

Project Statement

BC Coastal Forest Sector Development Initiative

Program	Harvesting and Conversion Program – Solid Wood and Residual Products
Project Title	Identification of Key Barriers and Opportunities in Solid Wood Products Mfg
Project Number	H.02
Project Leader	Darrell Wong
Project Team	Forintek (LMB, Markets, Resource), Feric (Harvesting), Paprican (residuals), UBC, machine suppliers and consultants
Start Date	October 1, 2007
Completion Date	Phase 1-Feb 2009, Phase 2-Nov 2009, Phase 3-Sept 2010

Rationale:

Solid wood products manufacturing is a key part of BC Coastal wood products industry. It accounts for approximately 50% of the fibre utilization and is the core business of a large proportion of the industry. Unfortunately, competition and product substitution from lower cost foreign manufacturers; generally poor economic and trading conditions in principle markets; and older machinery and technology are creating critical business challenges.

This project endeavours to improve the short, medium and long-term competitiveness of the sawmilling sector by focusing on barriers and opportunities in the following key areas:

- Cost of sawmilling – Efficiency, labour, machinery, technology and operational/tactical planning
- Return to log value – Log grades/attributes & sizes, products manufactured/mix, product attributes, quality control & reliability, recovery, use/value of residuals and ability to respond to customer/market needs
- Integration along the value/supply chain – coordination with harvesting, log mix/delivery and sales and marketing
- Solid wood products manufacturing capability – current/future manufacturing capability, location of facilities, log supply and market demand
- Other critical business issues as they arise, such as finished product shipping and transportation

Key Objectives:

1. Identify key barriers to and opportunities for the competitive and profitable manufacturing of solid wood products on the BC Coast.
2. Prioritize barriers and opportunities based on potential benefit, risk and payback
3. Technology transfer of barrier removal and quantification of actual benefit and ROI
4. Analysis and projection of industry wide benefit

Project Methodology:

H.02 will be conducted in 3 phases over 3 years.

Phase 1 will begin with a technical and business analysis of the coastal sawmills. The technical review will include an analysis of the machinery, layout, flow, recovery and efficiency of sawmills. The business review will include an analysis of products, return to log values and market response capability.

In order to examine the integration of the sawmilling sector along the value chain, several benchmark performance assessments will be performed. These studies will track logs from harvesting, merchandizing, log delivery, manufacturing and delivery to customers. The study will assess the efficiency, recovery, production barriers, product capabilities / limitations and value generation by relating each factor both backward to the origins of the resource and forward to product volumes and value.

The benchmark studies will be used to guide an expanded examination of the wood products' value chain to include areas that affect or are affected by manufacturing. This includes log-harvesting practices, log delivery and customer/market needs related to manufacturing. The focus will be on barriers and opportunities to improving return to log values, new product opportunities and a more rapid market response time. Concepts such as directing the right log to the right mill and the appropriate types and locations of sawmills will be considered in detail.

The first phase will be completed using proven analysis tools such as flow simulation and Optitek sawmill capability analysis software. These tools will allow for the reliable determination of potential mill capabilities once barriers are removed and opportunities are exploited. Sawmill and supply chain flow simulations are planned.

Phase 2 will focus on the economics of the identified barriers and opportunities, by determining which have the highest potential and lowest technical risk to the coastal industry. A go/no-go decision on technology transfer will be made in consultation with industry partners and co-operators.

Phase 3 will focus on technology transfer and the verification of projected benefits and ROI.

Project Milestones

Activities	Planned Completion Date
Preliminary report on return-to-log and processing efficiency results including a draft of identified potential barriers and opportunities for the coastal solid wood industry	March 2008
Preliminary resource inventory value projection from perspective of solid wood conversion and current facilities	September 2008
Phase 1 Completion - Quantify current return-to-log and processing efficiency for different logs, solid wood products and manufacturing facilities and establish baseline of solid wood industry performance levels	February 2009
Prioritized list of solid wood products opportunities based on barrier removal and estimated payback	June 2009
Phase 2 Completion - Identification of financial opportunities and technical risk leading to go / no go decision for barrier removal technology transfer	November 2009

Activities	Planned Completion Date
Industrial trial of barrier removal, analysis of benefits, determination of ROI and projection of industry wide benefit	May 2010
Phase 3 Completion - Report with industry wide guidelines for implementation and benefits for major segments of the coastal industry	September 2010

Key Deliverables:

1. Valuation of resource inventory based on current facilities and barrier removal opportunities
2. Return-to-log and processing efficiency for different logs, solid wood products and solid wood manufacturing facilities
3. Prioritized list of solid wood products opportunities based on barrier removal
4. Financial opportunities of barrier removal
5. Industrial trial with analysis of benefits, ROI and projection of industry wide benefit

Expected Long-term Outcomes:

Improved industry competitiveness through:

1. Improved resource and log identification and routing to specific mills and for specific products
2. Improved decision making in the coordination of resource selection, harvesting, conversion and marketing
3. Reduce log delivery and conversion costs
4. Reduced market and product opportunity reaction time
5. Improved operational efficiency
6. Increase reliability in predicting log delivery, product outturns and total product cycle time

Potential Impact:

Based on past mill wide assessments, it is anticipated that the project will identify barriers, that if removed, will potentially lead to combined cost reduction and/or production value improvement of at least \$1 million per year per mill. As a result, it is anticipated that this project will identify specific improvements potentially valued at a minimum of \$5 million per year for the manufacturers assessed in this project. The industry wide impact is anticipated to be a minimum of \$500,000 per mill per year.

Collaboration:

Work on this project spans most of the value chain and as a result, coordinating with other projects is critical. This project has planned interaction with 6 other projects and close collaboration with the University of British Columbia. Expertise from other research groups such as IVALSA in Italy and the University of Bio Bio in Chile will also be utilized.

Key information on the coastal Hem-Fir resource, Optitek development and products and markets necessary for sawmill and business assessments will be provided by projects:

- R.01 - Characterization of Hem-Fir Attributes In Terms of End-Product Potential
- H.04 – Resource Conversion Valuation Tools
- P.02 – Benchmarking Current Core Products

Two parallel projects examining the barriers and opportunities in harvest operations and log delivery will be carried out.

- R.02 – Develop Options for Margin Improvement Through Improved Log Quality and Merchandizing Practices
- H.01 – Identify and Demonstrate Opportunities to Improve Efficiency of Fibre Delivery

Project H.02 will process logs of various diameters and grades, arranged by R.02 from three sites. R.02 will benchmark the log delivery costs, while H.02 will benchmark the processing costs.

A parallel project is planned to examine chip quality and its effects on pulp and paper product quality. Project H.02 will supply chips from mill trials to H.05 for analysis. H.05 is expected to provide a quantified valuation of chip quality.

- H.05 – Demonstrate Effect of Modern Sawmills on Chip Quality

Dr. Thomas Maness and his research group at the University of British Columbia (UBC) will integrate existing models developed through the Coastal Initiative with those existing from UBC. UBC will be providing:

- Analysis of the fibre supply - providing supporting information for the selection of logs for processing.
- Support for the collection and analysis of mill data
- Information on timber supply and how this is affected by government regulations
- Support for simulation and optimization modeling efforts
- Development of integrated tactical and strategic decision support systems

Financial support for the UBC work is provided by project H.03, which is being leveraged with NSERC funding awarded directly to UBC.