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What do timber traders know about forest certification?

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ABSTRACT

Santa Catarina is in the Brazilian forest scenario the major furniture and paper producer. This study aimed to verify the perspectives on the certified timber market in the geographic Microregion of Florianópolis (MF) from a sawn wood trader's point of view, and to ascertain the knowledge level of forest certification in the main timber facilities. The sampling method used was the snowball technique. Questionnaires were used for the quantitative and qualitative characterization of the certification. They were completed in 119 timber facilities in the MF. Information about the traders' knowledge of forest certification and their ability to explain the subject were obtained from the questionnaires. Data, such as opinions about forest certification in the regional market were registered. The results showed that traders in MF do not know much about the subject. Based on this, it was concluded that the timber traders' knowledge of forest certification is poor.

Keywords: Market, perception, timber origin, trading, Santa Catarina, FSC.

1 INTRODUCTION

Given the importance of the preservation and rational use of natural resources aiming at sustainable economic growth, forest certification appears as an economic instrument that prevents environmental degradation and social problems. It also enables greater efficiency in the forest goods production chain.

A case study performed by the Forest and Agricultural Management and Certification Institute (IMAFLORA, 2009) analyzed the impact of FSC (Forest Management Council) forest certification on forest plantations in Southern Brazil, in the states of Paraná and Santa Catarina. It was observed that forest certification resulted in social and environmental contributions concerning workers' health and safety; training sessions, reduced use of agrochemicals, natural resources conservation, better forest management, and an improved relationship with the surrounding community.

Forest certification applies to both forest plantations and native forests, being a requirement importing markets, especially European countries. According to IBÁ (2017), in Brazil there is an division between the certified areas of plantations (36.5%) and managed areas (63.5%).

Basso *et al*. (2012) consider that there are two major certifications operating systems that accredit certifiers in Brazil: the FSC and; Brazilian Program of Forest Certification (CERFLOR), from the Brazilian Association of Technical Standards.

There are three different types of certification: forest management, chain of custody and controlled timber (Zenbini, 2014). In order to reach clients, the forest management certification requires a system which provides reliable information about the product's source, from the forest up to the final consumer, where the industrial step of the process is known as chain of custody (CoC) (Alves *et al.* 2009). CoC ensures that certified timber and non-certified timber from illegal deforestation will not be mixed (Zenbini, 2014).

However, Spathelf et al. (2004) indicate the need to make the distinction between environmental certification of products, forest management certification, and chain of custody certification. The first is related to the ISO 14000 family (International Organization for Standardization), which covers the design, production and monitoring of productive systems from an environmental point of view. The second is linked to the certification carried out by the FSC, CERFLOR, and other systems that aim at the implementation of “good forest management”. The third concerns chain of custody, in which forest products are certified. The certified raw material is tracked from the forest up to the manufacturing of the final product (Nussbaum & Simula, 2005).

Alves, *et al*. (2011) point out that the total area of certified native forests in South America is currently larger than the area of certified forest plantations, considering only the FSC system. Brazil

has about 8.5 million hectares of certified forests. From this total, around 48.2% are certified by FSC, whereas 5.9% are certified by CERFLOR/PEFC (IBA, 2017).

Some aspects should be considered in order to expand the certification process, such as: the legal compliance of organizations in the agricultural and environmental areas; the ability of the workforce to implant new technologies; the elimination of cultural barriers to the acceptance of new methods and technologies; the existence of organizations with temporary operations due to climatic factors, resulting in an intermittent workforce; the need of resources for adjustments due to non-conformity identified in the certification processes (Tomaselli, 2004).

According to Nardelli (2001) cited by Alves *et al*. (2009), the need for Brazilian forest companies to obtain certificates and to show environmental stamps on their products has acted as a catalyst for significant changes, with the incorporation or reinforcement of values like communication, credibility, and commitment with continuous improvement.

The association between forest certification and documents issued by environmental research institutions, particularly the Forest Origin Document (FOD) or in portuguese *Documento de Origem Florestal* (DOF), presents mistakes related to legality, quality, and forest certification (Silva et al. 2014). Such confusion may be associated with the severity of environmental agencies concerning legality, as much as with an increased number of stamps and certifications in the market. Moreover, there is a lack of information offered to society about forest certification.

As a whole, the FOD is an IBAMA (Brazilian Institute of the Environment and Renewable Natural Resources) control and monitoring system that consolidates the documents of state and federal transportation. It is an electronic document, which confirms the timber load during the transportation and storage of native forest products and their sub-products (Chaves, 2010). Brazil is currently one of the most important countries in the world regarding rainforests. It has 13 % of the world's forests and the largest extension of tropical forests, making it a country with enormous biodiversity (FAO, 2011). In 2009, the industrial and logging processes generated revenue of 2.3 billion US dollars. There are an average of 2227 sawmills that process 14,2 million cubic meters of timber in logs (approximately 3.5 million trees), resulting in 5.8 million cubic meters of processed wood (Hummel & Alves, 2010), representing 10% of the native wood production in the World (ITTO, 2017).

Santa Catarina state is an important production and exportation center for wood, paper and furniture in Brazil, totaling 2.04% of Eucalyptus reforestation projects in Brazil and 34.45% of Pinus reforestation projects in Brazil, that is, nearly 662 thousand hectares in 2016 (IBÁ 2017). Thus, the state occupies a prominent position in the Brazilian forest scenario, both as a consumer of tropical sawn wood and as a producer and exporter of products from the forestry industry. Growth programs

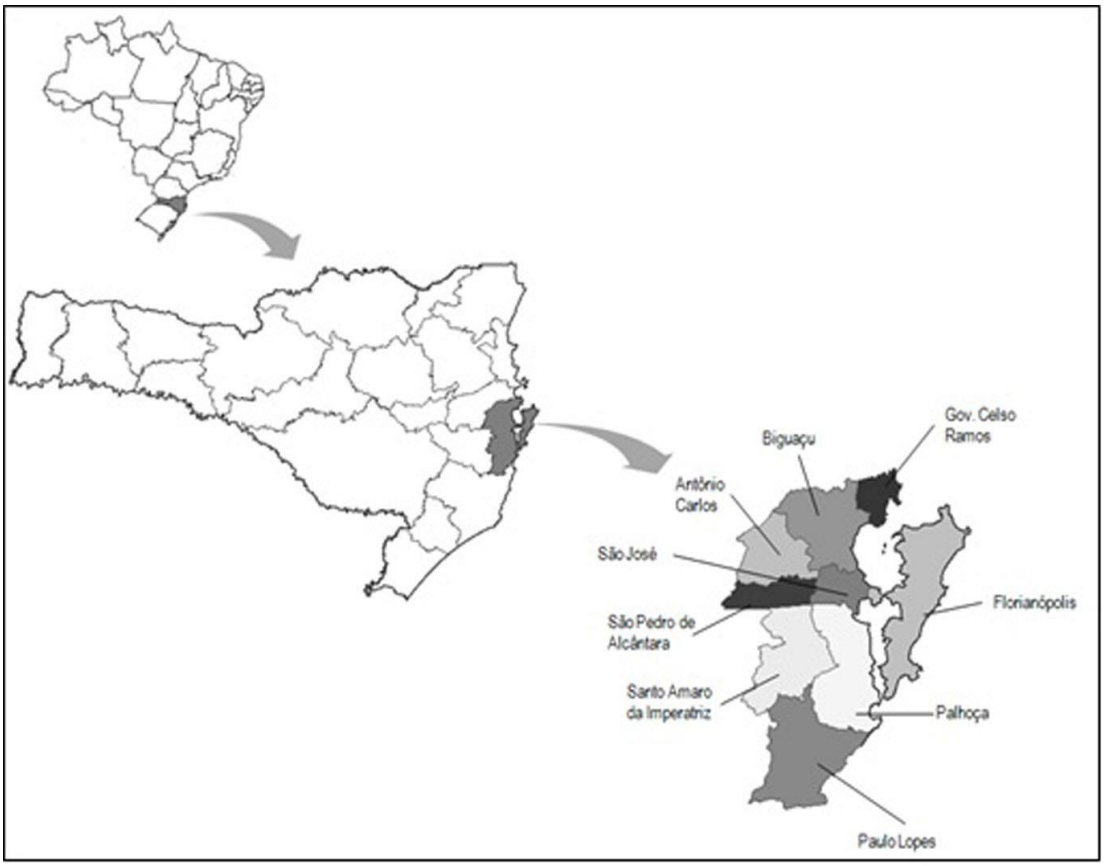
for forest-based companies, official credit lines for the plantation of new forests, and state programs have contributed to the expansion of forest areas in the state. As a result, there has been an increase in business-scale forest plantations, as well as forest plantations run by farmers and liberal professionals (EPAGRI, 2001).

Considering this situation and the socioeconomic importance of these regional areas to the state, the present study intends to assess the different perspectives of the certified timber market and the implementation of the FOD in the geographical Microregion of Florianopólis (MF) from timber merchants' points of view.

2 MATERIAL AND METHODS

The data was collected between August/2010 and February/2011, in partnership with the facilities responsible for the municipal timber markets in the MF. The municipalities are: São José, Biguaçú, Florianópolis, Palhoça, Antônio Carlos, Governador Celso Ramos, Paulo Lopes, Santo Amaro da Imperatriz and São Pedro de Alcântara.

Figure 1 - Location of municipalities in the geographic Microregion of Florianópolis.



The snowball technique was chosen as the sampling method for the logging companies. This is a non-probabilistic sampling method, used when the population or object of study is rare or difficult to reach. According to this technique, when at least one intended individual or one individual that has the exact characteristics sought by the researcher is found, it is possible to learn about the individual's relationship network. Furthermore, one can obtain valuable indications of where to search and who to talk to, thereby expanding the search field and allowing the identification of more areas to be researched (Biernacki & Waldorf, 1981). This sampling technique was used to facilitate access to timber establishments, since the research work could be confused with inspections, hindering the collection of the necessary information.

Following the snowball methodology, the interviewees from the first facility were asked to suggest the next facility for evaluation, which in turn would suggest the following location, and so on and so forth. The first facility was chosen at random. This procedure was repeated in all MF municipalities. The data collection was finished when the suggestions of new establishments or the content of the responses started to become systematically repeated.

A pre-test was performed, which consisted in validating the prior application of the questionnaire on a group with characteristics representative of the population studied. The intention was to verify its applicability and to make any relevant corrections (Barbetta et al. 2010; Richardson, 1999). During the pre-test performance period, the questionnaire was set in 11 facilities, in order to verify the need for any adjustments in the first draft. This was due to questions for which the owners and managers of the establishments lacked information because of the level of detail required. Nevertheless, the adjustments made did not prevent the incorporation of these interviews into the results, as the inappropriate questions were excluded from the questionnaire. In addition, the content of their answers was not affected.

Among the places visited, 11 chose not to participate in the study, citing lack of time, interest, or declaring that they were not willing to provide information to supervisory bodies. Therefore, 108 interviews were held with leaders, managers and owners of companies linked to the wholesale and retail trade of raw and processed timber in the region. (TABLES 1 and 2).

Table 1. Number of companies participating in the study by MF municipality.

Cities	Number of companies visited
Florianópolis	39
Paulo Lopes	8
Palhoça	23
Biguaçu	10
São Pedro de Alcântara	1
São José	23
Gov. Celso Ramos	2
Antônio Carlos	4
Santo Amaro da Imperatriz	9
Total	**119**

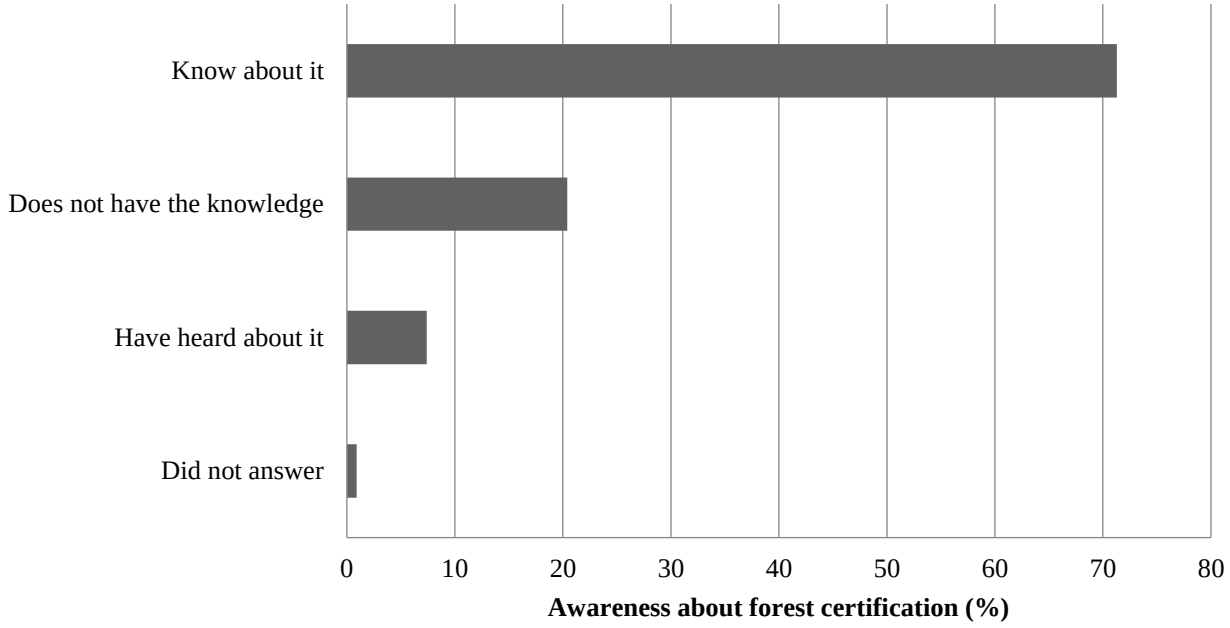
Table 2 - Type of establishments participating in the research.

Type of establishment	Number of establishment	%
Timber	47	42.6
Timber and Sawmill	13	12
Timber, Furniture, Window	10	9.3
Timber and Carpentry	27	25
Timber and Prefabricated	8	7.4
Carpentry factory	4	3.7
Total	**108**	**100**

3 RESULTS AND DISCUSSION

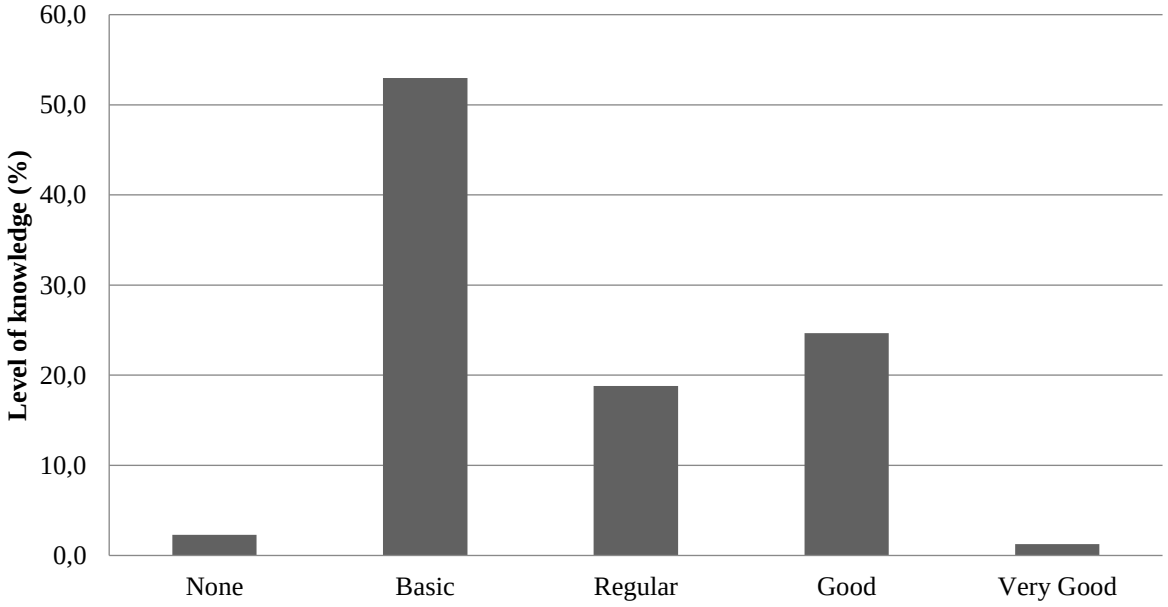
The interviewees were asked if they were aware of forest certification. Nearly 1% opted not to answer, whereas 71.3% said that they were aware of it. Seven point four per cent of respondents said that they had heard about it, whereas 20.4% did not know anything about it. These results can be seen in Figure 2.

Figure 2 MF timber traders' level of awareness of forest certification.



The interviewees who were aware of forest certification were asked to rate their level of knowledge from: none, basic, regular, good, and very good. They were also asked to briefly explain what they knew about the topic and their opinion about it. As a result, it was observed that 2.3% classified their knowledge level as none, 53% as basic, 18.8% as regular, 24.7% as good, and 1.3% as very good (see FIGURE 3).

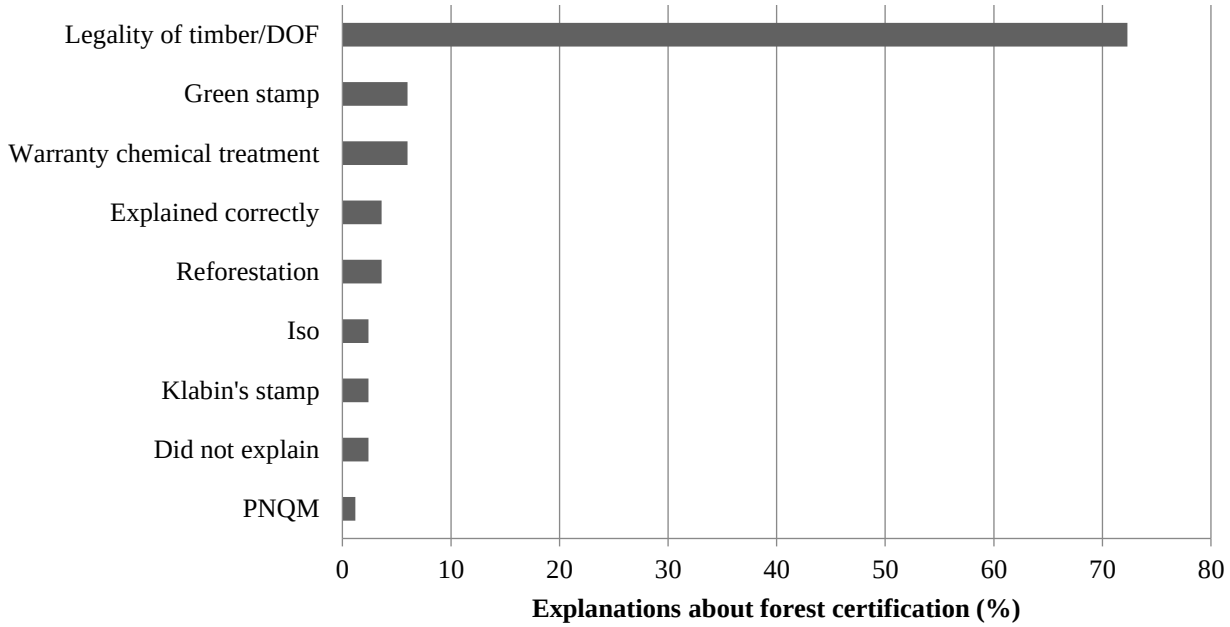
Figure 3 - Classification of knowledge level about forest certification.



In a study conducted in Recife, Silva *et al.* (2014) obtained results which showed that 88% of the interviewees were familiar with the concept of forest certification, but only 27.6% indicated correctly the list of specific certification stamps.

Regarding the explanations about forest certification, according to Figure 4, 2.4% of the interviewees who said they had some knowledge did not actually know how to give any kind of explanation about the theme. Only 3.6% pointed out that forest certification was related to studies on the regeneration of forests through forest plantations or the non-use of areas of native forests.

Figure 4 - Respondents' explanations about their forest certification knowledge.



In addition, 72.3% of the respondents confused the legality of timber with forest certification. More specifically, they misunderstood the obligation of using the FOD, and in some cases it was even claimed that forest certification was related to the “stamp” issued by IBAMA or FATMA (Santa Catarina State Environment Foundation).

Some interviewees (7.2%) explained the need for a logging management plan, claiming erroneously that, for every tree extracted in managed areas in the Amazon, another one is planted. Smeraldi & Veríssimo (1999) also observed this connection between forest management and tree planting among consumers and middlemen in the tropical timber trade in the Legal Amazon states.

Other interviewees (12%) mistook forest certification for wood quality stamps, when the ISO system was mentioned (2.4%). The National Program of Wood Quality (PNQM) was cited by 1.2%, whereas 6% stated warranty certificates relating to wood preservation and treatment. 2.4 % mentioned

the “Klabin quality stamp” (Klabin is a major paper producer) without being able to give further information about it. However, the company Klabin S/A of Santa Catarina state has the FSC certification. Six per cent of the interviewees linked forest certification to the “green stamp”, highlighting ecology and respect for the environment without offering further details.

The same misunderstanding occurred in relation to the “green stamp” in Silva et al. (2014) study in which half the interviewees could not correctly identify the stamps used in certified products and wood. Only 3.6% of the participants managed to give further explanations about the subject, stating that it is a voluntary stamp awarded to companies that perform a forest management programme according to certification standards; they even mentioned the FSC. Notwithstanding, they wrongly pointed out that forest certification also relates to wood quality.

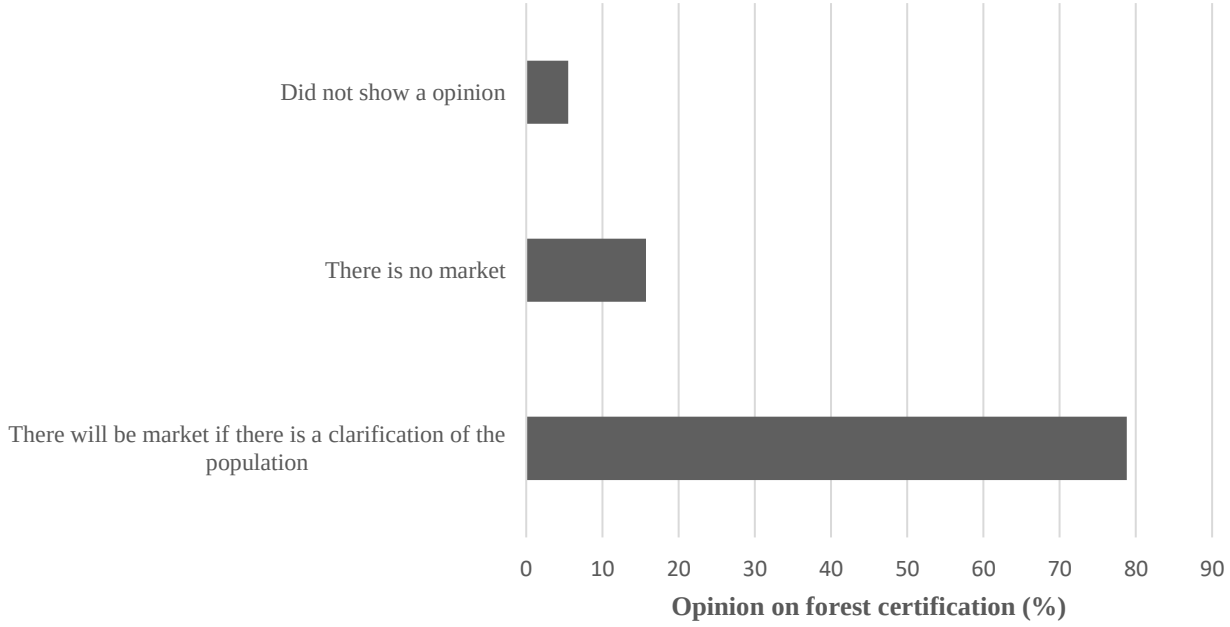
In addition, about 2% referred to certification as “a kind of closed society, which you must pay to enter and of which only members may buy wood”. Those respondents were apparently referring to chain of custody, although they did not specifically mention that or provide further details.

Regarding the interviewees' tendency to relate forest certification to certificates of quality or guarantee, it was observed that the term “certification” is associated with a connotation of quality. This may be related to a general increase in the number of other trading stamps with similar characteristics, since there are a range of products - whether or not related to wood - that provide such certificates. In a study performed in São Paulo state, Sobral et al. (2002) found that 80% of the interviewees had never heard of forest certification, and that they mistook it for stamps issued by IBAMA. Silva et al. (2014) also found similar results in a survey conducted in the greater Recife area, in which contradictory answers about certification were recorded.

Although the timber trade in the MF is not as prominent as that of São Paulo in the national context, it was noted that the term “forest certification” is still familiar to the local traders. Despite this, there is little insight about the topic because it has often been confused with certificates concerning legality or wood quality.

After assessing the participants’ knowledge of forest certification, participants were given an informative briefing on the theme by the interviewer. Later, the traders were asked their opinions on certification and the FOD, since the majority of the interviewees had mentioned it previously. Figure 5 presents the main opinions of the respondents on forest certification.

Figure 5 - Interviewees' opinions on forest certification by percentage.



Alves *et al*. (2009) found similar results via research on the furniture industries. In that survey, 56% of respondents said that Brazilian consumers in general had no interest in goods that are produced in partnership with the social and environmental areas. According to the authors, consumers' perceptions could be changed through: environmental education; awareness raising campaigns promoting the benefits to society of environmentally-friendly products; and finally through the use of pricing policies more compatible with purchasing power.

It was noted that 15.7% of the interviewees showed some interest in certification, believing that it would be a future trend. This comes from the realization that environmental issues are becoming more urgent in the region. Thus, this creates the possibility for certification to become an asset in an increasingly competitive market, since it does not raise the price of wood even further. Respondents even said that, in order for certification to establish itself as a real asset, the population needs to be made more aware about the subject.

In the opinion of 78.8% of the participants, forest certification does not have a place in the regional timber market because consumers are not particularly concerned about the origin of wood or how timber comes onto the market. For them, forest certification would imply higher costs, which interferes with consumers' regional interests, due to financial issues carrying greater weight than environmental concerns.

Furthermore, 11.1% mentioned that it would be necessary to obey more rules than the existing ones, thereby further complicating the timber market. For these interviewees, certification will only

find room in the local market if it becomes mandatory, like the FOD. In contrast, 3.7% are skeptical that certification really does guarantee that the wood is not from the illegal logging areas.

Another 1.8% expressed concern over the possibility of forest certification becoming a legal requirement, claiming that farmers and small wood producers in the region would be the worst affected. This is because they believe that the certification process would imply higher costs and requirements that they would not have the conditions to meet, resulting in the monopolisation of certified forest production by large companies. On the other hand, 5.56% chose not to express any opinion on the matter, saying that they would prefer to give it more thought.

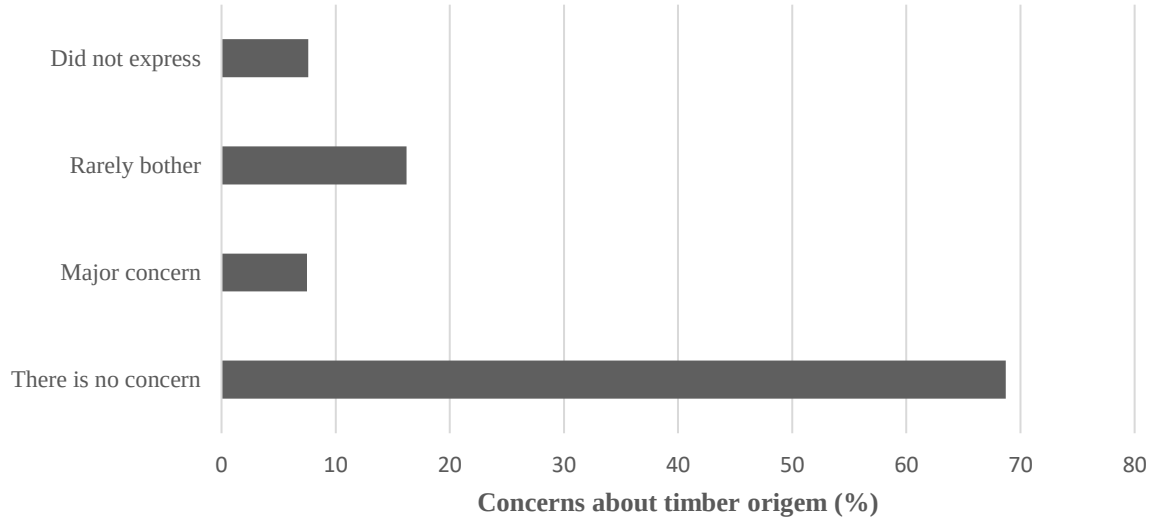
A general observation was that the chance of forest certification increasing the cost of wood would be a barrier to the development of the regional certified timber market in the short and medium terms. This was attributed to the majority of entrepreneurs from the regional wood sector being unaware of the subject.

Amongst the 80 facilities that trade in tropical sawn timber in the study area, 7.5% had no opinion on the concerns of consumers seeking information about the wood's legal origin.

Nevertheless, 68.7% stated that no client had ever shown interest in or concern about the wood's origin. In fact, consumers were most concerned about price, followed by quality. Another 7.5% of interviewees cited tropical wood legality as a concern of many consumers, while 16.2% mentioned that consumers rarely question the timber's legality. It was noted that this concern had started recently, to be exact, about two years ago (FIGURE 6).

However, Silva et al. (2014) study registered a growing demand for certified wood in the region of Recife in the northeastern state of Pernambuco.

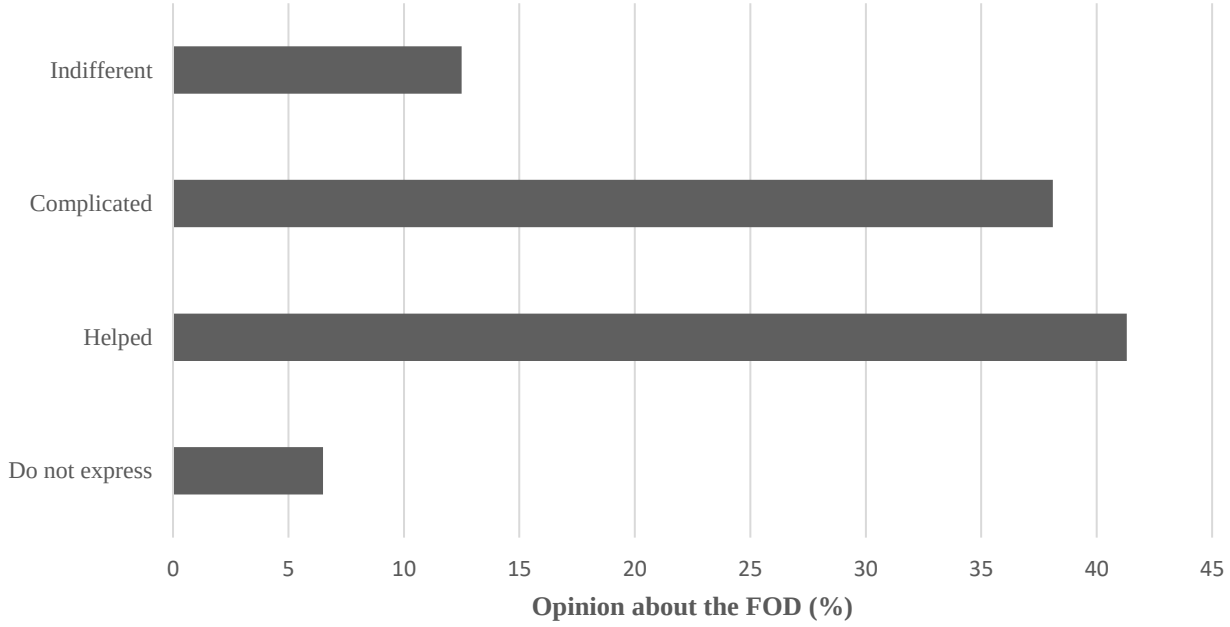
Figure 6 - Consumer's concerns in the MF regarding timber origin.



Respondents also highlighted that concerns about the origin of wood are generally raised with large-volume purchases, for example in the case of construction companies or individuals who have received funding for building work.

Apart from the above cases, participants reported that this concern is also demonstrated by employees of environmental agencies and by female consumers. According to reports from traders, the latter have the greatest interest in information regarding the legal and environmental aspects of wood products. The opinions of the interviewees regarding the FOD can be seen in Figure 7.

Figure 7 - Traders' opinions on the FOD by percentage.



According to 12.5% of the participants, mandatory use of the FOD neither harmed nor helped the tropical timber trade in places that already worked in accordance with the laws governing the sector. They also said that there was a lot of confusion during the early implementation of the FOD because the officials from the agency responsible (IBAMA) did not seem to possess much information about the subject either.

Moreover, 5.6% complained that, at the time of implementation, there was no prior communication from IBAMA about the need to register on the FOD system nor how exactly that should be done.

Another 32.5% believed that the FOD implementation hindered the sale of tropical wood, pointing to an increase in bureaucracy and in the price of timber. This was attributed to greater

monitoring, which in turn led to a reduction in the tropical sawn wood supply and to the closure of many facilities in the Legal Amazon.

For 6.3% of the interviewees, tropical timber became more expensive soon after the implementation of the FOD due to the reduction in the number of fully-legalized establishments. However, this situation was temporary and inflation has now fallen again.

Those respondents also drew attention to fragility in the control and supervision process regarding logging in the Amazon. What is more, they do not believe that there is any real concern among regional loggers for environmental or ecological issues. They also claimed that the only genuine "ecological timber" is wood taken from reforestation projects.

About 2% of the interviewees believed that the control and monitoring system in force is still fragile, complaining that it is difficult to be certain whether wood from the Amazon actually originates from regulated logging areas or not. They also alleged that there is a way to circumvent the law, and raised the possibility of corruption among employees of the supervisory bodies.

Despite all the negative feedback, 41.3% of traders still said that the FOD benefited the establishments that were already working in accordance with legal criteria. In their view, although the document did not solve all the problems concerning illegality in the tropical timber trade, it at least helped to organize it in a better manner. In the opinion of those interviewees, compulsory use of the FOD did not affect the price of wood. In fact, it even gave some assurance that they were trading in wood from legal sources.

Our results showed that despite of being directly involved in the trade of wood from planted and native species, retailers in the region of Florianópolis know little about forest certification. One important driver of this behavior may be the lack of interest of final consumers on certified timber products. The disconnection between retailers and final consumers of timber and the rough lumber suppliers may be another important fact behind the lack of awareness of certified products. Moreover, the costs and rules to be followed in a certification chain of custody burden directly on the landowners, covering the management operations as well as the social, economic and environmental aspects of the enterprise, thus restricting information on certification to the forest sites (Santos *et al.* 2014). These results suggest that dissemination of information on forest certification is crucial to increase awareness about the origin of lumber and to increase demand for certified forest products.

4 CONCLUSIONS

The awareness of timber traders in the study region regarding forest certification could be considered poor. Therefore, this leads to poor short-term perspectives for the expansion of the certified timber trade in the MF. A clear connection was observed between forest certification and documents issued by environmental monitoring agencies, specifically the FOD. This proves that there is great confusion about the concepts of legality, quality and forest certification.

REFERENCES

ALVES RR, JACOVINE LAG, BASSO VM, SILVA ML. Plantações florestais e a proteção de florestas nativas em unidades de manejo certificadas na América do Sul pelos sistemas FSC e PEFC. Floresta, 2011, 41(1): 145-152.

ALVES RR, JACOVINE LAG, SILVA ML, VALVERDE SR, SILVA JC, NARDELLI AMB. Certificação florestal e o mercado moveleiro nacional. **Árvore,** 2009, 33(3): 583-589.

ASSOCIAÇÃO BRASILEIRA DE PRODUTORES DE FLORESTAS PLANTADAS. **Anuário estatístico da ABRAF 2011 ano base 2010.** Brasília: ABRAF, 2011.

BARBETTA PA, REIS MM, BORNIA AC. Estatística para Cursos de Engenharia e Informática. 3rd ed. São Paulo: Atlas, 2010.

BASSO VM, JACOVINE LAG, ALVES RR, NARDELLI AMB. Contribuição da certificação florestal ao atendimento da legislação ambiental e social no estado de minas gerais. **Árvore,** 2012, 36(4): 747-757.

BIERNACKI P, WALDORF D**. Snowball Sampling: Problems and Techniques of Chain Referral Sampling. Sociological Methods and Research,** 1981, 10(2): 141-163.

CHAVES JH. DOF – **Informação estratégica para a gestão florestal no Brasil.** Brasília: IBAMA, 2010.

EMPRESA DE PESQUISA AGROPECUÁRIA E EXTENSÃO RURAL DE SANTA CATARINA (EPAGRI), Centro de Socioeconomia e Planejamento Agrícola. **Síntese Anual da Agricultura de Santa Catarina 2000 -2001.** Florianópolis: Epagri/Cepa, 2001.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. **State of the World's Forests 2011**. Roma: FAP, 2011.

INDÚSTRIA BRASILEIRA DE ÁRVORES. **Relatório IBÁ 2017 relativo a 2016.** IBÁ 2017. São Paulo, 2017. 77 p. Disponível em: <http://www.iba.org/pt/biblioteca-iba/publicacoes>. Acesso em: 10 Nov. 2017.

HUMMEL AC, ALVES MVS. **A atividade madeireira na Amazônia brasileira: produção, receita e mercados** / Serviço Florestal Brasileiro, Instituto do Homem e Meio Ambiente da

Amazônia – Belém, PA: Serviço Florestal Brasileiro (SFB); Instituto do Homem e Meio Ambiente da Amazônia (Imazon), 2010.

INSTITUTO DE MANEJO E CERTIFICAÇÃO FLORESTAL E AGRÍCOLA (IMAFLORA**). E certificar, faz diferença? Estudo de avaliação de impacto da certificação** FSC/RAS. Piracicaba: IMAFLORA, 2009.

INTERNATIONAL TROPICAL TIMBER ORGANIZATION**. Biennial review and assessment of the world timber situation 2015-2016**. International Tropical Timber Organization. Yokohama, Japan. Prepared by the Division of Economic Information and Market Intelligence, ITTO. 2017.

NUSSBAUM R, SIMULA M. **The forest certification handbook.** 2nded. London: Earthscan, 2005.

RICHARDSON RJ. **Pesquisa social: métodos e técnicas.** 3rd. ed. São Paulo: Atlas, 1999.

SANTOS AS, SILVA FAP, SIMONETTI RA, ROBERT RCG, FANTINI AC. Panorama do Comércio de Madeira Serrada na Microrregião Geográfica de Florianópolis-SC. **Floresta Ambiente,** 2014, 21(1): 19-29.

SILVA DM, ARAÚJO MC, SILVA VF, BERNARD E. **Contradições no comércio de madeira certificada em uma região metropolitana do nordeste do Brasil. Floresta,** 2014, 44(3): 403-410.

SOCIEDADE BRASILEIRA DE SILVICULTURA. Fatos e Números do Brasil Florestal. São Paulo: SBS, 2007.

SMERALDI R, VERÍSSIMO A. **Acertando o alvo: consumo de madeira no mercado interno brasileiro e promoção da certificação florestal.** São Paulo: Amigos da Terra – Programa Amazônia, Piracicaba: Imaflora, Belém: Imazon, 1999.

SOBRAL L, VERÍSSIMO A, LIMA E, AZEVEDO T, SMERALDI R. **Acertando o alvo 2: consumo de madeira amazônica e certificação florestal no Estado de São Paulo.** Belém: Imazon, 2002.

SPATHELF P, MATTOS PP, BOTOSSO PC. Certificação florestal no Brasil – uma ferramenta eficaz para a conservação das florestas naturais? **Floresta,** 2004, 34(3): 373-379.

TOMASELLI I. **Estudio de tendencias y perspectivas del sector forestal en América Latina documento de trabajo: informe nacional Brasil.** Roma: FAO, 2004.

ZENBINI F. **Cenário da Madeira FSC no Brasil 2012 - 2013**. São Paulo: FSC, 2014.