

# CINTRAFOR NEWS

THE CENTER FOR INTERNATIONAL TRADE IN FOREST PRODUCTS

## AN ASSESSMENT OF RESOURCE AVAILABILITY IN CLALLAM AND JEFFERSON COUNTIES

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By John Perez-Garcia, Associate Professor, CINTRAFOR

The Northern Olympic Peninsula (NOP) region was heavily affected by the curtailment of federal and state timber harvesting activity during the 1990s. Reduced timber harvest levels caused a decline in forest sector activity, prompting the State of Washington to designate the region “distressed”. There is now interest in attracting more investments to the area. The Clallam County Economic Development Council contracted CINTRAFOR to help identify potential areas for new investments and to identify markets for the raw material that leaves the region and the large volume of small diameter timber in the NOP’s unthinned timberlands.

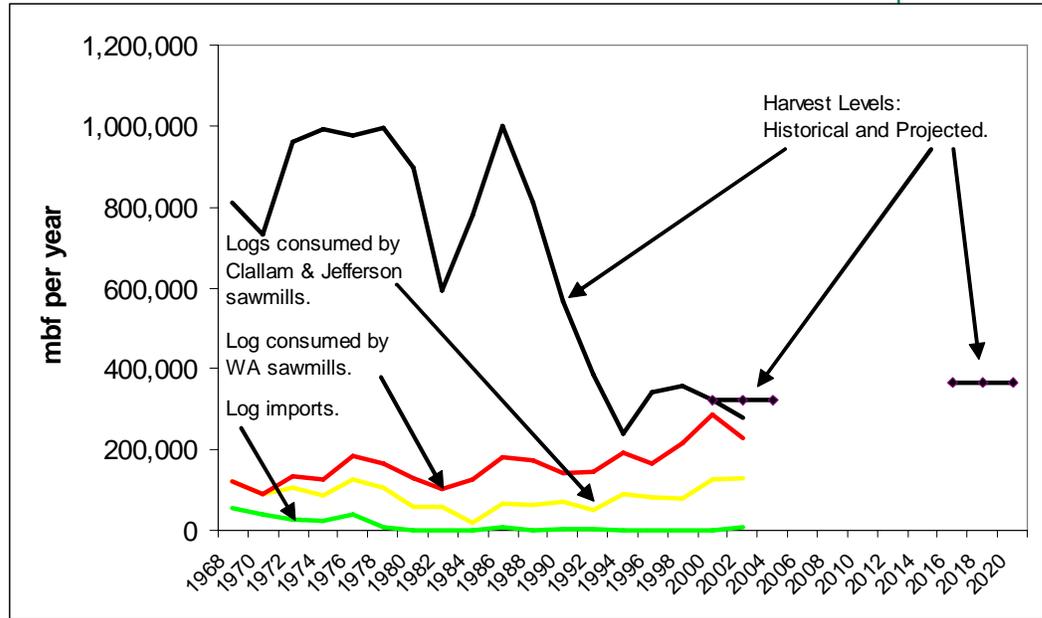


Figure 1. Clallam and Jefferson log harvest levels and amounts consumed by various sawmills locally and throughout Washington.

The study projected future timber harvest levels in Clallam and Jefferson counties, highlighting potential new supplies from small diameter materials. It examined pre-commercial thinning volumes on state and federal lands. It also analyzed the flow, species composition and log grade size of the raw material supply from the county. Three new investment opportunities were evaluated: (i) oriented strand board production utilizing harvest and current manufacturing waste material, (ii) biomass-based energy production, and (iii) second tier value-added products from random length alder lumber.

