

Value Chain Workshop Brief: Enhancing the Economic Value of Vermont’s Woodlands

Introduction

The Working Lands Enterprise Board (WLEB) is conducting a systems analysis of Vermont’s Forestry Industry to identify opportunities for strategic investments to support and grow this important sector of Vermont’s economy. The goals of this work are to identify the most promising opportunities and build relationships within the sector (and beyond) that contribute to prosperity for all participants. The Working Lands Enterprise Board will be using the results of this work to prioritize policy and investments in the wood products industry. Identified strategies will be presented in June at a Statewide Summit of the industry.

The material in this document comes from three separate activities conducted by Yellow Wood Associates as part of the systems analysis work underway (secondary data analysis, key informant interviews, and focus groups). The reports resulting from these activities were all prepared as internal documents for WLEB and are in draft form. Some of them include comments from members of the WLEB committee. This brief includes excerpts of material that seem most relevant to enhancing the economic value of Vermont’s woodlands. This information is provided to you as a participant in the upcoming value chain workshop and is not intended for broad dissemination.

We are sharing this material with you not because it is definitive, but because reading it may stimulate your own thinking with respect to emerging market-driven opportunities in enhancing the economic value of Vermont’s woodlands that could be captured by many Vermont firms working together. We will not be spending our time in the workshop debating this information; rather we will be counting on you to provide your own ideas and perspective.

The three sections in this brief are:

1. Part One: from *Draft Report on Secondary Research*, an internal report on market trends;
2. Part Two: Opportunity: Enhancing the Economic Value of Vermont’s Woodlands, based on secondary research and key informant interviews with industry players inside and outside Vermont;
3. Part Three: Positive Developments and Challenges in Vermont, based on four focus groups held in different parts of Vermont in November and December 2014.

Part One: Enhancing the Value of Vermont’s Woodlandsⁱ

Vermont’s Forest Resource

Over 75% of the land in Vermont, or nearly 4.5 million acres, is forested. Nearly three-quarters of the trees growing in Vermont are hardwoods and about 10% are softwoods, with mixed species making up the difference.¹ The great majority of Vermont’s forestland is capable of producing crops at a rate of more than 20 cubic feet per acre per year. Current inventory averages approximately 19 cords per acre. Historically, there has been a higher rate of harvest of softwood from Vermont forests, but a larger hardwood harvest overall. The rate of growth exceeds the rate of harvest, so the inventory of available wood is increasing. Everything else being equal, there is an opportunity to maintain the harvest of softwoods and increase the harvest of hardwoods in particular to some degree without undermining forest sustainability. A critical issue for the forestry and wood products sector is access and reliability of wood supply, which is highly influenced by ownership as well as competing demands for raw materials in different sub-sectors (e.g. maple syrup vs. maple sawlogs).

Climate change will continue to impact Vermont’s forests and may exacerbate challenges that have been around for decades. Increased temperatures and precipitation, including heavy precipitation events, may change the composition away from spruce, fir, maple, yellow birch and beech toward oak and pine over the long term. Shorter winters may lead to shorter winter logging seasons and earlier closings of haul roads. Other impacts are projected to include an increase in the spread of forest pests. If pests reduce tree cover, water and air quality may suffer and remaining resources may be stressed. Recommendations for management in a changing climate are receiving greater attention, and include monitoring, use of best forest management practices, and attention to maintaining a healthy and diverse forest base.²

Forestland Ownership

Almost one-fifth (19%) of Vermont’s forestland, or about 900,000 acres, is publicly owned by a combination of federal (11%), state (7%) and local (1%) governments. The number of acres in industrial ownership has decreased dramatically, from 300,000 acres in 1988 to 9,577 acres (about 1%) in 2004. At the same time, ownership by large non-industrial institutional investors, namely timber real estate investment trusts (REITs) and timber investment management organizations (TIMOs) have increased from 50,000 to 163,266 acres. Large non-governmental organizations (e.g. land trusts) were not listed as owners in 1988 and currently own about 60,000 acres of forestland.

The remaining forestland, 3.6 million acres (nearly 80%) is in the hands of 80,000 or so private, mostly family, forestland owners. The number of forested acres protected through conservation easements (some of which provide for working forests) was 576,733 (nearly 13%) as of 2005.³

The trend in Vermont as elsewhere has been toward an increase in private ownership and a reduction in parcel size. Owners of some “small” forestland parcels (less than 25 acres) often do not actively manage them; it is assumed that this is due, at least in part, to the relatively high costs of

ⁱ Information in this section excerpted from *Draft Report on Secondary Research* an internal report on market trends.

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managing small parcels and the relatively low returns from harvesting small quantities of wood. In the aggregate, this results in reduced availability and reliability of wood supply for commercial use.ⁱⁱ

Opportunities to interest small landowners in active forest management may arise due to the increasingly high burden of property taxes, if systems that reduce the cost of management and increase returns to landowners can be developed. Forest land that is not managed will not contribute to the supply of raw materials to which value can be added in state, nor will it produce at an optimal rate. A public awareness campaign could encourage Vermont’s private forestland owners to recognize the opportunity they have to become investors in and contributors to Vermont’s forest-based economy while improving the environment and meeting their other land management goals. Since private family forestland owners only hold land for a generally short time (less than 10 years) on average, whatever processes are developed will need to be institutionalized for the long term and made accessible to new owners as forestland ownership is transferred.

