AN ABSTRACT OF THE THESIS OF

Alyson Wade for the degree of Master of Science in Wood Science presented on June 11, 2015.

Title: Local Specialty and Niche Market Potential: Opportunities for Oregon's Small Woodland Owners.

Abstract approved: _____

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Small landowners in the state of Oregon find it difficult to be competitive with larger companies to provide traditional forest products to consumers. Additionally, many landowners hope to be profitable from their land, but are not necessarily interested in or have the capability to harvest large tracts of timber. Specialty and niche forest products can potentially offer opportunities for many of Oregon's small landowners to improve stewardship and profitability from their land.

To assess aspects of the current local specialty and niche forest products markets, interviews and surveys were conducted. Local area experts were interviewed to

understand current market dynamics, a mail survey was administered to landowners and manufacturers in Clackamas and surrounding counties in Oregon, and a consumer survey was administered to attendees of a Local Forest Products Market. Topics that these surveys addressed included interest in specialty and niche forest products, barriers for landowners and manufacturers, the role of forest certification and forest stewardship at the local level, and what additional resources landowners and manufacturers would find most helpful.

Results show that landowners, manufacturers, and consumers desire a stronger local economy and agree that forest stewardship is beneficial to the economy, society, and the environment. While landowners and manufacturers are most interested in pursuing markets for building materials and specialty woods, consumers are most interested in purchasing forest based foods and handicraft items. Landowners and manufacturers agree that the largest barriers to improving the local forest products sector are government regulations, and both agree that more marketing resources would be the most helpful. Some potential economic development projects for the region as identified by the results of this work include developing more outlets for regional forest products sales, development of educational materials for the public and forest sector employees, and the adoption of agroforestry practices to help landowners diversify forestlands and income.

Local Specialty and Niche Market Potential: Opportunities for Oregon's Small Woodland Owners

by
Alyson Wade

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Science

Presented June 11, 2015
Commencement June 2016

Master of Science thesis of Alyson Wade presented on June 11, 2015

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Dean of the Graduate School

I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Alyson Wade, Author

ACKNOWLEDGEMENTS

The author expresses sincere appreciation to the Clackamas County Innovation Funds, for supporting this research, the Department of Wood Science and Engineering for providing resources to conduct this research and supporting my education, and Oregon State University.

I would also like to thank my advisor Chris Knowles for being so helpful during every step of my graduate school experience, having endless patience for me, and always being approachable, understanding, and relatable.

Thanks to Glenn Ahrens for advising with this project and for patience and understanding as well.

Thanks to Julian and Raul, who helped stuff envelopes, carry heavy things, and provided advice about projects and about moving abroad!

Thanks to Scott Leavengood who helped me figure out how to use the OFID and provided feedback in preparation for my defense.

Thanks to Deb, Jessica, and Michelle in the office, who answered my endless questions and provided many a laugh.

Thanks to Ian and Marcel, for being supportive, helpful, understanding, patient, and helping me to smile when I least felt like doing so!

Thanks to everyone who helped me stuff envelopes!!!

Thanks to the experts who provided insights and good conversations.

And thanks to everyone else that I forgot!

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Background Justification

Many of Oregon's small landowners find it challenging to compete in large scale commodity wood products markets and are interested in alternative markets for forest products to increase profitability from their land. Some landowners have shown interest in pursuing specialty and niche forest products markets, but are hesitant to follow through with their interests because the market potential is unknown. There is similar interest among small scale manufacturers and similar hesitation as well.

At the same time, there is growing public interest in buying locally produced products and supporting small local businesses. Often times, consumers who are interested in local forest products are also interested in some aspects of forest management when purchasing forest products, especially sustainable forestry.

There are many questions that need to be answered in order to support this growing interest on both sides of the supply chain. How much demand is there for specialty forest products? What specialty forest products could be produced from this region? What local market channels currently exist, and where is there potential to grow additional market channels? What are some new and innovative ways to market specialty and niche forest products? What is the role of forest certification at the local

level? What barriers currently exist for landowners, manufacturers, and consumers to expanding the local specialty and niche forest products sector?

The original project proposal was designed to be specifically focused on Clackamas County, Oregon, but little information was available for only Clackamas County. Generally, the forest products markets for all of Oregon operate similarly, so conclusions drawn from this paper focusing on Oregon also apply to Clackamas County.

In order to answer some of these questions, local experts were consulted, as well as landowners, manufacturers, and consumers of local forest products. Phone interviews, mail surveys, and in-person surveys were conducted to collect information. Using these methods, this project seeks to identify ways to support Oregon's forest products sector.

Goals

The goals for this project are listed below, and have been taken directly from the "Clackamas Innovative Funds Proposal 2014", found in Appendix A.

1) Produce a synthesis and summary of existing information on timber inventory, product potential, landowner interest, manufacturer interest and capacity, and consumer demand for potential niche products.

2) Produce a summary of new information developed in this project focused on landowner interest and manufacturer interest and capacity in Clackamas County.

3) Plan, coordinate, market, and evaluate “Goods from the Woods Fair”, target of 40 vendors, 2 days, 1,000 customers, Clackamas County Fairgrounds, October 2014.

4) Make recommendations for 1) further market assessment needs for Clackamas County and 2) development of proposals for specific local, regional or statewide economic development projects in the niche and specialty wood product sector.

Action Items

The action items were derived from the goals for the project and included:

1) Gather background information and perform a literature review.

2) Coordinate focus groups and/or interviews with area experts.

3) Use information gathered during steps 1 and 2 to develop landowner, manufacturer, and consumer surveys.

4) Administer landowner and manufacturer surveys via mail.

5) Coordinate and market a Clackamas County “Goods from the Woods” fair.

6) Administer consumer survey at the “Goods from the Woods” fair.

7) Evaluate surveys, expert interviews, and the literature review in order to make appropriate recommendations for further market assessment needs and future economic development projects in the specialty and niche wood products sector.

Chapter 2 – Background Information

Forestlands are important for a variety of reasons including providing wildlife habitat, protecting streams and soils, improving air quality, providing recreation opportunities and other goods and services for human use, just to name a few. For those who own forestlands, forests provide private areas, scenery, places to recreate, assets to pass to future generations, and income opportunities (USDA, 2015).

Of the 751 million acres of forestlands in the United States, 56% (423 million acres) are privately owned. Private forestland ownerships can be classified as either industrial or non-industrial, and non-industrial can further be divided into family or other non-industrial (Butler 2008). See Figure 2.1. This paper will focus on privately owned family forestlands.

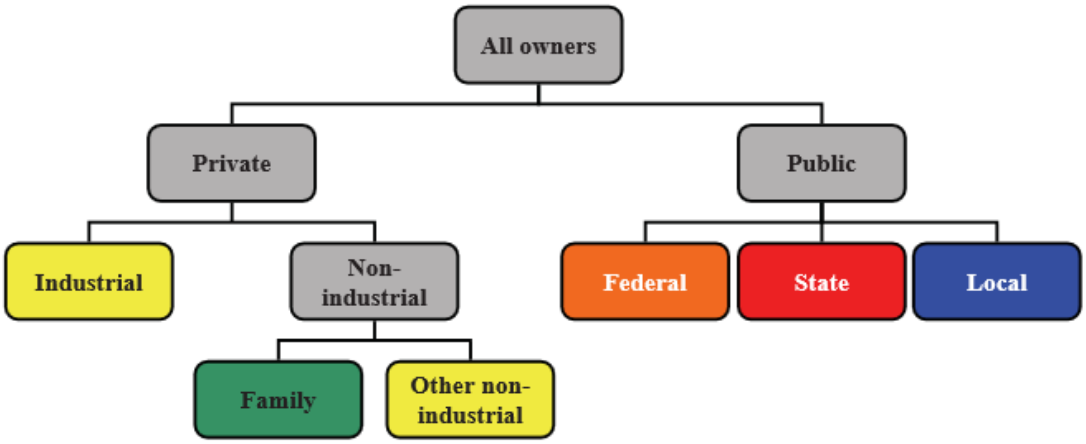

Figure 2.1. A breakdown of forest ownership categories in the United States (Butler, 2008).

There are approximately 10.2 million family forest owners in the United States, who collectively own 252 million acres (35% of total U.S. forestland). The average size of family forest ownerships is 25 acres, and when ownerships less than 10 acres are removed (60% of the total number of forest ownerships in the U.S.), the average size increases to 58 acres (Butler, 2008).

Small Woodland Owners

Small woodland owners, family forestland owners who own less than 5000 acres (in some cases they are classified as owning 10 to 5000 acres), play a vital role in the fate of the forestland in the United States as they own 252 million forested acres (35% of total U.S. forestland) (Butler, 2008). In Oregon, there are about 65,000 small woodlands owners (OFRI, n.d.) caring for almost 4.7 million acres of forestland, which is about 44% of the private forestland in Oregon. Half of the owners are 65 years or older, 4 of every 10 are women, and many have owned their forestland for 25 years or more in Oregon (ODF, 2015).

Most of Oregon's small woodland owners are not professional foresters; rather they represent a wide variety of professions. The reasons they own and manage forestland vary widely as well and include recreational use, fish and wildlife habitat, scenery, privacy, and income (OFRI, n.d.). Many have undertaken efforts to improve their forestland including planting seedlings, removing invasive species, improving streamside

areas and wildlife habitats, logging and thinning trees, reducing fire hazards, maintaining roads, and developing forest management plans (ODF, 2015).

Challenges Facing Small Woodland Owners

Small woodland owners care for the forests that benefit all Oregonians (and people around the world), but they also must face the challenges that come with being woodland owners. There is increasing economic pressure on small woodland owners that makes caring for and maintaining these vitally important forests more difficult. These challenges include rising labor and fuel costs, fluctuating timber markets, declining skilled forestry professionals (ODF, 2015), property taxes, and other regulatory costs (OFRI, n.d.). Increasing age and therefore health care costs for the older woodland owner population is another challenge that many resolve through the logging and sale of timber from the forestland they own. Another factor that is associated with the increasing age of the population is the passing of forestland to heirs, who often times prefer to sell the land rather than manage it (Mcclure, 2015).

One of the biggest challenges that small woodland owners face is the increasing drive towards development. As many of Oregon's small woodlands are situated at the urban-rural boundary, these areas are prime locations for development. Between 1974 and 2009, 191,000 acres of forest were converted to other uses in Oregon. Currently, 515,000 forest acres lie inside the urban growth boundary, and 1.9 million acres of family forestland lie within a mile of the urban growth boundary (Mcclure, 2015).

Additionally, Oregon's current population is roughly 4 million people, and by 2050, the population is projected to be greater than 5.5 million people (Office of Economic Analysis, 2013). This projected population increase in conjunction with economic pressures on woodland owners and adjacency of forestland to the urban growth boundary presents a large threat of development to Oregon's family forestlands in the coming decades.

It is crucial that Oregon create a positive environment for small woodland owners to thrive. In the meantime, some creative thinking to formulate solutions that satisfy multiple objectives is in order, because many landowners prefer to keep their land as forestland (OFRI, n.d.) and have no intentions of selling it (Cloughesy, 2005).

Forest Products

Deriving income from forest products is an option for many small woodland owners who wish to overcome financial challenges. Many forestland owners look to traditional forest products as sources of income, but non-traditional forest products may present opportunities as well.

Traditional Forest Products

Traditional forest products that are harvested from family forestlands include saw logs for dimension lumber, pulpwood, veneer logs, utility poles, posts, and tie logs among others. Markets for traditional forest products are generally well developed, as are market pathways (Great Lakes Forest Alliance, 2012). As most traditional forest products

are classified as commodities and may not command a high price (especially when sold in raw form), the conventional harvesting and sale of these products may not yield great returns for small landowners (Nygren, 2003).

Non-traditional Forest Products

Non-traditional and non-timber forest products and/or secondary forest products, including specialty and niche forest products present unique opportunities for small woodland owners. Non-traditional forest products usually depend on unique wood characteristics that are species, size, and/or characteristic specific. Non-timber forest products do not require the harvesting of whole trees. Both non-traditional and non-timber forest products can also be specialty or niche products, meaning they appeal to a certain subset of the population who appreciates the unique qualities of the product (Nygren, 2003). There is potential for some specialty and niche forest products to be quite profitable, and harvesting these products from woodlands is often times more sustainable than traditional timber harvests as well (Burden, 2013).

Jan Hacker provided a quote from a *Natural Resources Canada* publication that describes niche forest products well:

> "Niche products tend to be specialty, higher-value, non-commodity wood products that are directed at specific markets that value the unique appearance/quality of a product that has a limited production supply. Niche products are usually produced by smaller manufacturing plants that focus on producing a unique, high quality product in limited volumes. These are usually products that an end-user believes has an added-value component due to unique appearance/quality, end-use, etc.

> Many niche products have the same number of competitors as established commodity products but niche products have the advantage of being able to create brand or product loyalty to separate themselves from competitors, are more regional in market focus, are more attuned to market/demand changes and trends, and are quick to adapt to changes in market demand." (Hacker, 2006)

For the purposes of this research, specialty and niche forest products are defined as 1) high-quality, high-value, or value-added products, 2) local forest-to-market products, 3) "green-certified" products, 4) not the typical "run of the mill" high-volume, commodity products (Ahrens, 2014).

Specialty and niche forest products can be divided into some basic categories: 1) medicinals and botanicals, 2) forest based food products, 3) woody decorative florals, and 4) handicraft products and specialty woods (Josiah, 2014). Medicinals and botanicals include forest based medicinal herbs, such as ginseng and goldenseal, as well as value added essential oils, such as incense-cedar and Douglas fir (Non-Timber Forest Products, 2015). Forest based food products include a variety of nuts, fruits, and seeds, as well as other wildcrafted items like mushrooms and fiddleheads. Woody decorative florals include wreaths, holly, salal, pussy willow, and ferns among other items. Handicraft products and specialty woods include tables, boxes, toys, and other specially crafted wood items and rare or high value tree species. Building materials, including flooring, cabinetry, and timber poles, were also included as a category in the list of specialty and niche forest products for this project because of the potential to be locally crafted from local tree species and specially designed and custom milled.

There is a wide range of possibilities to grow and harvest specialty and niche forest products for Oregon's small woodland owners, as each parcel of land is unique and can therefore provide unique products and services. The benefits are numerous and include cash flow while waiting for timber crops to mature, less competition than commodity markets, more opportunity to connect with customers, and higher prices for products (Hacker, 2006). Challenges exist within these markets as well though, and include underdeveloped and sometimes nonexistent market pathways, unknown product demand, and generally higher labor costs and time commitments (Nygren, 2003).

Forest Certification

Forest certification is a relatively new concept that has developed over the past twenty years in response to demands that wood be ethically sourced. Forest certification schemes have certain managerial requirements that qualify parcels of land and trees as "certified", such as requirements for herbicide application and stream protection. The Forest Stewardship Council (FSC) was the first to develop a forest certification standard in the U.S. in the late 1990's, quickly followed by the Sustainable Forestry Initiative (SFI) and the American Tree Farm System (ATFS). Each certification scheme has different requirements, some are better recognized than others, and some are also used in conjunction with green building certification schemes. There is some controversy around forest certifications because some are more stringent than others, yet all claim

to support sustainable forestry and it can become difficult for consumers to keep up with.

Marketing Specialty and Niche Forest Products

Marketing of specialty and niche forest products is just as important, if not more important, than creating a quality product (Vollmers, 1999).

In *Marketing Specialty Forest Products* (2013), Josiah suggests the following strategies:

1) Know the customer – Knowing the needs of the customer is vital to success, and can be uncovered through the use of surveys, questionnaires, or other market research. These methods may also allow competitors' strengths and weaknesses to be uncovered.

