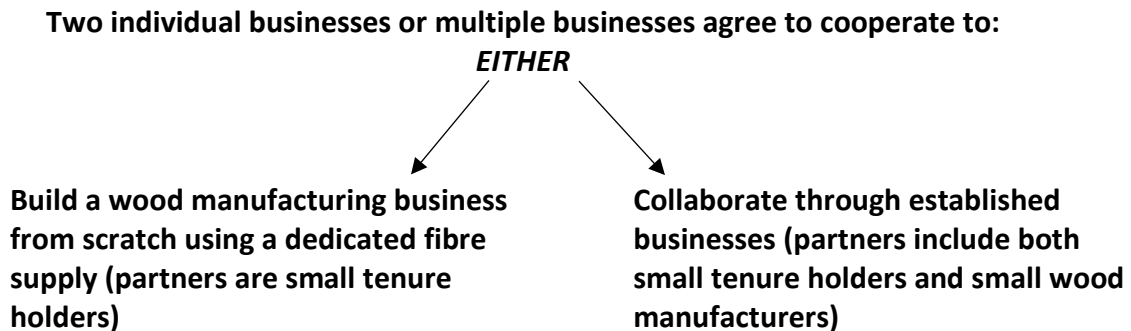
Sawmilling in the Kootenay-Boundary region has a 100-year history, beginning with a steam engine sawmill first established in early 1900s at Carmi. Many sawmills have come and gone and changed hands throughout this time. For instance, in the Boundary area approximately 110 different sawmills have started and closed in the last 100 years, where many of them were smaller family sawmills.<sup>6</sup>

The invention of the portable band sawmill in 1982 began a dramatic shift in sawmill design. Portable band sawmills made it relatively easy to get into sawmilling. For an equivalent price as an ATV or small car, a portable band sawmill could be up and running within a month. Many of these small portable sawmills exist throughout the Kootenay-Boundary.

This paper does not explore the technical intricacies of sawmilling nor the complexities of log supply. Generally, logging and sawmill technology is accessible and easy to set up and use, thus technically feasible.

## Choosing a Model

A business relationship requires a multi-stakeholder partnership between fibre suppliers (small tenure holders) and manufacturers of wood products (small wood manufacturers). For the purposes of this study, we are assuming that the following model will look like this:



## Cooperation in current climate:

The Small Forest Tenure Capacity Building Report found that:

1. small tenure holders and small wood manufacturers are highly independent,
2. many have structured their businesses as corporations, and
3. some players in the industry do not trust others.

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<sup>6</sup> The Regional District of Kootenay-Boundary recently completed a historic study of sawmilling in the Boundary area which is being stored in the Boundary Museum Archives.

Trust is a critical issue for any partnership, and a business relationship will not work without it. Though a majority of small wood manufacturers state that the major producers capture too large a share of fibre supply and that they could expand capacity with increased fibre, small tenure holders voiced concerns that small producers can't guarantee full and timely payment should they deliver. Several tenure holders stated that they sell most often to the major producers because they receive fair payments on time.

These factors, and the fact that many of them have registered their businesses as corporations, may make it tough for interested parties to form a business relationship. A business relationship model that respects the current business climate among small forestry operators is needed. A mill partnership where established small tenure holders and small wood manufacturers maintain their independence but join in a business relationship to maximize revenues from high-value logs and create a sustainable and consistent fibre supply for the manufacturing of wood products could prove to be a timely response.

Small tenure holders know their timber profiles and what their standing timber inventories can produce in a given year. Small wood manufacturers know what type of fibre they need to manufacture and sell wood products. A business relationship that brings these two independent businesses together – raw fibre supply and manufacturing wood products – might succeed where other strategies might never get off the ground.

## **Financial Feasibility**

### **Revenue Forecast**

#### **Pricing**

As with most commodities, the price of lumber is primarily driven by principles of supply and demand. When supply is plentiful, and demand is low, lumber mills reduce prices to encourage buying. The price of lumber impacts many industries, from construction to transportation, and is also affected by other industries. For example, when the real estate market cools down, fewer people spend money on home improvements and home construction, which means less demand for lumber.