Forest Services

Overview: Forest Services as Bridge between the Resource and Opportunities to Add Value

The services provided by foresters, loggers and truckers provide the bridge between landowners and others in the forest products industry. While there are many other types of service providers (trainers, researchers, lawyers, bankers, etc.) whose services are critical to support businesses and relationships among businesses in the industry, it takes foresters, loggers and truck drivers to move the wood off the stump and to the mill. Foresters advise landowners on forest management practices. Sustainable forest management practices have the potential of approximately doubling the total volume of wood produced per acre while dramatically increasing its quality and value.⁴ Together, foresters and loggers are the face of the industry to the landowners and their actions and relationship building skills help determine the reliability (or lack thereof) of the supply of raw materials. Although some landowners work directly with loggers, landowners are generally encouraged to work with foresters who act as a liaison between the landowner and logger. Some companies provide both services; but more often they are provided by separate businesses.

Demand for Forest Services

The Wood Supply Research Institute projected a 2% increase in the demand for roundwood harvest in 2014 and a 5% increase in 2014 in the Northeast, followed by 0% in 2016 and a 2% decrease in 2017.⁵ This suggests that historic fluctuations in demand for roundwood harvest are likely to persist into the future. Timber supply projections for Northern New England predict that harvest volume in Vermont will increase by 22% between 2000 and 2049, or at a rate of less than half of one percent per year on average.⁶ Some analysts predict a need for extensive capital investment in new or refurbished equipment for use in logging.⁷

ⁱⁱ Parcels of 25 acres or more in Vermont’s Current Use program are required to have a management plan.

Forest Services Data and Trends

Regional Trends

Trends in forestry are toward certification requiring certified or accredited foresters to abide by a code of ethics that dictates there will be no conflict of interest. The Society of American Foresters certifies foresters and the Vermont Woodlands Association offers accreditation for consulting foresters. The Northeast Master Logger Certification Program provides certification to Vermont loggers. Other resources include Logger Education to Advance Professionalism (LEAP), and Northeast Woodland Training, Inc. (The Game of Logging). There were 33 accredited consulting foresters listed in the 2013 Consulting Forester Membership Directory of Vermont Woodlands. While there are additional foresters that hold Tree Farm certification this shows a large discrepancy between the total number of consulting foresters and those that are certified. The Vermont legislature asked the Office of Professional Regulation to conduct a preliminary assessment to determine if all foresters should be licensed through the state. The review was released in January 2015 and recommends that foresters be regulated through licensure.⁸

Throughout the Northern Forest (which includes forestland in portions of New York, Vermont, New Hampshire and Maine) approximately 20% of current logging businesses entered the industry since 2000, and approximately 40% did so without any family history in logging.⁹ Nearly 75% of logging businesses in the Northern Forest subcontract some portion of their trucking services, making trucking a very important part of the overall value chain.

Vermont Data: Economic Contribution and Business Characteristics

Forestry, logging, and trucking combined are estimated to provide 875 jobs in Vermont and generate an estimated \$45 million in annual sales.

Most logging businesses in Vermont have no employees and fewer than 10% have 5 employees or more.¹⁰ The Vermont Department of Labor notes 2013 employment in forestry and logging at 193 with a projection of 195 for 2015 (the number of people working independently in this sector is likely to result in this number being underestimated).¹¹

There are a variety of logging systems in use in Vermont including whole tree, cut-to-length, and tree-length or feller-buncher. There is still some horse logging and some loggers use small tractors. Equipment in use is aging and some additional investment will be needed in capital stock to meet projected demand.¹² The large majority of loggers use only one system, though some operations run separate crews using different systems.¹³

A study by Leon and Benjamin found that, “tree-length harvest systems (chainsaw, cable skidder) are the most common system throughout the region in terms of frequency, but they rank last in total production. In contrast, whole-tree harvest systems (feller buncher, grapple skidder, stroke delimeter) account for almost 40% of harvest systems reported, but they rank first in total production.”¹⁴ The same study found that average weekly production varied across harvest methods and the four states of the region studied (VT, NY, NH, ME) with up to 100 tons per week with tree-length systems, more than 250 tons with cut-to-length systems and more than 300 tons with whole tree systems.¹⁵

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Some loggers may choose to invest in new equipment, such as chippers, and diversify their operations to maintain profitability and access new markets.¹⁶ It is important to note that highly mechanized and capital intensive operations are the most productive, they also require larger acreages to operate efficiently and cost effectively.

Loggers themselves identified the top five factors for success in their business as follows:

1. A broad-based knowledge of business that includes cost monitoring, business finance, operations management, and legal/ regulatory compliance.
2. The necessity to establish and maintain excellent relationships with people that are critical to the function of the business such as procurement managers, landowners, foresters, financial institutions, employees, and equipment sales-service providers.
3. Consistently maintaining a high degree of integrity in every aspect of the business.
4. A willingness to commit the personal time demanded for this kind of operation, including time for planning, supervision, technical aspects, and training.
5. Recruiting and holding capable and dependable employees.