2) Identify marketing options – Identify whether sales will be direct to consumers, retailers, wholesalers, or via distributors. Not all of these options will be appropriate or match with personal goals and business objectives.

3) Develop niche products with multiple markets – To reduce risk and provide greater flexibility, choose products with multiple markets. For example, hazelnuts can be sold in the shell, as crushed nuts, pressed for oils, used in other products, or stored for later sale.

4) Secure markets ahead of time – Line up markets before production begins and then work closely with customers to ensure their needs are being met. This will ensure higher prices.

5) Thinking small can pay off big – Prosperity comes by identifying and fulfilling the needs of the underserved or ignored market niches. The trick is to not focus on

too small a niche, otherwise prices will need to be too high for the market to support.

6) Setting prices – Ask around to see how others are pricing similar products and pay attention to the quality characteristics that affect price. Don't underprice the products or time invested!

Market Pathways

Options for market pathways for specialty and niche forest products are quite variable and choosing the right pathway(s) is a critical decision. Producers can choose to either sell raw material or produce a value added product. That product can be direct marketed to consumers, retailers, or wholesalers, or be sold on the internet. Direct marketing to consumers would likely require smaller quantities and be able to be sold for higher prices, while selling to wholesalers would likely require higher quantities and be sold at lower prices. Direct marketing to customers at farmers markets, fairs, and shows is a popular option for specialty and niche forest products producers (Josiah, 2014). For those who do not desire the customer interaction and effort of direct marketing to consumers, the wholesale option may be more attractive. See Figure 2.2 for a visual of market pathway options for specialty and niche forest products.

Figure 2.2. Diagram of market pathway options for specialty and niche forest products (Josiah, 2014).

Unfortunately for many small producers, selling wholesale requires more volume of product that may not be feasible to realize for individual landowners. In this case, a cooperative model may be of value to small landowners.

Forestry Cooperatives

Forestry cooperatives were established in the U.S. in the early 1900s, had a peak during the depression years (68 forestry cooperatives existed), and by 1965, roughly two thirds of them had dissolved. These cooperatives were diverse including “cooperative stores, marketing associations, processing cooperatives, federations of local cooperative associations, and special purpose cooperatives” (Sturgess, 2004).

Forestry cooperatives are on the rise again in the U.S., particularly in the upper Midwest, though other regions are recognizing the benefits that cooperatives offer and more are forming (Sturgess, 2004). Recent interest in cooperatives is driven by

landowners desiring a greater say in how their forestlands are managed, wanting to keep more economic value closer to the resource base through value-added processes, and the desire to have a social context to embed forest stewardship efforts (Bagley, 2010).

The benefits that cooperatives provide vary based on the needs of member landowners. Potential benefits include land management planning, forest certification services, in-woods services, contractor coordination, value-added processing and marketing. Cooperatives add strength to communities by engaging a group of committed members, providing mechanisms for stewardship continuity and coordinated stewardship, local job creation, and creating partnerships throughout the community. Cooperatives struggle with their own challenges as well including fluctuating forest products markets, capital requirements, competition, economies of scale, and cooperation (Bagley 2010).

For small woodland owners, cooperatives offer the chance to pool together resources and create common visions and goals for regional forestlands. They can secure greater market share, resources, and fair prices by acting together rather than acting alone. This cooperation helps to overcome some of the challenges that small woodland owners face when pursuing specialty and niche forest products markets.

The Oregon Woodland Cooperative

There is currently a forest products cooperative in Oregon called the Oregon Woodland Cooperative (OWC). They are a group of “over 70 woodland owner families involved in

growing and creating a variety of natural products" (OWC, 2015). The OWC's main focus is to find ways to add value for member owners. The cooperative has decided not to offer other services that are common for cooperatives because there are a variety of other organizations in Oregon who are already fulfilling some of those roles. For example, the OSU Extension forestry group and the Master Woodland Manager program already provide educational services to landowners and manufacturers. The Oregon Small Woodlands Association also offers educational services, as well as a political voice for small woodland owners.

The OWC focuses on creating value and cooperative marketing because they see that as a role that needed to be filled in this region. They also will recommend providers of forestry services for members. To decide what services or programs the cooperative should pursue, members have the opportunity at the annual meeting to brainstorm with each other and come up with ideas for the following year. They are currently especially interested in developing markets or creating added value around specialty and niche forest products, including truffles, forestland tours, mushrooms, pitch, and maple syrup.

The Build Local Alliance

Another area organization of importance is the Build Local Alliance, whose objectives are to create market driven incentives for higher levels of stewardship and to connect local wood with local projects. A major pathway for doing this is by creating market pull rather than market push, by targeting the people who are making material decisions,

mainly architects, who thereby create demand for locally sourced building materials and pull that product through the supply chain. Major avenues for connecting with the architects are by making presentations at local trade association meetings and also by travelling to the architect firms to make presentations (often times also supplying lunch to ensure high levels of attendance).

The Build Local Alliance also strives to organize three high quality events every year; two evening events and one day-long summer event. The goals of the evening events include connecting people along the supply chain, education, inspiration and celebration of people doing outstanding work, and organization expansion. An additional goal of the day-long event is to get people out into the forest to see what a working forest looks like and to understand more about where local wood comes from.

This innovative local organization is showing signs of health and maturity, as more people are getting involved (mid-level adopters), more significant amounts of funding have been procured, and the core leadership group has evolved into a rotating leadership structure. The organization is also strengthened by building partnerships with other organizations, including the Oregon State University Forestry Extension Service.

Local Market Case Studies

The local specialty and niche forest products markets of Oregon have not been extensively studied or documented, making it difficult to directly analyze. Instead,

several brief case studies of related topics have been performed and some implications and insights from those case studies will be discussed as they relate to the specialty and niche forest products markets of Western Oregon.

The "Buy Local" Movement

The first case study of importance is the "buy local" movement that is gaining momentum all over the United States and beyond. Stacy Mitchell, a senior researcher with the Institute for Local Self Reliance, states how "there is a larger, cultural shift … to buy local." She believes that the movement grew in popularity during the recession and "rather than pulling back and buying into the idea that they could save a few bucks elsewhere, in many communities, people seemed to make even more of an effort to steer their spending to businesses owned locally." Steve Bercu points out that "you have to provide actual superior customer experiences. If you don't, nobody cares if you're local" (Lyon, 2014). This is an important point, because often times once "local" is used as a tool to differentiate, superior customer service is no longer a competitive advantage, rather it is simply a customer expectation.

The buy local movement is important to draw from for a multitude of reasons, but one of the most intriguing things to note is that the appeal reaches many different age groups, income levels, and ethnicities (Huber, 2014). Drawing from this knowledge, it is reasonable to assume that there might be something special about the way that advocates for the buy local movement are connecting with the general public.

Upon performing a brief internet search, the first noticeable attribute is that the movement has prompted media attention, including stories about buy local organizations, small businesses, and the importance of keeping local money in local economies. This media attention has acted as an advertising tool, and not only does this get a name out to the public, but it is an opportunity to share a considerable amount of information as well.

The movement is largely fueled by individual local organizations advocating for spending more dollars locally rather than one large national organization. Most of these groups have their own logos and slogans, creating a sort of brand image for their organization that is easily recognized throughout the community. Businesses that participate will display the logo in windows and on doors to further promote the brand image and strengthen the legitimacy of the group and movement.

The last thing to note about the buy local movement is the innovative use of technology, which facilitates connecting with a larger portion of the public. The Explore Local App, created by Choose Local Media Inc. allows users to search for local businesses to support with the convenience of today's portable internet devices. The app shows places to shop, dine, drink, experience health and beauty, attractions, and entertainment. It is currently actively showing local businesses for 20 cities in Western Oregon (Choose Local, 2015). A similar website, Neighborhood Notes, keeps an updated local business directory and app for mobile devices with the following local business

categories: arts & entertainment, business services, community & social services, education, food & drink, government, health & wellness, recreation & sports, services, shopping, transportation, and travel, which might be better suited to list a wider variety of forest products (Neighborhood Notes, 2015).

The Local Food Movement

The local food movement is a subset of the buy local movement, but there is additional information that can be gleaned from this specific subset. Local food groups have been working on some of the same issues that present difficulties for specialty and niche forest products producers. Small food producing farms and communities, like small landowners and manufacturers, don't always have the capital required to build and maintain large facilities. The local food movement is pioneering ways to fund and manage community food processing, storage, and distribution facilities.

The USDA defines a Food Hub as "a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products" and the National Good Food Network adds "primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand". Benefits of these food hubs include expanded market opportunities, job creation, increased access to local food, and farm services and education. It takes substantial capital investment to build a food hub, and there are several different ownership and funding models to consider

including non-profit, producer/entrepreneur, public, wholesale/retail, cooperative, and virtual options (Van Dis, 2012).

There are more than 100 food hubs across the United States, each working in different regions and solving different problems every day. These food hubs could provide valuable knowledge and insights on how to fund and manage community processing, storage, and distribution facilities for the local forest products sector.

Goods from the Woods – Grand Rapids, MN

As previously mentioned, direct to consumer markets are popular options for specialty and niche forest products producers. Establishing a regional, annual local forest products market may be beneficial for Oregon's forest products sector. Luckily, there is a market similar to what was just described that can be used as a case study to understand strategies, successes, and challenges that these kinds of markets face.

The Goods from the Woods fair is a non-timber forest products market held annually since 2004 in Grand Rapids, MN. Unfortunately, according to the Goods from the Woods facebook page, as of 2015, the market will no longer be held. Obviously, the market faced some challenges that could not be overcome, which would be good to learn from. There were also some successes since the market ran for ten years that could also provide some valuable insight.

The goals of the fair were to “create an annual signature event of regional significance to attract visitors to Grand Rapids, improve the economic viability of non-traditional wood products businesses, increase the utilization of forest resources through improved harvest coordination, and promote sustainable harvesting techniques” (Hacker, 2006). The annual fair included a marketplace, educational programming, and entertainment to attract a variety of visitors.

The fair was organized by a group called True North Woods, an organization formed to build awareness about local species and products, create a brand for local forest products, and provide marketing and promotion for local forest products (Hacker, 2006). The fair apparently was not “gaining any traction”, and the group has decided to investigate alternative strategies for connecting with the public and creating awareness of local products, according to a conversation with a University of Minnesota Extension Educator.

Implications of Case Studies

There is a lot of attention and interest in local markets in the United States currently (Mercola, 2015). As such, there is a lot going on and a lot that can be learned. The “Buy Local” movement can provide some insight on how to better connect with the public, especially using innovative technologies. The local food movement can provide lessons on how to more efficiently and effectively organize supply and value chains. Other cooperatives and organizations working to bring more local forest products to the public

can share successes and failures, so that critical mistakes can be avoided and successes can be built upon.

Chapter 3 – Methods

In order to achieve the project goals, several project components were required. First, expert interviews were conducted in order to gain a general understanding of the current specialty and niche forest products sector. Ideas generated from these expert interviews were then used to develop landowner, manufacturer, and consumer questionnaires. These questionnaires covered a broad range of topics including interest in specialty and niche forest products markets, barriers to development, additional resources that would be beneficial, interest in developing the local market more, and the importance of forest stewardship and forest certification. Information from the questionnaires and the interviews were then used to determine some ideas for future work and economic development projects.

Expert Interviews

The goal of these conversations was to understand more about the current state of the local forest products sector and current issues or topics of interest that could lead to the development of survey concepts. Experts were identified who together represented a large portion of the supply chain (landowners, manufacturers, wholesalers, and consumers) as well as several local forest products organizations. The organizations that they represent are:

- Build Local Alliance – www.buildlocalalliance.com
- Oregon Woodland Cooperative – www.oregonwoodlandcooperative.com

- Oregon Small Woodlands Association – www.oswa.org

The names and contact information for the first three interviews were provided by Glenn Ahrens, one of the project advisors and a Clackamas County OSU Extension Forester, who identified these three people as “local experts”. A snowball sampling method was used, where these first three experts were asked to provide the names and contact information for other people they believed would be good “local experts” to interview. Four more names were collected using this method, making a total of seven expert interviews that were conducted.

The first three phone interviews were semi-structured, and were used to develop a more structured phone interview process for the following four interviews. The first three phone interviews were structured as such: A description of the project was given to the expert, and they were then asked to describe who they were, what organization(s) they represent, what role that organization plays in the local forest products sector, how the role of their organization could be improved, and what additional knowledge they would like to have that would be helpful to improve their organization’s operations (to imagine that they were administering the survey, what would they ask?).

Ideas collected from these first interviews and discussions with project advisors led to a more structured phone interview process for the following interviews in which the following ten questions were used to guide the conversation:

1) What market(s) does your organization currently operate within?

2) What potential market opportunities do you see for your organization, and what barriers are out there preventing the organization from pursuing those potential opportunities?

3) Explain how your current supply chain operates.

4) Explain any barriers that exist within the current supply chain and/or opportunities for improvement.

5) Describe your ideal supply chain.

6) What is the value in developing the local wood products market?

7) How much consumer awareness and interest is there for local wood products?

8) Please explain if you believe there are any discrepancies between the local wood products market supply and demand in the following areas:

    a. Capacity

    b. Species availability

    c. Quality/consistency

    d. Certified wood availability

    e. Other areas of discrepancy between local supply and local demand

9) What role does forest stewardship play in the local wood products market?

10) What role does forest certification play in the local wood products market? How does that differ from stewardship? What is the value of certification?

Field notes were recorded from each of the seven expert interviews, which were then compiled and commonly mentioned themes were used to develop concepts to test in the landowner, manufacturer, and consumer surveys. Themes were developed from this stage using two methods: 1) by identifying repetition of ideas among the experts, and 2) researcher discretion, when something was only mentioned once but seemed of greater importance.

Landowner and Manufacturer Survey

Often times, the best way to get information to use for planning and program improvement is through the use of a survey (Thayer-Hart, 2010). The landowner and manufacturer survey was used to collect information for several aspects of the project goals, including landowner and manufacturer interest in specialty and niche forest products markets, identifying areas where more research is needed, and identifying potential areas for economic development. As many manufacturers are also landowners, and vice versa, and many of the same questions applied to both target groups, the landowner and manufacturer survey was designed with one questionnaire which was administered to both target groups. A self-administered mail questionnaire was developed to collect information relating to these goals. This mode of data

collection was chosen mainly due to cost constraints and adequate coverage of the target population.

Questionnaire Development

Based on survey concepts that were developed from expert interviews, discussions with project advisors, and background research, the questionnaire was divided into 8 sections. The questionnaire utilized rating scales for some sections, so that in order for respondents to answer the questions, they simply had to choose a number that represented their level of agreement with a statement. Rating scales were used to allow for easier data entry and analysis.

In section 1, to assess the respondent's role in the local forest products sector, they were asked to answer the following questions:

1) *In which zip code is your business and/or land owned?* This was an open ended question which was included in order to ensure that the respondents were indeed located in the target geographical location.

2) *Which part of the local wood products supply chain do you represent?* This was a closed question in which a checklist was provided and respondents could choose as many as was appropriate of the following: landowner, land manager, timber/resource harvester, manufacturer/processor, wholesaler, retailer, consumer, and other – please specify. This question was used in order to separate respondents into categories for data analysis.

3) *If you are a landowner, how many acres do you own?* This was a closed question with multiple choice answer categories of: 0-10 acres, 11-50 acres, 51-200 acres, 201-500 acres, 500+ acres, and not applicable. Categories were not spaced evenly due to the large range of possible answers and the significance of understanding how smaller landowners' beliefs differ from the larger landowners' and non-landowners' beliefs.