### Sawlog Volumes Are Projected To Increase

Harvest levels were projected using timber harvest data by grade and species provided by the Department of Revenue Timber Tax Division and the Department of Natural Resources Marketing Division. The analysis of

the sales data indicated an average volume of nearly 40 thousand board feet (Scribner log scale) per acre. The majority of this volume is #2 and #3 grade sawmill logs. Western hemlock constitutes the greatest volume per acre with over 15 mbf, followed by Douglas fir with 8.8 mbf. An estimated 8,070 acres were projected to be harvested annually from 2000 to 2004, implying that 322,265 mbf of timber would be harvested annually during this period. Harvest acres are projected to reach 8,618 from 2015 to 2020, with an estimated annual harvest level of 344,148 mbf.

### Excess Timber Still Flows Out of the Region

Mills in Jefferson and Clallam counties consumed a total of 122,033 mbf (Scribner log scale) of timber in 2002, and slightly more in

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# Director's Notes:

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The Center for International Trade in Forest Products addresses opportunities and problems related to the international trade of wood and fiber products. Emphasizing forest economics and policy impacts, international marketing, technology developments, and value-added forest products, CINTRAFOR's work results in a variety of publications, professional gatherings, and consultations with public policymakers, industry representatives, and community members. Located in the Pacific Northwest, CINTRAFOR is administered through the College of Forest Resources at the University of Washington under the guidance of an Executive Board representing both large and small companies, agencies, and academics. It is supported by state, federal, and private grants. The Center's interdisciplinary research is carried out by university faculty and graduate students, internal staff, and through cooperative arrangements with professional groups and individuals.

The past two years has seen a significant weakening of the US dollar against the currencies of our major trading partners, Japan and the EU. Since the beginning of 2002, the US dollar has lost 51.4% and 21.2% of its value relative to the Euro and the Japanese yen, respectively. While a weaker dollar helps to increase the competitiveness of US exports, it took some time for the forest products sector to respond. US exports of wood products increased by just 1% in 2003, although the continued weakness of the dollar in 2004 contributed to a substantial increase in US forest products exports. Over the period 2002-2004, total US exports of forest products increased by 14%.

That these export increases did not occur consistently across all of our major export markets highlights the challenge confronting forest products exporters. For example, while forest products exports to China increased by almost 75% between 2002-2004, exports to Japan remained stagnant, increasing by just 6%. The relative flatness in US wood exports to Japan can be attributed to several factors over which the forest products industry has little control.

Perhaps most importantly, European companies, who largely displaced US exporters over the past decade, have been reluctant to cede market share in Japan, despite the dramatic strengthening of the Euro. Rather, they have opted to maintain long-term market share at the expense of short-term profitability. This long-term strategic focus, coupled with a strong customer focus and high

product quality, has allowed them to prevent US export gains in the lumber and glu-lam beam market segments.

In contrast, US export performance has been more encouraging across virtually every wood products sector in China. The combination of strong export growth in China, coupled with the stagnant Japanese market, means that the share of US wood exports to China relative to US wood exports to Japan increased from 6.1% in 2000 to 27.1% in 2002 to 46.6% in 2004. It is interesting to note important differences in the export product mix between the two countries. In 2004, almost two-thirds of US wood exports to Japan were logs as opposed to just 13.7% for lumber. In contrast, US exports of logs to China accounted for just 31.7% of total US wood exports to China, while lumber exports represented 47.3% of total wood exports to China.

Despite these market differences, CINTRAFOR expects both Japan and China to remain important export markets for US wood products far into the future. However, a different set of market dynamics is present within each market and these will influence the type of export strategies that US firms employ in each market. CINTRAFOR is working to provide US exporters with a detailed understanding of the emerging trends that will affect wood use in both Japan and China. To accomplish this, CINTRAFOR has teamed with the University of British Columbia and FORINTEK Canada to publish two timely market reports: Wood Market Trends in Japan as well as Wood Market Trends in China. Both of these reports will be available toward the end of 2005.▲

## CINTRAFOR JOINS CONSORTIUM FOR 2006 INTERNATIONAL TRADE CONFERENCE

CINTRAFOR has agreed to put its 2005 International Forest Products Conference on hold for one year to join a consortium of highly respected forest products industry groups to co-sponsor an International Trade Conference in Vancouver, Canada. The conference sponsors include CINTRAFOR, Resource Systems Inc (RISI), Forintek Canada Corporation and the Forest