In addition, successful loggers understand the importance of doing quality harvesting work consistently. This is highly important to landowners and to the suppliers in maintaining a logger’s reputation as someone who will do it right the first time. Loggers also recognize the need to be willing to stay flexible and to innovate to make the harvesting and transportation operations more efficient. If a supplier has a difficult time changing or adjusting when necessary, the business cannot be sustained.¹⁷

Right now, the logging sector is split between many small operations with zero to five employees, and a handful of larger businesses with more than five employees. A 2012 study by Leon and Benjamin found that 22% of loggers in Vermont are using whole-tree systems and 71% are using tree-length systems (with 7% using cut-to-length).¹⁸ Fully mechanized operations are generally best suited to larger acreages while smaller operations may be better suited to smaller acreages. Some companies run some mechanized and some non-mechanized crews. Given the mix of forest ownership types in Vermont, some of both types of operations will probably be needed to develop and maintain a reliable resource flow.

Opportunities and Challenges

There are two sides to the demand for forestry services – the landowner side, and the buyer of raw materials side. One key to unlocking a more stable and reliable flow of raw materials from the woods has to do with relationship building between foresters and loggers and forest landowners, large and small.

Opportunities

Some industrial landowners build mutually beneficial relationships with providers of forest services. On the industrial landowner side, many companies are looking for three things: 1) highly productive contractors that can meet harvest goals; 2) contractors committed to quality beyond Best Management Practices (BMPs), with a high level of overall professionalism and demonstrated

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concern for residual conditions; 3) contractors who can be trusted and require little supervision. Lyme Timber takes active steps to attract and maintain relationships with contractors that fit these criteria including making sure jobs are properly set up by foresters to save time for loggers and keeping production levels up during slow times to keep core contractors in business and ensure their availability when the market turns.¹⁹

There are opportunities involved in recognizing the multiple types of value provided by forest services, including opportunities for foresters. Forest services may include improved environmental conditions, wildlife habitat, long run value of timber, firewood, recreational access and more.

Increasing enrollment in Vermont’s Use Value Appraisal (UVA) program suggests that there are more landowners engaged in productively managing their forestland.

Challenges

On the landowner side, there does not appear to have been a great deal of research on what private, non-industrial landowners want or look for in a forester or logger. There are many educational materials for landowners on how to work with foresters and loggers, various programs designed to protect landowners from unscrupulous loggers, and general surveys about why people own forestland and what they value about their land, but almost nothing on what landowners want from their relationships with foresters and loggers. From the loggers’ perspective, weather, not parcel size, is the greatest challenge to increasing production.²⁰

Another key to maintaining a stable and reliable supply of raw materials has to do with building relationships between foresters, loggers and mills and log buyers. The focus with buyers of raw materials needs to be less on price and more on service and reliability. Log buyers that understand that it is in their self-interest to pay more for productive, committed, professional service can help loggers smooth the rough edges off the business cycles, particularly if they in turn are supported by their customers. Rewarding such service will help loggers achieve the levels of profitability required to attract new entrants and to make the investments required to modernize.

As the current generation of loggers age out of the business and the demand for roundwood continues to grow, it will be important to focus on the roles of foresters and loggers within the larger forest industry to insure that opportunities exist for profitability and expansion of services to more and more non-industrial forest landowners who must also benefit from industry growth. One of these opportunities may emerge by exploring new types of relationships and coordination between landowners, foresters, loggers, and log buyers with an emphasis on improving the reliability of revenues from harvesting for landowners and loggers and the capacity to finance logging equipment, much of which is rapidly aging.

Sawlogs and Veneer Logs

Demand for Sawlogs and Veneer Logs

Hardwood veneer logs and sawlogs are the raw wood products with the highest value. There are a large variety of markets for hardwood sawlogs due to the different combinations of species and

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products and the range in price of hardwood products due to species variations in quality and fashion trends. By contrast there are fewer commercial softwood species, and markets for softwood products are limited to primarily construction lumber, plywood and some furniture.²¹

2014 stumpage reports for Vermont show Sugar Maple, Yellow Birch, White Ash and White Oak as the species with the most value.²²

Sawlogs

The demand for sawlogs is driven by demand for the products for which they are inputs. The hardwood lumber market is currently split with standardized rail and pallet markets dominating the market from a volume standpoint and grade lumber having the greatest impact on profits. Pallets and railway ties comprise 55% of the U.S. hardwood market. When local markets are short on low grade logs, the manufacturers of pallets, rail ties and mats must buy higher grade logs or lumber, or switch species.²³

Sawlogs are typically purchased directly by sawmills, veneer mills, or log buyers (brokers). Sawmills consume the greatest volume of hardwood roundwood but veneer mills, plywood mills and engineered wood product plants can be important consumers in a specific sub-region; studies have shown that demand for hardwood varies by location.²⁴

Veneer

There are two classes of veneer logs:

- 1) Strength: construction grades of plywood, linear veneer lumber (beams made by gluing sheets of veneer) and industrial plywood;
- 2) Appearance: architectural millwork, furniture, interior doors, flooring, paneling – these come from hardwood logs.²⁵

The value of different species rises and falls as different looks go in and out of favor. This is evidenced by the Maine stumpage study that showed that veneer consistently maintains the highest value per ton, but the veneer in highest demand changed from red oak in 1984 to sugar maple in 2009.²⁶ Understanding the value and characteristics of veneer logs is integral to getting the best value from a woodlot.ⁱⁱⁱ

ⁱⁱⁱ “The very best logs are called slicer logs, because they are usually cut into slices parallel to their length. Rotary logs aren’t quite as good and are peeled on a lathe. These logs can travel the world, often changing hands several times. This is where the money is. Even the smaller, poorer-quality veneer logs are worth more than top-quality sawlogs, and large ones of excellent quality are worth several dollars per board foot in log form. At the high end for domestic species, a perfect bird’s-eye sugar maple veneer log can be worth more than 10 dollars per board foot.” Source: Post, Irwin. “Growing Value in Your Woods.” Northern Woodlands. Summer 2005. http://northernwoodlands.org/articles/article/growing_value_in_your_woods Accessed 07/11/14.