4) *If you are a landowner, how much of your forestland is currently being actively managed for timber and/or forest products harvesting?* This was a closed question with multiple choice answer categories of: none, 1-25%, 26-50%, 51-75%, 76-100%, not applicable. This information was included in order to understand more about capacity for the production of local forest products.

5) *Where are* your customers *located? (Please circle both the answers that describe your closest customer and your farthest customer.)* This was a closed question with multiple choice answer categories of: in the Willamette Valley, in Oregon and Washington, on the West Coast, in the U.S., Internationally, I don't know.

6) *Where are the* final customers *of your wood products located? (Please circle both the answers that describe the closest final customer and the farthest final customer.)* This was a closed question with multiple choice answer categories of: in the Willamette Valley, in Oregon and Washington, on the West Coast, in the U.S., Internationally, I don't know. The last two questions were included in order to understand how much local forest products are being used locally or being transported elsewhere, but also to assess landowners' knowledge about what happens to their wood or forest products once it leaves their land.

Section 2 was used to measure respondent interest in local markets and networking, and was assessed using the agreement scale (strongly disagree (1), disagree (2), neither (3), agree (4), strongly agree (5)) and the items in Table 3.1.

Table 3.1. Section 2 of the landowner and manufacturer questionnaire used to measure respondent interest in local markets and networking.

Please indicate the extent to which you agree or disagree with the following statements.
I am interested in:
Selling wood/forest products locally
Building relationships with local woodland owners
Building relationships with local wood processors
Building relationships with local wood products users
Attending wood/forest products networking events in my community

Section 3 was intended to measure respondent interest in pursuing different categories of specialty and niche forest products markets, and was assessed using the interest scale (not at all interested (1), slightly interested (2), moderately interested (3), strongly interested (4)) and the items in Table 3.2.

Table 3.2. Section 3 of the landowner and manufacturer questionnaire used to measure respondent interest in pursuing different categories of specialty and niche forest products markets.

Please indicate your interest in pursuing the following specialty wood and forest products markets in the future.
Specialty woods (e.g. high-value or uncommon species)
Building materials (e.g. flooring, siding, cabinetry)
Medicinals & Botanicals (e.g. natural health supplements, herbals, oils)
Forest based food products (e.g. nuts, fruits, mushrooms)
Woody decorative florals (e.g. boughs, floral arrangements)
Handicraft products (e.g. wooden boxes, kitchen utensils, toys, tables)
Other, please specify _____

Section 4 was designed to measure respondent beliefs about barriers that exist within the current local forest products sector, and was assessed using the agreement scale (strongly disagree (1), disagree (2), neither (3), agree (4), strongly agree (5)) and the items in Table 3.3.

Table 3.3. Section 4 of the landowner and manufacturer questionnaire used to measure respondent beliefs about barriers to market development that exist within the current local forest products sector.

Please indicate the extent to which you feel that each of the following are obstacles to expanding and/or improving the current local wood & forest products markets.
Tree species availability
Timber available for harvesting
Ability to produce a wide enough variety of products
Ability to produce enough volume of product
Capacity for holding inventory
Price competition
Governmental regulations
Consumer interest
Other, please specify _____

Section 5 was used to evaluate additional resources that would be beneficial for respondents to have access to in order to build business or develop and manage land better, and was assessed using the agreement scale (strongly disagree (1), disagree (2), neither (3), agree (4), strongly agree (5)) and the items in Table 3.4.

Table 3.4. Section 5 of the landowner and manufacturer questionnaire used to evaluate additional resources that would be beneficial for respondents to have access to in order to build business or develop and manage land better.

Please indicate the extent to which you disagree or agree with the following statements.
It would be useful to have additional resources available in the following areas:
Accomplishing woodland management practices
Identifying potential customers
Identifying potential market opportunities
Marketing/advertising planning
Processing/manufacturing knowledge
Product pricing
Funding
Other, please specify _____

Section 6 was used to evaluate respondent beliefs about forest stewardship and forest certification, and was assessed using the agreement scale (strongly disagree (1), disagree (2), neither (3), agree (4), strongly agree (5)) and the items in Table 3.5.

Table 3.5. Section 6 of the landowner and manufacturer questionnaire used to evaluate respondent beliefs about forest stewardship and forest certification.

Please indicate your level of agreement with each of the following:
The health of local forests is important to me.
Forest stewardship is beneficial to the economy.
Forest stewardship is beneficial to society.
Forest stewardship is beneficial for the plants and animals.
I am familiar with forest certification.
I am interested in pursuing forest and/or chain of custody certification.
Forest certification of any kind ensures good forest stewardship

Section 7 was comprised of three demographics questions:

1. *What is your age in years?* This question was open ended.

2. *Please indicate your gender.* Response options included male, female, or prefer not to answer.

3. *Please indicate the highest level of education that you have completed.* The response options were as follows: less than high school diploma, high school diploma or GED, 2 year associates degree or trade school, 4 year college degree, advance degree beyond 4 year degree, other, please specify.

Section 8 was for any additional commentary.

Attention was paid to the physical format of the questionnaire. It was formatted to be four pages and was printed as a booklet on an 11x17 sheet of paper for ease of survey taking for the respondent and ease of processing for the data entry step. The visual layout included white space, consistent use of bold and italicized statements, clean, easy to recognize transitions between questions, and an official OSU logo at the top of each page. These design considerations were intended to reduce survey non-response (Thayer-Hart, 2010).

The questionnaire was reviewed by four OSU College of Forestry faculty members and two additional graduate students. Revisions were made, and the project advisers reviewed it once more. The questionnaire and supporting documents were then submitted to the OSU Institutional Review Board for approval before human subject research could begin.

Questionnaire Administration

The questionnaire was administered by mail. It was determined that mailing would return a greater response rate (as opposed to a web-based survey) as the expected average age of landowners in the survey area was 65+, and they would likely respond most positively to a mail survey. The project budget allowed for an initial mailing and a replacement mailing of the questionnaire to be administered to as many as 3000 recipients. The option for an intermediary reminder postcard and second replacement

questionnaire, as described in Dillman's Total Design Method for mail surveys (Dillman, 1991), was declined due to budget and time constraints.

Survey recipient contact information was collected from two places. Landowner information was extracted from the Clackamas County woodland owner database (county tax assessor list of properties with a forest use property class 600 series) using a random number generator, screened to properties greater than 10 acres and less than 5,000 acres for a total of 2410 landowner addresses. Manufacturer contact information was collected from the Oregon Forest Industry Directory (www.orforestdirectory.com), which is an online directory of forest sector businesses in Oregon. Results were screened based on county (Clackamas, Clatsop, Columbia, Multnomah, Tillamook, Washington, and Yamhill Counties were included) resulting in 571 manufacturers for the mailing list. Surveys were mailed to 2981 recipients in total. Due to time constraints, all of the recipients received a first and second mailing, even if a questionnaire was received back from the first mailing. The invitation to participate was changed to reflect this for the second mailing, and recipients were asked to please disregard and recycle the second mailing if they had already responded to the first.

Included in the mailings was an invitation to participate, the questionnaire, and a prepaid return envelope. The invitation to participate explained the goals of the project, the intended use of the results, and funding information. See the "Invitation to Participate" in Appendix B, and the "Landowner and Manufacturer Questionnaire" in

Appendix C. Each questionnaire was identified on the top right corner of the first page by a mailing number (one or two), a dash, and a unique ID number (one through 2981). A spreadsheet with all of the recipient contact information was used to assign unique ID numbers to each recipient, and then mailing labels were created with the contact information and the corresponding assigned ID number. Each questionnaire was then placed into the corresponding labeled envelope so that the numbers matched.

Consumer Survey

A consumer survey was also developed to provide information about consumer demand for locally produced specialty and niche forest products.

Questionnaire Development

Concepts for the consumer questionnaire were derived from the expert interviews as well, and were very similar to the concepts that were tested in the landowner and manufacturer survey. One of the reasons for making them so similar was so that discrepancies between supply and demand and beliefs of the three groups could be identified. The consumer questionnaire included four sections.

Section 1 was intended to measure respondent interest in purchasing different categories of specialty and niche forest products, and was assessed using the interest scale (not at all interested (1), slightly interested (2), moderately interested (3), strongly interested (4)) and the items in Table 3.6.

Table 3.6. Section 1 of the consumer questionnaire used to measure respondent interest in purchasing different categories of specialty and niche forest products.

Please indicate your interest in purchasing the following locally produced specialty wood and forest products.
Specialty woods (e.g. high-value or uncommon species)
Building materials (e.g. flooring, siding, cabinetry)
Medicinals & Botanicals (e.g. natural health supplements, herbals, oils)
Forest based food products (e.g. nuts, fruits, mushrooms)
Woody decorative florals (e.g. boughs, floral arrangements)
Handicraft products (e.g. wooden boxes, kitchen utensils, toys, tables)
Other, please specify _____

Section 2 was used to evaluate respondent beliefs about the importance of buying locally produced forest products, forest stewardship and forest certification, and was assessed using the agreement scale (strongly disagree (1), disagree (2), neither (3), agree (4), strongly agree (5)) and the items in Table 3.7.

Table 3.7. Section 2 of the consumer questionnaire used to evaluate respondent beliefs about the importance of buying locally produced forest products, forest stewardship and forest certification.

Please indicate the extent to which you agree or disagree with the following statements.
Buying locally produced forest products is important because it:
Strengthens the local economy
Builds community relationships
Ensures good forest stewardship
Reduces my environmental impact
Encourages the uniqueness of my community
Boosts healthy competition and innovation
Ensures I am getting a high quality product
Other, please specify _____
Local products are worth a price premium
The health of local forests is important to me
I am familiar with forest certification (e.g. FSC, SFI, ATFS)
Forest certification of any kind ensures good forest stewardship
Certified forest products are worth a price premium
I would like to see more locally produced, certified forest products

Section 3 was for respondent demographics and included the following questions:

1) *Have you purchased any locally produced forest products in the last 12 months?* Response options included yes, no, and I have purchased forest products, but I don't know if they were produced locally.

2) *What is your age in years?* This question was open ended.

3) *Please indicate your gender.* Response options included male, female, and prefer not to answer.

Section 4 was provided for any additional commentary.

The questionnaire was developed, reviewed by both project advisors, edits were made, and then IRB approval was obtained.

Questionnaire Administration

The questionnaire was administered at the Local Forest Products Market at the Clackamas County Events Center on November 22, 2014, where a team of three people personally approached as many market attendees as possible and asked them to fill out a one page survey in order to build more knowledge about the local forest products sector. This audience was chosen primarily for convenience, but was also targeted as being interested in and/or consumers of local forest products, which is the group of people whose buying trends this project aims to understand better. No formal written introductory statement was used to engage attendees. A written "Consumer Consent Statement" was available for attendees to read before filling out the questionnaire, and

can be found in Appendix D of this document. The “Consumer Questionnaire” can be found in Appendix E of this document.

Data Analysis

A basic statistical analysis using Excel was performed on the quantitative data that was obtained from the landowner, manufacturer, and consumer surveys. This basic analysis included calculating averages, medians, counts, and percentages. PivotTables were used to separate landowner and manufacturer data, and to calculate the counts for each survey question response rating. Percentages were then calculated from the count data. Calculations were made at this point to change the five point agreement rating scale into a three point rating scale. “Strongly disagree” and “disagree” were combined into the “disagree” category, “neither” was left alone, and “agree” and “strongly agree” were combined into the “agree” category. Thus, results are reported as “disagree”, “neither”, or “agree”. Calculations were also made to change the four point interest scale into two points. “Not at all interested” and “slightly interested” were combined into “less interested”, and “moderately interested” and “strongly interested” were combined into “more interested”. This was done because the results are not significantly lessened in quality by doing so, but are significantly easier to use while reporting and discussing the results.

Respondent commentary from the landowner and manufacturer survey was analyzed using a cutting and sorting method and repetition recognition. Each of the comments

was placed into a category with similar comments, and then themes were developed from the description of the categories. This exercise was then repeated by another research assistant to add validity to the process of theme development.

Chapter 4 – Results

Interview Results

Each expert interview revealed different attributes of the local forest products economy and items that needed to be researched further. The conversations also became more complex with each interview, as it was easier to recognize and pick out the most important ideas and ask more questions about those topics in order to understand more thoroughly. Several items were mentioned in more than one interview and are discussed below.

1. There is a lot of potential to expand hardwood markets, but this is a complex endeavor for a variety of reasons including unpredictable volume of hardwoods especially FSC (Forest Stewardship Council) certified, lack of space and/or funding for holding logs or other inventory when hardwoods are available, and the endangerment of hardwood ecosystems in the Willamette valley, namely the oak savannah.

2. Being able to provide local products on demand is an issue for local producers, and many miss out on sales opportunities because of it.

3. Regional manufacturing capacity is lacking in several areas including kiln drying and hardwood processing. Quality of locally produced goods is inconsistent and lumber grading is variable among suppliers.

4. The public is interested in local wood products, but they are not willing to pay more for them, perceivably because they do not understand the true value of the trees, high quality, longevity, and craftsmanship of the wood products, and other ecosystem services that the local forests provide. More public education

and marketing could be done to boost this effort. The public could also be more informed about local product availability and variety.

5. The role of forest certification at the local level is clearly of little importance, and the local story is just as or more important to local consumers. Forest certification still plays a role however, as green building continues to grow in popularity, though at this time, FSC is the only certification scheme to benefit greatly from the green building boom. It is unclear how these trends will change and how much additional value landowners and manufacturers can get for being certified. Additionally, the politics of forest certification are unattractive.

6. Regardless of the role of forest certification, forest stewardship is of utmost importance to those who care about the local forest products industry. Most if not all of them understand that without healthy forests, they would soon be out of business.

7. Most people see the value of building the local economy which includes building a vibrant local community, responding to customer demands more quickly and accurately, providing more unique products, reducing consumers' carbon footprints, and ensuring forest stewardship.

Other noteworthy comments and/or questions posed by the experts include:

- Does forest stewardship mean the same thing as forest certification to landowners, manufacturers, and the public?

- In theory, forest certification is a good thing, but in practice it is "useless". Landowners are using the same practices and hiring the same loggers, yet some are certified and some are not.

- “I have a hard time selling ATFS (American Tree Farm System) and SFI (Sustainable Forestry Initiative), but I can sell FSC and the local story.”
- Where are markets going to develop?
- How do we help the producers “get the message out” and tell the good story about how local producers are “improving the world we live in”?
- A major barrier in the forest products markets is that people are “afraid to think of new ways to do things”. For landowners, this could mean considering a less generic land management plan.
- More wholesalers in the area who understand local product value and who can “tell the local story” would be helpful.

Results from Landowner, Manufacturer, and Consumer Surveys

Response Rates

Out of 2981 landowner and manufacturer questionnaires that were mailed out, 493 were returned completed and 91 surveys were returned as “undeliverable” for an overall response rate of 17%.

Out of 2410 questionnaires mailed to landowners, 420 were returned completed and 34 were returned as “undeliverable” for a landowner response rate of 18%

Out of 571 questionnaires mailed to manufacturers, 47 were returned completed and 57 were returned as “undeliverable” for a manufacturer response rate of 9%.

For the consumer survey, 36 consumer responses were obtained out of 100 market participants.

Respondent Information

Respondents identified themselves the following ways: 420 landowners, 102 land managers, 68 timber/resource harvesters, 47 manufacturer/processors, 27 wholesalers, 28 retailers, 37 consumers, and 19 others. The others included land clearing/roads, consultant, tree horticultural nursery (no wood products), fabricator, log buyer, financial services, trade association, small hobby farm, habitat, handcrafted log home builder, log scaling and grading, reforestation, and bamboo grower. 17 people identified themselves as both a landowner and a manufacturer.

