Market Opportunities for FSC Certified Wood Products in the Southern Appalachians

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Contents

Summary

Although current supplies of and demand for Forest Stewardship Council (FSC) certified forest products are difficult to quantify, recent research carried out by the Southern Forests Network and Rainforest Alliance shows that both are growing.

The Southern Forests Network (SFN) conducted research to assess supply and demand in the region, including a survey of US Green Building Council members that demonstrates a ready and growing market for FSC building materials and durable goods. Results indicate that the primary factor limiting more rapid growth of the FSC market is awareness. Manufacturers, major wood purchasers, retailers, and the general public are all uninformed about the mission, availability, impacts, and potential of the FSC label.

This project has increased our understanding of current conditions in terms of FSC demand and supply, and necessary steps toward cultivating a strong market for FSC in the South.

Demand for FSC Products

Survey results indicate that green builders and architects are very receptive to the message of FSC branding and that almost all could be easily persuaded to make an extra effort to specify and purchase FSC products. The survey results leads to a conclusion that very little has been done to raise awareness among green builders, and that fairly minimal outreach efforts could quickly generate demand.

FSC Certified Production

The anticipated annual harvest of FSC sawlogs in Virginia, West Virginia, and Tennessee is approximately 31 million board-feet. Estimates indicate this volume represents just over one percent of the total three-state harvest. The majority of available FSC timber is in the poplar, red oak, and white oak classes. The Forestland Group (TFG) accounts for 71% of the FSC timber inventory in this region. Almost half (47%) of TFG's regional supply is located in West Virginia, with 34% in Virginia and the remaining 19% in Tennessee.

Market Opportunities and Challenges

Research indicates a number of opportunities and challenges that are fundamental to building markets for FSC products.

Market Opportunities:

- Increasing demand for green building services.
- Significant potential for generating institutional interest in local FSC products.
- The more green building businesses learn about the potential for affecting local forests and jobs, the more enthusiastic they are about FSC
- Small increases in demand from consumers could leverage significant increases in demand from builders
- Individual building firms can provide high-volume demand

Market Challenges:

- Lowered or reduced preference for wood products as the public becomes more aware of the consequences of bad forestry.
- Poor understanding of third-party certification systems for building materials
- Low awareness of the preferable attributes of certified wood.
- One-quarter of those surveyed are unaware that forest certification exists.
- Most Green Building Council members were somewhat familiar with FSC certification, but have not been motivated to actively seek FSC products.

Research Methodology

The Southern Forests Network's research was undertaken under contract with the Rainforest Alliance's Training, Research, Extension, Education and Systems (TREES) Program as part of a collaborative project to facilitate FSC certification in the Southern Appalachians. The Conservation Fund was also a collaborator on the project.

Focus Area

Project team members (representatives from the Rainforest Alliance, Southern Forests Network, and The Conservation Fund) chose West Virginia and Virginia as the primary focus area. Portions of Tennessee (due to some supply from The Forestland Group) and North Carolina (whose markets connect with those in WV and VA, and where a large number of furniture companies are located) were also included. These regions were chosen due to:

- Concentration of newly-certified forest acreage in the study region.
- Potential for 100% certification of established processing and distribution chains that currently source from these newly-certified forests
- Perceived market potential for products currently produced from wood sourced from newly-certified forests
- Concentration of existing certificate holders (forests and chain of custody)
- Presence of SFN members or other allies who will continue to facilitate certification in the focus area
- Potential for establishing groups for certification (landowners and/or processors) within 2 years
- Presence of known projects, buyers, or markets that present a unique marketing opportunity
- Presence of other identified "gaps" in certified processing and distribution chains

Market Assessment Process

The Southern Forests Network carried out research to assess supply and demand of FSC certified wood products in the region, in coordination with team members working with both certified companies and uncertified companies targeted for recruiting. Research included compiling available data on timber harvests, manufacturing, and certified forests; and conducting a phone survey of US Green Building Council members.

<u>Assessment of the existing market for all solid wood products in the Southeast</u>

Using data collected by government agencies and the forest products industry, SFN assessed production and sales of solid wood products in the Southeast to identify:

- the products of greatest demand in the region,
- opportunities to displace imports from outside the region, and
- major products according to production volume.

This analysis enabled us to identify product lines that may provide the best opportunities for increasing the consumption and visibility of FSC-certified products in the marketplace.

Data from the U.S. Economic Census were used to analyze trends in forest products manufacturing, and provide a better understanding of which sectors are most competitive in today's market. To provide an estimate of the share of production that is FSC certified, U.S. Forest Service Timber Products Output data was used to assess the current timber production in the target area (certified and uncertified). Data regarding FSC certified acreage and timber production were collected directly from certified companies by the Rainforest Alliance. Reports from Henry Quesada, PhD, a consultant to the Rainforest Alliance, provided valuable insight into trends in the furniture market and opportunities for domestic manufacturers.

Assessment of production and sales of FSC-certified solid wood products

Certificate holders in the target area were asked to quantify their production, sales, and purchases of certified wood and products. This information was used to compile a database of producers with information about their production.

Certified chain-of-custody companies were contacted to collect the following information:

- Volume of certified production
- Where they purchase materials
- Destination of their certified product
- Whether their product is sold as certified
- Secondary processing of their products
- Whether they receive requests for FSC products
- Intent to maintain certification
- Whether they receive a price premium on FSC products

Survey of wood buyers

To assess the current and potential demand for FSC-certified wood and products, and identify opportunities for processing and distributing certified products, the green building industry was identified as the target market for our survey. Members of the U.S. Green Building Council in Virginia, West Virginia, and western North Carolina were surveyed to determine:

- preference for certified wood products,
- annual wood use,
- specific products they purchase in greatest quantities,
- where they purchase wood products, and
- current consumption of certified wood products.

The phone survey was designed by Dovetail Partners, Inc, a 501(c)(3) nonprofit corporation that specializes in programs and models to foster sustainable forestry and catalyze responsible trade and consumption. Dovetail Partners was hired to provide expert consultation on the survey design due to their experience with similar surveys focused on Forest Stewardship Council certification and wood products markets in general.[1]

Survey data was used to identify the level of consumption and unmet demand for certified products, and identify target product lines. The survey of buyers also identified distributors, millwork companies, and manufacturers from whom green builders are currently sourcing wood products. These companies are candidates for FSC certification.

The survey also identified high profile buyers in the green building industry due to their potential to:

- leverage large increases in demand,
- serve as models for the green building community, and/or
- increase visibility of FSC products in the marketplace.

Targets for Certification

Using the list of companies compiled from the buyers survey and the team's research on secondary processors in the region, a list of targets for certification was developed. Many of these companies were contacted by the research team during the project, and others are targeted for outreach in the future. Companies were targeted due to:

[1] Dovetail Partners, Inc., 4801 N. Highway 61, Suite 108, White Bear Lake, MN 55110, Phone: 651-762-4007, www.dovetailinc.org

- Currently serving the green building market;
- Being a customer or supplier of an FSC certified company;
- Currently manufacturing products in key-product-lines identified in this research; and
- Perceived interest in certification.

Databases

All data collected from the FSC-certified producers and wood buyers have been compiled in databases for easy reference.

Findings
A. Demand for FSC Products

In order to quantify current and potential demand for FSC products, members of the U.S. Green Building Council (USGBC) were surveyed. This target group was chosen because the green building sector is widely believed to represent the greatest current demand driver for FSC. The USGBC's LEED (Leadership in Energy and Environmental Design) Green Building Rating System® is the most recognized national standard for developing high-performance, sustainable buildings. The LEED rating system awards credits for the use of FSC-certified and local wood products. FSC is the only wood certification system recognized by LEED standards.

Green building is a growing industry that serves the same target market as FSC products. From 2000 to 2002, USGBC membership increased twelve-fold. Many corporations, institutions, federal agencies, and local governments have adopted LEED-based policies for buildings and construction, dramatically increasing demand for green building services. Green building appears to be dominated by high-end construction in both the commercial/institutional and residential sectors.

Survey Results
Forty-five surveys were completed by phone with interviewees in Virginia, West Virginia, and North Carolina. Forty-one of those surveyed are US Green Building Council members, and 4 are log home manufacturers in West Virginia, chosen for the survey because of low numbers of USGBC members in that state and because they were identified as serving the same target market as green builders. Of those surveyed, 76% were builders and architects, 13% were manufacturers, and 11% provided related services such as consultation and design.

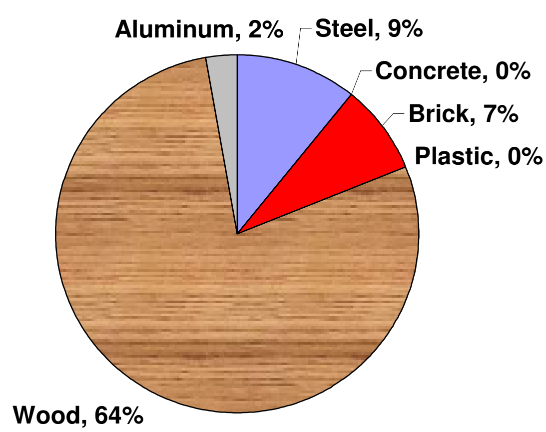
The Green Building Market
Eighty percent of those surveyed indicated that demand for "green" building from their clients in increasing. They estimated that over one-third (38%) of their business was in green building.

When asked about their primary motivation for serving the green building market, 29% were motivated by their client, 47% were motivated by internal values, and 18% said they were motivated by both equally.

Fifty-six percent are primarily serving the commercial and institutional market. These markets appear to generate most demand for LEED certification, largely due to the increase in corporate and government purchasing policies designed to address social and environmental issues. 29% are primarily serving the residential market, and 9% serve both markets equally.

Figure 1

Materials rated as "most environmentally friendly"



Wood Vs. Other Materials
One in five of the respondents actively seek replacements for wood when choosing materials, reflecting lower consumer preference for wood products as the public has become more aware of the negative impacts of bad forestry. Nearly one half (47%) said that availability of certified wood would affect their choice between wood and other materials, indicating that FSC certification has begun to address these concerns. Other reasons non-wood materials are sought are for structural capacity and fire resistance.

When asked what building material is produced with the lowest impact on the environment, 64% chose wood over brick, concrete, steel, aluminum, and plastic, indicating a nearly 2:1 preference for wood over all other materials combined.

Where Green Builders Seek Information

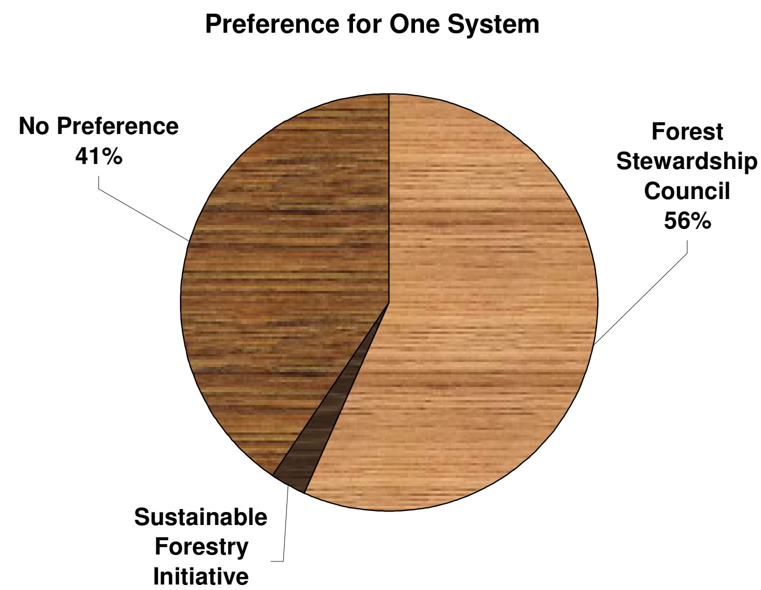
The two primary factors respondents cited when asked how they decide if a material is a good environmental choice were 1) recommendation by USGBC, LEED, or a similar organization (36%), and 2) personal experience (31%). Industry recommendation, peer recommendation, and advertising each ranked equally (4%) and only 2% cited third-party certification.

Respondents seemed both eager to learn about innovative materials options and overwhelmed by the range of options. Many referred to available data on embodied energy use associated with specific building materials, but there seemed to be a general sense that there was no one authoritative source of information on the relative sustainability of various material options. Combined with the lack of recognition of third-party certification, this seems to indicate a strong need to educate builders and architects about the preferable attributes of certified wood.

Awareness of FSC

Sixty-nine percent were aware that forest certification programs exist. Of those familiar with certification, 90% were familiar with FSC, but only 45% (half as many) were familiar with Sustainable Forestry Initiative (SFI). No respondents were familiar with only SFI, and several mentioned that SFI is increasingly viewed as a "greenwashing" system rather than an indicator of sustainability. Nearly one quarter (22%) were not familiar with forest certification at all, indicating that even among the most sustainability-minded builders, a significant number are completely uninformed about wood buying choices.

Figure 2



Among all respondents, nearly half (47%) indicated a preference for FSC. This is not surprising given that most are probably familiar with FSC via the LEED rating system. Only 2% indicated a preference for SFI, but both of these were log home manufacturers. One third (33%) do not prefer one particular certification system, indicating that there is still a need for education regarding the differences between FSC and SFI.

Sustainable Wood Utilization

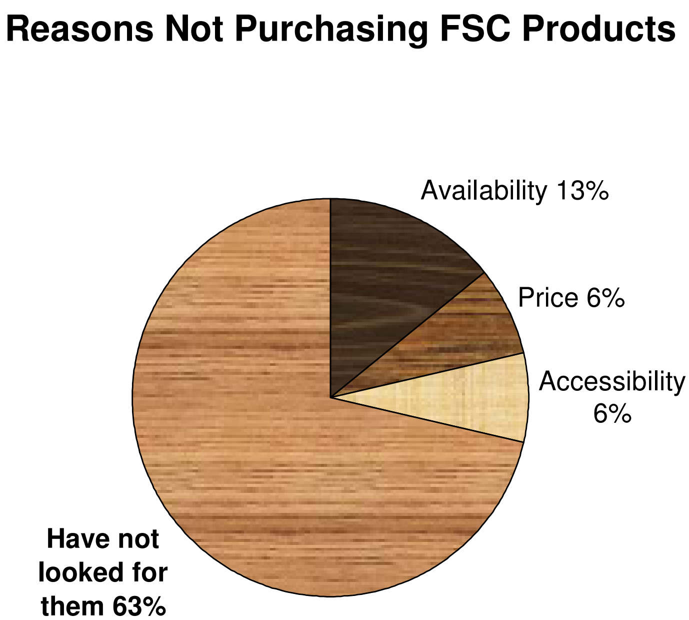
Almost two thirds (64%) have purchased "environmentally friendly wood products", and one half (49%) have purchased certified products.

Of those who have not purchased certified wood products, 63% have not even looked for them. Thirteen percent indicated that they had not purchased certified wood because it was not available, and price and accessibility ranked equally (6%) as factors limiting utilization. These responses indicate that one primary strategy for increasing demonstrated demand for FSC products is to motivate builders to seek them.

Potential Demand

Conversations with the respondents indicate that in general, green builders and architects are very receptive to the message of FSC branding and that almost all could be easily persuaded to make an extra effort to specify and purchase FSC products. It appears that very little has been done to raise awareness among green builders, and that fairly minimal outreach efforts could quickly generate demand. Many of those interviewed said that they would happily use FSC products if their clients asked them to do so.

Figure 3



Respondents indicated that wood products typically account for 5% or less of construction costs, suggesting that potential cost increases associated with FSC products would be easily absorbed in total project costs. Many indicated a willingness to pay a premium for FSC products, and that clients would be willing to pay a premium if educated. Dovetail Associates, a consulting firm in Minnesota that specializes in FSC markets, has observed that reliability of supply is also a key issue for most buyers in the building sector.

Several respondents suggested that even small demand for FSC from customers would likely leverage significant demand from builders, since they tend to apply preferences of their most innovative customers throughout their project portfolio.

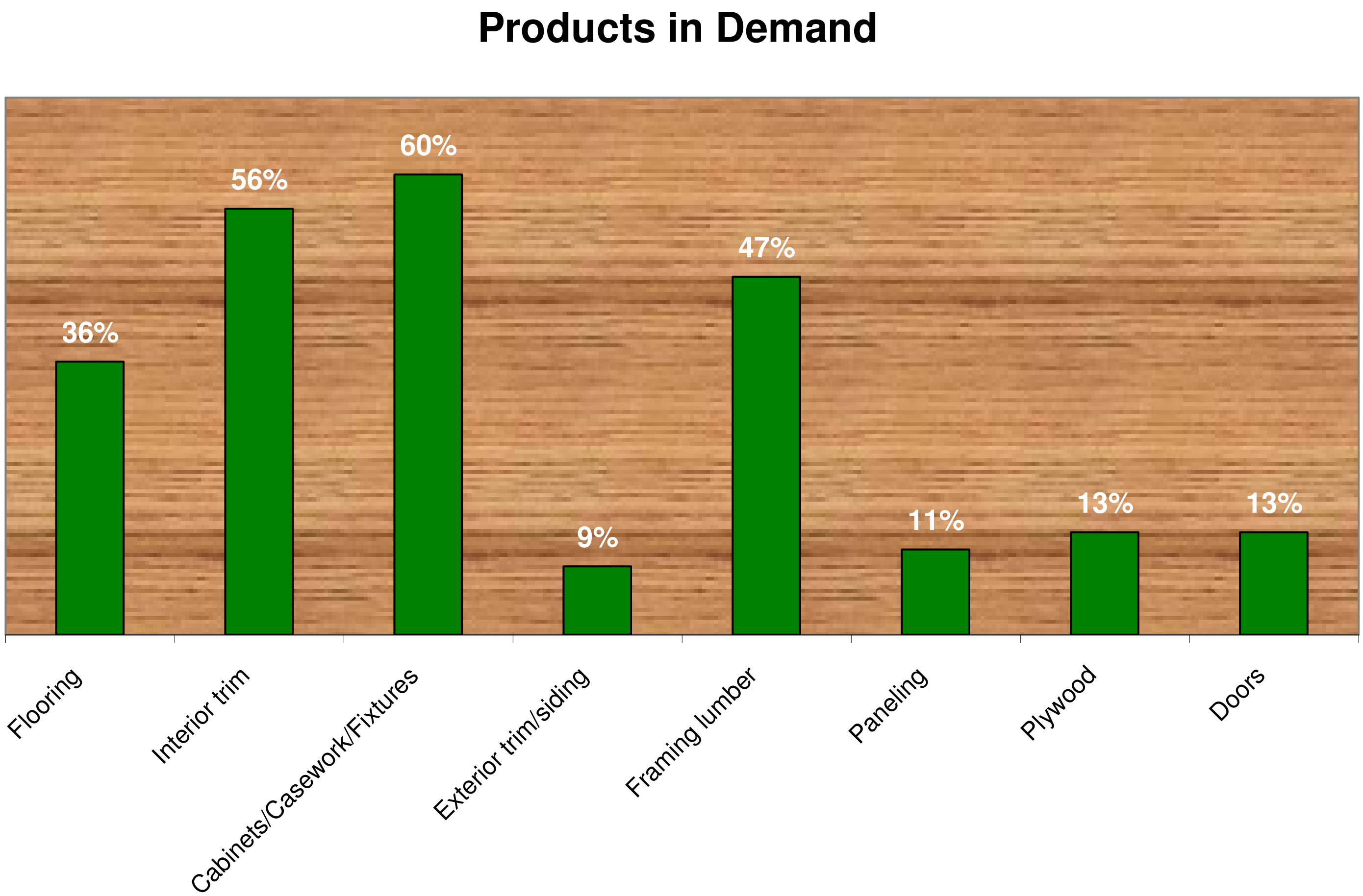
When asked what wood products they use most in their projects, respondents cited:

- Cabinets, fixtures & casework (60%)
- Interior trim (56%)
- Framing lumber (47%)
- Flooring (36%)

Markets for three out of four of these products (all except framing lumber) are dominated by hardwood species, making them suitable candidates as target product markets for manufacturers in the Southern Appalachians. While some respondents were able to give estimates of the volume or value of each product they consumed, most were unable to quantify their consumption. The responses received may provide some indication of potential demand:

- Plywood: Over $1 million a year from one company
- Cabinets and casework: Over $1 million a year from one company
- Logs: 8,000 board feet per week from one log home manufacturer
- Unspecified wood products: $30.25 million a year from 4 companies

Figure 4



Market Opportunities and Challenges

Survey results point to a number of market opportunities and challenges.

Market Opportunities:

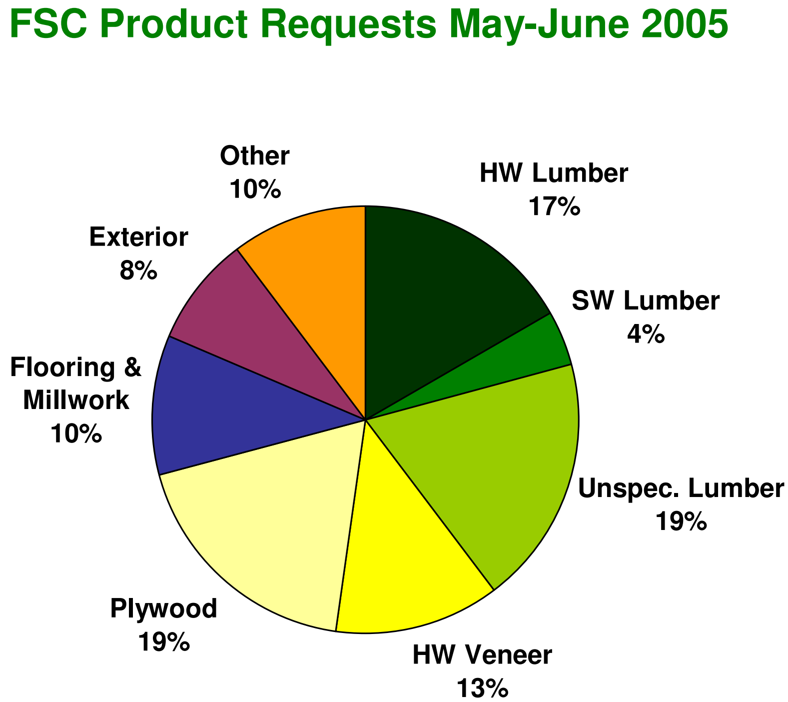
- Increasing demand for green building services.
- High level of optimism and personal commitment in the green building sector.
- Significant potential for generating institutional interest in local FSC products.
- The more they learn about the potential for impacting local forests and jobs, the more enthusiastic they are about FSC.
- Small increases in demand from consumers would likely leverage significant increases in demand from builders.
- Single building firms can provide high-volume demand.

Market Challenges:

- Lower consumer preference for wood products as the public has become more aware of the negative impacts of bad forestry.
- Low recognition of third-party certification systems for building materials, and low awareness of the preferable attributes of certified wood.
- One-quarter of those surveyed are unaware that forest certification exists.
- Most were somewhat familiar with FSC certification, but have not been motivated to actively seek FSC products.

FSC's Inquiry System
The Forest Stewardship Council has begun tracking inquiries they receive from buyers looking for specific FSC certified products. Data compiled in May and June of 2005 was analyzed for this study. 40% of the inquiries were for lumber products, 32% were for plywood and veneer, 10% for flooring and millwork, 8% for exteriors, and 10% were various other products.

Figure 5



Source: Forest Stewardship Council

Survey of FSC Certified Chain-of-custody Companies
Twenty-four certified companies in Virginia, West Virginia, and North Carolina were contacted, and interviewers received responses from 15 of these.

Most of the companies sell their FSC products to either manufacturers (33%) or distributors (33%). Twenty percent sell to retailers, and only 13% sell directly to the consumer. Two companies indicated that they primarily sell their FSC product to Europe and do not have a U.S. market for FSC products.

Among the companies interviewed, the FSC products they sell are going into a typical array of hardwood products including cabinetry (13%), plywood (20%), furniture (13%), flooring, millwork, and guitars.

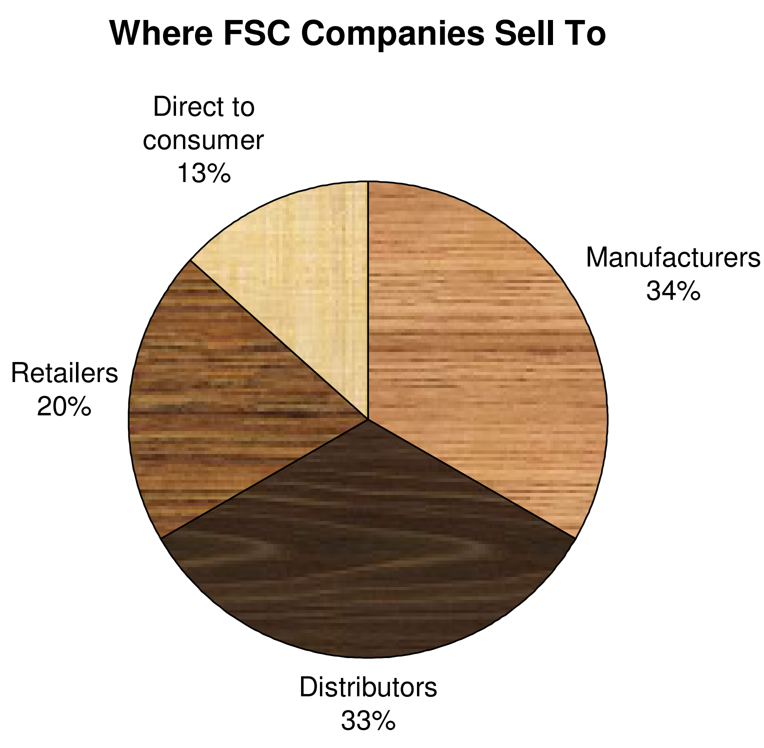
Eighty percent of the respondents said their product is labeled and sold as FSC certified. Thirteen percent said theirs was not, and seven percent were not sure.

The primary FSC materials being purchased by the companies surveyed are logs, lumber, and plywood. Forty percent of the respondents (6 companies) buy their FSC wood from Europe, 2 companies buy in the Southeast U.S., 3 buy from U.S. companies outside the Southeast, and 4 did not know where their FSC wood was coming from.

Most (13) indicated that they receive requests for FSC products, and those who did said they do not receive many or frequent requests. 100% of the interviewees intend to maintain certification.

In general, most companies did not see demand for FSC products but felt that FSC certification was important either because of personal values or a desire to get an "edge" in the marketplace. Many manufacturers see FSC certification as a means of

Figure 6



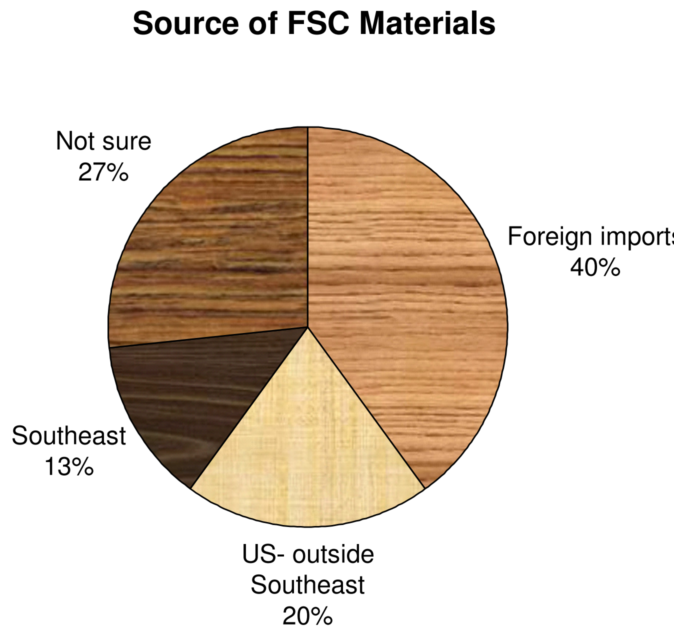
getting ahead of the curve in terms of market access and/or proactively avoiding boycott campaigns from environmental organizations. There was a general sense among those surveyed that the market may eventually provide greater advantages to FSC certified companies.

Those surveyed also indicated that they are not seeing much FSC material sold at a premium price- when a premium is charged, little will sell, and most of what is sold does not receive a premium price.

Conclusions about Potential Demand

There is great potential for rapidly increasing consumer demand for certified forest products. The green building sector demonstrates growing consumer demand for environmentally sustainable product choices for homes, offices, and other buildings. Marketing campaigns for local & organic foods demonstrates a distinct market of consumers who will seek out and pay for products that sustain rural livelihoods and reduce environmental impacts. In addition, a large sector of current wood demand is in high-end construction, representing consumers who are easy to lure with a good "story" and have high levels of disposable income. This market will inevitably be developed; the only question seems to be "how quickly?"

Figure 7



The research identified key factors to build demand for FSC products:

- Consumer awareness: educate consumers about the positive impacts of purchasing FSC
- Product identification: get FSC products in the marketplace to create options for consumers
- Green building: engage the green building community as advocates for FSC; highlight "model" projects that set the standard
- Retail sector: increase availability and visibility of FSC products to increase consumer awareness and demand
- Institutional purchasing: gain commitments from local governments, universities & colleges, and businesses to purchase FSC

B. Wood Products Manufacturing

Data from the 2002 Economic Census (U.S. Census Bureau) was used to determine major wood products by production volume for Virginia and West Virginia and to analyze trends in production.

Virginia
Manufacturing of wood products and wood furniture products in Virginia represents 5.8% of the state's total manufacturing (value of shipments), 11.2% of manufacturing employment, and 8.1% of manufacturing payroll. The largest wood manufacturing sectors were sawmills; wood kitchen cabinets and counter tops; and nonupholstered wood household furniture.

West Virginia
Manufacturing of wood products and wood furniture products in West Virginia represents 8.9% of the state's total manufacturing (value of shipments), 14.2% of manufacturing employment, and 9.4% of manufacturing payroll. The largest wood manufacturing sectors were sawmills; cut stock, resawing lumber & planing; and other millwork (including flooring).

Trends in Manufacturing
U.S. Economic Census data observed the following trends for the U.S. as a whole between 1997 and 2002:[*]

- Value of shipments increased in most wood processing sectors with the exception of wood office furniture
- Value added increased at a higher rate than value of shipments, indicating increased efficiency
- In most sectors, increases in value added and value of shipments were greater than increases in costs of production (payroll and cost of materials)

Nonupholstered wood household furniture
Number of firms & wages paid have been relatively stable
Value of shipments increased 12%
Value added increased 31%
Cost of materials decreased almost 5%

Institutional Furniture
Virtually unchanged, except for reduction in number of establishments

Wood Office Furniture
Value of shipments decreased 7%
Purchases of hardwood materials decreased, while purchases of softwood increased

Wood Kitchen Cabinets & Counters
Value of shipments increased 56%; 51% of this increase was in custom cabinetry
Value added increased 65%
Cost of materials increased 45%
Payroll increased 56%
Number of establishments increased 20%
Custom cabinet production increased 651%
Stock line cabinet production increased 41%

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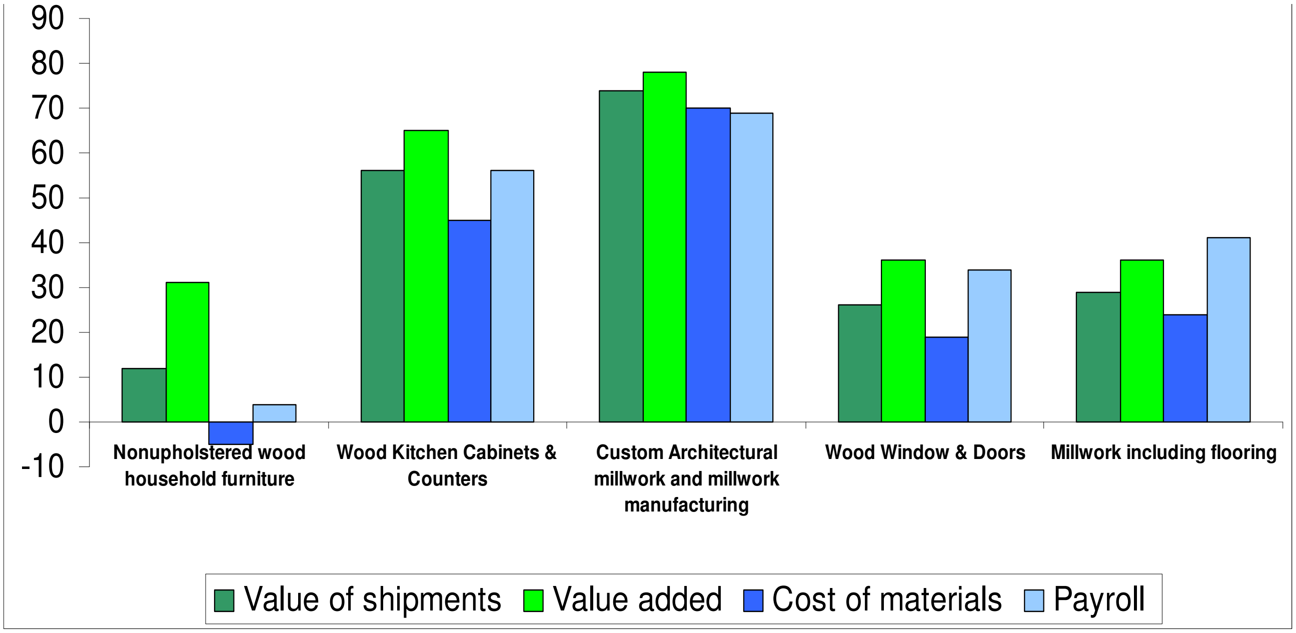
[*] Note that these figures are not adjusted for inflation. The Inflation rate January 1997- January 2002 was 5.4% based on the Producer Price Index measuring changes in the wholesale prices of finished goods.

Figure 8:

Change in Value of Shipments, Value Added, Cost of Materials, & Payroll, 1997-2002



Source: 2002 Economic Census (U.S. Census Bureau)

Custom Architectural millwork and millwork manufacturing
Value of shipments increased 74%
Value added increased 78%
Cost of materials increased 70%
Payroll increased 69%

Wood Window & Doors
Value of shipments increased 26%
Value added increased 36%
Payroll increased 34%

Hardwood flooring
Value of shipments increased 28%
Non-oak: value of shipments increased 88%

Wood Molding
Value of shipments increased 35%

Flooring and Molding Combined
Cost of materials increased 24%
Payroll increased 41%

C. Key Product Sectors

The following wood product sectors appear to provide the best opportunities for domestic manufacturers, and in particular for establishing markets for FSC products:

- Kitchen Cabinets & Counters
- Custom Architectural Millwork, and
- Furniture

Research indicates that these sectors also offer the best potential for domestic producers in term of industry competitiveness.

Kitchen Cabinets & Counters

The greatest increase in domestic wood manufacturing has been observed in custom kitchen cabinetry, which increased 651% from 1997-2002. Kitchen cabinet and counter production was the only wood product manufacturing sector in which a significant increase in the number of establishments was observed. Research indicates that this sector has experienced stronger growth because:

- There is a growing market for high-end cabinetry that is not satisfied by the mass-production sector;
- Foreign manufacturers cannot provide competitive services for custom work in terms of customer service and design; and
- Customer preference is based on design and quality rather than price.

Custom Architectural Millwork

Strong growth was observed in the custom architectural millwork sector, with a 74% increase in the value of shipments and 78% increase in value added. Market conditions are very similar to those observed in the custom cabinet sector:

- There is a growing market for high-end millwork that is not satisfied by the mass-production sector;
- Foreign manufacturers cannot provide competitive services for custom work in terms of customer service and design; and
- Customer preference is based on design and quality rather than price.

Furniture

Because of fierce competition in the global market, the U.S. furniture manufacturing sector has been place at a market disadvantage. Historically, furniture manufacturing was one of the largest sectors of manufacturing in the Southern Appalachians due to the region's abundant hardwood resources. Today, furniture production in the region has significantly diminished as a result of globalization, and the region is seeking opportunities to maintain, if not enhance, what remains of this industry.

Henry Quesada, a consultant to the Rainforest Alliance who specializes in market analysis in the furniture and wood product sector, identified the following trends and factors in the global and U.S. furniture markets:[2]

A loss in the U.S. furniture industry's share of the global and domestic furniture market:

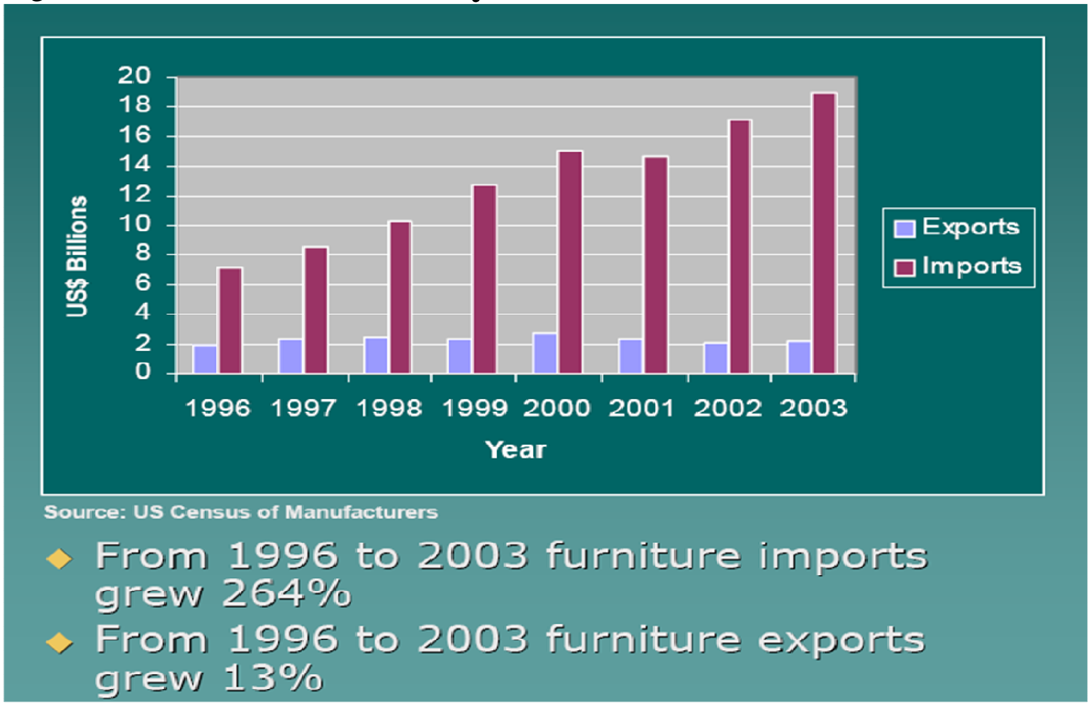
- From 1996-2003 US furniture imports grew 264% while exports grew only 13% (US Census of Manufacturers)
- Imports represent 43% of the household furniture sold in US and the share of imports has increased at twice the rate of domestic sales for the last 10 years (Evans 2002).

A decline in U.S. furniture manufacturing

[2] *Global and US Situation of the Furniture Industry: Trends and Strategies*, Henry Quesada, Ph.D., August 2005

- There were 168 furniture plant closures between 2000 and 2003. 65% of these closures were in the South (VA, NC, TN, AL, SC, GA, FL) with closures focused in NC (43%) and Virginia (9%)
- From 1999 to 2004 the US Furniture industry lost over 100,000 jobs

Figure 9 **US Furniture Industry Trade Balance**



Source: Henry Quesada, PhD

Quesada's analysis of competitiveness factors included the following conclusions[3]:

- During the evaluation of the trends for the US furniture industry results showed that customer satisfaction, price, innovation and shareholder satisfaction are the main critical success factors defined by publicly held US furniture manufacturers.
- Closeness of the US furniture industry to the customer may be the only viable competitive advantage that the industry has. To seize on this advantage, companies will have to improve design, manufacturing and delivery to offer customers a better product with a faster delivery time.
- The increase in housing demand from the "baby boom" generation is expected to increase overall demand for secondary wood products.
- "It appears that companies in the kitchen cabinet and office furniture sectors are far less prone to be out-competed by Asian manufacturers. The possible critical success factor for these sectors is service. The cabinet products come with design service to fit and to integrate the cabinets in the kitchen design-wise. The office furniture industry often provides whole-office organization systems. Increasingly, office furniture customers require turnkey solutions."

Quesada's conclusions indicate that the emerging domestic market for high-end furniture may offer a competitive advantage for U.S. companies. This reflects our findings related to cabinetry and casework.

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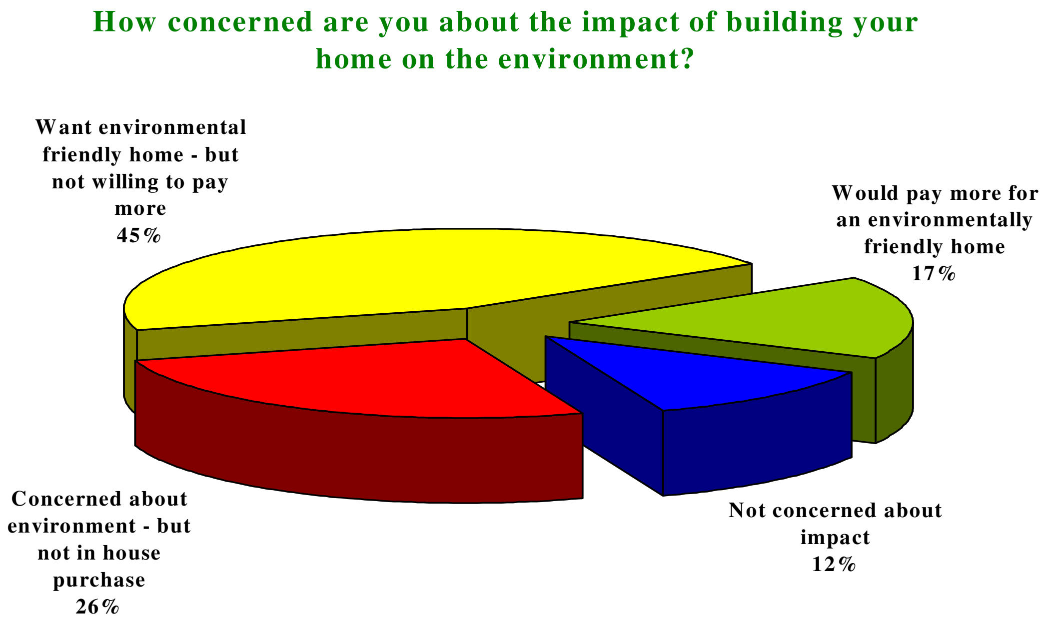
[3] *Best Supply Chain Management (SCM) Practices in the USA Wood Products Industry: A SCM strategic value-added map to increase competitiveness by using certified green products*, Henry Quesada, Ph.D., August 2005

D. FSC Certification and Market Advantage

Domestic wood products manufacturers face increasing pressures from low-priced imports. However, increasing consumer demand for local and sustainably-produced products presents a distinct opportunity for U.S. wood products manufacturers. FSC certification offers a distinct product identification that creates several market advantages:

- Product differentiation based on sustainability rather than price
- A niche market in which there are fewer competitors
- The opportunity to define the market for sustainable wood products and establish a strong brand identity

Figure 10



Source: National Association of Home Builders Consumers Preference Survey, 2003

Trends show increasing consumer preference for environmentally friendly products and expanding niche markets for products designed for these consumers. In a 2003 National Association of Home Builders Consumers Preference Survey, 88% of home buyers indicated that they are concerned about their home's impact on the environment. Seventeen percent were willing to pay more for an environmentally friendly home. Forty-five percent are concerned but are not willing to pay more for an environmentally friendly home. Twenty-six percent were concerned about the environment but it does not affect their house choice- it could likely affect other purchase decisions. Only 12% responded that they were unconcerned about the environmental impact of building their home.

Currently there are few FSC certified cabinetry, millwork, and furniture options for U.S. consumers. With growing interest in and demand for green building, it is expected that consumer demand for "green" household wood products will also increase, and that manufacturers who become FSC certified will be poised to capture this new demand and to displace imports.

FSC Certification and Competitiveness

According to Quesada, U.S. furniture manufacturers define critical success factors in four dimensions:

- customer satisfaction
- internal operations
- innovation and growth

- shareholder satisfaction

While Quesada's work was focused on the furniture industry, his analysis makes it possible to identify how FSC certification might impact these success factors for manufacturers in general:

Customer satisfaction
- Price: Where preference for FSC wood exists, FSC products do not have to distinguish themselves according to price
- Quality: FSC products will appeal to "quality of life" concerns: environment, jobs, economy
- Design: FSC products tell a good story and respond to specific consumer preferences

Internal Operations
- Tracking- FSC companies are required to have precise inventory tracking systems
- Waste reduction- FSC companies are required to utilize waste-reducing processes
- Stability: FSC supply chains are less likely to be the target of environmental campaigns; and because the FSC market is currently limited, there is a high level of loyalty in purchaser-supplier relationships

Innovation and Growth
- FSC manufacturers will define a new market and set a new standard in the industry
- FSC products have the potential to displace imports
- Demand for environmentally friendly products is increasing
- The FSC market will likely have high level of consumer loyalty

Shareholder Satisfaction
- Stability: The stock market views companies with an environmental commitment as being more financially stable
- Performance: A Morgan Stanley Dean Witter study showed market outperformance by firms with sustainability best practices. The best-in-class portfolio outperformed the sustainability laggards portfolio by 23.39 percent and performed competitively in comparison to the broader market.

E. Current FSC Certified Production

Current production of FSC certified timber and value-added wood products is difficult to quantify due to lack of data available from certified companies. Interviews with FSC certified secondary processors yielded very little solid data in terms of production volumes or values because most companies did not have that information readily available or were unwilling to share it. However, we were able to obtain good estimates of the expected annual harvest from the four largest FSC producers in terms of certified acreage, which currently represent over 95% of FSC acreage in Virginia, West Virginia, and Tennessee.

The anticipated annual harvest of FSC sawlogs in Virginia, West Virginia, and Tennessee is 30,536 MBF (MBF= 1,000 board feet). The majority of available FSC timber is in the poplar, red oak, and white oak classes.

The Forestland Group (TFG) accounts for 71% of the FSC timber inventory in this region. Almost half (47%) of TFG's regional supply is located in West Virginia, with 34% in Virginia and the remaining 19% in Tennessee.

The US Forest Service estimates the total annual harvest of sawlogs in Virginia, West Virginia, and Tennessee to be 2,721,538 MBF, thus the anticipated FSC harvest will represent approximately 1.12% of the three-state harvest.

Figure 11

Estimated Annual Harvest- FSC Timber, Virginia, West Virginia, & Tennessee (MBF)

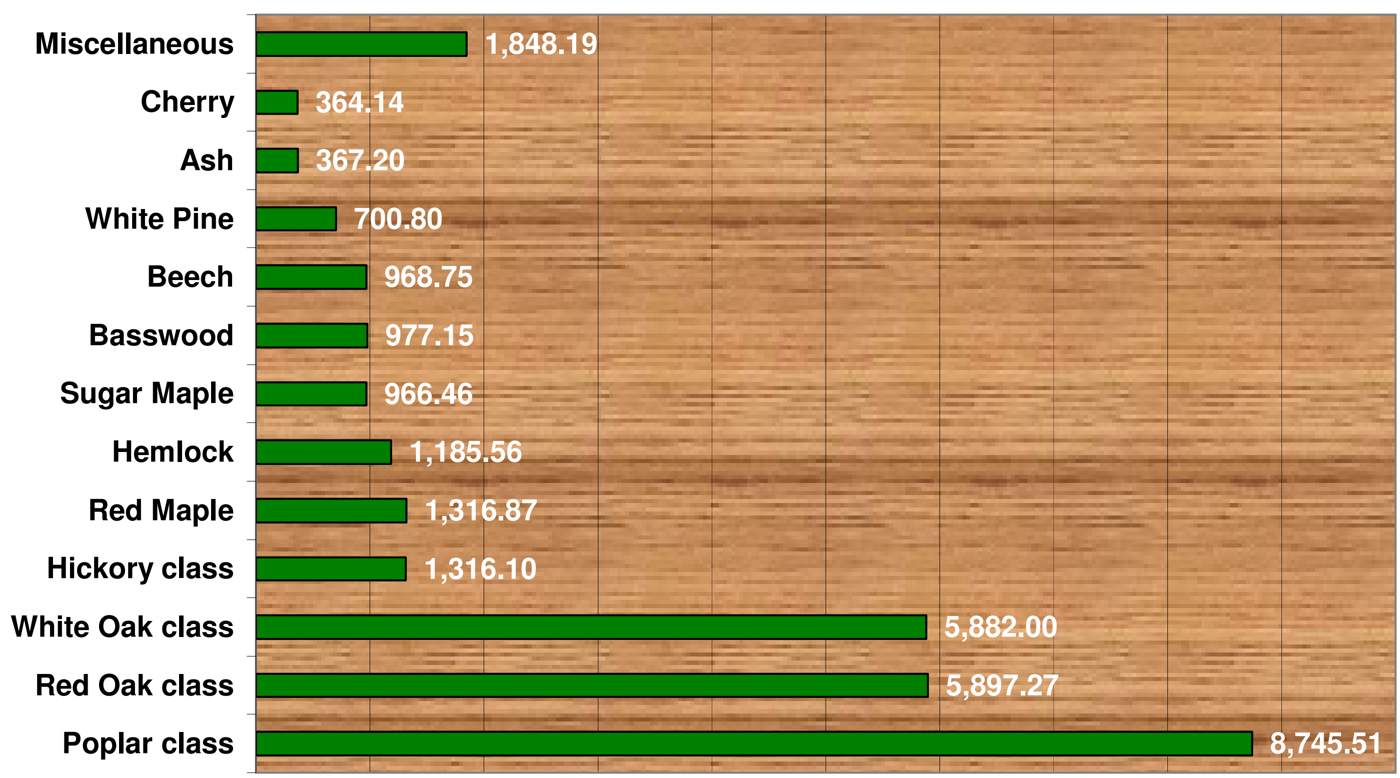


Table 1

FSC as Percentage of Total Harvest- Select species

MBF	FSC Sawlogs	All Sawlogs	FSC %
Hemlock	1,242.9	13,905.9	8.94%
Wh Pine	740.9	51,428.9	1.44%
Ash	397.9	41,873.2	0.95%
Basswood	1,019.2	19,276.4	5.29%
Beech	1,011.0	34,576.3	2.92%
Cherry	380.5	26,397.6	1.44%
Hickory	1,565.1	98,930.6	1.58%
Maple	2,401.8	147,481.8	1.63%
Red Oak	6,166.9	542,003.3	1.14%
Wh Oak	6,134.2	284,590.1	2.16%

Conclusions: Achievements, Lessons Learned, and Opportunities

This research provides valuable information about the current and potential demand for FSC certified wood products in the Southern Appalachians. At the project's inception, there was little relevant information available about demand for FSC products or for wood products consumption in the green building sector. While the project's demand data is not highly quantifiable in terms of volume, it is highly relevant because it has identified important strategies for facilitating the development of FSC markets in the South.

Assessment of potential demand and manufacturing trends indicate that the best opportunities for domestic wood products manufacturers, and in particular for establishing markets for FSC products, are: cabinets and casework, millwork, and furniture.

There is clearly a consumer market primed to create demand for FSC products, but these consumers are very unaware of the purchasing options that FSC provides. Without marketing and outreach, FSC could languish for years before ever building any real market. On a positive note, it appears that small investments in marketing and outreach would result in an increase in demand.

The research's greatest difficulty was obtaining quantifiable demand and supply data. Supply data was difficult to obtain because companies were wary of revealing information about their production. Demand data was difficult to obtain because smaller companies do not track it, and for those companies that do, it is time consuming to compile this information for a survey. It is notable that some builders and architects were enthusiastic enough about using FSC products that an effort to educate and engage them could result in collecting more quantifiable data.

Survey interviews, contact with mills, and other outreach undertaken as part of this project have yielded many opportunities for increasing both demand for and supplies of FSC products in the Southern Appalachians. The limited outreach which occurred as a coincidence of this research has already created more interest in FSC among both buyers and producers.

Recommended future activities are:

- A regional or national marketing campaign designed to increase public awareness of FSC and to increase government and institutional commitments to purchasing FSC wood products.
- Continued outreach and education in the green building community.
- Outreach to key buyers identified in the survey of USGBC members, more in-depth collection of demand data, and facilitation of FSC purchasing for projects that can serve as models to set a new standard for wood use in green building.
- Continued outreach to suppliers identified through the buyer survey and through Rainforest Alliance's market linkage efforts with a focus on the key product lines identified.
- Target initiatives designed to increase production of FSC products for which demand is most efficiently generated. A campaign focusing on one particular product might be the most effective strategy for simultaneously generating adequate supply and demand.
- Pursue strategies for organizing FSC certified production among groups of landowners and processors. These potential suppliers are highly receptive to FSC's mission, could facilitate more local processing, and have a very "sellable story".
- Pursue greater commitments to FSC purchasing from major retailers. FSC has lost steam with producers because of a lack of solid commitment from retailers such as Lowe's and Home Depot. Rainforest Alliance's work with ABC Home may prove to be a significant demand and visibility boost for FSC.

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