

The Tendency of Expanding Forest Certification in Vietnam: Case Analysis of Certification Holders in Quang Tri Province

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Abstract

Forest management certification has been widely promulgated throughout the world, and the growth rate of forest management under the Forest Stewardship Council is especially high in Southeast Asia. In Vietnam, where the growth rate is the highest in all of Southeast Asia, timber processing and chip industries are developing dramatically. Here we clarify factors surrounding the expansion of forest management certification and the merits of attaining certification for corporations and farmers. We targeted two certified corporations and a group of farmers in Quang Tri Province in Central Vietnam where the movement for attaining certification occurred earlier than in other areas. The reasons of the two interviewed corporations to apply for certification were the helm of the government, a higher selling price for timber, and access to international markets. The farmers' group was also motivated by the higher timber-selling price. Thus, higher timber selling points and access to international markets were the main motivations for applying for certification. Even though prices are increasing, income will decrease because of the long timber harvesting cycle; therefore, for expanding forest management certification can be said to correspond with the demand for certified timber from international markets and domestic timber demand from corporate channels.

Discipline: Forestry and forest products

Additional key words: acacia, company forest certification, farmer group certification, FSC (Forest Stewardship Council), timber processing company

Introduction

The promulgation of forest certification is expanding throughout the world for sustainable and appropriate forest management in the environmental, social, and economic realms. Some of the most notable forest certification schemes worldwide are the Programme for the Endorsement of Forest Certification (PEFC) and the Forest Stewardship Council (FSC). As of September 2017, the area of certified forests was 304 million ha in 37 countries and the number of Chain of Custody (CoC) certifications was 11,262 in 72 countries under the PEFC scheme (Website of PEFC). While under the FSC scheme, the area of certified forests was 198 million ha in 84 countries and the number of CoC certifications stood at

32,742 in 120 countries (Website of FSC). Under the PEFC scheme, 54% of the certified forest area was in North America and 32% was in Europe, and 83% of the number of CoC certifications was in Europe (Website of PEFC, Website of FSC). Under the FSC scheme, 48% of the certified forest area was in Europe and 35% was in North America, and 53% of the number of CoC certifications was in Europe. The center of forest certification is in Western countries. Western countries recognized the effectiveness of forest certification, while many developing countries had negative opinions on the promulgation of forest certification, stemming from anxiety related to the forest product sales strategies of developed countries and import protection measures such as those in the Uruguay Round (Elliott 2000, Bajenaru-Declerck 2008). Additionally,

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Durst et al. (2006) noted that forest certification was not being spread in developing countries due to “insufficient demand for certified products in global markets, wide gaps between existing management standards and certification requirements, weak ability to formulate appropriate sector policies and ensure their effective implementation, insufficient capacity to develop national certification standards and certification procedures, and the high direct and indirect costs of obtaining certification in developing countries.” The analysis of forest certification conditions and certified countries’ characters in 117 countries by van Kooten et al. (2005) shows that the purpose of obtaining certification is not only for business reasons but also for environmental reasons, and the higher level of exports makes it interesting to seek certification especially such non-FSC domestic one. However, FSC’s “Global market survey” in 2014 showed results of increasingly higher marks when it comes to business reasons and that the FSC label adds value to the products of 81.5% of FSC certificate holders. FSC helps 84.9% of certificate holders communicate their corporate social responsibility strategy and helps create a positive corporate image for 90% of certificate holders (FSC 2015).

As mentioned previously, the certified forest area under PEFC overtook FSC. However, as far as tropical forest area goes, due to that significant deforesting in Southeast Asia, Latin America, and Africa, the certified forest area was 13 million ha in six countries under PEFC (4% of the whole PEFC) and 27 million ha under FSC in

36 countries (14% of the whole FSC) (Website of PEFC, Website of FSC). The certified forest area and the number of countries in tropical forest area under FSC were larger than PEFC; therefore, it can be said that FSC was the mainstream certification in tropical forest area. From 2012 to 2017, in terms of FSC certified tropical forest area, the certified forest area increased 6.6 million ha, and Latin America and Africa were bigger than Southeast Asia; however, both the growth rate of the area and the number of CoCs in Southeast Asia were the highest (Fig. 1, left). Additionally, in Southeast Asia, Indonesia showed a dramatic increase to 238% in five years from 2012 to 2017; however, Vietnam showed the highest growth rate at 554% (Fig. 1, right).

The timber processing and wood chip industries have been developing significantly in Vietnam in recent times. Vietnam became one of the largest exporters of furniture, starting from 1997 (Website of New Forests), and exported USD 7.1 billion worth of timber products in 2015 (Fig. 2). The countries that import from Vietnam request wood products with forest certification and require adherence to The Forest Law Enforcement, Governance and Trade (FLEGT) criteria that prove legal timber. Timber products that are certified by FSC or PEFC satisfy this requirement, and these products can, then, be exported to international markets. Furthermore, depending on the buyer’s consciousness, these products have the possibility of getting the premium price. In Vietnam’s domestic market, it is not necessary to obtain forest certification;