The most common property size category represented by this survey is that of 11-50 acres (56%), followed by 51-200 acres (27%). See Figure 4.1 for property size results.

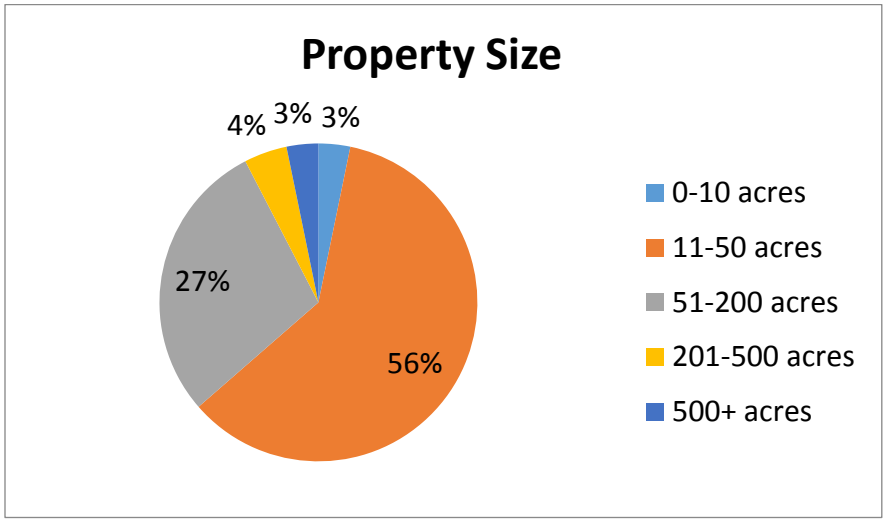

Figure 4.1. Breakdown of property sizes of respondent landowners.

The most common percentages of actively managed land for forest products were 76-100% of land (34%) followed by 0% of land (23%). See Figure 4.2 for land management results.

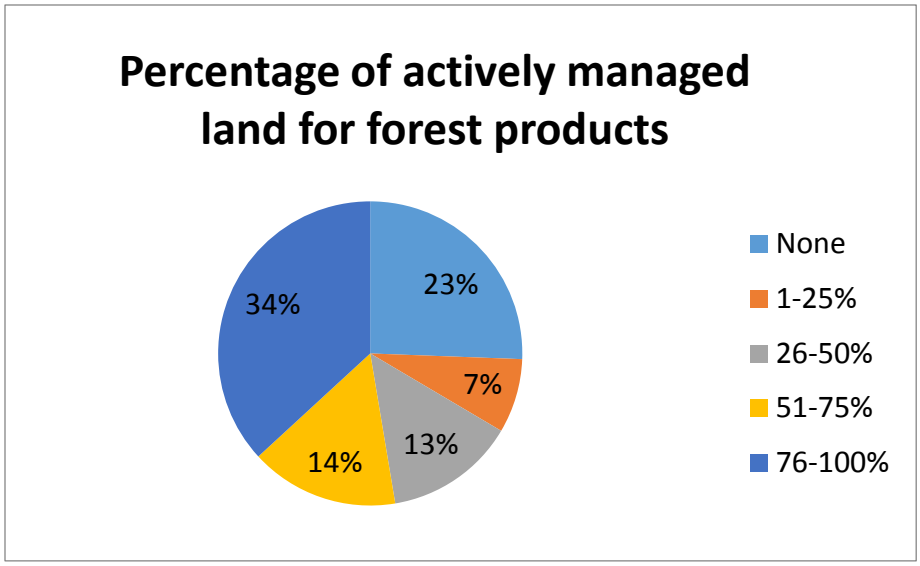

Figure 4.2. Breakdown of percentages of land actively managed by respondent landowners.

Local Markets

Landowners and manufacturers were asked to rate their interest in pursuing local markets. 61% of landowners and 85% of manufacturers agreed that they are interested in selling wood products locally. Landowners are most interested in building relationships with other landowners (43%), then with local wood processors (42%), and finally with consumers (31%). Interestingly, manufacturers were interested in building relationships in the opposite order. First with consumers (72%), then with other manufacturers (70%), and finally with woodland owners (57%). 43% of landowners and

72% of manufacturers are interested in attending forest products networking events in their communities. See Table 4.1 for the complete listing of landowner and manufacturer survey results regarding local markets.

Table 4.1. Landowner and manufacturer survey data relating to local markets.

I am interested in:	Landowners			Manufacturers		
	Disagree	Neither	Agree	Disagree	Neither	Agree
Selling wood/forest products locally	10%	20%	61%	2%	4%	85%
Building relationships with local woodland owners	10%	29%	43%	13%	15%	57%
Building relationships with local wood processors	12%	30%	42%	4%	13%	70%
Building relationships with local wood products users	13%	37%	31%	4%	11%	72%
Attending wood/forest products networking events in my community	13%	27%	43%	4%	26%	61%

Consumers were asked to rate their most important reasons for buying locally produced forest products. 100% of consumers who completed the survey felt that buying locally produced forest products was important because it builds community relationships. Other reasons respondents agreed that buying locally was important include that it strengthens the local economy (97%), it ensures good forest stewardship (94%), and it encourages the uniqueness of the community (92%). Respondents felt the least

important reason to buy locally produced forest products was because it ensures a high quality product (79% agreed while 6% disagreed). This confirms what was discussed in the expert interview results, that consistency of quality is an area for improvement for local wood products manufacturers. 82% of respondents agreed that local products are worth a price premium. See Table 4.2 for a complete listing of consumer survey results relating to local markets.

Table 4.2. Consumer survey data relating to local markets.

	Consumers		
Buying locally produced forest products is important because it:	Disagree	Neither	Agree
Strengthens the local economy	0%	3%	97%
Builds community relationships	0%	0%	100%
Ensures good forest stewardship	0%	6%	94%
Reduces my environmental impact	0%	17%	83%
Encourages the uniqueness of my community	0%	8%	92%
Boosts healthy competition and innovation	0%	11%	89%
Ensures I am getting a high quality product	6%	15%	79%
Local products are worth a price premium	0%	18%	82%

Specialty and Niche Forest Products

Landowners, manufacturers, and consumers were asked to rate their interest in each of the six previously identified specialty and niche forest products markets. Their interests varied considerably based on the category of specialty and niche market product.

Landowners were most interested in specialty woods (33%) and building materials (31%). They were least interested in handicraft products (18%) and woody decorative florals (21%). This is likely because these items are not of high value in raw material form, rather the value is added during the processing or marketing of the materials.

Manufacturers were most interested in specialty woods (70%) and building materials (57%). They were least interested in woody decorative florals (83%), medicinals and botanicals (72%), and forest based food products (72%). This is likely because more manufacturers participate in specialty wood and building materials markets.

Consumers were most interested in handicraft products (47%) and forest based foods (45%). They were least interested in building materials (20%) and medicinals and botanicals (27%). This shows that there is a disconnect between what consumers want versus what landowners and manufacturers provide, but also that there is an opportunity to do some targeted marketing.

See Figures 4.3, 4.4, 4.5, 4.6, 4.7, and 4.8 below for results of landowner, manufacturer, and consumer interest in specialty and niche forest products.

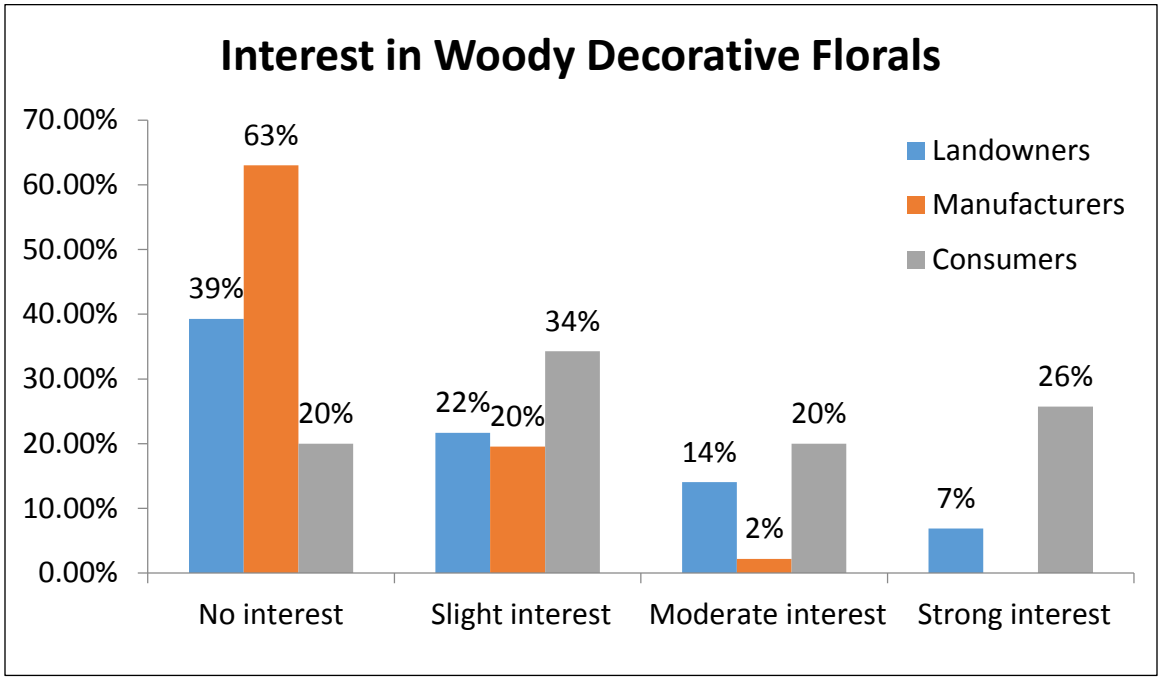

Figure 4.3. Landowner, manufacturer, and consumer interest in woody decorative florals.

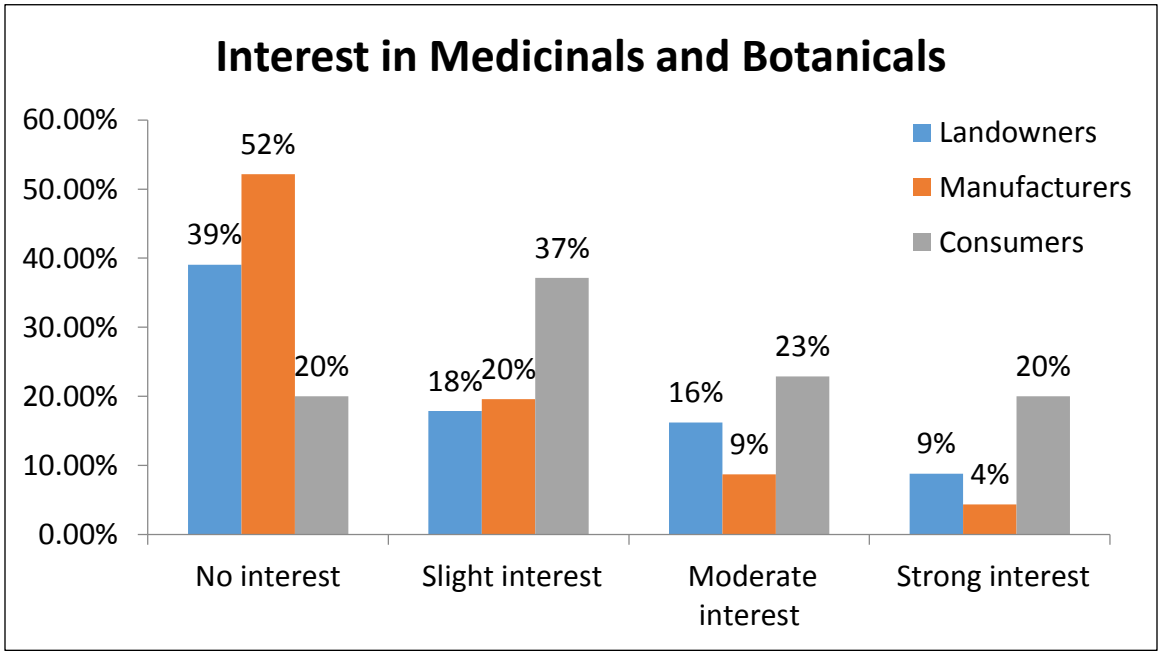

Figure 4.4. Landowner, manufacturer, and consumer interest in medicinals and botanicals.

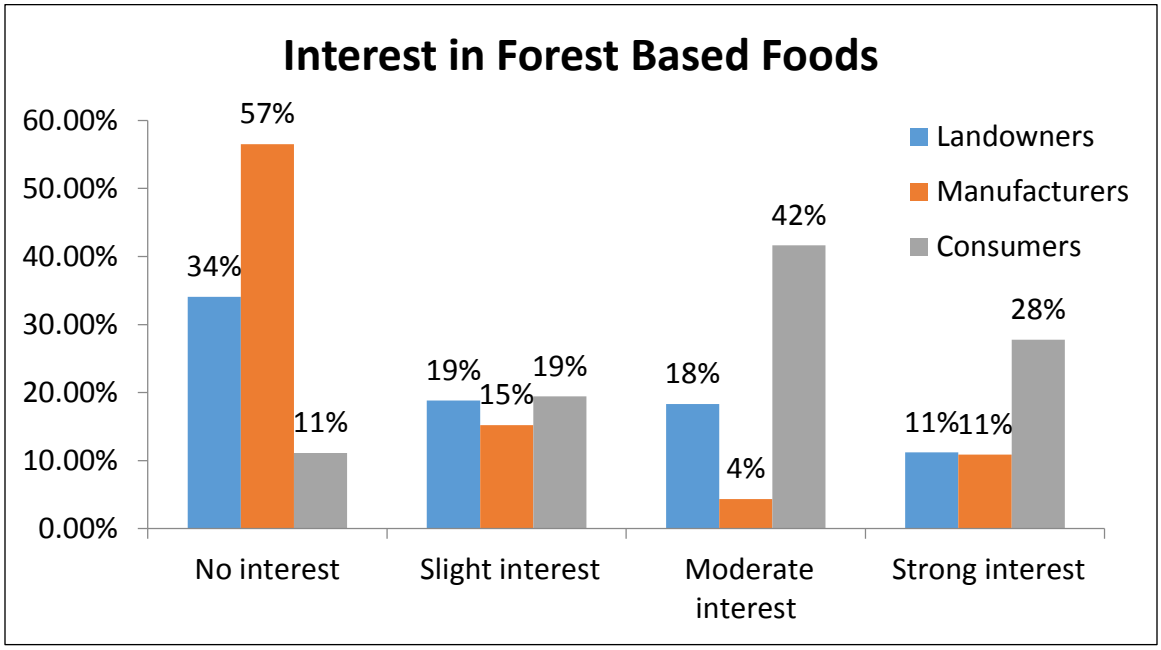

Figure 4.5. Landowner, manufacturer, and consumer interest in forest based foods.