The most recent Pennsylvania Woodlands Timber Market Report – covering hardwood markets in the Northeast – identifies strong demand for oak, maple and ash and shows double digit increases in the prices for these species over 2013.

Sawlog and Veneer Log Data and Trends

National Data

A 2005 study (the most recent available) of wood procurement by sawmills in the Northeast ²⁷ found:

- Mills in the area procure 90% of roundwood (sawlogs) from within 30-70 miles of the mill but may go as far as 200 miles to meet requirements.
- Hardwood mills had a higher average distance of log supply (mean 59 miles) and higher maximum distance (161 miles) compared to softwood mills (mean 44, maximum 135).
- Large hardwood mills had the largest average woodshed radius (70 miles) but large softwood mills had the greatest average maximum distance to logs (211 miles).
- Small softwood mills had the smallest average woodshed radius (32 miles).
- Hardwood mills get their wood supplied almost evenly across stumpage (27%), roadside (34%) and gatewood (34%)^{iv}.
- Softwood mills get the majority of wood from gatewood (69%), followed by roadside (14%) and stumpage (7%).
- Mills reported a decline in quantity and quality of logs between 1994 and 2005.
- Half of the mills studied reported reselling logs to other mills or brokers.

Vermont Data

In 2011, 352,876 cords (equivalent to approximately 176,438 Mbf) of sawlogs (both hard and soft) were harvested in Vermont, with 314,708 cords (157,354 Mbf) processed in the state (160,208 cords exported, 122,040 cords imported).²⁸

Innovation in Vermont

Efforts to revive the forest economy in the Northeast Kingdom in Vermont are focused on demand from regional markets. Joel Currier owns a sawmill in Danville. Currier harvests trees from his own property as well as other forests. He hopes to tap the emerging market for locally sourced wood products. His niche is long timbers and specialty woods and he’s reaching new markets with an online presence. The region still supplies high quality sawlogs to mills across the border in Canada, which means that the Northeast Kingdom doesn’t benefit from value-added manufacturing.

Dillon, J. 2012. NEK Forest Products Industry Shifts Focus to Regional Markets. VPR. http://www.vpr.net/news_detail/94732/nek-forest-products-industry-shifts-focus-to-regio/

^{iv} Stumpage – purchased as standing timber; gatewood – logs purchased at the mill at time of delivery; roadside wood – purchased by bid or direct sale from a log landing or concentration yard

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If processed in state, these logs go to either one the veneer mills or one of the approximately 97 sawmills in the state.²⁹ In 2011, the most recent year data was available, Vermont was served by 97 mills that processed 97,454 Mbf of hardwood and 59,900 Mbf of softwood – the majority (57%) of this was processed by the seven mills that have capacity over 5 MMbf (and 79% was processed by the 18 mills with capacity greater than 2.5 MMbf).³⁰

Looking at long term trends, roundwood harvest in the state has increased 2.07% annually (122% period increase) from 1961 to 2000, while real price increased 33.35% annually (81% period increase) from 1982 to 2000. Timber supply projections for Northern New England predict that harvest volume in Vermont will increase by 22% between 2000 and 2049 with a 30% increase in sugar maple/ash harvest.^{31, 32}

Opportunities and Challenges

Vermont’s forestland is dominated by hardwood species, many of which are currently in demand. Because of the diversity of markets for hardwood sawlogs and veneer logs there are a range of market opportunities that can be accessed by Vermont producers. There are also challenges, including but not limited to competition with Canadian markets, lack of capital to modernize and difficulty in moving through the permitting process. Because so much of Vermont forestland is held privately it will be necessary to educate landowners about the benefits of sustainable harvesting on their properties and what the opportunities are for the wood they own. It will also be necessary to understand what landowners are looking for in relationships with loggers and other buyers of their wood to ensure that we are getting the highest value out of our forests.

Part Two: Opportunity: Enhancing the Economic Value of Vermont’s Woodlands^v

The Dynamics of Demand and Supply

Markets for forestry and logging services and wood products fluctuate. Based on interviews with industry professionals, there is currently a strong national and international market for most of the forest products harvested in Vermont. However, supply is not keeping pace with demand.

A number of factors, which may include a lack of sufficient logging workforce, unpredictable weather, and not enough landowners involved in harvesting activities, likely contribute to this imbalance. The relative shortage of logs has coincided with, but is not necessarily caused by, a reduction in the number of small loggers and increasing mechanization of logging operations. In addition there has been a tendency for some log buyers to secure their supply closer to the source by purchasing stumpage or hiring their own logging crews rather than depending on unplanned deliveries of logs at their facilities. This may result in fewer logs available for export from the state.