Evidence in 2023 suggests that the nation's economy is slowing down, a factor that will influence spending on everything from real estate to discretionary expenditures. In line with this slowdown, the lumber futures commodity has fallen significantly from its record high just one year ago.

In order to illustrate financial feasibility of a collaborative partnership or business relationship, 2021 data from the Small Forest Tenure Capacity Building project has been used in the following pro forma statements.<sup>7</sup> This data has been compared to pricing data from Sawmill Sales Direct, Ladysmith, BC to facilitate a comparison between Interior and Coastal 2022 pricing data.<sup>8</sup>

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<sup>7</sup> The dataset was collected during the winter of 2020/21.

<sup>8</sup> Retrieved 03/24/23 from [Pricing — SSD Sawmill Sales Direct Ltd](#)

The pricing data of both datasets is based on rough green nominal measure<sup>9</sup> with the length of boards ranging from 8 to 12 feet in length.<sup>10</sup> It is important to note that wood product pricing is continually changing as our country’s economy fluctuates. For instance, as of writing this paper, lumber futures<sup>11</sup> have fallen close to COVID-19 per-pandemic levels of \$400/mfbm from a peak of \$1700/mfbm in 2021.

## Sales Revenue

The sales revenue forecast used in the following table is relative only to the commodity prices of lumber at the point in time detailed:

*Table 1: 2021 Data from SFTCB<sup>12</sup>*

Product Type	SELLING PRICE	
	\$/mfbm	\$/m <sup>3</sup>
<b>Cedar 1”</b>	2,400	480
<b>Cedar 2”</b>	2,000	400
<b>Cedar Boards</b>	2,500	500
<b>Cedar Clear<sup>13</sup> Boards</b>	3,500	700
<b>Cedar Timber</b>	2,500	500
<b>Cedar Timber FOH<sup>14</sup></b>	4,000	800
<b>Douglas Fir 1”</b>	1,500	375
<b>Douglas Fir 2”</b>	1,200	300
<b>Douglas Fir Boards</b>	2,000	500
<b>Douglas Timber</b>	2,000	500
<b>Douglas Timber FOH</b>	3,000	750

<sup>9</sup> Often in a retail hardware store a softwood board is advertised as a “2×6.” That is the nominal thickness and width. The “actual” size of the advertised “2×6” piece of lumber is “1-1/2×5-1/2.” The nominal size refers to the original state of the board before secondary processes have occurred.

<sup>10</sup> On average pricing would increase by 20% for boards over 12 feet in length.

<sup>11</sup> Lumber futures are traded on random length 8 to 12-foot 2 x 4s, the type used in construction. The contract is priced in terms of dollars per thousand board feet (mfbm).

<sup>12</sup> mfbm conversion to m<sup>3</sup> was derived from the average conversions used by various manufacturers and log exporters. An average conversion of 4 was used for Douglas-fir and 5 for Cedar. Douglas-fir and Cedar sawlog source is from SFTCB participant data.

<sup>13</sup> ‘Clear’ means free of knots; the fewer the knots in a piece of stock, the more expensive it is likely to be.

<sup>14</sup> Free-of-heart centre (FOHC) is lumber that does not include the pith, or first year's growth of the log. Timbers cut FOHC are much less likely to split open as they dry.

**Table 2: Coastal Sawmill Direct Pricing November 2022<sup>15</sup>**

Product Type	SELLING PRICE	
	\$/mfbm	\$/m <sup>3</sup>
<b>Cedar 1X4</b>	2,760	552
<b>Cedar 2X4</b>	2,625	525
<b>Cedar 4X4</b>	3,000	600
<b>Cedar 6X6</b>	4,333	867
<b>Cedar 8X8</b>	4,125	825
<b>Cedar 10X10</b>	4,680	936
<b>Douglas Fir 1X4</b>	2,100	525
<b>Douglas Fir 2X4</b>	2,100	525
<b>Douglas Fir 4X4</b>	2,250	563
<b>Douglas Fir 6X6</b>	2,667	667
<b>Douglas Fir 8X8</b>	3,000	750
<b>Douglas Fir 10X10</b>	3,360	840

Data gathered through the Small Forest Tenure Capacity Building project did not detail the actual dimension of the lumber produced and only focused on common thicknesses. For example, the SFTCB pricing for Cedar and Douglas-fir 1” lumber would compare to the Sawmill Direct 1X4 lumber. The Cedar and Douglas-fir 2” lumber would compare to the Sawmill Direct 2X4 lumber. For simplicity, boards include dimensions equal to or less than 2” in thickness, and timbers include dimensions greater than 2”.