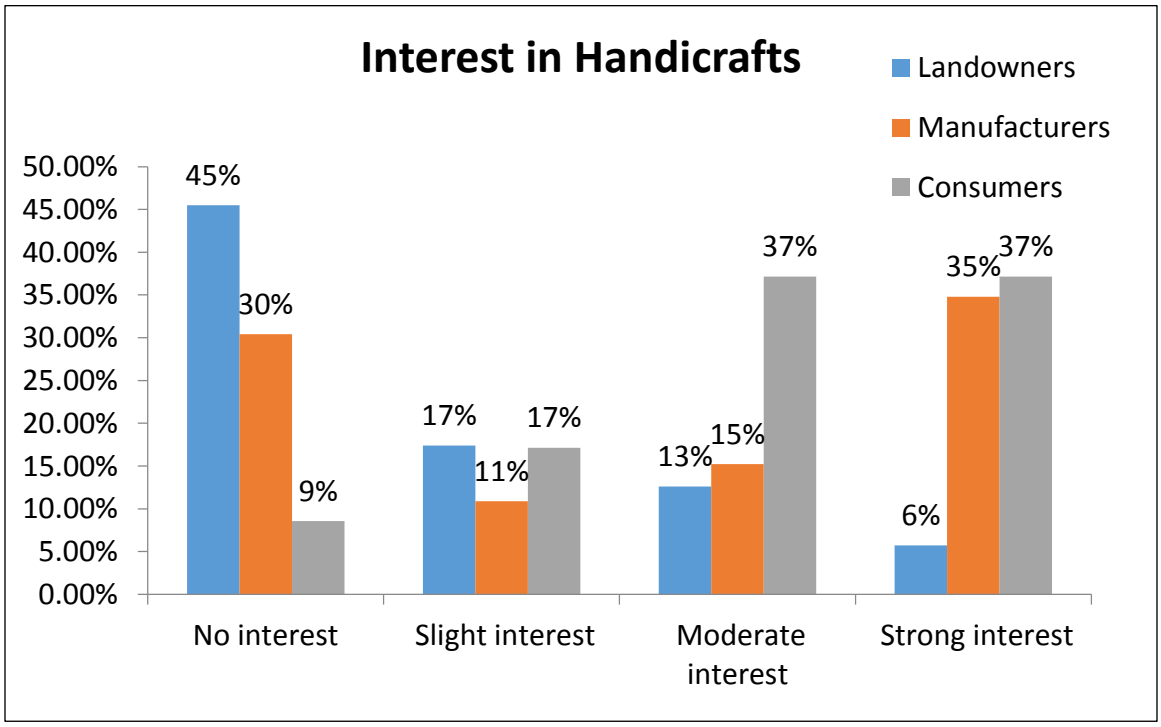

Figure 4.6. Landowner, manufacturer, and consumer interest in handicrafts.

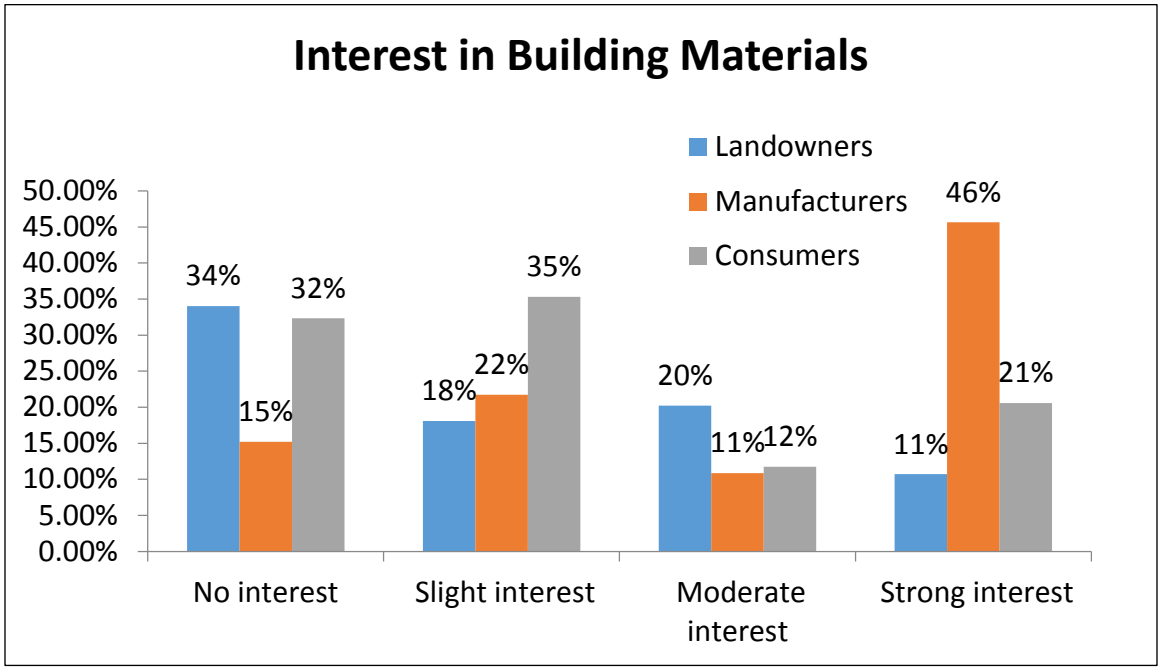

Figure 4.7. Landowner, manufacturer, and consumer interest in building materials.

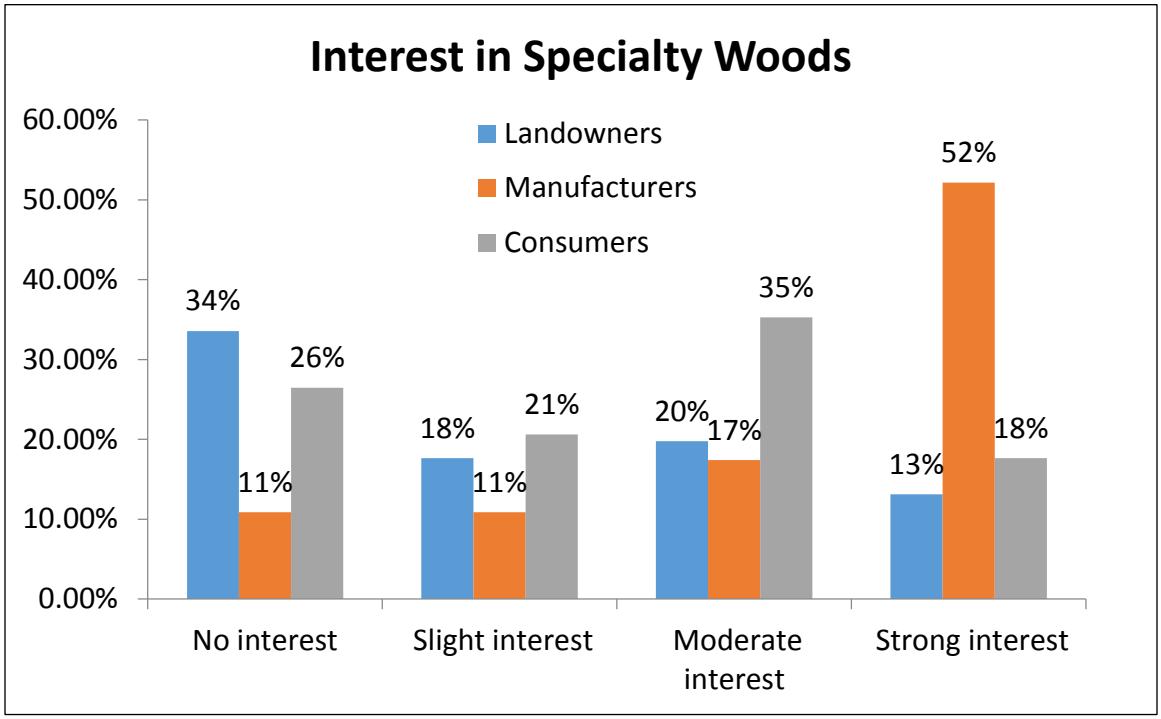

Figure 4.8. Landowner, manufacturer, and consumer interest in specialty woods.

Market Barriers

Respondents were asked to identify obstacles to expanding or improving local forest products markets. Landowners felt that the most prohibitive barriers to improved forest products markets were government regulations (46%), price competition (31%), and the ability to produce enough volume of product (29%). Manufacturers felt the most prohibitive barriers were government regulations (65%), capacity for holding inventory (50%), and price competition (48%). See Table 4.3 for a complete listing of landowner and manufacturer survey data relating to market barriers.

Table 4.3. Landowner and manufacturer survey data relating to market barriers.

	Landowners			Manufacturers		
	Disagree	Neither	Agree	Disagree	Neither	Agree
Tree species availability	23%	32%	19%	24%	9%	43%
Timber available for harvesting	21%	26%	29%	20%	28%	33%
Ability to produce a wide enough variety of products	20%	34%	19%	28%	26%	26%
Ability to produce enough volume of product	17%	27%	29%	15%	24%	46%
Capacity for holding inventory	17%	34%	20%	15%	17%	50%
Price competition	13%	30%	31%	17%	24%	48%
Governmental regulations	12%	20%	46%	11%	15%	65%
Consumer interest	16%	32%	22%	24%	22%	33%

Additional Resources Needed

Landowners and manufacturers were asked to rate how helpful it would be to receive additional resources in a number of different areas. Landowners felt it would be useful to have additional help accomplishing woodland management practices (50%), identifying potential market opportunities (50%), and identifying potential customers (45%). Manufacturers would like additional resources to identify potential market opportunities (74%), identify potential customers (67%), and performing marketing and advertising planning (61%). See Table 4.4 for a complete listing of landowner and manufacturer survey results relating to additional resources.

Table 4.4. Landowner and manufacturer survey data relating to additional resources that would be useful.

	Landowners			Manufacturers		
	Disagree	Neither	Agree	Disagree	Neither	Agree
Accomplishing woodland management practices	8%	20%	50%	11%	30%	43%
Identifying potential customers	6%	25%	45%	9%	13%	67%
Identifying potential market opportunities	6%	20%	50%	7%	9%	74%
Marketing/advertising planning	8%	34%	32%	7%	22%	61%
Processing/manufacturing knowledge	9%	29%	37%	9%	20%	54%
Product pricing	7%	24%	45%	7%	30%	50%
Funding	10%	32%	30%	15%	22%	52%

Importance of Forest Stewardship and Certification

Landowners and manufacturers were asked a series of questions related to an area that the experts talked a good deal about, the importance of forest stewardship and certification. 91% of landowners and 98% of manufacturers agreed that the health of local forests was important to them. Almost no one disagreed with this statement (0.5% of landowners, 0% of manufacturers). Landowners and manufacturers generally agreed that forest stewardship is beneficial to the economy, to society, and to the plants and animals. 39% of landowners were familiar with certification, while 21% were not (the balance of people did not respond to the question or selected neither as their answer). 61% of manufacturers were familiar with certification, while 17% were not. Only 23% of landowners and 22% of manufacturers were interested in pursuing forest and/or chain of custody certification. 17% of landowners and 28% of manufacturers disagreed that forest certification of any kind ensured forest stewardship. See Table 4.5 for a complete listing of landowner and manufacturer survey results relating to forest stewardship and certification.

Table 4.5. Landowner and manufacturer survey data relating to the importance of forest stewardship and certification.

	Landowners			Manufacturers		
	Disagree	Neither	Agree	Disagree	Neither	Agree
The health of local forests is important to me.	0%	1%	91%	0%	0%	98%
Forest stewardship is beneficial to the economy.	1%	4%	85%	0%	2%	93%
Forest stewardship is beneficial to society.	1%	4%	85%	0%	4%	91%
Forest stewardship is beneficial for the plants and animals.	1%	3%	86%	0%	4%	91%
I am familiar with forest certification.	21%	27%	39%	17%	15%	61%
I am interested in pursuing forest and/or chain of custody certification.	23%	35%	23%	37%	33%	22%
Forest certification of any kind ensures good forest stewardship	17%	30%	36%	28%	33%	33%

Consumers were also asked about the role of forest stewardship and certification. 94% agreed that the health of local forests was important to them. 47% were familiar with forest certification, while 21% were not. 53% agreed that certified forest products are worth a price premium, and 69% of consumers would like to see more locally produced,

certified forest products. See Table 4.6 for a complete listing of consumer survey results relating to forest stewardship and certification.

Table 4.6. Consumer survey data relating to the importance of forest stewardship and certification.

	Consumers		
	Disagree	Neither	Agree
The health of local forests is important to me	3%	3%	94%
I am familiar with forest certification (e.g. FSC, SFI, ATFS)	21%	32%	47%
Forest certification of any kind ensures good forest stewardship	6%	43%	51%
Certified forest products are worth a price premium	3%	44%	53%
I would like to see more locally produced, certified forest products	3%	29%	69%

Demographics

Average landowner age was 65 years old. The minimum age was 32 and the maximum age was 95. See Figure 4.9 for a breakdown of respondent landowner age. Of the landowners who provided answers, 75% of them were male and 25% of them were female.

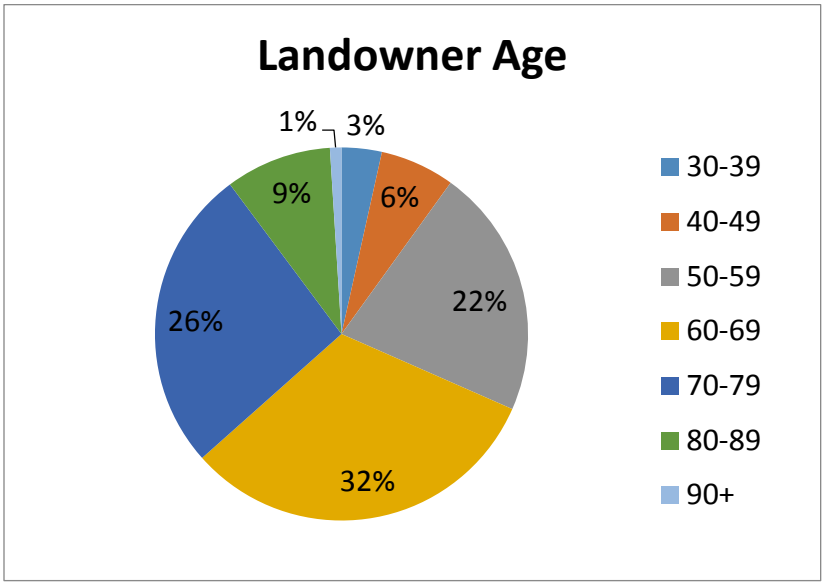

Figure 4.9. Breakdown of respondent landowner ages.

The most common level of education of respondents was a four year college degree (36%), followed by advanced degrees (24%), 2 year associates/trade school (19%), high school diploma/GED (17%), other (3%), and less than a high school diploma (1%). Common other responses were military and years of experience.

Respondent Commentary

Respondents were given space to offer any additional commentary they felt was appropriate or beneficial for the research. This commentary ended up being an important key to understanding some of the thoughts and motives of Oregon's small landowners and manufacturers. Most of the comments ended up being focused on barriers or reasons why they are unable or unwilling to use their land to bring in

additional income. Five themes were derived from the respondent commentary and those themes are described below along with supporting quotations.

General Lack of Knowledge in Key Areas

Respondents acknowledged that a lack of knowledge in key areas such as basic forestry management, types of products that can be produced from small woodlands, marketing of wood products, etc., was a barrier to further property and business development. This is the first theme, which encompasses a broad range of topics, some of which are discussed below. Some respondents expressed how they felt they weren't always being treated fairly by forest sector businesses due to their inexperience or the small scale of their property.

> "Winding through timber sales is a difficult business for the inexperienced. Twice we have thinned/cut. Mill got their money. Loggers got their money. We only got firewood. Poor quality firewood at that. Highly unlikely that we will ever see a return on our 80 acres of Doug firs. Considering hiring a custom portable saw mill to turn some logs into lumber. But we are pretty sour on the deal and will likely come out ahead buying lumber at Home Depot."

> "As small-scale growers our major uncertainty is how to find a harvester and marketer who would be fair to us. Help in this regard would be most appreciated."

Other respondents communicated difficulties with creating value from the marginal portions of their land, or difficulties with their efforts to manage their land not being successful.