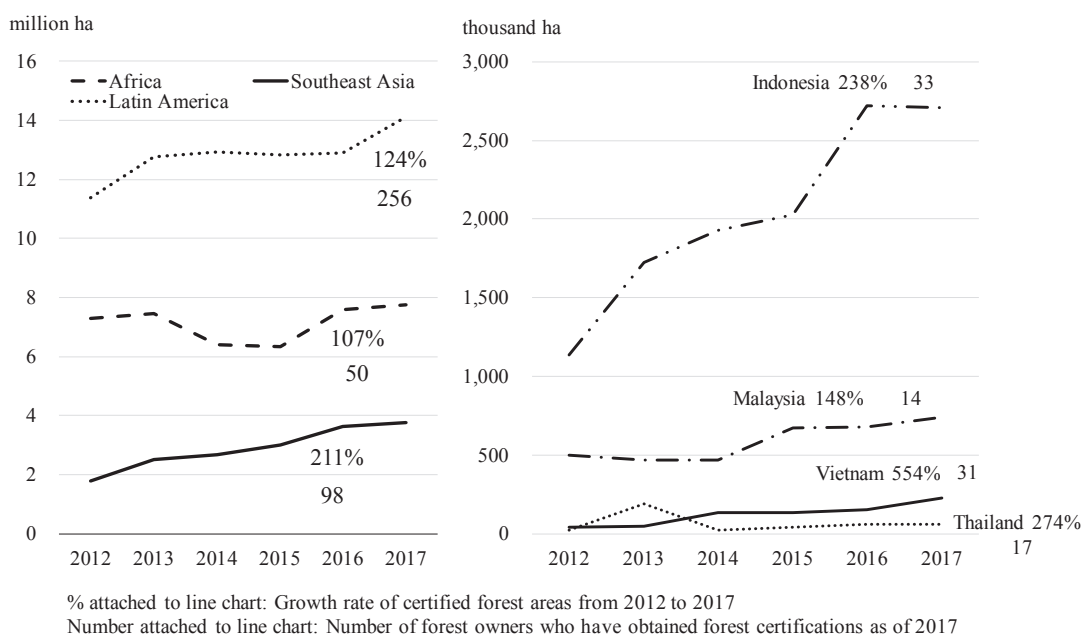


Fig. 1. Transition of FSC-certified forest area in tropical areas (left) and Southeast Asian countries (right)
Source: Website of FSC

however, Vietnam imports 4 million m³ of timber per year, and a significant proportion of this timber obtains forest certification.

Along with the growth of the timber processing industry, the volume of timber produced as raw material has also increased; however, the domestic demand for raw material makes up 20-30% only of the total (Nguyen et al. 2015) and the remaining 70-80% is imported from more than 100 countries (Nguyen & Tran 2011) (Fig. 2). And it is pointed out that there is some legally suspect timber within it (Barney 2005, Meyfroidt & Lambin 2008). To counter illegal timber and to guarantee the supply of legal timber, the movement for obtaining the certification of forest management, processing, and circulation is expanding in Vietnam (Roe et al. 2014). In Vietnam, the first FSC certification was obtained in 2006.

In this article, we targeted Vietnam and its expanding certified forest area to unravel the process of forest certification introduction. Then, we clarified the factors for expanding and increasing the certified forest area. It is certain that forest certification has big payoffs for forest conservation and increases the amount of legal timber supply. On the one hand, it is not clear just how big the payoffs are for suppliers such as timber harvesting companies and small forest owners, or if they are seeing increased benefits. We clarified this as well, and then, we aimed at setting up a mechanism of forest certification expansion in other areas and/or other countries.

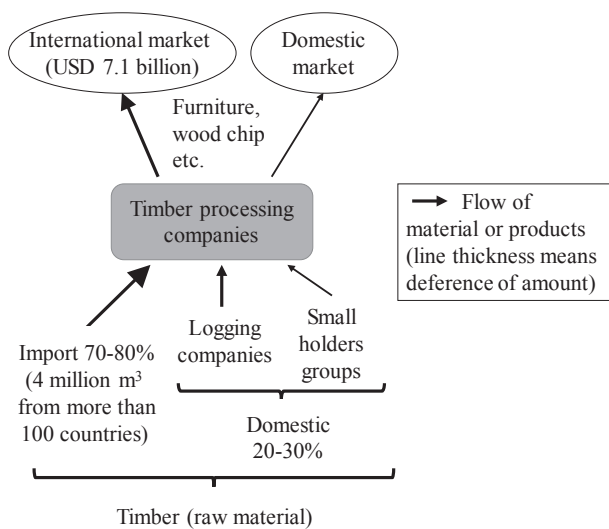


Fig. 2. General flow of raw materials and products among stakeholders in Vietnam
Source: Website of New Forests; Nguyen & Tran (2011); Nguyen et al. (2015)

Methods

1. Study site

Since there were some companies that took interest in environment and quality management such as obtaining the ISO (International Organization for Standardization) 9001 and some smallholder farmers groups that started pilot projects of the FSC under the support of the World Wide Fund for Nature (WWF) in this area, the movement for attaining certification in Quang Tri Province (Fig. 3) occurred earlier than in other areas. In addition, in Vietnam, only Quang Tri Province has two types of forest certification such as the company forest certification (individual certification) and the farmer group certification (group certification). Therefore, we chose this province as a study site and chose two companies and one farmers' group.

Quang Tri Province has a population of 619,900 and the population density is 131 per km² (Website of General Statistics Office of Vietnam). The total area of this province is 474,000 ha. There are 141,456 ha of natural forest and 99,649 ha of planted forest, and the rate of forest is 48.6% in 2014 (MARD 2015).