The rough green lumber listed above could also be remanufactured into even higher value products or commonly called value-added wood products. For instance, value-added wood products are the result of combining commodity level products and innovation to turn lumber into something more useful. For example: carpentry products, profile wood, engineered wood, millwork, cabinets, furniture, and flooring. Remanufacturing creates supplementary value that could be used to generate higher revenues for the business relationship.

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<sup>15</sup> Retrieved 03/24/23 from [Pricing — SSD Sawmill Sales Direct Ltd](#)

## Operating Cost

Operating costs used in the following tables are approximations:

*Table 3: 2021 Data from SFTCB<sup>16</sup>*

MILLING COST		
Product Type	\$/mfbm	\$/m <sup>3</sup>
Cedar 1"	600	120
Cedar 2"	500	100
Cedar Boards	600	120
Cedar Clear	750	150
Cedar Timber	400	80
Cedar Timber FOH	450	90
Douglas Fir 1"	600	150
Douglas Fir 2"	500	125
Douglas Fir Boards	600	150
Douglas Timber	400	100
Douglas Timber FOH	450	113

*Table 4: Coastal Sawmill Direct Pricing November 2022*

MILLING COST		
Product Type	\$/mfbm	\$/m <sup>3</sup>
Cedar 1X4	600	120
Cedar 2X4	500	100
Cedar 4X4	500	100
Cedar 6X6	500	100
Cedar 8X8	450	90
Cedar 10X10	400	80
Douglas Fir 1X4	600	150
Douglas Fir 2X4	500	125
Douglas Fir 4X4	500	125
Douglas Fir 6X6	500	125
Douglas Fir 8X8	450	113
Douglas Fir 10X10	400	100

<sup>16</sup> mfbm conversion to m<sup>3</sup> was derived from the average conversions used by various manufacturers and log exporters. An average conversion of 4 was used for Douglas-fir and 5 for Cedar. Douglas-fir and Cedar sawlog source is from SFTCB participant data.



## Profitability

The following detailed financials are estimates that demonstrate the possible profit margins that could be shared amongst business partners. It is important to note that the milling process seeks maximum value from each log; therefore, sawlogs produce multiple products as size and dimensions allow. The milling process typically begins with rotating and sawing the outer sides of a log into boards until the center is squared into a four-sided cant. The cant is then rotated and sawn to produce the maximum amount and value of lumber. Thus each log can produce a variety of board dimensions until the remaining log is negligible.

*Table 5: 2021 Data from SFTCB<sup>17</sup>*

Product Type	SELLING PRICE		MILLING COST		LOG COST		PROFIT		Throughput %
	\$/mfbm	\$/m <sup>3</sup>	\$/mfbm	\$/m <sup>3</sup>	\$/mfbm	\$/m <sup>3</sup>	\$/mfbm	\$/m <sup>3</sup>	
Cedar 1"	2,400	480	600	120	1,025	205	625	125	10%
Cedar 2"	2,000	400	500	100	1,025	205	375	75	10%
Cedar Clear	3,500	700	750	150	1,025	205	1,725	345	10%
Cedar Boards	2,500	500	600	120	1,025	205	875	175	10%
Cedar Timbers	2,500	500	400	80	1,025	205	1,075	215	30%
Cedar FOH Timbers	4,000	800	450	90	1,025	205	2,525	505	30%
							<b>293.00</b>		<b>Average</b>
Douglas Fir 1"	1,500	375	600	150	548	137	202	51	13.3%
Douglas Fir 2"	1,200	300	500	125	548	137	52	13	13.3%
Douglas Fir Boards	2,000	500	600	150	548	137	852	213	13.3%
Douglas Fir Timbers	2,000	500	400	100	548	137	1,052	263	30%
Douglas Fir FOH Timbers	3,000	750	450	113	548	137	2,002	501	30%
							<b>274.25</b>		<b>Average</b>

Based on discussions with various small mills, the throughput of boards (1X4, 2X4, 4X4) compared to timbers (6X6, 8X8, 10X10) is typically in the range of 30 to 40%. If using a ratio of 40% boards and 60% timbers and weighting it against the above throughput, the SFTCB 2021 data for Cedar nets \$293.00/m<sup>3</sup> and \$274.25/m<sup>3</sup> for Douglas fir.

This profit would be shared over and above the typical sales price of the log if sold to any buyer outside of a business relationship.

<sup>17</sup> mfbm conversion to m<sup>3</sup> was derived from the average conversions used by various manufacturers and log exporters. An average conversion of 4 was used for Douglas-fir and 5 for Cedar. Douglas-fir and Cedar sawlog source is from SFTCB participant data.

*Table 6: Coastal Sawmill Direct Pricing November 2022*

Product Type	SELLING PRICE		MILLING COST		LOG COST		PROFIT		Throughput %
	\$/mfbm	\$/m <sup>3</sup>	\$/mfbm	\$/m <sup>3</sup>	\$/mfbm	\$/m <sup>3</sup>	\$/mfbm	\$/m <sup>3</sup>	
<b>Cedar 1X4</b>	2,760	552	600	120	1,325	265	685	137	13.3%
<b>Cedar 2X4</b>	2,625	525	500	100	1,325	265	700	140	13.3%
<b>Cedar 4X4</b>	3,000	600	500	100	1,325	265	1,175	235	13.3%
<b>Cedar 6X6</b>	4,333	867	500	100	1,325	265	2,508	502	20%
<b>Cedar 8X8</b>	4,125	825	450	90	1,325	265	2,350	470	20%
<b>Cedar 10X10</b>	4,680	936	400	80	1,325	265	2,955	591	20%
								<b>387.53</b>	<b>Average</b>
<b>Douglas Fir 1X4</b>	2,100	525	600	150	600	150	750	188	13.3%
<b>Douglas Fir 2X4</b>	2,100	525	500	125	600	150	900	225	13.3%
<b>Douglas Fir 4X4</b>	2,250	563	500	125	600	150	1,150	288	13.3%
<b>Douglas Fir 6X6</b>	2,667	667	500	125	600	150	1,567	392	20%
<b>Douglas Fir 8X8</b>	3,000	750	450	113	600	150	1,950	488	20%
<b>Douglas Fir 10X10</b>	3,360	840	400	100	600	150	2,360	590	20%
								<b>395.63</b>	<b>Average</b>

Using the same ratio of 40% for boards and 60% for timbers the Sawmill Direct data from November 2022 illustrates a weighted throughput net of \$387.53/m<sup>3</sup> for Cedar and \$395.63/m<sup>3</sup> for Douglas fir. It is interesting to note that the Douglas-fir in this example yields a higher return than the Cedar even though the selling price of Cedar is significantly higher. The difference in profit is directly related to the high-cost of a Cedar log in 2022.

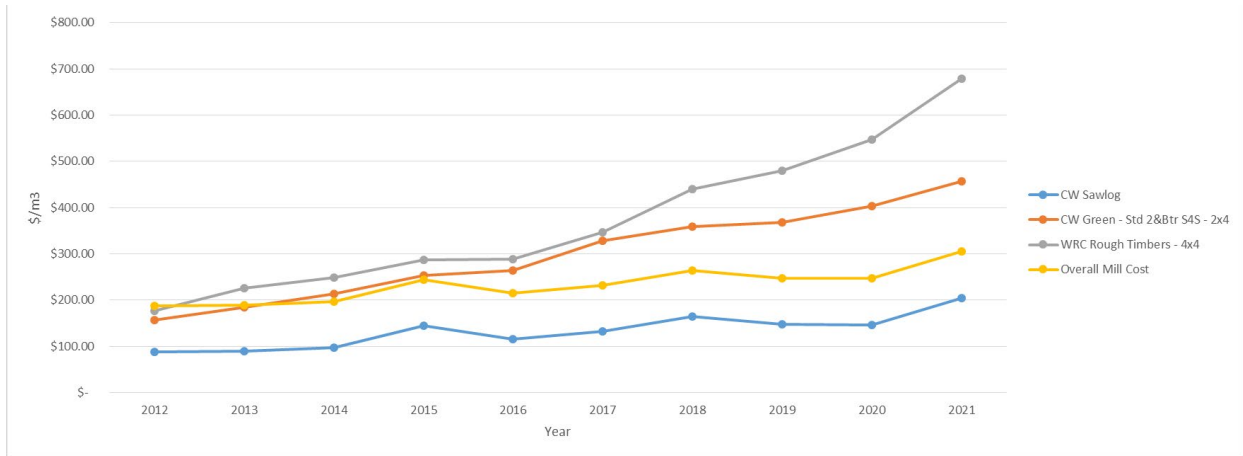
Another example of the profit potential for Cedar and Douglas-fir is illustrated in the following charts of the North American sell price per cubic metre of green Cedar – Douglas-fir lumber vs sawlog and overall milling cost.<sup>18</sup> The sell price listed above has been determined by converting US\$/mfbm to CD\$/m<sup>3</sup>.<sup>19</sup>

The average sawlog price for Cedar has gradually climbed over the last 10 years, with a year over year average increase of 15%. As comparison both the Cedar green 2x4 and 4x4 have risen year over year by 28% and 56% respectively since 2011. The combined material and operating cost of Cedar sawlogs and sawmilling yielded a profit 8 out of the 10 years.

<sup>18</sup> The overall milling cost is the cost of the sawlog combined with the cost of sawmilling.

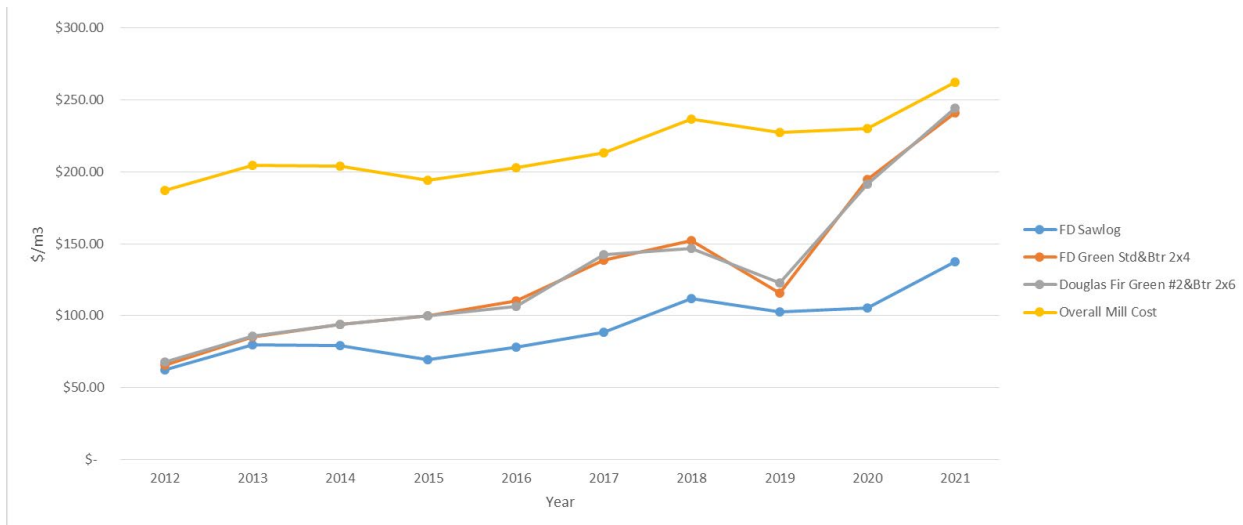
<sup>19</sup> Source: Madisons Lumber Reporter. <https://madisonsreport.com/> USD to CND conversions. <https://ca.investing.com/currencies/usd-cad-historical-data> mfbm conversion to m3 was derived from the average conversions used by various manufacturers and log exporters. An average conversion of 5 for Cedar. Cedar sawlog source is from SFTCB participant data.

**Figure A: Average Cedar Sawlog Purchase Price vs. Cedar green 2x4 and 4x4**



The average sawlog price for Douglas-fir has gradually climbed over the last 10 years, with a year over year average increase of 12%. As comparison both the Douglas-fir green 2x4 and 2x6 have risen year over year by 38% since 2011. This chart demonstrates that it is not profitable to cut dimensional Douglas-fir lumber until the selling price reaches levels in excess of \$265.00/m<sup>3</sup>.

**Figure B: Average Douglas Fir Sawlog Purchase Price vs. Douglas Fir green 2x4 and 2x6**



In order for a small sawmill to remain profitable it must focus its production on higher value lumber. There will be times when certain dimensions of lumber will yield a loss, as demonstrated by the Douglas-fir chart above, and where higher value products will be needed to offset these losses. This highlights that for a small sawmill to succeed and grow, it must acquire high-value logs in order to have the ability to manufacture them into high value wood products.

Maximising revenues from high-value wood products will ensure a profit that could be apportioned between the small wood manufacturers and small tenure holders of a Mill Co-op. The apportionment would have to be negotiated amongst the members due to factors such as:

- Operating costs
- Opportunity cost of logs being sold other places
- Opportunity cost of the sawmill not cutting for another customer order
- Product outputs and sale prices
- Production costs
- Value-added
- Risk

Participation by small wood manufacturers increases their sustainability and their capacity for growth as they are able to procure the fibre needed for manufacturing operations. However, profitability for small tenure holders depends on a profit-sharing arrangement between the parties for products milled, manufactured and sold using the provided fibre. Without profit-sharing or another incentive, small tenure holders will simply continue to sell the majority of their fibre to the major producers.

An example of profit sharing for both parties can be found in the following table, which is derived from **Table 5**. This table illustrates a hypothetical 50/50 profit sharing model for both 1m<sup>3</sup> of Cedar and 1m<sup>3</sup> of Douglas-fir.

**Table 7: Profit Sharing Example for Mill Partnership<sup>20</sup>**

					50/50 sharing	
	Wood product selling price (\$/m <sup>3</sup> )	Mill Cost (\$/m <sup>3</sup> )	Log Cost (\$/m <sup>3</sup> )	Profit (\$/m <sup>3</sup> )	Small Wood Manufacturer Profit (\$/m <sup>3</sup> )	Small Tenure Holder Profit (\$/m <sup>3</sup> )
1m <sup>3</sup> of Cedar	598.00	100.00	205.00	288.00	144.00	144.00
1m <sup>3</sup> Douglas-fir	531.28	120.43	137.00	266.04	133.02	133.02

Under a typical scenario, the small tenure holder would earn \$205/m<sup>3</sup> from the sale of 1m<sup>3</sup> of Cedar to a log buyer. However, with a business relationship in place, the small tenure holder commits that fibre to the manufacturer in exchange for profit sharing once the fibre is manufactured and sold. Thus, in addition to the \$205/m<sup>3</sup> profit from the Cedar sale, the small tenure holder also benefits from the sales of goods manufactured from the Cedar, which in the scenario presented above, is half of total profits (\$144/m<sup>3</sup>) and results in a total profit of \$349/m<sup>3</sup>.

Small manufacturers will not see additional profits from the business relationship. However they will be able to consistently obtain fibre for milling operations, which will allow them to build capacity, increase sales and potentially open up into new markets.

<sup>20</sup> These values are based on a Cedar sort with poles removed and a bush run Douglas-fir sort with nothing removed.

## Conclusion and Next Steps

This paper recognizes that a mill partnership between small forest tenure holders and small wood manufacturers is feasible. Whether the venture is a business relationship or a formal registered cooperative, both can work.

Trust is a critical issue for any partnership, and some participants in the Small Forest Tenure Capacity Building report stated that partnerships in the industry fail due to a lack of trust. However, a business relationship will not work without it.

With these factors in mind, it is most feasible to begin any business relationship with an informal partnership wherein members agree to “test the waters” as they build trust in their business relationship. The timeframe or likelihood to build enough trust to officially form a business relationship is unknown and highly dependent on the partners.

In a mill partnership, the objective is twofold: 1) to allow small tenure holders to capture more value for high-value logs, and 2) to increase wood supply for small wood manufacturers. A successful business relationship can increase profitability for small tenure holders by ensuring a market for their high-value logs while simultaneously increasing profitability for small wood manufacturers by ensuring a consistent delivery of fibre.

Additionally, high-value logs yield more valuable wood products and thus could also increase production of value-added products, creating even greater value and revenue for partners. This not only builds trust but could 1) expand existing markets and potentially open new ones, 2) create business stability and a healthy revenue stream, and 3) help to stabilise small wood manufacturing businesses. Trust is built as both members experience benefits from the business relationship, leading to higher revenues for small tenure holders and increased capacity and manufacturing for small wood manufacturers.

As small tenure holders can typically find buyers for fibre, they may be less interested in a partnership venture and may need an incentive to enter into a business relationship with small wood manufacturers. Small wood manufacturers who need a commitment of sustainable and consistent fibre should be willing to provide an incentive for a dedicated fibre supply. Any incentive structures should be re-evaluated after the project has been launched and operations are ongoing.

Regardless of the organizational structure, a business relationship offers several benefits.

### Benefits

- **Increased profitability:** Small tenure holders can expect increased profits with a guaranteed market for their high value logs. With a stable fibre supply, small wood manufacturers can focus on secondary markets and value-added production, increasing their profits.
- **More value captured from logs:** Small tenure holders in a business relationship will capture more value from the logs sold than they would in a typical log sale. Due to the

profit-sharing agreement, the tenure holders will earn not only money from log sales but from the goods manufactured as a result.

- **Stabilized wood fibre supply:** Throughout the Interior, small wood manufacturers lack the fibre supply they need to build and expand their markets. A business relationship or mill partnership will provide them with guaranteed fibre supply.
- **New and expanded markets:** Small wood manufacturers can capitalize on the consistent fibre supply to focus on increasing capacity through new products and market share.

## Feasibility

1. **Operational Structure:** The venture does not require any new business structures. However, a signed partnership agreement should be established and should detail the business relationship's goals and objectives as well as roles and responsibilities for participating parties.
2. **Market:** A business relationship or partnership will enhance competition against major producers for fibre supply. It will provide both a market for fibre held by small tenure holders as well as a market for new and expanded wood products facilitated by a consistent fibre supply. There is room in the market for a mill partnership; however, parties should expect competition from the major producers for fibre supply.
3. **Technical:** Technical feasibility is already proven. This venture would not add any technical aspects to the operations of small tenure holders and small wood manufacturers except in the collaboration required to deliver fibre and store it prior to manufacturing.
4. **Financial:** A mill partnership is financially feasible when small tenure holders provide all logs, including, and in particular, their high-value logs.

## Future Steps

**Build trust:** Outreach and stakeholder engagement is crucial to building support and trust among the potential partners.

**Outreach to small tenure holders and small wood manufacturers:** This project requires outreach by respected logging industry veterans who see the potential for a collaboration between small tenure holders and small wood manufacturers, a champion or champions for the cause who can discuss the concept, build enthusiasm and recruit potential collaborators.

**Develop talking point documents:** Developing documents that illustrate the potential for a business relationship/collaboration will help industry folks recognize what's needed to make the project work and what benefits could be expected.

**Focus on lumber commodity markets outside of the major producers' spheres of influence:** The competitive advantages of a Mill Co-op are limited when up against the major producers in

BC. The project will be limited by economies of scale and a sustainable cash flow to acquire fibre. A business relationship that focuses on the production of wood products outside of the scope of major producers would be more competitive. This includes wood products that are rare or hard to find and which could command a higher price as a supply source for a marketplace that is not saturated. This would also support the mill partnership's ability to pay more for high-value logs and sustain itself.