> "We are full time serious food farmers (hazelnuts) but of the 160 acres of land we own, only half is level enough for field crops, the other half is just costing me taxes and I have very little or no income from approx 80 acres. I'd sure like to learn and know more about how to make the creeks, hillsides and wooded areas of our farm bring more income in."

> "A good portion of our woodlands are reclaimed hillsides and riparian zones that had been farmed. They need to be thinned ~some are ~30+ years old now, but knowing how to get these fairly good sized trees to a market is the challenge. They aren't big enough to be extremely valuable, but too big to just chip, burn, or generally waste. Maybe they could be used for an alternative product/market?"

> "Elk ate just about all the 800 planted cedar trees."

Several respondents indicated that their trees were not ready for harvest yet. This indicates that they may not be aware of short term income opportunities.

> "Our forestland is all young - our children will be harvesting."

> "Our forest is 10-20 years from harvest."

> "Ready for harvest when I'm 130 yr old."

Others expressed that they felt they did not own enough land to bring in any income, indicating that they may not be aware of opportunities that do not require substantial amounts of land, such as high-value understory crops.

> "[We own] approximately 9 acres…The parcel is not large enough to be an income producer for us."

A prevalent thought in the forest products sector is that only large volumes of product are important, and that smaller volumes of more specialized products or services are not important for the industry.

> “Timber supply is the key. To grow markets we need volume, not product ideas or marketing expertise.”

A respondent recognized that this mindset can be limiting.

> “The biggest problem in Oregon regarding wood products development is the mindset that unless raw material comes in large acreages it is not worth thinking about. Example: talked with State 4 Forestry about buying one or two trees or salvaging hazard or windfall trees and there is no interest. A million dollar timber sale, everything is great. Why do we have specialty hardwood molding sold in Oregon stores that is from Asia? Why aren’t we competitive in small wood product manufacturing? So we can make chips to export? It just doesn’t make sense!”

Some respondents made specific suggestions about what information or resources would be helpful to them.

> “Management plan mentoring is very valuable. It would be good to develop a "pass-it-on" system for expanding the mentoring group to get more landowners to develop management plans.”

> “Having recently returned from a tour of Swedish & Norwegian small woodland forestry, I strongly believe we could benefit from strong cooperative action by small woodland owners to jointly market products -cooperative marketing association, cooperatively owned processing capability, particularly for certified wood, specialty wood, non-timber products, "bonding" of quality products, i.e. as done by Oregon Woodland Cooperative.”

> “It would be helpful to know if there's a market for unusual woods like black cottonwood.”

> "I recently acquired more land. It is in terrible shape from a forest practice stand point. I wish there were available to people situated similarly to me, advice on how to restore such properties back to health."

Several respondents mentioned how beneficial the Tree School is.

> "Events like Tree School at Clackamas Community College are a real benefit to we small landholders (under 50 acres)."

It is likely that many landowners are looking for additional knowledge and resources in a variety of areas.

> "Most every tree farmer I know has income as a priority goal, yet every year it seems more challenging to increase products & markets to meet this objective."

> "While I have an interest in marketing the more common commercial species such as maple, oak, Doug-fir, WR cedar, etc., a stronger interest lies in marketing secondary species such as madrone, myrtle, cascara, yew, mountain mahogany, et al."

Small landowners seem to care about taking care of their land and doing good things with it. Many of them could benefit from additional networking and cooperation.

> "I am interested in learning, growing, developing and expanding my knowledge, experience and sustainable management of my property, resources and time/energy/strength in the most beneficial way for the highest good of all concerned. I am at a new beginning and excited about the new prospects as a landowner who now has time to devote to this new endeavor...enterprise. I am open, willing, teachable and resourceful-and I don't want to be the sole one responsible for the grunt-physical labor and open for assistance, cooperation, coordination with others. Work and play well with others-especially those who are clear, focused and passionate about living and doing their best to make the world a better place-for our beloved future generations.

Alternative Primary Management Goals

Another theme that was apparent from the respondent commentary is that many landowners' primary management goals for land focused on habitat, wildlife, and recreation rather than income.

> "Our land has 18 acres of trees, for oxygen."
>
> "Right now I cut down trees for heating my house and use the land for camping with the family."
>
> "We manage our property for wildlife habitat & native species. Our goal is to 1) eliminate non-native species…ivy (all gone); holly (75% gone); blackberry (controlled), 2) create differing environments for wildlife & protection of creek running through the property."

Landowners with these other goals may find it undesirable to "harvest" trees or clear cut large areas, showing that they are unaware of the other options for utilizing trees, and maybe also that removing some trees can actually be beneficial for the environment and wildlife habitat.

> "I manage 15 acres of Doug-fir. I planted in 1994. I never intend to "harvest" it."
>
> "We have no desire to clear cut. We feel we are stewards of the land."

Restrictive Government Regulations

Many respondents discussed their beliefs regarding government regulations and taxes including land use laws, wildlife protection laws, stream protection laws, and high taxes on property as being too restrictive.

> "Land use laws are killing my business."
>
> "This land was originally purchased as a retirement investment nearly 50 years ago. Due to Oregon's land use restrictions, that turned out to be a folly."
>
> "I believe opening more public lands for timber harvesting would be beneficial to our economy and to forest health (in the sense that it would reduce loss due to forest fires and insect damage). I believe government regulations are in general much too restrictive towards responsible timber harvesting."
>
> "Over regulation of our natural timber resources will in many ways hurt the industry. These regulations appear to hurt only the smaller participants of the timber industry. This is not too bad but when you put them together it is huge."
>
> "Too many government regulations set up by environmentalists to save old dead trees & spotted owls!"

General Lack of Management

Many respondents indicated a general lack of management due to age, health problems, and money to perform needed functions. Also indicated by several respondents was the lack of desire to manage their forestlands. This indicates that there may need to be more outreach to landowners about the importance of forestland management.

> “We are elderly and I don't really have a lot of time. If I hit the lottery, OSU will get some. Thanks.”

> “I'm a homeowner. I love the trees. I want to keep them.”

> “We are simply small land owners with no interest in the commercial aspects.”

> “I have a bit of forest land but I do not manage or harvest.”

> “This survey did not apply to our timberland. We have no business; small acreage. No intentions of logging it at this time. Timber prices are not that great.”

> “Due to recent health issues, we were very passive forestry landowners. Hope to get back on track this year. Thanks.”

> “I currently have 10 of 16 acres I own under reforestation, but do not have the resources or interest to actively manage these trees.”

> “Problem, we don't really know what we are doing and time and age prevent the progress we would like to see. Knowledge of educational & physical resources would be helpful.”

Passing Land to Successors

A final theme was the passing of land on to successors, who will harvest and/or use the land.

> “Actual use of the product growing here will be determined by beneficiaries of the estate. In the meantime my bride and I will enjoy the pleasures of flora & fauna.”

> “Our forestland is all young - our children will be harvesting it.”

Consumer Commentary

A couple of comments were received from the consumer survey and they were:

- "Nice event - would like to see it grow to include more merchandise from the forest and heavily promoted to encourage people to attend."
- "Just here to check out what this is and I hope that it will continue to grow."

The Local Forest Products Market

The Local Forest Products Market that was organized in conjunction with this project was smaller than originally anticipated, but was still quite successful for a number of reasons including the opportunity for vendors to network with each other and build customer contacts (Ahrens, 2014).

The market was held on November 22, 2014 in the 4-H Hall of the Clackamas County Events Center. 15 vendors brought booth materials and products to the event, and 100 participants came to see what the market had to offer. Originally, the market was to be named the "Goods from the Woods" fair, but it was discovered that this name is a nationally registered trademark of the Blandin Foundation, and thus could not be used. The "Local Forest Products Market" name was used instead.

Market vendors at the 2014 Local Forest Products Market indicated that local supply chains were often built through personal connections, which are formed at local markets and other local industry events. They agreed that markets, festivals, and fairs

are a good way to connect with the public and can be a main outlet for sales. Many vendors, especially crafters, agreed that they do not see the value locally for certified wood. As small businesses, they have more time to connect with the public and focus on education and explaining why local is better. They often have more than one business and are pursuing many different roles within their communities. Most of them agreed that they would like to see more local events for networking and reaching the public, and that the events that do occur need to be publicized more effectively.

Chapter 5 – Discussion and Conclusions

Upon analysis of the project results, some key points stand out.

- There is a need to help landowners develop land management plans that help overcome the identified barriers and achieve more of their management goals.
- There is also a need to develop more specialty and niche market products as consumers are looking for more local forest product offerings.
- Landowners and manufacturers are the ones who can supply this consumer demand, but to do this they need help identifying products with high potential, incorporating the production of these products into their land management and business plans, and developing new or existing market channels to bring these products to the consumers.
- Those who are in a position to help landowners and manufacturers with the above tasks (local government and organizations) need to develop programs and policies that address and/or remove barriers and potentially create new opportunities.

The discussion and conclusions portion of this report will attempt to identify some potential ideas and programs that local government and organizations could pursue as have been identified by the results of this project.

Land Management Planning

Good land management plans can help landowners achieve more of the goals for their land and recognize greater returns, whether they are of social, environmental, or

economic value. The results show that landowners have a wide variety of land management goals, and many landowners are not currently actively managing their land for production of forest products (46% actively manage <50% of their forestlands for forest products). Many landowners may be interested to learn about agroforestry, which offers a different model for land management that provides a more holistic view of what productive forestland can be while achieving a wider variety of land management goals.

Agroforestry as a Model for Land Management

Agroforestry is "an intensive land management system that optimizes the benefits from the biological interactions created when trees and/or shrubs are deliberately combined with crops and/or livestock" (What is Agroforestry?, AFTA).

Agroforestry practices include use of the following (Training Manual, 2013):

- Windbreaks – linear plantings of trees or shrubs used to protect crops and livestock from wind and other harsh weather and to control erosion
- Riparian buffers – "strips of permanent vegetation consisting of trees, shrubs, and grasses, planted or managed between agricultural land and water bodies to reduce runoff and non-point source pollution"
- Silvopasture – "combines trees with forage (pasture or hay) and livestock production"

- Forest farming – "high-value specialty crops are cultivated under the protection of a forest overstory that has been modified and managed for sustained timber production and to provide the appropriate microclimate conditions"

- Alley cropping – "combines trees planted in single or multiple rows with agricultural or horticultural crops cultivated in the wide alleys between tree rows"

The Food and Agriculture Organization of the United Nations states that

> "Agroforestry is in the heart of many initiatives such as watershed management, non wood forest products and enterprises, climate change mitigation and adaptation, waste water reuse, landscape restoration, food systems through integrated territorial development, urban agriculture, and trees outside forests assessments" (Agroforestry, 2015).

Agroforestry practices potentially resolve a number of the barriers that respondent landowners identified as reasons they are unable to have income from their land. Many of the practices combine short rotation crops or livestock with the longer rotation timber crops, thereby reducing the time that it takes to generate income from forestland. By diversifying the crops that are managed on a piece of forestland, landowners can have a more resilient flow of income. By combining potentially many crops onto the same plot of land, including some high-value crops, it takes less land to generate income. Agroforestry practices can even provide ideas for income opportunities from marginal land, such as wetlands, stream banks, and hillsides.

Diversifying the flora of forestland from a monoculture to a polyculture will provide a greater variety of habitat and attract more diverse wildlife. Recreation opportunities may increase and at least would not be diminished on forestland managed using agroforestry practices (What is Agroforestry?, AFTA). Inclusion of agroforestry practices may even provide opportunities for education and ecotourism, as agroforestry practices become more popular (Beecher, 2011).

Agroforestry practices vary from region to region, and often even from parcel to parcel. Development of practices specific to the Pacific Northwest are still being researched, which could present some challenges for landowners wishing to adopt more agroforestry practices on their land in the near future. The OSU College of Forestry's Department of Forest Ecosystems and Society is working to support agroforestry research and adoption in the Pacific Northwest (Bishaw, 2014).

Some specific agroforestry practices that could be considered for the Pacific Northwest include alley cropping (tree species including pines, walnuts, and filberts; shrub species including willow, dogwood, and berries; and alley crops including cereals, forages, specialty fruits, vegetables, flowers, and biomass crops), silvopasture (utilizing cows, sheep, goats, and horses foraging on grasses and clovers under cover of a variety of tree species including firs, pines, oaks, alders, locusts, poplars, and walnuts), and riparian buffers (to protect streams and rivers whose native riparian areas have nearly all been cleared and converted to agricultural land).

Additionally, there is government support for the adoption of agroforestry practices. In 2011, the USDA released the *USDA Agroforestry Strategic Framework*, which created a roadmap to advancing agroforestry in the U.S. though "adoption, science, and integration" (USDA's Role in Agroforestry, 2013). This means that government agencies are finding ways to support farmers and landowners who are interested in incorporating agroforestry practices on their land, including financial incentives in the form of grants.

Agroforestry can offer a model for land management plans that diversify not only the landscape but the local forest products markets as well. This strategy has been identified by others looking for ways to improve forest products markets for small landowners in Oregon as well (Nygren, 2003). Landowners will need assistance making this happen though.

Support for Developing and Implementing Land Management Plans

Landowners identified the need for help with development and implementation of land management plans. There are many local companies that provide land management planning and other forestry services, and they can be easily searched for using the Oregon Forest Industry Directory. The Association of Consulting Foresters and the Oregon Society of American Foresters are area organizations that can also provide assistance with finding professional land management planning services. Additionally, landowners can connect with their county's Extension Forester for advice on land

management planning, though these services would not be as in depth as professional services.

Regular workshops for landowners to help develop and update land management plans could be a good way to provide additional assistance in this area. This could prove successful not just in increasing actively managed land in Oregon, but could foster more landowner to landowner relationships and cooperative planning efforts among landowners. As such, they could be organized by the Oregon Woodland Cooperative and/or the Oregon Small Woodlands Association, with support from OSU Extension Foresters and knowledgeable people associated with the Pacific Northwest Agroforestry Working Group.

Understanding Consumer Demand for Locally Produced Forest Products

Some interesting research has been done regarding consumer preferences for "ecolabeled" forest products, which is relevant to this study because specialty and niche products were defined as including green certified products. Results of those studies show that consumers prefer certified products so long as they do not have to pay a price premium for them (Anderson, 2004), and that often times, consumers are unaware that they even have a choice between certified or non-certified products (Anderson, 2005). When price, wood source, and environmental certifications were studied as they impacted architects preferences for hardwood flooring, it was found that price was the most influential factor, followed by wood source, and then environmental certification

(Macias, 2011). This suggests that local products will need to cost as much or less than non-local products in order to receive market share.

According to results of this study, consumers are interested in purchasing locally produced forest products for a variety of reasons, and they are even willing to pay more for them, assuming they are of high quality. They are most interested in forest based foods and handicraft items, but the chances are high that if a consumer is oriented towards buying things locally, they will likely consider purchasing from all of the categories of specialty and niche forest products when they have the need or desire.

Manufacturers indicated that they are most interested in receiving help in the area of identifying potential market opportunities (74% of manufacturers agree). To ensure that the right market opportunities are being pursued, more market research should be conducted. A more detailed consumer survey, consumer focus groups, or a side-by-side comparison with an exit interview at a local forest products retailer could be conducted in order to better understand what products would be desirable, how much customers would be willing to pay for those products, how much volume of product could reasonably be expected to be sold, and where customers would go to buy those products. This information could be used by local businesses to develop better customer orientation, which leads to increased success and customer retention (Ahrens, 2014).

