

Overview of Wisconsin's Value-Added Wood Manufacturing Industry

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Abstract.—The valued-added wood manufacturing industry includes firms that use primary wood products, such as lumber or veneer, to produce higher value products, including flooring, cabinets, or furniture. Wisconsin's value-added wood industry is an important sector for the State's economy and serves as a vital downstream market for forest raw materials. A survey was conducted with the Wisconsin value-added wood industry in 2018 to better understand the current economic impacts, markets, and needs of this industry. Results suggest that employment opportunities exist. Enrollment in a forest certification and/or chain-of-custody certification program was uncommon among respondents. This study found there is an opportunity to substitute locally grown commercial species instead of using out-of-the-region species such as southern yellow pine and alder. Lastly, results indicated additional need for educational training to support the value-added wood industry, particularly in the areas of manufacturing and processing.

INTRODUCTION

Wisconsin's valued-added wood industry is an important sector for the State's economy and serves as a vital downstream market for forest raw materials. The industry includes more than 800 establishments, employs more than 20,000 workers, and generates a direct economic impact \$3 billion (WI DWD 2019, IMPLAN 2017).

During the last two decades, the U.S. forest products industry has experienced challenges. Similarly, to other domestic markets, wood manufacturers have lost market shares to low-cost producers overseas. In the 2000s, many value-added firms closed operations in the United States or moved production facilities overseas where reduced labor costs, reduced regulations, and lower energy costs allowed for cheaper production. Domestic consumption of hardwood lumber shifted from being used in manufacturing of furniture to producing industrial wood products, such as railroad ties and crane mats. Also, the decrease in domestic housing starts during the 2007–2009 recession led to a decline in consumption of wood products in construction and remodeling (Buehlmann et al. 2017, McKeever and Elling 2015). In residential construction, wood products are used as building materials (roof trusses and beams, framing, windows and doors) and appearance wood products (trim, flooring, and cabinets). Additionally, substitute materials such as steel and plastics have created market competition for wood products. Many of these substitute products are being used in flooring, furniture, millwork, and cabinets. However, wood has many benefits. Wood is a renewable resource as opposed to substitute nonrenewable products such as concrete, steel, and plastics. Less energy is required when manufacturing with wood than steel. Also, wood has been shown to increase human health and wellness when used in visual applications such as furniture, flooring, ceilings, and walls (Nyrud and Bringslimark 2010).

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Table 1.—Wood products manufacturing type by respondent (n=201) (companies could choose multiple responses)

Wood Product	Respondents	Percentage of Total
Millwork	106	52.70%
Architectural woodwork	62	30.80%
Furniture	55	27.40%
Hardwood and softwood lumber	47	23.40%
Hardwood dimension components	41	20.40%
Laminated counters & laminated other	28	13.90%
Containers, crates, pallets or skids, pallet parts	27	13.40%
Roof trusses, beams, particleboard, plywood & panels	25	12.40%
Crafts, models, toys, picture frames, & sporting goods	19	9.50%
Firewood, fuel logs & pellets	14	7.00%
Patterns	14	7.00%
Blocking	11	5.50%
Fencing	7	3.50%
Partitions & fixtures	7	3.50%
Veneer	7	3.50%
Boats and ships	2	1.00%
Caskets	2	1.00%
Lathe and stakes	1	0.05%

METHODS

From July to September 2018, an online and mail survey was conducted with Wisconsin's value-added wood-using industry. Mail and email lists were compiled by using both past editions of the Wisconsin Wood Using Industry Directory and known wood products manufacturer locations that were not listed in the directory. The goals of the survey were: (1) to update contact information in the Wisconsin Wood Using Industry Directory in order to serve local markets and forest utilization, (2) determine the impact of the secondary wood industry on Wisconsin's economy and (3) develop an understanding of educational and training needs of Wisconsin's secondary wood manufacturers. The survey was sent to 507 businesses across Wisconsin, using the Dillman's Tailored Design Method (Dillman 2000). The mailings consisted of a cover letter and questionnaire, a reminder letter, a second copy of the questionnaire, and a final reminder letter. Question topics included: demographics, wood product production, wood product purchasing, forest certification program enrollment, and educational training needs. In total, 205 completed surveys were returned. After eliminating undeliverable addresses and closed businesses from those contacted, the adjusted response rate for the survey was 51 percent.

RESULTS

Manufacturer Demographics and Types of Products Produced

Manufacturer demographics consisted of 163 firms with a single facility and 27 with multiple facilities that responded to the survey. Sixty-six percent of responding companies had fewer than 25 full time employees and produced less than \$5 million annually. Companies ranging from 25 to 99 employees (22 percent) reported sales from \$1 million to \$50 million. Only 12 percent of respondents had more than 100 employees. Most respondents identified as millwork manufacturers (n = 106 firms), architectural woodwork manufacturers (62), and furniture (55) (Table 1). Some of the respondents indicated that their companies were identified as more than one manufacturer type.

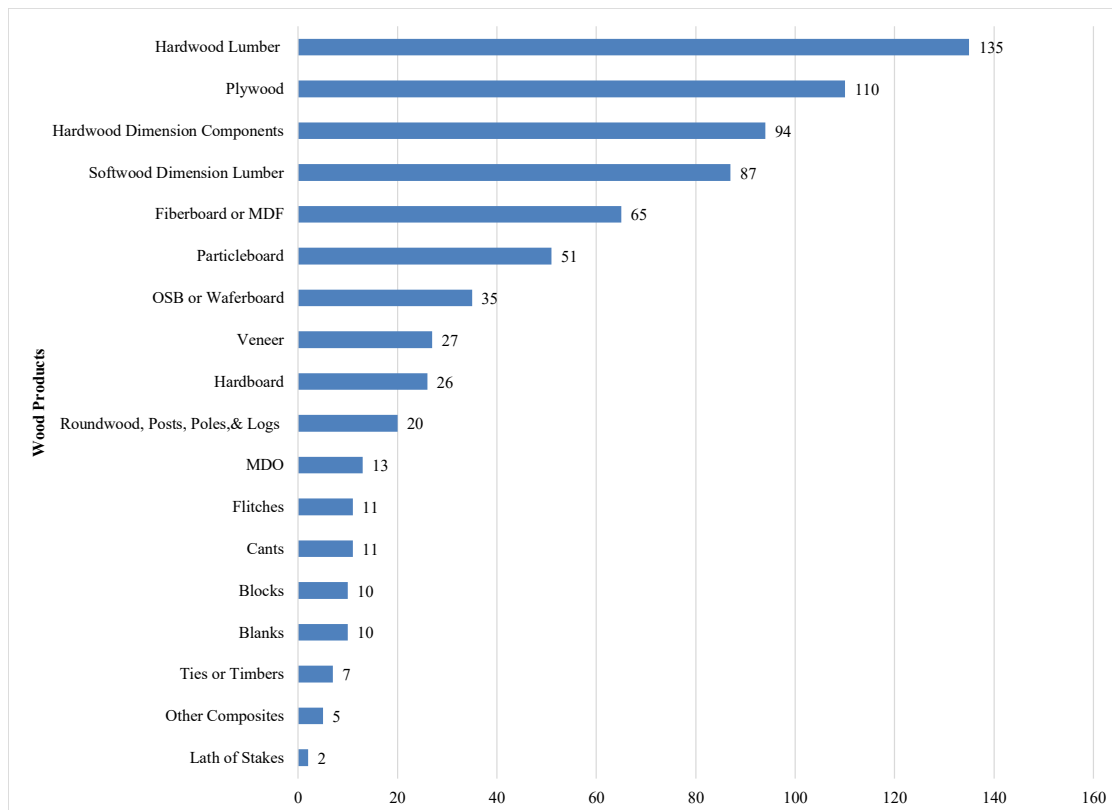


Figure 1.— Wood products purchased by responding companies (n=180); companies could choose multiple responses.

Types of Wood Products and Lumber Species Purchased

The most purchased wood products were hardwood lumber, plywood, hardwood dimension components, softwood dimension lumber, and fiberboard or medium density fiberboard. Other products purchased by respondents included: sawdust, wood shavings, urban wood (Fig. 1).

Of the companies that purchased lumber, the top hardwood species purchased were red oak, hard maple, cherry, white oak, and soft maple. These hardwood species were primarily used in cabinets, millwork, furniture, flooring, containers, and pallet manufacturing. The main softwood species used in manufacturing were eastern white pine (*Pinus strobus*), Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), southern yellow pine (*P. echinata*), and red pine (*P. resinosa*). Companies purchasing eastern white pine included: millwork manufacturers and furniture makers. Other softwood species were used in manufacturing of roof trusses, laminated beams, containers, pallets, and fencing.

Extent Enrolled in Forest Certification

Only 19 percent of firms indicated that they were currently enrolled in either a forest certification program or a chain-of-custody certification program. Where multiple responses were possible, more manufacturers were certified by Forest Stewardship Council than the Sustainable Forestry Initiative (15 percent vs. 4 percent, respectively).

Educational Training Requirements and Frequency of Labor Shortages

Manufacturers rated the importance of 11 training categories using: not at all important, not too important, unsure, fairly important, and very important. Training in workplace safety, lean manufacturing, process improvement, and marketing/sales were rated relatively high on the importance scale among the respondents.

Thirty-six percent of companies reported that they often or always experience a labor shortage. Smaller companies tended to report less turnover of employees compared to larger manufacturers. Companies with 25 or more employees had a shortage of employees often or always.

SUMMARY

Wisconsin's value-added wood manufacturers produce a diverse array of products ranging from furniture and millwork to industrial products, such as crates and pallets. The results showed that employment opportunities exist across the industry with most of responding companies experiencing some sort of labor shortage, especially larger companies. Enrollment in forest certification or chain-of-custody certification programs was the minority among respondents. Of those that were certified, firms who responded to the survey were more likely to be enrolled in the Forest Stewardship Council program compared to other programs.

Most of the respondents purchased and sold wood products domestically. Global markets for valued-added wood products from the United States are minimal because of low labor and production costs overseas. There may be an opportunity to substitute locally grown commercial species such as red maple (*Acer saccharum*) and red or white pine for wood species that are being purchased outside of Wisconsin, such as red alder, southern yellow pine, and ponderosa pine (*P. ponderosa*). This study indicated a continued need for educational training for the value-added wood industry, particularly in the areas of manufacturing and processing.

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