Markets for forestry and wood products are also inter-related. For example, when pulpwood prices are high, there may be less low-grade wood available to cut for firewood. Woodchips may also compete with firewood and pulpwood. When demand for maple syrup is expanding, as it is now, standing maple trees for tapping may provide landowners with higher returns than maple logs, but this may reduce the availability of maple to be harvested. These relationships fluctuate over time and impact the price and availability of raw materials. Regardless of fluctuations in demand for specific products, there is concern that even with a stronger economy the overall level of harvest may not rebound. In general, however, the rate of growth exceeds the rate of harvest. A lack of capacity for well-planned and sustainably managed harvesting could mean that a lot of the standing timber in Vermont that could contribute to a stronger forestry and wood products sector would be underutilized.

Identifying Wood Harvested in Vermont

Yellow Wood’s research failed to identify centralized information on current and planned harvests in Vermont, so it is impossible to know how much of what species is being harvested where in Vermont in real time. There have been attempts at this in the last several years, mostly related to wood fuel supply. Yellow Wood believes this information would help determine where there are likely to be gaps and opportunities, as well as how to improve trucking efficiencies for raw materials, and could lead to other systems changes and efficiencies over time.

Better, more complete and timely information on availability of log supply could benefit multiple firms that depend, at least in part, on Vermont harvests and would support the trend toward de-commodification of logs and just in time deliveries. This information would also clarify the extent of landowner engagement in harvesting activity, help identify landowners with harvestable acres that

^v From *Draft Market Sector Analysis Summary and Recommendations*, based on secondary research and key informant interviews with industry players inside and outside Vermont. All quotes in this section are from key informant interviews conducted in the Fall of 2014 with approximately 30 businesses working in the forestry and wood products sector in Vermont.

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are not harvesting, indicate where outreach could yield the greatest return and could facilitate connections between wood harvesters and in-state wood product manufacturers, and facilitate development of Vermont products using Vermont materials where demand exists or could be created. There is an opportunity to help Vermont woodland owners better understand the contribution they can make to the Vermont economy and wood marketplace by harvesting and selling their trees. Outreach that connects wood users with woodland owners and educates owners about the positive environmental impacts associated with appropriate harvesting could create incentives for woodland owners to harvest that include both self-interest and a shared interest in the state’s economy and environment.

Currently, it is very difficult, if not impossible, for purchasers of lumber and other wood inputs from most Vermont brokers and wholesalers to know whether the wood they are using originated in Vermont. For example, some Vermont logs are sold to Canadian mills that resell lumber to Vermont wholesalers. Although some landowners, loggers and foresters say they would like to sell Vermont logs to Vermont mills, according to several interviews, Canadian mills typically pay a higher price. Price will always be an issue; unless Vermont mills can compete on price, competition with out-of-state markets will be a problem. It would be instructive to compare the costs of production of Vermont versus Canadian mills to better understand why Canadian mills seem to be consistently able to offer higher prices for raw materials. Knowledgeable interviewees suggest it is because Canadian mills are newer and more efficient than Vermont mills (the low cost of power and subsidized health care in Canada are also likely contributors), and that regulations in Vermont, such as Act 250, make it difficult to expand mills and site new mills at a commercial scale.

Typically, Vermont wholesalers that buy lumber on the open market do not know how much of it came from trees harvested in Vermont. For many of their customers, this is not a significant issue. However, for Vermont manufacturers and builders seeking to produce and market products from Vermont wood, difficulty identifying the origin of the wood available to them is a barrier. Some manufacturers deal with this by either cutting wood from property they own, arranging to purchase wood that has been chain of custody certified, or verifying its source by communicating directly with loggers or others, but there is no system in place that serves multiple buyers. There may be an opportunity to pilot a project that connects builders and manufacturers with a market-driven demand for Vermont wood back to landowners, loggers, foresters, mills and lumber wholesalers that work together to generate supply. Redstart Forestry has attempted a similar process, but it has been limited to FSC certified wood. It may be possible to apply lessons learned more broadly.

Adding Value for Landowners

One key to getting more wood out of the woods seems to be increasing the engagement of a larger number of landowners in harvesting activities. About 80% of Vermont’s forestland is owned by 80,000 or so private, mostly family, forestland owners. It is unclear what percentage of these owners have engaged in harvesting activities. A 2006 study found that about 46 percent of U.S. family forest owners, who own 69 percent of the family forest land, have harvested or removed trees from some or all of their land. The number of commercial harvests is lower; 27% of the family forest owners,

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who own 58 percent of the family forestland, have commercially harvested trees.³³ For many, harvesting is not the primary motivation for owning forestland. As property tax burdens continue to increase, though, landowners may well look for ways to offset that cost by generating more revenue from their land.^{vi} Harvesting provides one such opportunity. Tapping trees for maple sap and/or raising or harvesting non-timber forest products like mushrooms or balsam needles are other options. Pressure from property taxes may provide an opening to capture the attention of more private landowners regarding the contributions they could make to Vermont’s economy and their bottom line through forest management, including, where appropriate, harvesting. Yellow Wood’s experience suggests that smaller private landowners typically respond better to the language of “forest stewardship” than to the language of “forest management.” According to USFS studies landowners also respond better to the term “woodland” (in place of forest).³⁴ A campaign emphasizing stewardship and forest/woodland improvement with clear outreach targets linking landowners with county and/or private foresters might be considered. This type of activity could be coordinated with demand by Vermont manufacturers for specific species and even with a pilot to maintain log identity. It could also emphasize the benefits of working with a forester for wildlife management, invasive species control, and recreational uses.

“Most landowners are trying to figure out how to keep their land. Now, they are looking at alternative forest products.”

Carbon credits are another possible market opportunity that could benefit landowners. Carbon markets are maturing and becoming more accepted and more stable. There is more demand for credits than there is supply. The infrastructure to supply carbon credits is still being developed in response to demand which is created through a combination of regulations (in the compliance market) and the public relations benefits to firms of carbon offsets (in the voluntary market). New EPA regulations on utility carbon dioxide emissions are in the works and will shape the carbon market in New England. Even though Vermont does not have coal-based utilities, it could still feed credits into the system. Carbon credits help other companies establish environmentally friendly credentials (on the voluntary market) and meet regulatory requirements (on the compliance market); this may appeal to Vermont companies in other sectors who may be interested in purchasing Vermont carbon credits if they were available in sufficient quantity.

“New EPA rules on utility carbon dioxide emissions are being worked on. It is a big unknown. Vermont doesn’t have major utilities that are coal based here so it’s not subject to the rules, but they could still feed credits.”

There are now organizations like The Climate Trust that can manage projects for states and/or utility companies. There are innovative state programs in Oregon and elsewhere and programs that

^{vi} Vermont’s Use Value Appraisal (UVA), also called Current Use or Land Use, enables landowners who practice long-term forest management to have their enrolled land appraised for property taxes based on its value for forestry, rather than its fair market (development) value. When land is enrolled in the UVA program, the State attaches a permanent lien to the deed. Currently, there are over 17,000 properties enrolled totaling more than 2.3 million acres. This represents approximately 1/3 of Vermont’s total land area.

invest dollars generated through carbon credit sales for improved forest management and landowner health care^{vii} that could be used as a starting point for developing a Vermont program.

In Vermont, the average yield is 1 to 3 tons of marketable carbon per acre per year. Carbon credits will likely have to be aggregated by type of ownership (e.g. private, municipal, non-profit, state). Aggregation adds a layer of complexity and would require management. Carbon credits are totally compatible with sugaring. Both pay landowners for not harvesting. Carbon credits can also be earned for some durable products that use solid wood. Vermont has not yet established the guidance, models, and templates or the relationships between aggregators, forest managers and landowners that would be required to succeed in aggregating carbon credits at scale.

Value Chain Gaps and Possible Interventions

One commonly cited concern related to growing the forestry and wood products industry is the aging of the experienced logger labor force and uncertainty regarding its replacement with younger qualified loggers. More than 60 percent of logging business owners in the Northern Forest were found to be over 50 years old.³⁵ Some logging companies are reaching out to the younger generation, and some young people are entering the logging profession on their own. Many interviewees would like to see Vermont strengthen the pipeline of loggers through in-state training programs. Interviewees have suggested vocational programs at the high school level. Companies have suggested that it would be easier for them to hire if there was some sort of training and screening in place to help them identify the best candidates. Strengthening the pipeline of loggers involves vocational programs at all levels, as well as training and apprenticeship programs. There are also challenges in getting students from these programs and into careers in logging. This may be due to a lack of available jobs, difficulty securing capital to start their own businesses or a general lack of public respect for loggers.

“The aging contractor workforce is now working with young guys to help them to be productive. We offer training on bookkeeping and planning. I saw this contractor doing this, making it so people want to be loggers. We need that up and down the chain.”

Trucking logs is increasingly expensive. Improved coordination between truckers, loggers, foresters and landowners could reduce costs across the board. However, the absence of information regarding where and when harvests are occurring must be addressed before sector-wide efficiencies are achievable. Trust and the value of personal relationships are an important part of the forestry and wood products industry and an important element in this equation. Truckers may not be aware of back-haul opportunities, which would allow them to make money going to mills and coming back. A system with more information about where and when harvests are occurring, as well as where there may be back-haul opportunities could be accomplished in stages beginning with a pilot program. Back-haul opportunities may include logs as well as other materials.

^{vii} For more information see <http://www.pinchot.org/news/451>.

Certification

Fewer than a quarter (23%) of all survey respondents reported that their customers require forestry or chain-of-custody certification. Of these, the most common certification was American Tree Farm System (ATFS), followed by Sustainable Forest Initiative (SFI) and then Forest Stewardship Council (FSC). The majority of respondents (55%) reported that the market didn’t justify participation in certification programs; other barriers, in order of importance, included cost to maintain certification (40%), cost to certify (39%) and lack of time (21%). Several interviewees reported having dropped previously held certifications.

Interviews made clear that certification means different things to different subsectors. FSC is a hard sell for private landowners because it is expensive and complex, compared to the Tree Farm certification, which is nearly free, except for the cost for management plan preparation and record maintenance. FSC certification does matter for pulpwood. Some mills are certified, either FSC or SFI. Even if they aren’t, many care about where the wood comes from and how it was harvested.

“Some paper mills pay premiums for FSC or want elements of FSC wood. Finch in Glens Falls pays a bonus for certified wood. SFI is also accepted by some mills.”