It is interesting to note here that results from the surveys indicate that landowners and manufacturers showed the most interest in pursuing specialty and niche forest product

markets that were not what consumers showed the most interest in. Landowners and manufacturers were most interested in specialty woods and building materials, while consumers were most interested in handicraft products and forest based foods. This could indicate that landowners and manufacturers need to rethink their business plans in order to be successful in the local marketplace. It is also likely that the sample population for the consumer survey was simply too small or skewed toward a certain group of buyers (those who attend small local markets) to be representative of the entire population. This also suggests that more market research needs to be conducted. Additionally, most specialty and niche market products generally only appeal to a subset of the population, so though consumer interest for building materials may be low, this really just represents the opportunity to do targeted marketing.

Manufacturing Local Forest Products

Manufacturers did not indicate a high need for additional resources related to processing/manufacturing knowledge currently, but as the demand for new products becomes apparent, resources in this area might be well appreciated.

The expert interviews did however reveal some areas for improvement with regards to current local manufacturing capacity and supply chain management of forest products. They suggested that more regional hardwood processing and kiln drying capacity would be beneficial. There is also a need for more storage capacity all along the supply chain. As one expert described, if products aren’t available when customers want them, then

they will lose out on the business. More community storage facilities might provide a solution.

As many small landowners and businesses do not have the large amounts of capital that are required to invest in large projects such as these, a cooperative effort to increase regional capacity seems the most feasible option. The Oregon Woodland Cooperative is well poised to lead projects related to building community manufacturing facilities, though financial support would likely be required. More research should be done to investigate the real need for and feasibility of this sort of project.

Marketing of Local Forest Products

Landowners and manufacturers both agreed that they would like to have assistance with several marketing functions, including identifying potential customers, marketing/advertising planning, and product pricing. Establishing annual and/or regular forest products markets, local product branding, cooperative marketing/advertising, proper use of available technology, and marketing based on forest certification and the local story are all ways to attract and connect with potential customers. Additionally, small business owners should focus on developing an effective competitive advantage.

Direct to Consumer Markets

Consumers were happy to attend the Local Forest Products Market, and remarked that they would be interested to see it grow into a larger and more publicized event. Vendors agree that markets are a good way to connect with the public. Some even

mentioned how they attend just a few markets every year, and that sales from those markets (and contacts made with customers at those markets) are their sole source of income from their forest products. It is clear that direct marketing to consumers through markets and fairs is still an important market pathway.

More research and work should be done to understand what type of markets would be most successful in this region for forest products companies. One expert reported that he has had little success at county fairs, and other vendors report that markets and fairs are their only source of forest products income. It may be beneficial to put more work into building a well-established, regional annual forest products market that customers look forward to every year, or maybe simply building a culture of including forest products at weekly farmers markets is the best option.

Other Market Pathways

The expert interviews revealed the need for more wholesalers and retailers who care about communicating the local story. In direct to consumer markets, small business owners have the opportunity to talk directly to customers about the local story, which has been described as one of the most important selling points for local forest products. When selling wholesale, small business owners must rely on the wholesale or retail employees to create sales, and they may not always be communicating the uniqueness of the products. When the salespeople are educated about the product qualities that make them special, they serve as an education medium for the public, as well as better

representatives of the products. When wholesalers and retailers are better representing the local products, greater supply chain efficiency can be achieved because small business owners can focus on creating quality products, professional salespeople can assist the customers, and customers can travel to one destination to find exactly what they are looking for.

More locally focused wholesalers or retailers could potentially help mitigate some of the barriers created by not having enough regional storage capacity. A forest products version of a food hub could be explored as well.

Local Product Branding

Branding is the use of a name, symbol, or design to identify goods or services. Branding can be beneficial because it creates an image that customers recognize and trust to represent some measure of quality or performance, thereby making purchasing easier (Entenmann, 2007). Creating a local forest products brand may be of benefit to the forest products sector in this region.

Other areas of the United States have created local forest products brands including Appalachia (See Figure 5.1) and Idaho. These brand images can be combined with advertising campaigns and slogans to bring awareness of the branding and message behind the brand. See Figure 5.2 for an Idaho Preferred campaign image. More research should be conducted related to the effectiveness of these brands that already exist. This could be done through the use of phone interviews with representatives from these

organizations as well as by conducting consumer surveys in these areas to understand how people are relating to these brands and how or if they have changed their buying habits because of them.

Figure 5.1. Appalachian Grown Local Forest Products brand image.

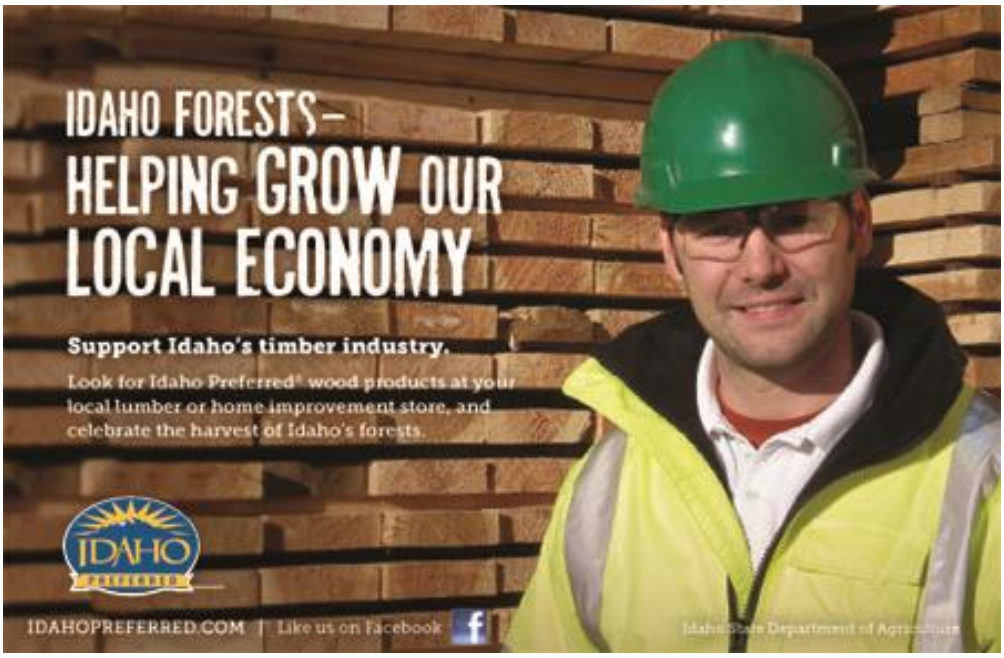

Figure 5.2. Idaho Preferred brand image combined with an advertising campaign (Idaho Forest Products Commission, 2015).

The Oregon Woodland Cooperative has created some brands for specialty products such as the Canopy Essential Oils brand and Heartwood specially crafted products, but these are product specific brands. The local forest products sector could potentially benefit from a regional local forest products brand image that communicates the message about local forest products being sustainable and supporting the local economy. This brand image could be displayed at retailers and wholesalers outlets, and an advertising campaign could be designed to promote the new brand as well. This is something that the state or local forest products organizations could sponsor.

An attempt similar to what was mentioned in the previous paragraph was made early in the 2000's to create an Oregon brand called "Brand Oregon" (See Figure 5.3) which was one of twelve objectives identified in the Oregon Business Plan. This initiative was managed by the state government, including the Oregon Economic & Community Development Department, the Department of Tourism, and the Department of Agriculture (Brand Oregon, n.d.) and was developed to be used in any business sector, but especially tourism and agriculture. This initiative used a "top-down" approach that required the use of the brand on all state sponsored business development materials. This approach resulted in resistance to the initiative, especially from the tourism sector (Tasci, 2011) which may have ultimately led to the demise of the initiative.

Figure 5.3. Brand Oregon brand image (Brand Oregon, n.d.).

Using Technology to Market Forest Products

Reaching out to the public in society today involves a number of different mediums, and it increasingly means taking advantage of opportunities that technology creates. The buy local movement is using technology in new and innovative ways, such as the Choose Local App, and the forest products sector should find some way to use or build off of what the buy local movement is already doing.

The Importance of Supply Chain Communication and Networking

The experts mentioned the importance of connecting with people and having the opportunity to talk about the local story. Landowners and manufacturers agreed that they would like to attend more networking events in their communities and meet other landowners, manufacturers, and consumers. The desire and need for networking within the local forest products community is apparent.

Networking is an important tool for businesses and economic development (Nastasi, 2013). When excited people with ideas get together, the result can often be even better ideas and a consolidation of resources to make it happen. Experience shows this is true of small woodlands owners in Oregon (Kern-Korot, 2010).

To support economic development in this region, organizations should sponsor and support more networking events. New and innovative approaches to networking should be considered, including organizing lost lectures, unconferences, and knowledge cafes (Bul-Godley, 2012). These types of events not only allow people to get to know each other, but they encourage engagement and collaborative problem solving which serves to empower people as well. Organizing different kinds of programs than the sector normally sees may even serve to draw in more or different crowds, thus engaging more of the forest products community.

Incentives for Forest Stewardship

More than 90% of landowners, 98% of manufacturers, and 94% of consumers agreed that the health of local forests was important to them. Landowners are faced with a dilemma in this regard though, as many of them are pressured to harvest their forests in order to pay taxes and to generate income (Randall, 2015). An emerging area of interest for small landowners is the opportunity to gain income from mature trees that are left standing. This opportunity lies in selling carbon offset credits, which are a sort of specialty product that Oregon forests can provide. A carbon credit is “a financial

instrument that represents a tonne of carbon dioxide (or carbon dioxide equivalent gases) removed or reduced from the atmosphere from an emission reduction project" (Carbon Planet, 2015). Many small landowners do not have the volume of timber that is required to be sold as a package on the carbon market, so they must be packaged together with other parcels of land in order to be marketable. This requires a cooperative effort, and the Oregon Small Woodlands Association has created an organization, Woodlands Carbon, that does just that (Woodlands Carbon, 2015).

The Need for More Education

Survey results and expert interviews revealed the need for more education all along the supply chain. Landowners could benefit from more education on forest certification, basic forestry management, the importance of land management, marketing functions, and land management planning. Manufacturers could use some additional educational resources relating to forest/chain of custody certification, marketing functions, and building successful business plans. The public could use more outreach to communicate about the value of local forest products, supporting local businesses, and local product availability and variety.

Untapped Resources

There are a number of seemingly untapped resources that are provided by area organizations, whose increased utilization could be beneficial for economic development of the local forest products sector. Those resources are:

- Oregon Forest Industry Directory (www.orforestdirectory.com) – This resource is maintained by Oregon State University's Oregon Wood Innovation Center and is a directory of all businesses that buy or sell forest products and services. It is searchable by location, product type, species, certifications, and services. Also included on the website is a function for searching for logs that are for sale, and a page for classified ads. This is an innovative and important tool for making supply chain connections that potentially a large number of forest sector businesses are unaware of.

- Oregon Wood Innovation Center (owic.oregonstate.edu/) - The OWIC at Oregon State University was created to "improve the competitiveness of Oregon's wood products industry by fostering innovation in products processes, and business systems" (OWIC, 2015). Many services are offered through this program including laboratories and equipment for new product development and testing, business and marketing services, and distance education programs.

- The Build Local Alliance and the Oregon Woodland Cooperative – These two organizations are actively working to improve the local forest products sector by creating added value and demand for locally produced forest products. These organizations are largely run by volunteers, and thus their strength comes from those who are involved. When there is more community involvement, the organizations become stronger as whole, and can offer many more services and

benefits than they are already do. These resources have already been organized and what they need now is more people to participate and add to the dynamics.

- Websites – These are important tools for connecting with people and providing updated information quickly. Oregon has some websites designed specifically for certain groups of people:
    - OregonForests.org (www.oregonforests.org) – This is a website designed for anyone who is interested to know more about forests and forestry in Oregon. There is information about laws, recreation, economics and more.
    - KnowYourForest.org (www.knowyourforest.org) – This is a website designed for Oregon's forest landowners with information about resources, events, laws and more.

Conclusions

The research and results show that landowners, manufacturers, and consumers of forest products in Oregon are interested in a variety of specialty and niche market products, though they also face some barriers (such as government regulations and price competition) and could use some additional resources (including help with marketing functions and land management/business planning). There is a lot of potential for improvement of the local forest products markets including improving the

diversity and availability of products, expanding existing market channels, and creating new outlets for connecting with the public.

There is a lot of information that still needs to be collected. More research should be conducted to understand specific government regulations that are too restrictive, feasibility of building and managing community manufacturing and storage facilities, additional cooperative and networking opportunities, and agroforestry practices specific to the forests of the Pacific Northwest.

There are a multitude of untapped resources and these should be used for further market development and education. Education should be an ongoing objective for all forest products organizations.

Research Limitations

Some limitations of this research have been identified throughout the final steps of this project. The consumer survey instrument and administration resulted in only very limited knowledge with low validity, and consumer demand information as outlined in the goals for this project cannot truly be identified using this research. The proposal focused on gathering consumer demand information from the Local Forest Products Market, but the market did not have a true dedicated organizer which could have led to more market attendance and thus greater consumer survey validity. As noted before, more market research needs to be completed to understand the consumer demand for locally produced specialty and niche forest products.

Limitations of the landowner and manufacturer questionnaire portion exist as well. Some of the questions in the survey had very odd or mixed responses, some even with question marks beside of them indicating that respondents did not fully understand what was being asked of them. The questions about where customers and final end users of the product are located were of particular confusion. Questionnaire pretesting could have avoided some of these lost opportunities for gaining valuable information.

Time has been a limitation for this research as well. Due to budget and personal/situational constraints, adequate time available for the data analysis and final write-up portion of this research has been lacking. With more time and expertise, a more in-depth statistical analysis on the quantitative data that was produced from this research could reveal more useful information than what this paper has reported. Specific examples of more data analysis that could be done include analyzing results based on age, gender, and education level of respondents. A non-response bias check could have added validity to this data analysis stage as well.

Final Thoughts

Unfortunately, overall, this project has not found an answer to the original question, which is understanding what the true market potential is for specialty and niche forest products in Oregon, which is a difficult question to answer. This research does support the justification for this project though, that there is real interest and potential to build the local economy more through specialty and niche forest products!

If one were to start all over from scratch but with the knowledge that has been revealed throughout this process thus far, some additional things to focus on would be organizing focus groups (for landowners, manufacturers, and consumers), understanding specific regulatory challenges (and if they are actually restrictive rather than just being perceived as restrictive), interviews with innovators in specialty and niche forest products in this region, and identifying more specific educational tools and economic development projects.

As far as understanding wood product potential, which was identified in the proposal, the limiting factor seems to be individual creativity, ingenuity, courage, and energy. As several of the experts identified, many limits exist within peoples' minds, revealing that there is plenty of land and timber for just about any small business and/or local endeavor.

Another expert mentioned that people just don't want to *do* anything nowadays, and that is the greatest limitation of all, not just for specialty and niche forest products, but for society as a whole. There are likely many ideas floating around out there, some of them great, but too many people rest knowing that they had a great idea rather than making it become a reality because that is hard work.

The giant elephant in the room that cannot be ignored, that this project proposal exemplifies well, is that there are different schools of thought around what a vibrant forest products industry looks like in Oregon. There is the school of thought that lingers

that suggests a vibrant forest products industry is equal to more volume of sales. Whether it be for the commodity building materials or export markets, and even specialty or niche products, more is always better. The other school of thought is that Oregon's forests shouldn't be for sale, at any price, to those who don't deeply care about the land that we all call home and strive to responsibly and appropriately use its bounty. This way of thinking puts greater value on thriving communities and intact, working forests in the vision of what makes the industry vibrant. When assessing the local potential for specialty and niche forest products, the latter school of thought seems more appropriate a lens with which to view the industry. This requires a new way of thinking about how to assess market demand and potential that is completely locally focused and not necessarily solely about dollars, rather incorporating the environmental and social values of ecosystem services as well. It also requires a critical ethical analysis of what the forests *should* be used for; is it appropriate for a family of four to live in a 3000 square foot house, even if it is built of local wood? Is it appropriate to use a tree from Oregon for concrete formwork in China?

