# Perceptions of Virginia's Primary Forest Products Manufacturers regarding Forest Certification

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**Abstract**

Some forest products companies have enrolled in forest certification and chain-of-custody certification programs due to a perceived increase in demand for certified products. The results of studies on certification conflict in regard to whether certification provides a competitive advantage and enhances market access. There is a lack of information regarding forest industry perceptions of forest certification, including potential barriers and challenges. To address these shortcomings, a survey was mailed to forest products manufacturers in Virginia to study their opinions about forest certification. The majority of respondents believed there were few benefits to certification programs; in particular, a majority perceived limited to no benefit with regard to market share, exports, future demand, and gaining a competitive edge. A similar number also reported that they associate little to no environmental benefits or improvements to company image associated with certification. The top barriers to certification identified by forest products manufacturers were that certification systems do not add value to their products and there is a lack of certified raw material.

The top challenges that certification faces in regard to acceptance by manufacturers included limited to no perceived financial benefit and lack of market demand. The barriers and challenges identified will likely have to be overcome to increase the number of firms enrolling in certification programs.

The demand for environmentally friendly products is one of the reasons that some forest products companies began to enroll in certification programs (Bartley 2003, Anderson and Hansen 2004a). In the United States, the demand for certified forest products grew with controversy over old-growth forests supporting the Northern spotted owl in the Pacific Northwest (Hubbard and Bowe 2005, Bowyer 2008). Third-party organizations, such as the Forest Stewardship Council (FSC), certify forestland and products by comparing forest management practices and processes to preset standardized guidelines (Vlosky and Ozanne 1998, Rametsteiner and Simula 2002). Primarily, these programs offer certification of the management practices used on forestlands but can also provide certification of the processing and distribution of the forest products through chain-of-custody certification (Hubbard and Bowe 2005).

Because many of these certification programs require fees to become a member, chain-of-custody–certified manufacturers and retailers must either be cost competitive or charge customers a premium to make their businesses economically efficient. In the past, wood products firms enrolled in certified programs believing that they could earn profits from price premiums, expand market opportunities, and better compete in the market (Jensen et al. 2003, 2004). However, in recent years, studies on the market for certified forest products determined that supply chain buyers and end consumers are not willing to pay a premium for a certified forest product (Teisl et al. 2002; Anderson and Hansen 2004a, 2004b; Hubbard and Bowe 2005; Durst et al. 2006; Aguilar and Vlosky 2007; Perera et al. 2008; Montague 2011; Espinoza et al. 2012). The reticence of consumers to pay a premium for certified forest products may occur because ecolabeling does not clearly define the source as a sustainably managed forest and the benefits of the certified product over one that is not. A previous study on ecolabels on certified forest products found a positive relationship

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between more detailed labels and a willingness to pay a price premium (Teisl 2003). Nevertheless, willingness to pay a price premium among most general consumers is thought to remain low.

Because most consumers are not likely to pay a premium for certified forest products, new market entry and a competitive advantage have been positioned as more realistic benefits associated with enrollment in a certification program (Jensen et al. 2003, Durst et al. 2006, Montague 2011). Some companies feel that enrollment in a certification program gives their firm a better image to environmentally savvy customers (Hubbard and Bowe 2005, Aguilar and Vlosky 2007). Businesses and government agencies have the greatest current need for certified products as they move toward a policy of sustainability (Durst et al. 2006). In addition, some environmentally concerned end consumers have purchased certified forest products from niche markets, such as specialty furniture (Anderson and Hansen 2004b). A study on home center retailers' attitudes, perceptions, and behaviors toward certified forest products found that retailers enroll in certified programs and enter certified markets primarily to improve their company's image in the eyes of consumers. Other reasons retailers believed that certification would benefit their company were perceived consumer demand, anticipated increased sales, and the business owner's commitment to environmental issues (Perera et al. 2008). However, many forest products companies continue to question enrollment despite new large-scale consumer interest because many are not willing to pay a premium for certified products (Hubbard and Bowe 2005, Vidal et al. 2005).

Virginia's primary forest products industry employs over 140,000 people and utilizes over 1.4 billion board feet of sawtimber annually (Virginia Forest Products Association [VFPA] 2012). In the past few years, the state has suffered from the economic crisis resulting in forest product mill closures and loss of employment due to intensification of competition. Therefore, Virginia may need to increase product competiveness by expanding export markets and improving product promotion (Wang et al. 2010). One potential improvement could be to participate in certification programs to increase share of specialty markets, such as green building and others requiring certified products. The objectives of this study were to (1) determine the perceptions of forest certification programs among Virginia's primary forest products manufacturers and (2) define the barriers/challenges that certified and noncertified manufacturers believe affect participation in forest certification programs.

## Methodology

### Data collection

A self-administered questionnaire was mailed to 252 primary wood products manufacturers in Virginia, using Dillman's Tailored Design Method (Dillman 2000). Contact information for each company, current as of 2010, was provided by Virginia Department of Forestry (VDOF) personnel (C. Becker, personal communication, 2010). The VDOF estimates that their mailing list includes 90 percent of all primary manufacturers in the state.

The mailings consisted of a prenotification letter about the study, a cover letter and questionnaire, a reminder postcard, and a second copy of the questionnaire. A prepaid envelope was enclosed to serve as a business reply mailer. The questionnaire was two pages in length and included 15 questions. Three types of questions were used in the questionnaire: 6 categorical, 6 Likert scale, and 3 open ended. Questions covered topics including demographics, forest certification programs, certification barriers, and certification challenges.

The Likert scale questions included familiarity, extent, and agreement questions. Familiarity was ranked using a unipolar 5-point Likert-type scale where 1 = never heard of it and 5 = very familiar. Extent was ranked using a unipolar 5-point Likert-type scale where 1 = not at all and 5 = a lot. Agreement was ranked using a bipolar 5-point Likert-type scale where 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree. The questionnaire was reviewed by wood products manufacturing experts and revised on the basis of suggestions.

### Data analysis

Survey data were coded, entered, and analyzed in IBM SPSS 20 Statistical Package for Social Sciences. Categorical and Likert scale data are presented as frequencies. The Likert scale data were used to provide a consistent response scale and to reduce the burden on respondents (Jamieson 2004).

The researchers used $\chi^2$ tests to assess the differences in distribution of responses between certified and noncertified companies for 18 statements regarding benefits associated with certification using $\alpha = 0.05$. The $\chi^2$ test is a nonparametric method of analysis used to evaluate significant differences in distributions of the data (Vaske 2008). This method was selected because the Likert response scale is categorical in nature and does not represent continuous interval data (Jamieson 2004).

## Results and Discussion

### Survey response

Of the 252 questionnaires mailed, 25 were returned as undeliverable, and 21 were returned as indicating that the company was no longer in business. A total of 67 surveys were returned, and 66 were usable for analysis. The adjusted response rate was 26 percent, which falls within the acceptable response rate for wood industry surveys. A representative distribution of all company types responded with the exception of ''If your company has a chain of custody certification, to what extent does this benefit the company financially?'' This question was answered only by those falling into the hardwood and softwood sawmill industry type.

### Nonresponse bias

A nonresponse bias was conducted in September 2011 by randomly calling manufacturers who did not respond. An additional 20 manufacturers completed a shorter set of questions. Statistical tests were performed to test for differences between respondents and nonrespondents. None were found.

### Limitations

The results of this work share similar limitations to other survey work where answers come most likely from one person in each company and might not necessarily reflect the views of others within the organization or of the

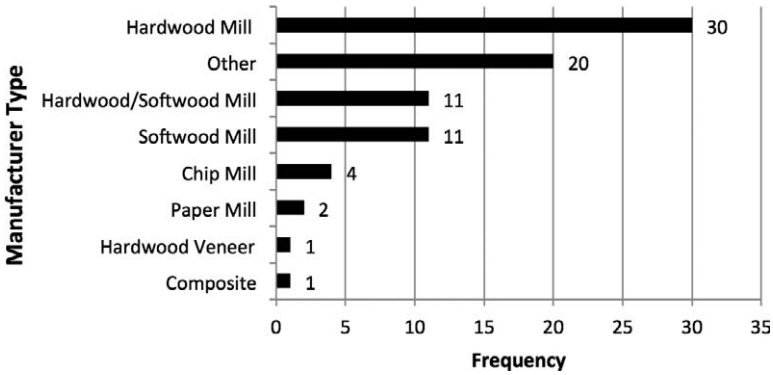


*Figure 1.—Response of manufacturers to survey by mill type (multiple responses were possible;* n = *66).*

company's policies (Alreck and Settle 2003). Information about the person answering the survey was not collected, so no determination can be made if the response represents the company or the responding individual. Also, the survey was conducted in the first half of 2011 and may have been influenced by the poor market conditions during that time period.

## Demographics of wood products manufacturers

Forty-nine firms with a single facility and 17 with multiple facilities responded to the survey. Seventy-nine percent of respondents owned a sawmill, and 30 percent chose the ''other'' category (Fig. 1). The most common other mill types were flooring manufacturers, planing mills, and wood pellet manufacturers.

The majority of respondents had fewer than 50 employees (65%) with an average of 44 per company, as expected with sawmills and chipmills. Only 9 percent had more than 100 employees, and these companies had multiple faculties with the exception of paper manufacturers, who employed over 100 people in one facility. Only 5 percent of respondents owned certified forestland in Virginia, and 19 firms (29%) indicated that they were currently enrolled in a certification program. As shown in Table 1, where multiple responses were possible, more primary manufacturers were certified by the Sustainable Forestry Initiative (SFI) than for the FSC (11% and 6%, respectively); however, more respondents were planning on FSC certification (7%) than any other system.

## Familiarity with forest certification

The first survey questions focused on familiarity of the industry with forest certification programs. On a scale ranging from 1 (never heard of it) to 5 (very familiar), the respondents' average familiarity with forest certification was 2.7 for the six forest certification programs (Table 2) with the greatest familiarity being with the SFI (3.4). Both of these results are lower-than-average familiarity for the nation's hardwood industry as reported by Espinoza et al. (2012). Lack of familiarity with these programs may be related to the small amount of forestland currently certified in Virginia: SFI has just over 406,000 acres and the American Tree Farm System (ATFS) has over 884,000 acres, whereas the FSC has just over 209,000 acres (Lowe et al. 2011). American Loggers Council Master Logger Certification is currently not available in Virginia. The certification program least familiar to respondents was the Program for the Endorsement of Forest Certification (PEFC; 48%), which originated in Europe and is the world's largest forest certification program (PEFC 2012). Primary forest products manufacturers in Virginia may not be aware of PEFC because it is relatively new to the United States and it endorses the SFI and the ATFS (ATFS 2012). Given the large number of respondents that were only somewhat familiar (rankings between 2 and 4) with the top three forest certification systems, it is clear that there is still a lack of understanding of these programs.

## Bias toward certification programs

Concern over a negative bias toward certification systems led to asking firms directly if their company does not like or trust current certification systems (Table 3). The results for the two questions were the same, where 20 percent agreed that they do not like or trust the systems, while the majority (69%) neither agreed nor disagreed with each statement, indicating that the majority of respondents do not have strong issues with trust or likes/dislikes with certification programs. However, the neutral response indicates that there is room for improvement of their perceptions and a need to better understand industry trust in forest certification programs. These neutral results, in addition to those

*Table 1.—Extent of Virginia's primary manufacturers with certified forestlands and/or those with chain-of-custody certification (multiple responses were possible).*

| Certification system | % of respondents | |
|---|---|---|
| | Indicating enrollment in certification program | Planning on certification |
| Sustainable Forestry Initiative (SFI) | 11 | 5 |
| Forest Stewardship Council (FSC) | 6 | 7 |
| American Tree Farm System (ATFS) | 6 | 3 |
| Program for the Endorsement of Forest Certification (PEFC) | 4 | 4 |

Table 2.—Percentage of responses regarding manufacturer familiarity with various certification programs.

| Certification program | *n* | Familiarity: Never heard of it 1 | 2 | 3 | 4 | Very familiar 5 |
|---|---|---|---|---|---|---|
| Sustainable Forestry Initiative (SFI) | 64 | 11 | 13 | 27 | 15 | 34 |
| Forest Stewardship Council (FSC) | 63 | 18 | 18 | 36 | 14 | 14 |
| American Tree Farm System (ATFS) | 64 | 23 | 23 | 16 | 21 | 17 |
| American Loggers Council Master Logger Certification | 61 | 33 | 23 | 26 | 5 | 13 |
| Program for the Endorsement of Forest Certification (PEFC) | 61 | 48 | 26 | 13 | 5 | 8 |

regarding familiarity, indicate the need for more education about forest certification systems, which may help change the forest products industry's perceptions.

## Benefits of certification

Four statements regarding benefits of forest certification were asked relative to benefits, the state of Virginia, the economic opportunities of the company, and the environment. Only 14 percent of respondents thought that Virginia would benefit if the use of certification were increased, and 41 percent of firms disagreed that forest certification would benefit the commonwealth. Forty-eight percent of firms neither agreed nor disagreed that there is not enough benefit to being enrolled in a certified program, and 43 percent agreed with the statement with only 10 percent disagreeing. The largest number of respondents, 48 percent, disagreed with the statement that forest certification would improve economic opportunities for their company, and only 19 percent agreed and 33 percent were neutral. When these firms were asked to indicate if they perceived that there are no real environmental benefits associated with forest certification systems, 38 percent of firms neither agreed nor disagreed with the statement and 35 percent agreed. These results indicate that the majority of manufacturers surveyed perceive that there are few benefits associated with forest certification, including environmental benefits to forest certification.

## Marketing and competitiveness

It is often mentioned that companies enroll in certification programs to expand market opportunities and become more competitive. Several of the survey questions addressed manufacturers' perceptions of certification related to current markets and expanding markets.

Markets drive demand for goods and services, and the majority (55%) of respondents neither agreed nor disagreed that there is currently a market for certified products, with 22 percent disagreeing and 23 percent agreeing. While the

Table 3.—Frequency of responses regarding benefits associated with certification.[a]

| Statement | *n* | Agreement (%): Disagree | Neither agree or disagree | Agree | $\chi^2$ *P* value |
|---|---|---|---|---|---|
| Bias toward certification | | | | | |
| Our company does not like the current certification systems. | 65 | 11 | 69 | 20 | 0.197 |
| Our company does not trust current certification systems. | 65 | 11 | 69 | 20 | 0.473 |
| Virginia would benefit if the use of forest certification increased. | 66 | 41 | 45 | 14 | 0.394 |
| Benefits of certification | | | | | |
| There is not enough benefit in becoming certified. | 65 | 10 | 48 | 43 | 0.354 |
| I think increasing forest certification would improve economic opportunities for my company. | 65 | 48 | 33 | 19 | 0.352 |
| There are no real environmental benefits associated with forest certification. | 65 | 26 | 38 | 35 | 0.437 |
| Marketing and competitiveness | | | | | |
| There is currently a market for certified material. | 64 | 22 | 55 | 23 | 0.110 |
| Being certified would give my company a competitive advantage. | 66 | 39 | 47 | 14 | 0.453 |
| Certification is more important for export markets. | 66 | 10 | 62 | 29 | 0.967 |
| I think increasing the use of certified wood would improve the overall image of wood products manufacturers. | 66 | 41 | 38 | 22 | 0.074 |
| Certified products leads to higher profit margins. | 65 | 59 | 35 | 7 | 0.079 |
| Future demand | | | | | |
| Demand for certified lumber will increase in the future. | 66 | 20 | 55 | 26 | 0.209 |
| Certification will be required to access market share in the future. | 64 | 19 | 52 | 30 | 0.169 |
| Barriers | | | | | |
| There is not enough certified raw material to justify becoming certified. | 66 | 19 | 48 | 34 | **0.013** |

[a] A $\chi^2$ test was performed on each statement to compare the responses of noncertified and certified companies. A significant result with $P < 0.05$ is shown in bold ($\alpha = 0.05$).

*Table 4.—Percentage of responses regarding the extent of changes to marketing products to be perceived as more environmentally friendly (n = 64).*

| | Extent | | | | |
|---|---|---|---|---|---|
| | Not at all | | → | | A lot |
| Question | 1 | 2 | 3 | 4 | 5 |
| In the past 3 years, to what extent have you changed the way you market your products so they are perceived as more environmentally friendly? | 39 | 24 | 25 | 6 | 6 |

literature suggests that firms marketing certified products may have a competitive advantage over firms not enrolled in a certification program (Ozanne and Smith 1995, Ozanne and Vlosky 1997, Forsyth et al. 1999, Grönroos and Bowyer 1999, Ozanne et al. 1999), 47 percent of firms surveyed neither agreed nor disagreed that certification provides a competitive advantage. Thirty-nine percent actually stated that they did not agree with this statement.

Export markets often are perceived as having a large potential for certified wood–based materials; hence, a question was asked regarding certification being more important for export markets. The majority of firms (62%) neither agreed nor disagreed with the statement with only 29 percent agreeing and 10 percent disagreeing. The perceived lack of potential market and competitive edge for companies indicates a potential barrier to increasing forest certification. Results from other research also demonstrates that the perceived need for certification for export markets can be variable; for example, Lyon et al. (2013) noted that even tropical timber producers in Central America were evenly split in how they perceive the need for certification to gain access to export markets. The absence of benefit for certification on export markets also was demonstrated by the lack of willingness of some international buyers to pay a premium for imported certified primary forest products (Cossio 2007, Lyon et al. 2013).

Previous research results differ regarding the enrollment of retailers and manufacturers in certification programs for enhancing their image. Perera et al. (2008) suggested that some retailers believed that certification may benefit their company's image because of perceived commitment to environmental issues; however, others have identified that companies participating in a certified forest products program may not view that their participation improves their company's reputation and thus increases profits (Vidal et al. 2005). To determine if Virginia's primary forest products manufacturers might behave similarly, respondents were asked if increasing the use of certified wood would improve the overall image of wood product manufacturers. Overall, most of the respondents (41%) did not agree that certification enhances a manufacturer's image, which may indicate that manufacturers were not marketing these certified products to a target market. Only 22 percent of firms agreed with the statement that using certified wood improves their image to their customers.

In one of the early pushes to get companies to become certified, the opportunity to realize higher prices for certified material was popularized; however, the literature questions if this actually occurs. Fifty-nine percent of responding firms indicated that they do not perceive that there has been an increase in profits as a result of being enrolled in a certified program (Table 3). Our results support other studies that found that forest products manufacturers were not able to charge a premium for producing certified forest products (Hubbard and Bowe 2005, Vidal et al. 2005, Wang et al. 2010, Lyon et al. 2013).

To determine if firms changed the way they market their products so that they might be perceived as more environmentally friendly, they were asked to what extent they may have changed their marketing strategy in the past 3 years to do so (Table 4). The majority, 55 percent, indicated that they had changed to some extent, 39 percent of the responding companies indicated that they had not changed their marketing strategy to appear more environmentally friendly to their customers, and only 6 percent indicated that they had changed their strategy a lot. The majority of companies had taken some action to change their marketing strategy to be perceived as more environmentally friendly; however, a majority of companies not seeing certification as being important to markets is perceived by the authors as an indication of a lack of belief by the industry that certification is linked to a better environment.

## Future demand

Participants were asked to rank a number of statements according to their agreement with them regarding their perceived future demand of certified wood products. Will the demand for certified lumber increase in the future, and will certification be required to access markets in the future? The majority of firms, 55 percent, neither agreed nor disagreed that the demand for certified lumber will increase in the future, and the majority of respondents, 52 percent, neither agreed nor disagreed that certification will be required to access markets in the future. This indicates that the majority of the industry surveyed is unsure about the future of certified forest products (Table 3). One possible increase in demand for certified wood products in Virginia could be the use of green building certification programs. Green building certification programs available for residential construction in Virginia, such as those of the US Green Building Council (2007) and EarthCraft Virginia (2010), require that a percentage of either certified or recycled wood products be used in home construction. Espinoza et al. (2012) found that 44 percent of hardwood lumber producers thought that the demand for certified lumber for green buildings would increase in the future.

## Barriers and challenges

The second objective of the research was to determine barriers and challenges faced by the industry in regard to certification. A barrier is defined as an obstacle that a company that does not use certified material or does not have chain-of-custody certification might perceive as preventing them from becoming certified or using such raw materials. Challenges are obstacles faced by companies

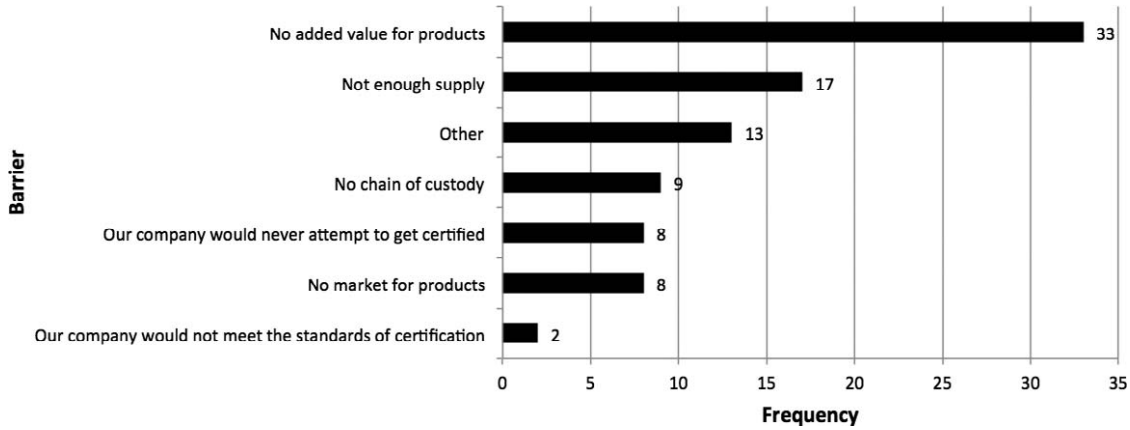


*Figure 2.—Manufacturer responses to barriers for not participating in a certified program (multiple responses were possible;* n = *64).*

who already use certified raw materials, own certified forestlands, or are certified in the chain-of-custody face.

Manufacturers who are not currently certified via chain of custody or do not own certified forestlands were asked to select from a list of six potential barriers that prevent them from participating in a certified program with an additional write-in category titled ''other'' (Fig. 2). The largest perceived barrier to enrolling in a certified program was failure to add value to products (33 firms) with the second-greatest barrier being a lack of supply (17 companies). The ''other'' category included items such as paperwork hassles, currently too many other regulations, and not sure if the company wants to be certified. The issue of lack of certified raw material was further investigated by asking if there is not enough raw material to justify becoming certified, and 34 percent of all respondents agreed. However, when responses from companies with certified forestlands or that participate in chain-of-custody certification were compared with those that do not, agreement with the statement was higher (44% vs. 32%).

When determining perceived challenges faced by companies enrolled in chain-of-custody certification or owning certified forestlands (Fig. 3), the most common response was that offering certified products does not provide a financial benefit to their company because certified products do not add value (eight firms) with a lack of market being the second most common perceived challenge. These results are similar to those of Espinoza et al. (2012), who found that the majority (71%) of US hardwood lumber producers with chain-of-custody certification indicated that they did not obtain any financial benefits from certification.

These barriers/challenges may be faced by both companies not certified and those with certification (either chain-of-custody or forestland certification) because they feel that their consumers are not willing to pay extra for a certified product. Previous studies have found that some consumers are more likely to purchase, and about half of the consumers are willing to pay a premium for, certified forest products if they have done so in the past (Ozanne and Vlosky 2003, Jensen et al. 2004, O'Brien and Teisl 2004, Aguilar and Vlosky 2007). However, these studies examined the customer's willingness to pay a premium and did not determine the customer's actual purchasing behavior. People with limited resources often are prohibited from buying certified products that are functionally similar to cheaper noncertified products (Anderson and Hansen 2004a, Aguilar and Vlosky 2007).

Following up on the lack of value for certified products, manufacturers enrolled in a chain-of-custody program were asked if their company has benefited financially by being enrolled (Table 5). Fifty-nine percent of respondents indicated that enrollment in a certification program has not provided a financial benefit to their firm, and only 6 percent feel that they have gained financially. Companies considering enrollment may perceive that the costs of certification outweigh the associated benefits.

To determine if the industry believes that there is a current or future market for certified forest products, all survey respondents were asked how frequently customers

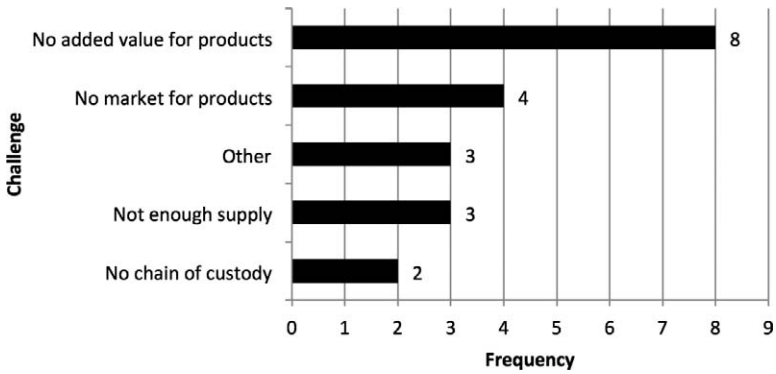


*Figure 3.—Manufacturer responses to challenges for participating in a certified program (multiple responses were possible;* n = *13).*

Table 5.—Percentage of respondents reporting extent of benefiting financially from certification (n = 17).

| Question | Extent | | | | |
|---|---|---|---|---|---|
| | Not at all | | → | | A lot |
| | 1 | 2 | 3 | 4 | 5 |
| If your company has chain-of-custody certification, to what extent does this benefit the company financially? | 59 | 17 | 12 | 6 | 6 |

request certified forest products (e.g., SFI, FSC, etc.; Fig. 4). Owing to a small sample size for other industry types, only hardwood and softwood sawmills could be analyzed for responses. Only 8 percent (5 firms) stated that their customers frequently request certified products, whereas 35 percent (22 firms) of respondents indicated that customers never ask for certified products. Most hardwood and softwood sawmills in Virginia rarely had customers requesting certified products (Fig. 4), which is consistent with results for the entire US hardwood industry (Espinoza et al. 2012). These results indicate that customers may not be aware of these products or that they are not willing to pay the premium price for them. This low demand has been found throughout the United States. Hubbard and Bowe (2005) observed that the majority of chain-of-custody primary forest products manufacturing firms in Wisconsin rarely had customers requesting certified products. A more recent study (Montague 2011) of Appalachian hardwood manufacturers also found a low demand for certified products by consumers. In a previous question, four certified forest products manufacturers believed that a lack of market availability for certified products was a challenge for them, and eight firms also indicated that a lack of market acted as a barrier preventing them from joining a certification program.

In order to increase the domestic market demand for certified forest products, the third-party forest certification programs and forest products companies may need to make the consumer more aware of environmental attributes associated with certified forest products that are harvested and managed sustainably (Teisl 2003). Consumers need to understand the process of certification and the potential impacts of purchasing noncertified forest products. Point-of-purchase literature, such as an ecolabel on the certified forest product, may be the best marketing tool to gain consumers at the display racks. Demand may increase if consumers are aware of the environmental benefits of certified products over noncertified products. In return, this understanding may add value to certified products and cause customers to seek them out.

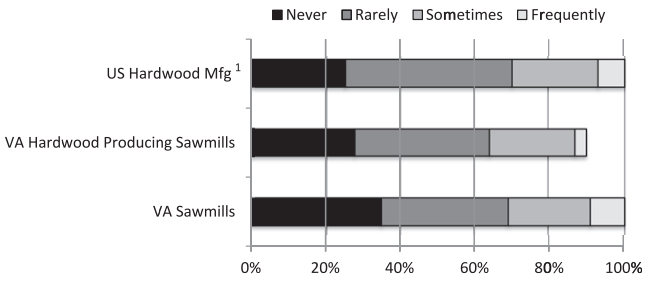


Figure 4.—Frequency of customers requesting certified products by mill type (multiple responses were possible; n = 66). [1] From Espinoza et al. 2012.

## Summary

According to the results from the study, most responding forest products companies have some familiarity (average of 2.7 of 5) with and trusted the leading certification; however, given the small number of respondents (14% to 34%) that were very familiar (ranking of 5) with the top three certification systems, it is clear that there is still room for improved understanding and knowledge. Manufacturers who responded to the survey were more likely to be members of the SFI certification program over other programs. Most forest products manufacturers believed that there were few benefits to certification programs; in particular, they perceived no financial benefit, such as added value, market share, competitive advantage, or increase in customer requests. Additionally, respondents believed that there was no environmental benefit associated with certification and that certification did not improve company image. Responses suggest a small market for certified primary forest products; manufacturers indicated that only a few customers requested them. The most commonly identified perceived barriers to certification programs were the lack of added value for product and the lack of available timber supply. The greatest challenges facing those currently certified were the lack of added value and market for products. The barriers and challenges identified by this research will likely have to be overcome to increase the number of firms enrolling in certification programs.

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