“There are mills in Canada that send us a blanket form that says please sign here to certify all wood you are sending us is harvested sustainably. Those might have even gone away with the demand the way it is.”

As part of the effort to raise the public awareness of the economic contributions of the forestry and wood products industry, Vermonters could be encouraged to ask where their wood came from – whether it is their firewood, furniture, pellets, or the wood that fired their restaurant pizza. This could also help strengthen the connection between Vermont woodland owners and Vermont wood-using industries by allowing some businesses to feature the suppliers of their wood materials. The agriculture and food industry has done this well, as there is a movement to know where food comes from and more restaurants talking about their local food offerings. However, wood is not food and the in-state demand for wood, even if more fully developed, would be insufficient to support a robust state-wide forestry and wood products industry. It is not clear whether the return on investment from a “local wood” campaign would be sufficient to justify its cost, in part because we do not know the extent to which Vermonters already know where the wood products they purchase on a regular basis (particularly firewood) come from. It may make more sense as part of a larger public awareness campaign that features the large variety of forestry and wood products businesses based in Vermont, whether or not they are geared toward the local market.

Part Three: Positive Developments and Challenges in Vermont^{viii}

Selected Positive Developments

Changing Attitudes by the State and the Public

Members of the WLEB forestry subcommittee introduced the four regional focus groups by discussing the history of this initiative and its focus now on providing a boost to the forestry industry in the context of engaging the forestry sector as part of the Working Lands Initiative as a whole. There was a feeling that the legislature has recognized the value of the forestry industry alongside agriculture as part of the working landscape, as evidenced in part by these focus groups and also by forestry’s inclusion in the Working Lands Enterprise Board. Participants felt that this has translated into an increase in public awareness of the working forest and its importance.

Others, specifically loggers and those operating mills, said that they had previously been chastised for how they make their living; that has changed over the past 5–10 years, as the general public now appreciates wood products more. Having organizations such as The Nature Conservancy and the Appalachian Mountain Club becoming forest landowners that are actively practicing forestry has also made the public more receptive to working forestland.

Current Use

Vermont’s Use Value Appraisal or Current Use program, while not perfect, is encouraging more forestland owners to work their land. There is a feeling that there is an increase in land enrolled in Current Use, which incentivizes better forest management by educating landowners and encouraging them to have a relationship with a forester. Consulting foresters are used more often in the woods. Vermont’s program was cited as being the best program among the adjacent states in terms of the silvicultural results on the ground. Despite its success, in difficult economic times the Current Use program is often viewed as a source of lost revenue and thus always under scrutiny. It’s increasingly important for landowners and organizations that represent them to keep a careful eye on the Current Use program and advocate for its continued support by the legislature.

Safety Improvements and New Technologies

There are more equipment choices due to better and improved technology, and an increase in the use of mechanized equipment in the woods. This is also leading to more efficient and safer harvesting practices. Mechanized equipment is used by 17% of companies, but it is helping to produce 60% of the wood that is harvested in Vermont. Forest management practices have also improved, partly as a result of Current Use (mentioned above). There are fewer accidents in the woods and workers’ compensation rates for mechanized loggers are beginning to go down.

^{viii} Excerpts from *Draft Focus Group Summary*, based on four focus groups held throughout Vermont to bring together a variety of perspectives throughout the forestry and wood products industry. The information in this section is based on the opinions and perceptions of the approximately 50 focus group participants.

Transportation

The state opening up the interstates to logging trucks was seen as a huge positive. This was mentioned several times. This makes transportation much easier and safer.

Environmental Protection

There was a discussion about the tremendous improvement in water quality protection in logging. There are now more and more innovative products being used in the woods in an effort to practice more sustainable forestry.

Demand for VT/Sustainable Wood

Demand for Vermont wood and sustainable wood was mentioned as a positive development in retail lumber, furniture and institutional construction and renovation projects. Wood has also been included as a sustainable material in the LEED credit system.

Land Certification

Certification may have raised the bar on conservation and sensible stewardship. There is an increase in landowners who have their forests certified. According to one participant, this (an increase in certified land) is a resource that is underutilized. And there is a greater resource of certified wood growing in the forest. Certifications mentioned included FSC, SFI and Tree Farm.

Wood Product Markets

Loggers and foresters reported having more lowgrade wood products markets available to them, which is improving prices for loggers. This may be as a result of more and better markets for low-grade wood products. Markets are strong and there are plenty of places to sell wood. More markets are using forestry and wood products. There has been more demand for secondary products made from local wood. More and more people are seeking character wood, or wood with imperfections; the story helps to promote this kind of wood. Another example given was firewood, which is being sold for \$100 per cord on the landing, as opposed to four years ago, when a cord was being sold for significantly less. The competition between firewood and wood chips was felt to be beneficial. The energy market, which uses low-grade wood, was also believed to be helping to support higher prices.

The popularity of sugar maple was mentioned as a positive development in the furniture and wood products sector. When maple became the species of choice, Vermont was lucky enough to be the maple state. Participants perceive that Vermont has become the place to go for high quality wood products. The cachet of the Vermont brand has increased.

Logger Education and Business Training

The increase and improvement in logger education was cited as a positive. There have been strides in these programs that have increased awareness and business acumen for those people working in the woods. Learning about forest management and concepts has led to a higher standard of harvesting wood in Vermont. Along the same lines, there was a recognition that more landowners are educated in the forestry business, through the work of county foresters, landowner organizations, and others.

Selected Challenges

Lack of Connectivity

The forestry and wood products industry is experienced as a fragmented industry. People in this industry are very independent and self-sufficient and often lack knowledge about each other. As a result, participants perceive there is not as much connectivity or collaboration as there could be.^{ix}

Cost/Price Squeeze

Global pressure on price was a challenge that was mentioned, specifically by those in secondary production, which is “mostly out of our hands,” but is an issue because of the high costs of production in Vermont. High energy costs relative to Canada was also mentioned as a challenge.

Cost of Equipment and Lack of Infrastructure

The shorter winter harvest season is a concern. This is tied to the number of loggers operating and the equipment that they own and whether that equipment is adapted to more marginal times of the year. Fewer people are entering logging and that is partly because of the cost of the equipment for them to enter the market. Cut to length is one example; there is excitement about this opportunity, but the cost of the equipment isn’t reasonable for a younger person to be able to step into.

Infrastructure is an issue, such as the cost and availability of three phase power and “clean” electricity of consistent quality (e.g. no brown outs). Taxes related to health care were mentioned as a barrier to hiring. Quick changes in different directions (whether single payer, taxes, minimum wage, etc.) around policy creates business uncertainty that is a significant challenge.^x

Regulatory Uncertainty

Uncertainty in the regulatory and property tax environment is another big challenge. Property taxes drive decisions about managing land. This is not productive for future forests. From a regulatory standpoint, Use Value Appraisal has been positive for the industry. However, the tendency of the legislature to revisit the terms of Current Use on an almost annual basis creates a great deal of uncertainty and is beginning to undermine the value of the program since people do not have confidence that it will continue as it has in the past.

There is also a perception that there is more regulation in Vermont relative to nearby states. This creates additional cost and less production and puts more economic pressure on the industry. Most of these comments were in relation to Act 250. Participants perceive that there is much more regulation in establishing a manufacturing site in Vermont compared to adjoining states, due to local zoning and NIMBY (Not In My Back Yard).

Transportation

Trucking and transportation were mentioned as a challenge unless you have your own vehicles and drivers. The ups and downs in demand make trucking logs a challenging business. There is a

^{ix} To wit, several people at the focus groups were meeting for the first time and some were identifying potential partners, customers, or suppliers.

^x The final focus group was held just before Governor Shumlin announced his decision to scrap single payer health care for Vermont. Participants were very concerned about the rumored increase in taxes that would have accompanied single payer.

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perception that loggers are buying trucks as a break-even endeavor. It gives them the opportunity to move material and allows for convenience.

Loss of Mills

The loss of sawmills and pulpmills is a challenge, as is the fact that these mills have been replaced by logyards or concentration yards. When the sawmills go, the jobs go. The logyards can be managed by 1–2 people, where far more people are required to run a sawmill. In some areas of the state where concentration yards pay a lower price than mills, this can lead to a downward pressure on price usually due to lower trucking costs. Logyards do provide a market for smaller operations that may only be moving small loads versus tractor-trailer loads of logs.

From a logger’s perspective, this means there are fewer places to sell logs than before the recession. There are fewer mills; those mills remaining have significantly cut production. It is the lower grade logs that are harder to sell. The loss of Rutland Plywood was mentioned specifically several times, which represented the loss of birch market. While it’s not helpful to have mills right on top of each other, the cost of transportation to more distant mills can be high.

Workers Compensation Insurance

Workers compensation insurance has been mentioned as a challenge; people in the forestry industry are finding it difficult to pay the rates that are being charged. This means that many businesses are employing subcontractors instead of employees. However, workers compensation insurance does decrease as you mechanize; one participant quoted it as \$0.14 on the dollar if you’re mechanized and \$0.40 if you’re not. So, this becomes less of a challenge as you mechanize your operation. However, it also seems to be a problem for sawmills.

Access to Wood

This is a barrier having to do with landowners. According to participants, if more landowners enrolled in Current Use, there would be more access to wood for the industry.

Labor Issues

It seems there is also a limited supply of logging contractors. Skilled labor is a challenge. Participants felt that technical schools were doing less and less and most programs were no longer relevant to the industry. Many do not have woodworking programs or cabinet-making programs. Getting youth engaged in the industry is another challenge that may eventually lead to an opportunity. It is a challenge to identify and encourage people willing and able to work in the woods. The opportunity is getting more youth to be exposed to the industry. There is a need for tech centers to be more attuned to the businesses in their neighborhoods. There are great underutilized resources such as people, businesses and infrastructure. Education about the forestry and wood products industry encompasses general education, training programs, apprenticeships, college programs and job shadowing opportunities.

Certification / Local Wood

Certification seems to be a challenge. Participants felt like better practices are happening already, without certification. The cost to maintain certification has gone up. People want certified lumber,

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but are not willing to pay extra for it. Some participants reported that their recent experience with local institutions was that they are now more interested in local Vermont grown or sawn product. This can be a challenge but also an opportunity.

There are disconnects in the supply chain for Vermont products. Some buyers want to know it comes from Vermont. Some producers want to be able to say that they’re using Vermont material, but there is not a predictable supply. There is an opportunity for collaborative purchasing for sawyers and wood product businesses. There is also an opportunity to differentiate between sustainable and certified sustainable.

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