Products Society. The conference is scheduled for January 18-20, 2006 and will be held at the Westin Bayshore Resort and Marina in Vancouver, British Columbia. The

scope of the conference, tentatively titled: "China's Boom: Implications for Trade and Investment in Forestry and Forest Products" is to present data and analysis on how China's forest products markets have grown over the past 10-15 years, and to provide assessments of where those markets are likely to go over the next 10-15 years. The CINTRAFOR conference held in Seattle will return to its usual venue in Seattle in October 2006. More information on the conference will be provided in future editions of the CINTRAFORNews. ▲



# CONSUMER WILLINGNESS TO PAY FOR RENEWABLE BUILDING MATERIALS

By John Perez-Garcia, Associate Professor and Alicia Robbins, CINTRAFOR Graduate Student

In recent years, growing consumer awareness of the environmental effects of the products they purchase has resulted in a demonstrated change in buying behavior. The tremendous rise of the organic food industry illustrates the desire and willingness of consumers to pay a price premium for food products that meet certain environmental standards. The emergence of forest eco-certification standards demonstrates that greater market share will go to

companies that can demonstrate higher levels of environmental sustainability. Other developments, like

carbon-trading programs and green energy programs further demonstrate this shift. Over the past decade, greater attention has also been paid to the environmental effects of building products industries. Understanding public attitudes toward building materials and their related environmental performance is important as it can provide consumers with the product attribute information they seek.

Product attribute information has important policy implications for programs that may help achieve

certain environmental standards. This study, which resulted in Working Paper 94, Consumer Willingness to Pay (WTP) for Renewable Building Materials: An Experimental Choice Analysis and Survey, uses a choice-based, stated preference approach and relies on basic consumer demand theory. Using a mail survey, respondents were asked to assess a set of goods with different levels of emissions and price attributes; they were then asked to choose their most preferred alternative. Various price and environmental levels were included in the choice sets. Surveys were sent to two different populations. The first sample came from the general population; the second came specifically from real estate agents in the western states.

The results of the general population survey demonstrated that respondents were most sensitive to reductions in greenhouse gas emissions and were willing to pay for up to eleven tons of reduction associated with building a new house. Considering a typical house produces twenty tons of such gases during the construction process, this assessment is significant. They were also willing to pay

## Results: Total WTP and Amount Reductions by Pollution Type for Each Survey

Environmental Variable	Air Pollution	Solid Waste Emissions	Greenhouse Gas Emissions
Total WTP and Amount of Reduction			
General Mail Survey Respondents	\$106.25 for up to 18%	\$95.50 for up to 18%	\$168.09 for up to 11 tons
Real Estate Agents	\$110.90 for up to 21%	\$189.16 for up to 17%	\$62.21 for up to 13 tons

NB: each WTP is estimated individually while holding the other elements constant

for reductions in air pollution and solid wastes, although less than they were for reductions in greenhouse gas emissions. The water pollution variable was not significant enough in this study to estimate a willingness to pay. The responses from real estate agents suggest that they are much more willing to pay for reductions in solid waste emissions than for reductions in the other environmental attributes.

## Comparison Between Reductions in Different Building Materials and WTP

Environmental attribute	Minneapolis Steel vs. wood	Atlanta Concrete vs. wood	Maximum amount respondents WTP
Greenhouse gas emissions	9.8 tons	6.6 tons	11 tons
Air emissions	14%	23%	18%
Solid waste emissions	-0.9%	51%	18%

The survey results suggest that wood-based framing construction (instead of steel- or concrete- based framing) can better achieve certain environmental standards since, particularly in the case of greenhouse gas emissions, wood framing has lower greenhouse gas emissions than either steel- or concrete-framed houses. That is to say that the reduction in the number of tons a respondent was willing to pay for always exceeds the inherent reductions when these two framing systems were compared. For example, in Minneapolis, using wood instead of concrete results in a 9.8-ton reduction in greenhouse gas emissions; in Atlanta, using wood instead of concrete results in a 6.6-ton reduction<sup>1</sup>.



## CHINA BUSINESS DEVELOPMENT MISSION & FACTORY TOURS TO BE HELD IN JUNE

US-China Build (USCB), with support from CINTRAFOR, will lead a business development and factory tour mission to Shanghai on June 5-10, 2005. The tour is designed to provide US companies with an opportunity to learn about China's building materials and construction market, and China's role as a competitor in domestic and export markets.



Mission members talk with the developer of a luxury master planned community

Participants in the five-day mission will meet with developers, distributors, and sales representatives for US building materials sold in China, legal and financial experts, and purchasing agents representing some of China's largest home centers. Mission members will also visit retail and wholesale outlets for building materials and single- and multi-family housing developments.

According to experts in China's building products industry, key obstacles for US companies who want to begin exporting to China include a lack of understanding about the logistics and distribution system for building materials, and finding reputable distributors and sales representatives in China. Many US companies are unsure about their strategy for China, but are aware that China's construction market could positively affect their business. US participants on the mission will have an opportunity to learn about the market first-hand and to begin discussions with pre-qualified developers and distributors.

The mission will help US participants develop a better understanding about demand trends, distribution, regulations affecting the import of goods, considerations for establishing joint ventures, and other factors affecting company success in China.

Companies will also have the opportunity to present information about their products to Chinese firms.



### Included on the itinerary are:

- Meetings with Chinese developers and distributors to discuss how Chinese companies source imported materials, market trends, and how to sell US products in China.
- Briefings with US Foreign Commercial Service staff and Chinese housing association representatives to discuss market trends, regulations, and the demand for green and energy efficient building materials.
- Briefings with a representative from a US/China based law firm to discuss legal aspects related to distribution agreements, how to ensure payment is received, hiring employees in China, setting up a China-based office, and dispute resolution.
- Meetings with firms who are short-listed to design and build venues for the Shanghai Expo 2010 (World's Fair).

A draft itinerary is available on the USCB website at: [www.uschinabuild.org/Events/events.htm](http://www.uschinabuild.org/Events/events.htm). The participation fee for the business development mission is \$650 for Evergreen Building Products Association members, \$750 for non-members. Meals, accommodations, and airfare costs are not included. In-country transportation and hotel reservations can be arranged by USCB. Packages that include hotel and travel costs are also available. For more information, please contact Rose Braden at (503) 248-0406. ▲

*Willingness to Pay continued from page 3*

This survey has useful implications for both market and policy applications. For marketing purposes, the results suggest that those building materials producers seeking to increase their market share can point to better environmental performance associated with those materials that produce lower emissions, particularly greenhouse gases. For policy purposes, programs that aim to improve environmental performance standards might want to design a label that indicates the lower emissions standards in building material products. Perhaps a label similar to that of the "green star" by the EPA might be appropriate. Such a label may be used to educate homebuyers on the environmental performances associated with the building materials used in the construction of the house. Research into effective marketing tools should be conducted to provide consumers with the environmental attribute information to enable them to make better-informed decisions about the building products they purchase. ▲

<sup>1</sup>Lippke, B., J. Wilson, J. Perez-Garcia, J. Bowyer, J. Meil, 2004, CORRIM: Life Cycle Environmental Performance of Renewable Building Materials, *Forest Products Journal*, 54(6): 8-19.

## ENDOWED FUND FOR CINTRAFOR GRADUATE STUDENTS ESTABLISHED

Major funding to establish an endowment for CINTRAFOR graduate students was provided to the College of Forest Resources and the Center for International Trade in Forest Products on February 14th, 2005 in memory



of Josef Kolar. Over the past fifteen years Josef was a strong advocate and supporter of CINTRAFOR. The purpose of this endowment is to provide support for graduate students in CINTRAFOR in Josef's memory. This endowment will be used to fund a Scholarship for CINTRAFOR graduate students engaged in the research of international trade in forest products.

Josef Kolar was born and raised in Czechoslovakia, where he received his Masters of Science in Wood Science and Technology from the University of Forestry and Wood Technology at Zvolen, Czechoslovakia in 1981. After immigrating to the United States of America, Josef entered the College of Forest Resources graduate program and completed a Masters of Science Degree in Forest Products Marketing in 1989. After working in private industry for 9 years, Josef returned to CINTRAFOR to pursue his doctoral studies in forest products marketing. As a leading graduate student, Josef Kolar made important contributions to CINTRAFOR and the College of Forest Resources. These accomplishments include being awarded a highly competitive United States Department of Agriculture Doctoral Fellowship. In 2001, complications from Multiple Sclerosis forced Josef to withdraw from his doctoral program. Josef's courage and determination in the face of his illness will provide CINTRAFOR graduate students with an inspiring example of achievement in the face of adversity. Tax deductible contributions to this endowed fund for CINTRAFOR graduate students can be sent directly to CINTRAFOR. ▲

## CINTRAFOR WELCOMES NEW INTERNATIONAL MARKETING RESEARCHER

This February CINTRAFOR welcomed a new member to our research team. Dr. Joseph Roos joined CINTRAFOR after a two year appointment with the USDA Forest Service as a marketing specialist.



Dr. Roos comes to CINTRAFOR with a strong background in international trade and marketing of forest products. He started his career working for a Japanese trading company

in the export department. He then moved into global logistics as assistant manager for the Seattle office of a Japanese freight forwarding company and was eventually recruited as a Japan sales representative for a lumber and building materials exporter.

Dr. Roos has a bachelors degree in Business Administration from the University of Washington, a masters degree in Economics from Oita National University (Japan) and a masters certificate in Global Trade, Transportation, and Logistics (UW). Dr. Roos was a research assistant with CINTRAFOR where he received his doctoral degree in Forest Products Marketing. He reads, writes, and speaks fluent Japanese. During graduate school, Dr. Roos worked on a research project with Weyerhaeuser and was a research fellow with the United Nations Food and Agriculture Organization in Rome. Dr. Roos was a recipient of a highly competitive and prestigious Fulbright Fellowship to Japan. While in Japan, Dr. Roos was affiliated with Oita University where he conducted his doctoral research related to a market segmentation and analysis of Japan's residential post and beam construction market. His research interests include global e-commerce, consumer perceptions of wood, and Japan's forest products market.

Joe can be reached at [joroos@u.washington.edu](mailto:joroos@u.washington.edu) ▲

## CHINA CONSTRUCTION FACTS

- Energy consumption in China represents over 10% of the world's total energy consumption.
- More than 90% of China's fossil energy reserves are coal.
- The average life cycle of existing residential buildings in China is less than 30 years because of their poor quality.

- Annual housing construction ranges from between 1.6 and 2 billion square meters, more than all the world's developed countries' annual housing starts combined. Approximately 10-12 million housing starts per year in China.
- China's construction sector consumes 25% of all national steel consumption; 40% of all wood, and 70% of all glass and concrete.



2004. Timber consumed by Washington sawmills that originated in Clallam and Jefferson counties reached nearly 230,000 mbf in 2002, indicating that over 90,000 mbf of Jefferson and Clallam timber is exported to mills located in other Washington counties (see Figure 1). The majority of this timber, or about 77,000 mbf, went across the Puget Sound to Whatcom, Skagit, Snohomish, King and Pierce county mills.

The annual volume of timber removed from state and federal lands in Washington through pre-commercial thinnings is estimated to be 125,000 to 180,000 green tons. The majority of this thinned material is harvested from 4,000 to 6,000 acres of state lands, which will be available for thinning for the next decade. The majority of the available forest land is not considered to be commercial due to restrictions imposed by terrain conditions that lead to prohibitive harvesting and extraction costs.

### **Oriented Strand Board: A Competitively-Sized Mill is Larger than the Available Resources**

Oriented Strand Board (OSB) utilizes low grade materials to produce a plywood substitute. First generation OSB manufacturing plants had a capacity of approximately 50 million square feet on a 3/8 inch basis. Newer plants with continuous flow production are capable of producing 800 million square feet on a 3/8 inch basis. The majority of new plants have a capacity of 500 million square feet on a 3/8 inch basis. There is not enough resource in #4 and utility grade sawlogs to supply a new modern-sized mill. At most the projections reached 335 million square feet by 2020. Since the volume of required materials is much lower than what a new facility would consume, the potential for a new OSB plant in the region was determined early on during the study to be non-existent. Other limitations were also evident including the lack of sufficient hardwood for fuel in the region. If a sufficient amount of hardwoods for fuel was available, we then estimated the competitiveness of the material for use in energy production. To determine the fuel value of the materials in the region we estimated the size of a potential power plant by converting the wood volume of #4 saw mill and utility logs into a green ton measure, then relating this green ton measure with energy production. This conversion indicated that the power plant sizes could range from 37 to 45 megawatts, representing substantial amounts of energy production. We then calculated the competitiveness of the raw material if it were used to produce energy. Plants of similar sizes in Vermont purchased chips for \$12 to \$21 per green ton, substantially lower than chip prices paid by local pulp mills, and lower than estimated harvesting and delivery costs (about \$35 per dry ton). In addition the low price per kilowatt hour (about \$0.03) acts as a disincentive to utilize woody biomass as an energy source. These calculations indicate that wood as an



energy source is uncompetitive with current energy pricing. Also, harvesting and delivery costs are still too high for woody biomass to be viable, even if supply was not a constraining factor.

### **Red Alder Manufacturing: Diversification into Other Species a Necessity for Economic Success**

The utilization of red alder has increased dramatically, and the projected start of a new alder mill in 2006 suggested analyzing potential value-added products such as cabinetry, furniture and door manufacturing. We conducted interviews with the new mill manager and regional end-users of alder and determined constraints associated with attracting a value-added facility to the region. The constraints identified during these interviews included the inability to diversify products should a new manufacturing plant focus exclusively on alder. Various wood species are used in cabinetry, door and furniture manufacture. Currently alder is well received, but demand is highly responsive to changes in consumer preferences. Diversification of various species is perceived to be an important aspect of a successful end-user. The success of a value-added manufacturer will depend on its ability to utilize various sources of lumber and other materials.

### **Excess Timber Should Attract New Investments in Sawmilling**

While the volume of sawmill logs that are exported from the area is estimated at less than 100,000 mbf, and is insufficient for a new modern large mill, which can be twice as big, expanding the sawmilling capacity of existing mills may provide benefits for the local region and enhance their competitiveness with mills outside of the region that successfully bid for local timber. The announced plans for a new mill in the Everett area suggests an evaluation of timber values for the region and its competitiveness. An analysis is currently underway to examine these values and should be consulted when completed. While woody biomass is too costly now, opportunities should be explored for promoting "green energy" options. Finally, since the region is an excess supplier of timber, it should promote its position in order to attract new manufacturing enterprises that can consume underutilized resources and compliment the existing milling infrastructure in the area. ▲



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## New Publications

### Working Papers

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- WP96 Consumer Willingness to Pay for Renewable Building Materials: An Experimental Choice Analysis and Survey  
Alicia Robbins and John Perez-Garcia. 2005. 65 pp. \$20.00
- WP95 Discrepancies in Forest Products Trade Statistics  
Ivan Eastin and John Perez-Garcia. 2004. 47 pages. \$20.00
- WP94 China Sourcebook: An Introduction to the Chinese Residential Construction and Building Materials Market  
Alicia Robbins, Paul Boardman, John Perez-Garcia, and Rose Braden. 2004. 54 pages. \$20.00