The world is entering an era where it may be necessary to abandon old paradigms and adopt new ways of thinking that are much more holistic and personally meaningful. Oregon's forests currently support a globalized world, where bioregionalism has been abandoned and too many aspects of traditional cultures have been forgotten. Many would say this way of conducting business is unsustainable and unsatisfying, and so they

look to building local markets and supporting local businesses to regain some sense of connection to the land and to the community. A true assessment of local market potential would take these issues of sustainability into account, and not mesh the old paradigm with the new in order to appease both sides.

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Appendices

Appendix A: Clackamas Innovative Funds Proposal 2014

Title: Niche and Specialty Wood Market Potential

Summary: We propose to 1) Conduct an assessment of niche and specialty wood market potential for Clackamas County woodland landowners; and 2) Organize and coordinate a "Clackamas Goods from the Woods Fair" for niche and specialty wood products producers and consumers. Outcomes of the Woods Fair itself will contribute to the assessment of producers, consumers, and market interest. The assessment will include a summary of woodland owner timber inventory, product potential, landowner interests in niche marketing, manufacturer interests and capacity, and specific recommendations for future local and regional economic development proposals supporting niche and specialty wood enterprises. The primary use of Clackamas County funding will be for staff time to conduct the assessment and organize the Fair.

Team: Glenn Ahrens, OSU Extension Forester, Clackamas, Marion, Hood River Co.; Tim Delano, OSU Extension Forestry Educator, Clackamas County.

Cooperators: Oregon Wood Innovation Center at OSU, Clackamas County Farm Forestry Association, Oregon Woodland Cooperative, Build Local Alliance, Clackamas County.

Target Audience: Woodland owners, Wood products enterprises, Builders, Wood Products Consumers

Justification: There is ongoing interest in direct marketing of niche or alternative wood products from family forests in Clackamas County and across Oregon. Particularly as mainstream markets for timber and wood products become increasingly narrow, dominated by large scale commodity wood producers, small woodland owners are looking for alternative markets. Likewise, there is interest and processing capacity among the small-scale wood manufacturing enterprises, which are often associated with family forest operations. Interest in developing new market opportunities for family forest owners is longstanding, but progress has been slow. It is difficult to overcome various barriers including brand/product recognition, stimulating market demand and meeting that demand with a stable product supply at an appropriate scale

Timber harvests and harvest-related income (~$15 million gross/year) from family forests in Clackamas County rank third among Oregon Counties. Clackamas landowners benefit from relative strong forest sector infrastructure and good access to markets. To the extent that niche and specialty wood markets can be enhanced, Clackamas landowners are well-positioned to supply new demand. Proximity to the Portland Metro area and a strong building materials marketplace should provide good potential for increasing returns to landowners via niche or specialty wood products from small woodlands. However, a focused assessment of niche market potential for Clackamas County woodland landowners is lacking.

The hypothesis is that there is interest from both producers and consumers in sustainable forestry to produce local wood products, “making the most of every tree”, and supporting local economies and communities. Questions are: How much interest is there really? What is realistic potential in terms of supply and demand? If niche wood markets have potential, what are key obstacles and steps for increased business in this sector?

Goals and Objectives:

Produce a synthesis and summary of existing information on timber inventory, product potential, landowner interest, manufacturer interest and capacity, and consumer demand for potential niche products.

Produce a summary of new information developed in this project focused on landowner interest and manufacturer interest and capacity in Clackamas County.

Plan, coordinate, market, and evaluate “Goods from the Woods Fair”, target of 40 vendors, 2 days, 1,000 customers, Clackamas County Fairgrounds, October 2014.

Make recommendations for 1) further market assessment needs for Clackamas County and 2) development of proposals for specific local, regional or statewide economic development projects in the niche and specialty wood product sector.

Action Plan and Project Activities:

Assess landowner interest - Mail and telephone survey, three focus group meetings around the County, participant tracking and interviews at a Clackamas Goods from the Woods, October 2014 event.

Family Forest landowner timber resource assessment – product estimates from surveys, private harvest data, and regional timber supply assessments.

Wood Product potential – work with OSU Wood Innovation Center to assess product recovery potential, review literature, wood market assessments from the PNW and elsewhere in the world.

Manufacturer interest and capacity – work with OSU Wood Innovation Center, literature review, recent surveys of manufacturers, phone survey of enterprises listed in Oregon Forest Industry directory.

Market demand – literature review and analysis of wood product sales and distribution by product grade from NW Oregon.

Evaluate regulatory and policy obstacles to rural natural resources enterprises. For family forest wood products enterprises in Clackamas County, challenges in operating their business in rural locations due to zoning and conflicts with neighbors may limit manufacturing, sales, and distribution from rural parcels in Farm and Forest zones. How important is this?

Timeline: January-October 2014 Conduct assessment, surveys, literature review. Plan and market Goods from the Woods Fair. November 2014 - Evaluation of Goods from the Woods Fair. December 2014 – Final assessment report.

Evaluation Plan: Evaluative information is part of the assessment product, based on results of both landowner and manufacturer surveys, surveys of participants at the Woods Fair, and the rate of participation and sales at the Woods Fair. Short term indicators will include the level of both landowner and manufacturer interest, volume of current niche product business, willingness to participate, expressed intention to pursue niche and specialty markets, and estimated potential niche product quantities (market scale and value).

Background: In 2003 the Washington County Small Woodlands Association produced a primer on Market Opportunities for Small Woodland Owners. Some recommendations from that report have been carried out, such as cooperative marketing of non-timber forest products by the Oregon Woodland Cooperative and direct marketing of FSC-certified wood to woodworkers and architects by the Build Local Alliance. However these efforts are relatively small in scope and much more potential remains for capacity-building and involving more landowners in these or related efforts.

Budget

Description	**cost**
Program assistant/research assitant 20% FTE	$15,000
Materials and supplies – mail survey production, focus group supplies	$2,800
Communications and technology	$1,200
Travel	$300
Total estimated cost	$19,300

Appendix B – Invitation to Participate

Greetings!

I am writing to ask for your participation in exciting new research happening through Oregon State University.

A study is being conducted which aims to understand in more detail the current local wood and forest products markets, and how they can be improved in the future. Results from this research will be used to inform future projects and funding to continue improvement in the local wood and forest products markets. Funding for this research is being provided by the OSU Extension Clackamas County tax service district.

This research is comprehensive, encompassing the entire supply chain. Phone and mail surveys are being conducted with landowners, manufacturers, and consumers of local wood products. To top it all off, a Local Forest Products Market is being organized in order to showcase the wide variety of local products and services that are available.

Enclosed in this packet is a survey for you to complete and send back using the enclosed prepaid return envelope. This voluntary survey should take you no longer than 30 minutes to complete and you may skip any questions that you are uncomfortable answering. Your identity will remain anonymous to anyone outside of the research team, and we foresee there to be no risk to you in completing this survey, only potential benefits for the local forest products community!

Additionally, there is more information about the Local Forest Products Market, and an application for a booth at the market. We sincerely hope that you will consider attending and showcasing your products and/or services at the market, which will be **November 22, 2014 at the Clackamas County Fairgrounds in Canby, OR.**

Thank you very much for taking the time to complete this survey!

Sincerely,

Alyson Wade, Graduate Research Assistant

Chris Knowles, Principal Investigator, OSU Faculty and Extension Service

Appendix C – Landowner and Manufacturer Questionnaire

The following questions will help us understand what your role is within the local wood products market:

1. In which zip code is your business and/or land owned? (write answer) _____

2. Which part of the local wood products supply chain do you represent? (Check the appropriate boxes)
   - ☐ Land owner
   - ☐ Land manager
   - ☐ Timber/resource harvester
   - ☐ Manufacturer/processor
   - ☐ Wholesaler
   - ☐ Retailer
   - ☐ Consumer
   - ☐ Other – please specify _____

3. If you are a landowner, how many acres do you own? (Check the appropriate box)

☐ **0-10 acres** ☐ **11-50 acres** ☐ **51-200 acres** ☐ **201-500 acres** ☐ **501+ acres** ☐ **Not applicable**

4. If you are a landowner, how much of your forestland is currently being actively managed for timber and/or forest products harvesting? (Check the appropriate box)

☐ **None** ☐ **1-25%** ☐ **26-50%** ☐ **51-75%** ☐ **76-100%** ☐ **Not applicable**

5. Where are *your customers* located? (Please circle both the answers that describe your closest customer and your farthest customer.)
   a. In the Willamette Valley
   b. In Oregon and Washington
   c. On the West Coast
   d. In the U.S.
   e. Internationally
   f. I don't know

6. Where are the *final customers* of your wood products located? (Please circle both the answers that describe the closest final customer and the farthest final customer.)
   g. In the Willamette Valley
   h. In Oregon and Washington
   i. On the West Coast
   j. In the U.S.
   k. Internationally
   l. I don't know

For questions 7-11,, please circle a number for each statement.

7) Please indicate the extent to which you agree or disagree with the following statements.	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
I am interested in:					
Selling wood/forest products locally	1	2	3	4	5
Building relationships with local woodland owners	1	2	3	4	5
Building relationships with local wood processors	1	2	3	4	5
Building relationships with local wood products users	1	2	3	4	5
Attending wood/forest products networking events in my community	1	2	3	4	5

8) Please indicate your interest in pursuing the following specialty wood and forest products markets in the future.	Not at all Interested	Slightly Interested	Moderately Interested	Strongly Interested
Specialty woods (e.g. high-value or uncommon species)	1	2	3	4
Building materials (e.g. flooring, siding, cabinetry)	1	2	3	4
Medicinals & Botanicals (e.g. natural health supplements, herbals, oils)	1	2	3	4
Forest based food products (e.g. nuts, fruits, mushrooms)	1	2	3	4
Woody decorative florals (e.g. boughs, floral arrangements)	1	2	3	4
Handicraft products (e.g. wooden boxes, kitchen utensils, toys, tables)	1	2	3	4
Other, please specify _____	1	2	3	4
Other, please specify _____	1	2	3	4

9) Please indicate the extent to which you feel that each of the following are obstacles to expanding and/or improving the current local wood & forest products markets.	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Tree species availability	1	2	3	4	5
Timber available for harvesting	1	2	3	4	5
Ability to produce a wide enough variety of products	1	2	3	4	5
Ability to produce enough volume of product	1	2	3	4	5
Capacity for holding inventory	1	2	3	4	5
Price competition	1	2	3	4	5
Governmental regulations	1	2	3	4	5
Consumer interest	1	2	3	4	5
Other, please specify _____	1	2	3	4	5
Other, please specify _____	1	2	3	4	5

10) Please indicate the extent to which you disagree or agree with the following statements.	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
It would be useful to have additional resources available in the following areas:					
Accomplishing woodland management practices	1	2	3	4	5
Identifying potential customers	1	2	3	4	5
Identifying potential market opportunities	1	2	3	4	5
Marketing/advertising planning	1	2	3	4	5
Processing/manufacturing knowledge	1	2	3	4	5
Product pricing	1	2	3	4	5
Funding	1	2	3	4	5
Other, please specify _____	1	2	3	4	5
Other, please specify _____	1	2	3	4	5

11) Please indicate your level of agreement with each of the following:	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
The health of local forests is important to me.	1	2	3	4	5
Forest stewardship is beneficial to the economy.	1	2	3	4	5
Forest stewardship is beneficial to society.	1	2	3	4	5
Forest stewardship is beneficial for the plants and animals.	1	2	3	4	5
I am familiar with forest certification.	1	2	3	4	5
I am interested in pursuing forest and/or chain of custody certification.	1	2	3	4	5
Forest certification of any kind ensures good forest stewardship	1	2	3	4	5

Please answer the following additional questions:

12. What is your age in years? (write number) _____

13. Please indicate your gender? (Circle most appropriate answer)

a. Male **b. Female** **c. Prefer not to answer**

14. Please indicate the highest level of education have you completed? (Circle most appropriate answer)
    m. Less than high school diploma
    n. High school diploma or GED
    o. 2 year associates degree or trade school
    p. 4 year college degree (e.g., bachelors degree)
    q. Advanced degree beyond 4 year degree (e.g., masters, doctorate, medical doctor, law degree)
    r. Other, please specify _____

Please use the following space to provide any additional commentary:

End of Survey. Thank you!

Appendix D – Consumer Consent Statement

Greetings Local Forest Products Market Attendees!

Research is being conducted in conjunction with this market. The study aims to understand in more detail the current local wood and forest products markets, and how they can be improved in the future. Results from this research will be used to inform future projects and funding to continue improvement in the local wood and forest products markets. For more information regarding the research, please see or contact Glenn Ahrens or Alyson Wade.

Funding for this research is being provided by the OSU Extension Clackamas County tax service district. No personally identifiable information will be collected during this completely voluntary survey, which should take no longer than 5 minutes. We foresee there to be no risk to you in completing this survey.

Thank you very much for taking the time to complete this survey!

Sincerely,

The Research Team

Alyson Wade, Graduate Research Assistant

Glenn Ahrens, OSU Faculty and Extension Service

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Appendix E – Consumer Questionnaire

The following questions will help us better understand local forest products markets. Please circle a number for each of the following statements:

1) Please indicate your interest in purchasing the following locally produced specialty wood and forest products.	**Not at all Interested**	**Slightly Interested**	**Moderately Interested**	**Strongly Interested**
Specialty woods (e.g. high-value, uncommon species)	1	2	3	4
Building materials (e.g. flooring, siding, cabinetry)	1	2	3	4
Medicinals & Botanicals (e.g. natural health supplements, herbals, oils)	1	2	3	4
Forest based food products (e.g. nuts, fruits, mushrooms)	1	2	3	4
Woody decorative florals (e.g. boughs, floral arrangements)	1	2	3	4
Handicraft products (e.g. wooden boxes, kitchen utensils, toys, tables)	1	2	3	4
Other, please specify _____	1	2	3	4
Other, please specify _____	1	2	3	4

2) Please indicate the extent to which you agree or disagree with the following statements.	**Strongly Disagree**	**Disagree**	**Neither**	**Agree**	**Strongly Agree**
Buying locally produced forest products is important because it:					
Strengthens the local economy	1	2	3	4	5
Builds community relationships	1	2	3	4	5
Ensures good forest stewardship	1	2	3	4	5
Reduces my environmental impact	1	2	3	4	5
Encourages the uniqueness of my community	1	2	3	4	5
Boosts healthy competition and innovation	1	2	3	4	5
Ensures I am getting a high quality product	1	2	3	4	5
Other, please specify _____	1	2	3	4	5
Local products are worth a price premium	1	2	3	4	5
The health of local forests is important to me	1	2	3	4	5
I am familiar with forest certification (e.g. FSC, SFI, ATFS)	1	2	3	4	5
Forest certification of any kind ensures good forest stewardship	1	2	3	4	5
Certified forest products are worth a price premium	1	2	3	4	5
I would like to see more locally produced, certified forest products	1	2	3	4	5

Please answer the following additional questions:

3. Have you purchased any locally produced forest products in the last 12 months? (Circle most appropriate answer)

a. Yes b. No c. I have purchased forest products, but I don't know if they were produced locally or not

4. What is your age in years? (write number) _____

5. Please indicate your gender? (Circle most appropriate answer)

a. Male b. Female c. Prefer not to answer

Please use the following space to provide any additional commentary: