CHALLENGES AND SOLUTIONS IN IMPLEMENTING AND MAINTAINING FOREST STEWARDSHIP COUNCIL CHAIN OF CUSTODY CERTIFICATION: A CASE STUDY IN FINLAND

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Tiivistelmä – Referat – Abstract

Forest certification has been used as a tool to promote forestry responsibility towards sustainable forest management. Forest Stewardship Council (FSC) is one of the certification systems that is well recognised in Europe. Nevertheless, compared to other European countries, the number of FSC chain of custody (CoC) certifications in Finland is relatively low.

Semi-structured interviews were conducted with six FSC CoC certified companies to explore their experiences towards implementing and maintaining the system in their companies. The sample group was comprised of wood and paper product industries in manufacturing and trading sectors. Thematic analysis of the interviews revealed the challenges companies encountered.

The results indicated that there were eight types of challenges, including three internal and five external ones, hindering the development of FSC CoC certification in Finland. Internal challenges included competence, financial resources, and a lack of motivation to[1] change. External challenges included insufficient marketing and demand, uncertain cost benefit, keen competitor programmes, limited supply, and long trademark approval time. Meanwhile, the relevant solutions these companies adopted to deal with the challenges were discussed. Since external challenges out-numbered internal ones, it seemed that certified companies are not able to tackle the existing challenges alone. Joint-effort among other actors in the forestry sector, for instance, the national authority, FSC national office, certification bodies are essential to influence the rate of certification uptake.

Furthermore, participants discussed about the future development of FSC CoC certification system in Finland. Interviewees believed that the enactment of the EU Timber Regulation (EUTR) and the introduction of forest certification into national public procurement policy could positively impact the development of the system.

The results of this study could be used as a reference for potential certificate users to prepare themselves for implementing FSC CoC certification system. In addition, the study could shed a light on the development of FSC in Finland in the future.

Avainsanat – Nyckelord – Keywords
Forest certification, Forest Stewardship Council, chain of custody, challenges, solutions, Finland

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Abbreviations

Abbrev.	Full Titles
CoC	Chain of Custody
CB	Certification Body
EUTR	EU Timber Regulation
FM	Forest Management
FSC	Forest Stewardship Council
NGO	Non-governmental organization
SME	Small and medium-sized enterprise

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1 Introduction

1.1 Background

Forests are critical for maintaining life on earth. They play an essential role in the prosperity of humankind in many ways: providing resources, regulating food and water cycle, supporting the nutrient cycle, mitigating climate change and providing recreation (Ministerial Conference on the Protection of Forests in Europe 2011). Sustaining and improving the quality of human beings have affected the quality of forests negatively (Weaver *et al.* 2000, Entrekin *et al.* 2011). Ever-advancing technological development has exaggerated the consumption and exhausted the natural resources in a rate faster than the earth can replenish itself (Weaver *et al.* 2000, Entrekin *et al.* 2011). Are the threats inevitable? Is there a solution effectively addressing the situation?

The world's forests and inhabitants, including humankind who depends on them, are encountering various challenges. Deforestation and biodiversity loss have become issues of international concern and many (e.g. the Netherlands, Germany) have been searching for a lasting solution to manage the world's forests (Klooster 2005). Sustainable use of forest resources maintains the balance of the afore-mentioned forest services as well as suitable habitats for the fauna and flora (Nussbaum *et al.* 2004). Forest certification has been recognized as a potential tool to promote forestry responsibility and to develop sustainable forest management (Nussbaum *et al.* 2004, Durst 2006).

Among the forest certification systems actively in use today, the *Forest Stewardship Council* (FSC) was chosen as the focus of this study. Through conducting a qualitative research in Finland, certified companies along the wood fibre supply chain were interviewed. The study aimed at exploring the challenges these companies encountered upon implementing and maintaining the system in their companies. It also revealed the solutions used by these companies to

overcome the identified challenges. During the interview, participants discussed about their projection on the future development of FSC chain of custody (CoC) in Finland. They particularly mentioned the positive impact of EU Timber Regulation (EUTR) and the possible influence of introducing forest certification into the national public procurement policy.

1.1.1 The emergence of forest certification

In the 1970s and 1980s, international environmental movements were initiated as a response to the consequences of deforestation, forest degradation and biodiversity loss (Cashore *et al.* 2003, Klooster 2005). At first, the destructive activities of large logging companies, ranging from clear cuts in the Pacific Northwest of the US and Canada to the tropical forests of Africa, Asia and South America, were criticized. Such actions initiated international boycotts against the big wood retailers and logging companies (Klooster 2005, Johansson 2012). For instance, the German and the Dutch governments ceased the use of tropical timber in public construction and the state and municipal governments of the US debated the prohibition of purchasing tropical timber. Subsequently, environmental organizations joined with retailers to develop the environmental certification system as a boycott alternative (Klooster 2005).

The successful development of the certification system resulted from a combination of factors including environmental, political and economic. Economic and political trends in the 1990s provided lessons to environmental non-governmental organization that it was more effective to shape policy by using market forces than attempting to influence domestic and international business dominated networks (Cashore *et al.* 2003). This recognition increased the salience of market-manipulation campaigns (Cashore *et al.* 2003). Non-state market-driven governance systems were developed as such. Under such systems, traditional state

authorities were not used to force compliance. It envisioned new policy-making structures in which social, economic, and environmental interests compete equally in the private policy-making process (Cashore 2002). Meanwhile, government was treated as an interest group in the system. The supply chain provided the institutional settings through which authorities were granted and incentives were created (Cashore 2002, Cashore *et al.* 2005).

Various forest certification programmes emerged sequentially and gained interest as non-state market-driven programmes (Cashore *et al.* 2003). Forest certification aims at greater efficiency in forest resource use through an expected increase in consumer demand for sustainably produced forest products (Cashore *et al.* 2004). It identifies acceptable timber sources from well-managed forests (Rametsteiner *et al.* 2003, Leslie 2004). In 1990s, forest certification was quickly accepted as a means to pursue sustainable forest management (Durst 2006).

The establishment of a forest certification system involves various civil society actors to set up standards defining sustainability and identifying the process for monitoring. Interested companies agree to implement the forest management systems in their companies and comply with the requirements in the standards. They pay for periodic audits conducted by accredited independent auditors who are employed by certification bodies (CBs) to verify and monitor the compliance of their systems. Meanwhile, certified companies make use of the labelling programme to differentiate their products from non-certified ones. The label identifies that materials originated from well-managed forests (Nussbaum *et al.* 2004).

FSC is one of the forest certification programmes that generated a lot of international attention. Founded in 1993, FSC is a non-profit, non-governmental and membership-based organization (Tolunay *et al.* 2014). It was developed based

on the conception of non-state market-driven governance. The driving force for companies to acquire the programme originates from the demand of certified products in the market. The state government does not use its sovereign authority to force certificate holders' adherence to criteria in FSC standards (Cashore 2002). Instead, it incorporates actors from the forest industry, environmental and social non-governmental organizations (NGOs) to collectively set standards for sustainable forest management (Overdevest *et al.* 2006).

FSC introduced a certification system under ten principles, covering economic, social and environmental aspects to promote responsible forest management (FSC 2013e). It provides two types of certification: FSC forest management (FM) certification and CoC certification. Forests certified with FM certification confirm that the certified area is managed in line with FSC requirements and guarantee that the timber originated from well-managed forests. Supply chain actors, for instance traders, manufacturers and processors who process and transform the certified materials require a CoC certificate in order to sell the certified materials along the supply chain. The end products may then carry the FSC logos specifying they originated from well-managed forests (Overdevest *et al.* 2006) (Fig. 1).

It should be noted that FSC is not the only existing forest certification scheme. Certification has been endorsed by a few other organizations as well, including, the Canadian Standards Association (CSA) in Canada, the Sustainable Forest Initiative (SFI) in the USA and the Programme for the Endorsement of Forest Certification (PEFC), which is recognised internationally (Cashore *et al.* 2004).