2. Research methods

Regarding the history and the latest trends in forest certification in Vietnam and Quang Tri Province, we interviewed the people responsible for forest certification

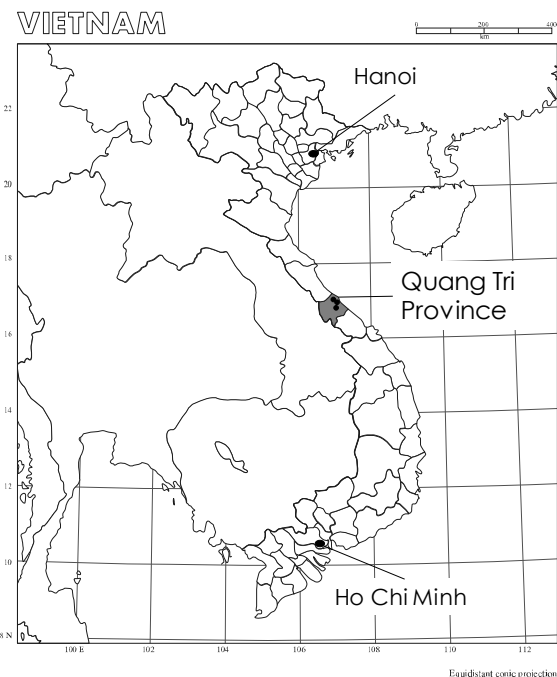


Fig. 3. Location of Quang Tri Province

within the Vietnamese Academy of Forest Sciences (VAFS)¹ and the Department of Agriculture and Rural Development (DARD) in Quang Tri Province. These were the sources of all the no reference information in “1. History and trends of forest certifications in Vietnam” of “Results.” In addition, we collected information on all forest certifications under the FSC in Vietnam, analyzed it, and showed it in “1. History and trends of forest certification in Vietnam” of “Results.”

In Quang Tri Province, we interviewed people responsible for forest certification in two companies and the sub-association leader of the farmers’ group. Out of the two companies, one was the first company which obtained forest certification in Vietnamese domestic companies and another one was the latest company which obtained forest certification when we researched (as of January 2016). The farmers’ group was the first and only case of group certification in Vietnam when we researched (as of January 2016). The contents of the interviews centered on general information from the companies and from the group, their reasons for applying for forest certification, changes after obtaining certification, and forest operation and management methods.

These interviews were conducted in January 2016 and January 2018.

3. Characteristics of the research target

(1) Company B (Certified company)

Company B is the state-owned enterprise that was established in 1961. There are 160 employees, of which 40 are managerial personnel that come mainly from Quang Tri Province, 45 are forest security staff, and 75 are forest laborers. Additionally, the company employs 450 seasonal workers from Quang Binh Province for 2 or 3 months for pruning and harvesting. Furthermore, this company employs indigenous people called Bru (*Vân Kiều*) people as seasonal workers. Before 2007, this company played a role in forest conservation and rehabilitation as tasks of a state-owned enterprise, and started timber production in 2007. This company used to produce sawn timber. Currently, this company does not have any processing machines but harvests timber and sells it to other timber processing companies. This company also harvests pine resin, which is processed by a partner company.

¹ VAFS is the organization of special science and technology on forest and forestry under the Ministry of Agriculture and Rural Development (MARD). The organization structure of VAFS includes seven thematic research institute and centers, six regional research institute and centers, and four functional departments in the whole of Vietnam.

All the managed forests are state forests and are FSC certified, of which 2,500 ha are natural forests and 6,100 ha are plantation forests. The tree species in the plantation forest include 4,500 ha of acacia (*Acacia hybrid* and *Acacia mangium*) and 1,600 ha of pine (*Pinus merkusii*). There are no indigenous peoples living inside these forests.

(2) Company D (Certified company)

Company D is the state-owned enterprise that was established in 1974. There are 126 full-time employees and 60 seasonal workers. This company has conducted forest management and plantation operations since 1974. From 1974 to 2007, they utilized government funds, especially the budget of Programme 327 from 1993 to 1998 (*Decision 327-CT*) and Programme 661 from 1998 to 2010 (*Prime Minister Decision 661 /QD/ TTg*)². Since 2007, this company has been managed under an independent accounting system with timber production, pine resin production and seedling production in its nursery. Currently, this company does not have any processing machines but harvests timbers and sells it to other timber processing companies.

The total forest management area is 7,500 ha, of which 2,000 ha are protected forests and 5,500 ha are plantation forests. Tree species in the plantation forest include 4,200 ha of acacia (*Acacia hybrid* and *Acacia mangium*) and 1,300 ha of pine (*Pinus merkusii*) and in protected forests with a mix of acacia and pine. In plantation forest, 4,870 ha have obtained FSC certification.

(3) Certified small forest holders group

Sub-association K was established in 2007 to apply for forest certification and to harvest timber with FSC certification. There are 14 members – 9 males and 5 females. The certified area of this sub-association is 150 ha, and Mr. M (the interviewee and leader of this sub-association) owns 30 ha of certified forest in it. We found that 25% of households in his village are mainly getting income from acacia, and the other 75% are getting income from rubber and other agriculture products. In Quang Tri Province, there are 32 sub-associations with 515 members. These comprise 1,392 ha of certified forest area.

² For protecting the environment (decrease the severity of natural disasters, increase water availability, preserve gene resources, and protect biodiversity), developing the forest product processing industry, and contributing to improvement in the socio-economic situation of local people, this program planned to implement a five million ha reforestation (Sam and Trung 2001).

Results

1. History and trends in forest certification in Vietnam

Beginning in 1997, the size of timber product exports from Vietnam to the international market grew such that the Vietnamese furniture industry became one of the largest exporters (Website of New Forests) and other timber processing industries also started to develop. The total export value of forest products expanded from USD 154 million in 1995 to USD 804 million in 2010 (Website of the General Statistics Office of Vietnam). At the same time, products such as timber are suspected of being illegal, and Vietnam has to respond and solve the problem to develop the export of forest products more (Roe et al. 2014). Therefore, the certification of products in the processing and circulation steps, namely CoC certification, needs to be obtained and developed more in Vietnam. As of 2017, there have been 558 CoC certifications issued in the whole of Vietnam (Fig. 4). Now, the emphasis is on obtaining CoC certification, rather than sustainable forest management certification, as the primary step in the discussion regarding certification.

On the one hand, to improve the low rate of self-sufficiency in timber, it is also necessary to establish a sustainable forest management system. In 1998, the same year when the five million ha reforestation plan (Programme 661) was developed, Vietnam started to

consider the concept of sustainable forest management. As its first steps, Vietnam collected information through communication with international organizations and other countries and international workshops. Before this, “sustainable forest management” had been understood only as ecological sustainability and forest rehabilitation and not considered as production (Dang et al. 2012). To develop a sustainable forest management system, a national working group was set up. A workshop for developing a national standard was held in 2005 and the “National Forest Development Strategy” was subsequently established in 2007. This strategy aimed to manage 30% of the production forest in Vietnam sustainably and to qualify for forest certification such as FSC. For this purpose, some models of sustainable forest management have been piloted (Forest Trends 2012). After this, timber production gained recognition and the amount of companies that changed their strategies increased. In connection with this, Japanese companies obtained FSC forest certification for 8.5 thousand ha as the first case in Vietnam in 2006 (Website of Sojitz Corporation). Currently, in 2017, the certified forest management area has expanded to 229,927 ha comprising 31 cases (Fig. 4).

One of the merits of the forest certification system is the economic benefit due to increases in productivity and stability. Along with company growth, workers and local people’s incomes also increase with the strengthening of the sustainability of forest management. Another merit is that people are becoming aware of environmental aspects such as preventing nutrients from being drained, by refraining from burning logs, branches, stubs, and leaves. Obtaining forest certification based on business aspects, therefore increases economic and environmental awareness.

In line with the growing importance of obtaining forest certification as a mechanism to promote a sustainable forest management system, the Vietnamese government is developing a more economical, speedy, and domestic forest management certification pathway to mutual recognition with international certificate organizations. In January 2016, the Ministry of Agriculture and Rural Development (MARD) enacted Decision 83 (83/QĐ-BNN-TCLN). In it, it was shown that the Vietnam Forest Certification Scheme (VFCS) Program was developed in line with PEFC requirements as a national forest certification. Presently in Vietnam, the national forest certification has not yet been endorsed by the PEFC; therefore, Vietnamese companies or farmer groups cannot apply for forest management certification of PEFC and can choose only FSC forest management certification. However, this VFCS will serve as a guide for mutual recognition with PEFC (Website of PEFC).

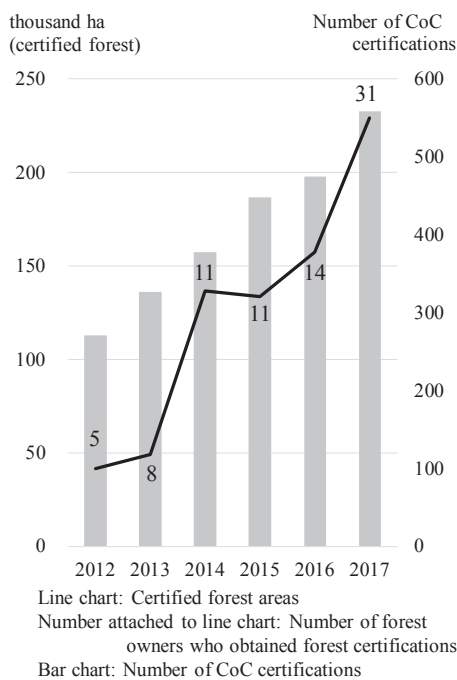


Fig. 4. Transition of Vietnamese certified forest areas and the number of CoC certifications under FSC
 Source: Website of FSC

In the case of the FSC, an applicant submits documents to the front office of the FSC. If there is non-conformity, the applicant is issued a Corrective Action Request (CAR). A minor defect would be such a failure to learn a required technique, even though adequate training was received. A major defect would be such a failure to pay an employee when there is a contract in place. An evaluation is conducted every five years by NGOs accredited by the FSC. The problems within the forest certification system included high costs of applying and auditing, and a difficulty to maintain certification. In Central Vietnam, forest operation and management is especially difficult because of the large percentage of steep lands and severe weather events such as typhoons.

Out of the current 31 certified forests in Vietnam under FSC, three cases are natural forests and the remaining 28 cases are plantation forests. Out of the 28 plantation forests, 27 are acacia forests planted with *Acacia hybrid*, *Acacia mangium*, and *Acacia auriculiformis*. Except in the first case on obtaining certification in Vietnam in 2006, the year of obtaining certification can be divided into two stages: the early stage from 2010 to 2015, and the expansion stage after 2016 (Fig. 5). Out of the 12 cases certified in the early stage, 9 cases are in Central Vietnam, including North Central Coast Area, South Central Area, and Central Highland Area. The North Central Coast Area which includes Quang Tri Province, is the center for obtaining certification, with five cases of company forest certification in the early stage. Of these, four cases are in Quang Tri Province and one case is in Quang Binh Province. On the one hand, out of 18 cases certified in the spread stage, 12 cases are in the northern part of Vietnam, including the Northwestern Area and the Northeastern Area. In comparison with average certified forest areas, the early stage comprises 11,349 ha and the expansion stage totals 4,353 ha. The large scale certified forests

tended to have been applied in the early stage (Fig. 5).

Regarding the farmers' group certification, the Website of FSC gave the following explanation: "To ease barriers to forest certification, FSC created the group certification system. Group certification involves sharing the costs of certification among members of the group. While group certification is typically pursued by small family forest landowners, forests of any size can seek certification as part of a group" (Website of FSC). In Vietnam, the first application for FSC group certification was implemented in 2007 by the farmers' group in Quang Tri Province. This group knew the fact that Company B in the same province applied for FSC certification and was aware of the merit of the certification such as a high selling price for timber. The group discussed with the DARD of Quang Tri Province, who coordinated this group with the front office of the FSC. This group obtained FSC certification in 2010 as the first case of group certification in Vietnam.

Of the current 31 cases of forest certification in Vietnam, there are three cases of farmers' group certification. Of these, one is in Quang Tri Province, one is in Thua Thien Hue Province, and another is in Yen Bai Province, for a total area of 4,565 ha. This is approximately 2% of the certified areas in Vietnam.

Auer (2012) pointed out problems from a case in Quang Tri Province. Six problems were shown here, and they are as follows: affording certification and operational costs, gaps in timing of harvest between trees planted in different years, non-sustainable market prices with premiums, a non-sustainable benefit-sharing system, pre-harvesting risks because of long timber harvesting cycle, and necessity of donor dependency. Regarding the high cost of maintaining FSC certification, Hoang et al. (2015a; 2015b) also pointed out a problem from a case in Quang Tri Province; therefore, it could be understood this problem should be focused on.

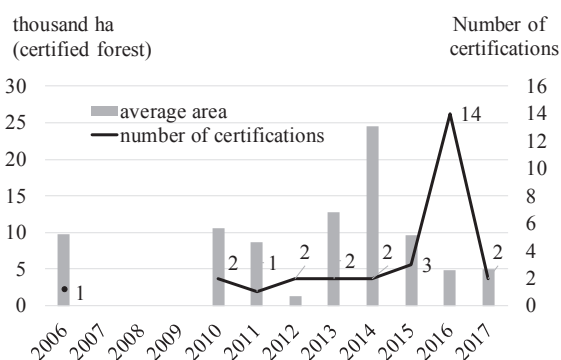


Fig. 5. Number of certifications on first year of issuance and its average area under FSC
Source: Website of FSC

2. A case of certified stakeholders in Quang Tri Province

(1) Company B (Certified company)

Company B was the first domestic company to apply to the FSC in 2007 and to be certified in 2011 in the early stage of obtaining certification in Vietnam. At that time, the government provided direction to obtain forest management certification; however, there was no support from outside such as the government or NGOs. Therefore, the company applied on its own. The reasons for applying were higher selling prices for timber and access to international markets. Since 2007, it has cost USD 200,000 (approximately 4.4 billion Vietnam Dong (VND)) in total to obtain FSC certification. It is

also necessary to pay USD 10,000 (approximately 220 million VND) per year. For maintaining certification, this company aligns with the ten principles³ of FSC. As a result of obtaining certification, the selling price of timber became higher, the skill of labor was improved because of operating under the principles of FSC such as fertilizing, weeding, pruning, tree thinning for higher intensity, prohibiting fires to prevent the drain of soil, and observing security precautions. The ability of staff to do paper work was also enhanced due to the improved rules, systems, and work procedures through preparing huge quantities of documents for FSC.

Regarding timber production, logs that are under 10 cm in diameter are sold for wood chips and logs that are over 10 cm in diameter are sold for sawn timber. Logs for sawn timber account for 5,400 to 6,000 tons (30% of the whole amount) per year and all these logs are produced from an FSC-certified forest. Ten-year-old trees that are around 25-30 cm in diameter are used here. The selling price rose 20% (USD 120 per ton: approximately 2.64 million VND) after obtaining FSC certification. The logs are sold to Company M in Quang Tri Province.

Logs for wood chips account for 12,600 to 14,000 tons (70% of the whole amount) per year. The selling price has kept steady at USD 60 (approximately 1.32 million VND) per ton because no wood chip company buys for a premium price, even when FSC certification has been obtained and all these logs are produced from an FSC-certified forest. Logs are sold to four wood chip companies: Company Q in Quang Binh Province, Company V in Ha Tinh Province, Company P in Thua Thien Hue Province, and Company QT in Quang Tri Province. Company B outsources transportation of logs to an outside company.

To obtain FSC certification, it is necessary to lengthen timber harvesting cycle from 5 to 10 years. Consequently, the benefits are smaller and can even send a company into the red, given the cost of application in the timber production sector. As far as this goes, benefits from pine resin cover this loss. On the other hand, the volume of the biomass in managing forests increased 30 tons per ha because of changing operational systems as required by FSC certification.

Regarding seedlings, before 2007, this company bought seedling from seed production companies. However, after 2007, 70 to 80% of seedlings have been produced internally. Seedlings are mainly planted from September to October, or right up to January. Species of seedlings include *Acacia hybrid* and *Acacia mangium*. *Pinus merkusii* is not planted but regenerated naturally, and it yields resin harvests of 1,000 tons per year. When laborers plant seedlings, they level land only at the spot of planting. Before applying for certification, they had leveled all the land. Regarding initial fires, they did not do it both before and after applying for certification. They did pruning and weeding both before and after applying for certification. Now, they have to do pruning and weeding for 2 years after planting in accordance with FSC rules. Four or five years after planting, they do tree thinning. They fertilize with NPK fertilizer using 0.2 kg per seedling. This company owns 15 chainsaws. When harvesting trees, all laborers (including seasonal workers and indigenous people) wear helmets and HAZMAT suits. These systems of operation follow the rules of the FSC.

(2) Company D (Certified company)

Company D obtained FSC certification with the support of European Company I through WWF. This company applied for FSC in July 2014 and was certified in November 2015 in the last of the early stage of obtaining certification in Vietnam. The reasons for the application that were listed by this company were not based on government's direction but on the higher timber-selling price and good relations with international markets. It cost USD 10,000 (approximately 220 million VND) to obtain FSC certification, and USD 7,000 (approximately 154 million VND) must be paid per year. For cutting the cost of auditing by the FSC (especially travel expenses), this company set a date for auditing at a time simultaneous with other companies (other companies do not mean parent or controlling company). In the past, sharing technologies with other companies under the DARD was common; therefore, collaboration among companies is still strong. For maintaining certification, this company aligns with the ten principles of the FSC.

This company was certified in 2015; therefore, it did not reap the higher sales price of timber from FSC certification. However, this company already had some FSC certification effects since the staff became more professional due to improved rules, systems, and work procedures especially in preparing documents for FSC. On the other hand, this company had problems regarding FSC certification. One of the problems was the difficulty in improving the ability of laborers. This company is still making continuous efforts to improve itself with support from WWF. The second problem was the lengthening of

³ The ten FSC principles require the forest owner or manager to do the following: 1) Compliance with laws and FSC Principles, 2) Tenure and use rights and responsibilities, 3) Indigenous peoples' rights, 4) Community relations and worker's rights, 5) Benefits from the forest, 6) Environmental impact, 7) Management plan, 8) Monitoring and assessment, 9) Maintenance of high conservation value forests, 10) Plantations (Website of FSC).

the timber harvesting cycle. Their forest area for timber harvesting is not so large. Regarding this, it is expected to be offset by the rising sales price. The company would like the FSC to give them more room to negotiate and to make the rules more flexible.

Regarding timber production, they harvested timber only from plantation forests. Logs for wood chips are cut under 10 cm in diameter. Logs for sawn timber are not yet grown, but their final length will be 25-30 cm in diameter. The sales price of logs for wood chips has kept steady at USD 60 (approximately 1.32 million VND) per ton, because no wood chip company buys at a premium price, even with FSC certification. Logs for wood chips account for 36,000 to 40,000 tons per year. Logs are sold to four wood chip companies: Company Q in Quang Binh Province, Company V in Ha Tinh Province, Company P in Thua Thien Hue Province, and Company QT in Quang Tri Province. This company outsources the transportation of logs to an outside company.

Regarding pine resin, this company sells to the same buyer as Company B. The amount is 200 tons per year. The pine resin company exports it to Korea, India, and China.

Regarding seedlings, 90% of seedlings are produced internally, and the remaining 10% is bought from a seedling production company. Seedlings are mainly planted from September to January, or sometimes up until February. This company planted pine and acacia before 2007, and has planted *Acacia hybrid* and *Acacia mangium* since 2007; 1,600 seedlings are planted per hectare (2 × 3 m). When laborers plant seedlings, they level land only at the spot of planting. Before applying for certification, they had leveled all the land. Regarding initial fires, they did not do it both before and after applying for certification. They did pruning and weeding both before and after applying for certification. Now, they have to do pruning and weeding for 2 years after planting in accordance with FSC rules. They do tree thinning four or five years after planting. They fertilize with NPK fertilizer using 0.2 kg per seedling. To obtain FSC certification, it is necessary to lengthen the timber harvesting cycle from 5-7 years to 10 years.

(3) Certified small forest holders group

Sub-association K was established 2007 as one of the group certification pilot projects under technical assistance and advice by the WWF. This sub-association aimed to obtain forest certification to sell timber at a higher price and to contribute to the environment and society. One reason to not choose an individual certification system but rather a group certification system was that each member did not own enough land. Another reason was that the cost of application became lower than in the case of general

certification⁴. This sub-association was certified in 2010 and started to harvest timber with FSC certification. There is no big change in the main income after obtaining FSC certification in this area. Only some people changed occupations from rubber to acacia because of the price drop in rubber. People who have not yet joined such sub-associations are wary of the effects of certification, but the members of this sub-association continually promote the expanding scale of the association with a goal of 3,000 ha by 2020.

Cost for evaluation that is conducted every five years amounts to USD 1,800 (approximately 39.6 million VND) for the whole of Quang Tri Province. Associations in Quang Tri Province hold meetings every six months. Evaluation was conducted by researching some target areas through random sampling. If there is even one case that does not satisfy FSC regulations, the association in which the case occurs will lose its certification.

As a result of obtaining certification, the selling price of timber became higher, timber-processing companies buy for set prices, WWF staff come to advise them about fertilization techniques, and members of the sub-association can manage forestry or timber harvesting with schedules. On the one hand, there are two problems. The first one is that harvest times are reduced. The second one is that some members do not understand regulations sufficiently yet; therefore, it is necessary to get the regulations across members. In addition, members of sub-associations requested that they want the government to pay costs for improving environment around obtaining certification.

The entire group implements the harvesting of acacia. The timber harvesting cycle is 8 to 10 years. Ten-year-old trees can be sold for 200 million VND per hectare. From this, the labor fee including rental fee of chainsaw (20 million VND) and the transportation fee (30 million VND) are subtracted and income will be 150 million VND per hectare, or 15 million VND per year (Table 1). In addition, if they own the chainsaw, only the transportation fee (30 million VND) will be subtracted. Income will be 170 million VND per hectare and 17 million VND per year. By similar calculation, income from harvesting five-year-old trees was 7.18 million VND per hectare per year for a non-certified forest. Ten sub-associations own chainsaws; however, this sub-association does not own one. In this case, this sub-association has to pay a labor fee

⁴ The group certification system is designed to help reduce the cost of certification; therefore, the cost per group member is significantly lower than if each member applied for an individual certificate (Website of FSC).

that includes the rental fee for the chainsaw. The logs are 15 cm × 1.5 m. Logs meeting FSC standards are harvested for sawn timber. The remaining non-FSC logs are sold for wood chips. After timber harvesting, members leave the logs on the roadside and then, the transporter brings them to a timber processing company such Company T in Quang Tri Province, Company T in Da Nang City, or Company D in Quang Nam Province.

Regarding seedlings, this sub-association buys all its seedlings from a production company in central Vietnam. The price is 1,000 VND per seedling. Seedlings are mainly planted from October to November, and 1,600 seedlings are planted per hectare (2 × 3 m). Species of seedlings are mainly *Acacia hybrid* and a few *Acacia mangium*. Before they obtained certification, members leveled the land with initial fires, but this is now restricted. Residue from log branches, leaves, and stubs are not burnt; therefore, nutrients are not lost in accordance with regulation. For this reason, they do not sell branches and leaves now. Before certification, they sold them at 900,000 VND per hectare and the amount was 30-35% of biomass. In addition, members never do mixed crops between planted trees and they do weeding if necessary. Four years after planting, they do tree thinning, and after five years, they thin 600 trees. Trees that show signs of trouble are cut first. After five years, they have to report inventory for every year. Before certification, only a few households used fertilizer (0.2-0.3 kg per seedling). Now all the members use it with 0.1-0.2 kg per seedling, three or four months after planting. They can only use fertilizer that is specified in FSC regulations. Additionally, members cannot hunt animals in certified forests and cannot cut trees near the river.

Discussion and conclusion

Durst et al. (2006) pointed out that it is difficult to spread forest certification in developing countries. However, forest certification is spreading gradually in developing and tropical countries, especially under the FSC scheme. The factor of spreading FSC certification

in such countries is that it is suitable as a first step in obtaining forest certification for a country that cannot develop the domestic criteria itself because applicants only need to satisfy FSC regulations. FSC certification caught up with the developing countries' condition that "insufficient capacity to develop national certification standards and certification procedures" as Durst et al. (2006) mentioned. In addition, the FSC supported and improved the "wide gaps between existing management standards and certification requirement" and the "weak ability to formulate appropriate sector policies and ensure their effective implementation." On the other hand, PEFC is spreading under mutual recognition with Asian countries such as China, Indonesia, Malaysia, and Japan. In this manner, each country must develop a forest certification system in line with the PEFC itself. However, once developed, the speed of its spread will be fast, because the process of obtaining certification is inexpensive and simple as remarked below. Presently, Vietnam is in this position and is trying to catch up with the two conditions pointed out by Durst et al. (2006) (i.e., "the insufficient capacity to develop national certification standards and certification procedures" and "the high direct and indirect costs of obtaining certification") by developing the VFCS Program in line with PEFC requirements as a national forest certification.

In our focus on the Vietnamese situation of expanding forest certification, all the interviewees answered that higher timber selling prices and access to international markets or domestic channels for sales are the main reasons for obtaining certification. Accordingly, the factor of spreading forest certification corresponds with requests from both timber buyers and sellers. It can be said that "insufficient demand for certificated products in global market," as pointed out by Durst et al. (2006) was cleared in Vietnam. Under such requests, it can be considered that the spread of forest certification will continue; however, there is a problem regarding costs, as Auer (2012) and Hoang et al. (2015a, 2015b) have pointed out. The interviewed companies could cope with auditing costs by sharing costs and by compensating from

Table 1. Comparison of prices, fees, and farmers' incomes from acacia timber for FSC and non-FSC

Thousand VND	FSC (10-year-old tree)		Non-FSC (5-year-old tree)	
	With chainsaw	No chainsaw	With chainsaw	No chainsaw
Price of timber per hectare	200,000		85,000	
Chainsaw rental fee	—	20,000	—	20,000
Transportation fee	30,000			
Price of branches and leaves	—		900	
Annual income per hectare	17,000	15,000	11,180	7,180

income generated from pine resin. However, companies that try to obtain forest certification from now on might not have income from pine resin or find other companies that can share the cost. In this situation, the PEFC will exude a strong presence. The PEFC recognizes review by domestic institutions or organizations; therefore, costs will be low and processes will be short, as opposed to the FSC. This is the reason for the PEFC's spread at a rate double that of FSC's forest certification area, even though the FSC started earlier than the PEFC. The PEFC has spread to 37 countries and 304 million ha. Recently, a mutual recognition has come to a number of Asian countries (Website of PEFC). Not only the FSC but also the PEFC has group certification. In Vietnam, several efforts to obtain group certification for small forest holders have been implemented (*ibid*). If Vietnam can achieve mutual recognition between the PEFC and VFCS Program, small forest holders' timber that is increasing in volume due to policies such as Forest Land Allocation (FLA) has the possibility to become internationally certified timber. This can satisfy the spread of certification and reduce the cost of certification.

Regarding farmers' group certification, their income is increased by the rise in timber prices on a long-term basis (Table 1). However, the lengthening of the timber harvesting cycle is a barrier to entry for farmers. In general, they harvest timber every five years (Nguyen et al. 2016). It is not always an incentive for them since 20-25% in price increases can only be realized 10 years later. Additionally, the lengthening of the timber harvesting cycle brings increases in risk with typhoons or forest fires. Furthermore, it is difficult to plan a timber harvesting cycle schedule because of the small area of land. Therefore, farmers prefer a shorter timber harvesting cycle. To spread forest certification better, this problem must be solved. Auer (2012) pointed out this problem and showed that the way to solve this was through a member fee to increase and incentivize downstream wood processing. On the one hand, in this article, we considered some suggested approaches to manage forests collaboratively or establish a system of microcredit within a group. In our approach, at first, a management committee is established. Then, the committee receives all the income from selling timber and calculates an adequate amount of money by area of land owned, and distributes the amount of money divided by 10 every year. Alternatively, the committee gives cash advances to members and they will refund it when they get income from the harvest of timber. Systems like this could spontaneously be built; however, it takes a long time. Therefore, it should be included in a manual for farmers' group certification and promoted to establish a management committee. Furthermore, when

a management committee is established, if chainsaws are subsidized and members pay rental fees and deposits, it could be funded via microcredit. From the case of our farmers' group, 13% of income (20 million VND) per ha will be able to be funded (Table 1). In Vietnam, where acacia plantation areas are expanding and the timber-processing industry is developing, farmers' participation holds the key to expanding forest certification. There are effective ways to collaborate on forest management with microcredit systems and subsidizing of chainsaw as a kickback of payment for environment service by the Government as the sub-Association K requested – or as an advance against collateral to sell timber for processing by wood chips companies.

Regarding company forest certification, both companies started to produce timbers, pine resin and seedlings from the moment that established the National Forest Development Strategy. These companies obtained forest certification and aimed to join international markets because it was around the same time that forest certification began attracting rising attention. At the time of the research, forest certification was not requested by the wood chip companies making a deal with Company B and Company D; however, it was clarified that these companies were getting ready to supply certified timber for wood chips. Wood chips are an important product as a raw material for wood pellets for East Asian countries such as Japan and Korea, and MDF (medium density fiberboard) demand is expected to rise. Because the balance of payments for timber is at a deficit at this initial stage, it is difficult to reach a conclusion; however, it can be said that the deficit will improve before long, especially if forest certification is required not only for sawn timber but also for wood chips. Furthermore, for continuing the FSC or for obtaining other forest certifications, the available factor is that collaboration among companies is still strong. In addition, Breukink et al. (2015) found that net financial benefit of FSC appeared in tropical and small and medium-sized enterprises⁵, characteristics that are coincident with the conditions of these two companies.

Finally, interviewed companies attained quality enhancement of laborers and staff through the process of preparing documents to obtain forest certification in accordance with FSC principles. It is a very important point for competing in international markets, even though it is not represented in numeric values. Breukink

⁵ We withhold the actual turnover; however, these two companies are categorized as medium-sized enterprises having a turnover of up to USD 5 million as defined in Breukink et al. (2015).

et al. (2015) indicated “improvements in operational efficiency” as benefit of FSC, secondary to “price premium.” In Southeast Asia (the Philippines, Indonesia, and Malaysia), natural forest operations have mainly been implemented. Vietnam mainly implements planted forest operations. As challenging as emerging timber processing is, it is important to enhance not only forest resources, but also human resources, along with the process of obtaining forest certification.

Almost every country in the world is importing and exporting timber or timber products. It can be said that few countries can supply timber or timber products themselves to satisfy their domestic demand. Therefore, to correspond for requesting forest certification from demand side or consumer makes positive concatenation for supply side or producer. The lesson learned from cases of the expanding certified forest area in Vietnam is that understanding and satisfying the requests of demand side is important.

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