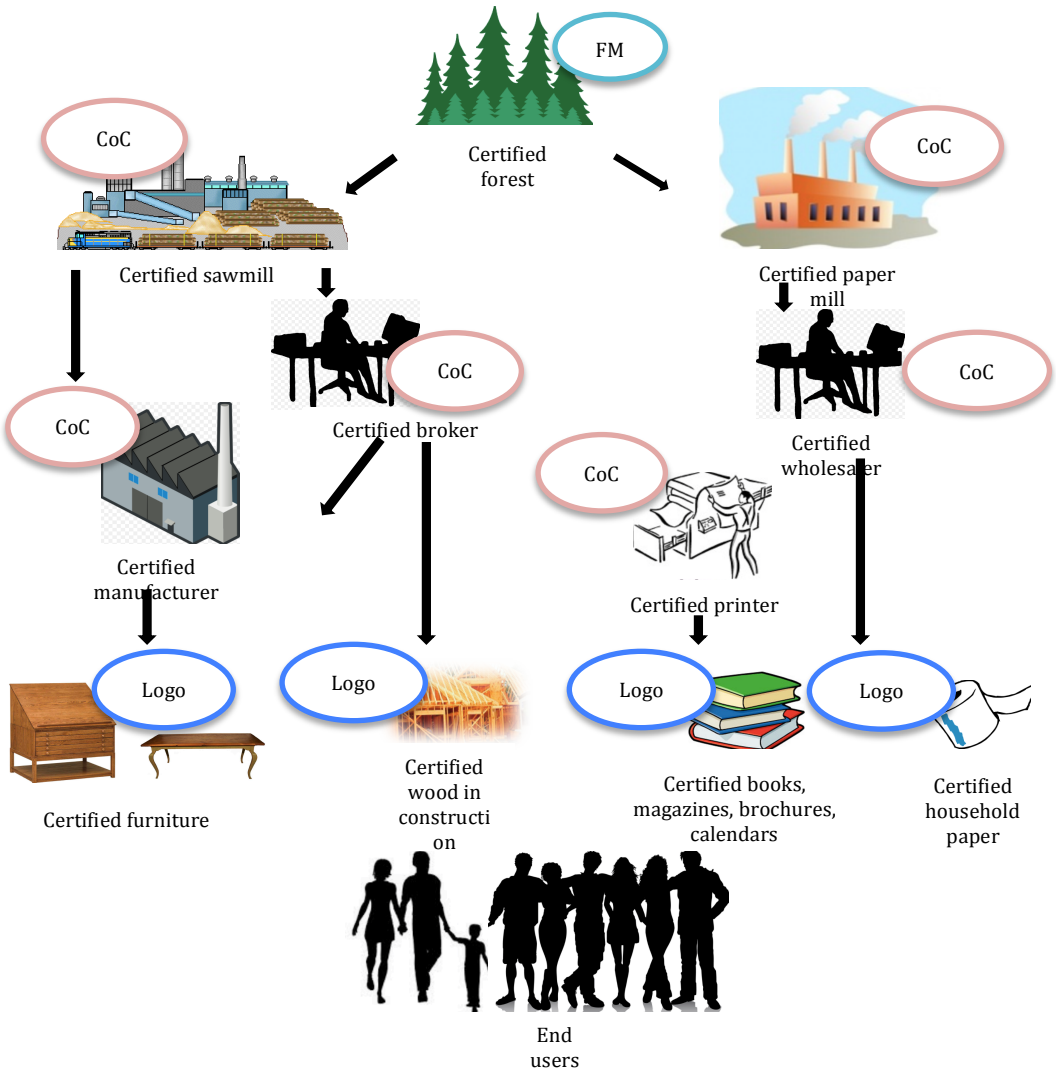

Figure 1. Flowchart illustrating the relationship among FSC FM certification, FSC CoC certification and the FSC logo.

1.1.2 Why Finland?

Globally, Finland is one the few countries with more than a 70% forest-covered land area (Fig. 2). Three fourths of the land area, about 23.1 million ha, is covered by forests (FAO 2010). The forest area of Finland accounts for 11% of that in Europe (210 million ha) (FAO 2010). Finland has the most extensive forest coverage area than any of its neighbouring countries (FAO 2010).

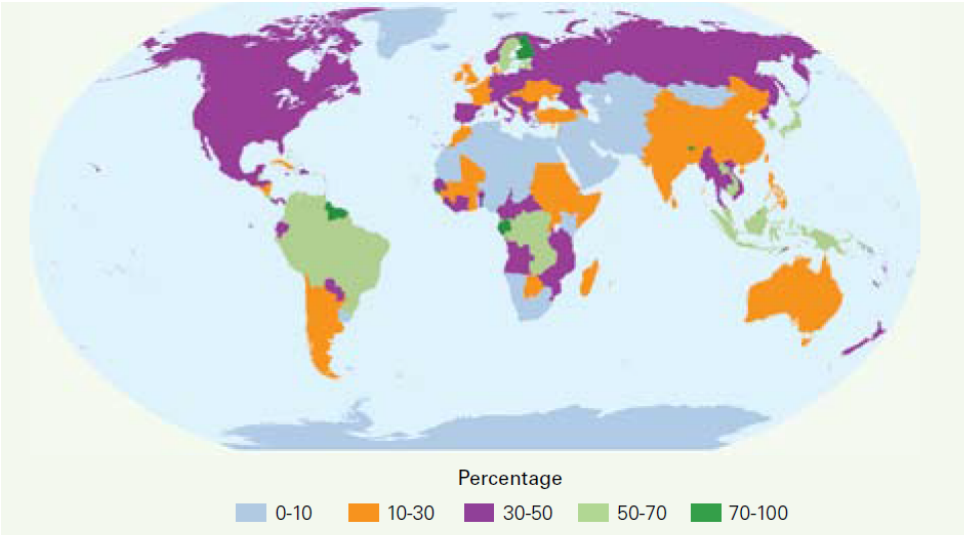

Figure 2. Forest area as a percentage of total land area by country in 2010 (reproduced from FAO 2010).

This section explains why Finland was chosen as the study site. Since the founding of FSC in 1993, the number of CoC certificates has increased steadily internationally over the last two decades. In 2013, there were 26 049 companies certified by FSC CoC. Compare to the 11 834 certificates issued in 2009, the number grew by 120% (FSC 2013a) (Fig. 3).

As mentioned in the previous session, PEFC is an alternative forest certification systems commonly acquired internationally. Therefore it is appropriate to compare the number of certificates issued by FSC and by PEFC so as to illustrate the acceptance level of FSC. In Europe, as of June 2014, there were 14 552 and 8 475 CoC certificates issued by FSC and by PEFC respectively (FSC 2014e, PEFC 2014b). The number of CoC certificate issued by FSC is nearly double that by PEFC.

Correspondingly, the figures between FSC and PEFC in the same time period in Finland were compared. As of June 2014, FSC had 97 CoC certificates while PEFC had 199 CoC certificates (FSC 2014e, PEFC 2014b). The certification uptake rate in Finland is relatively slow in contrast to the respective figure in Europe (FSC 2014e).

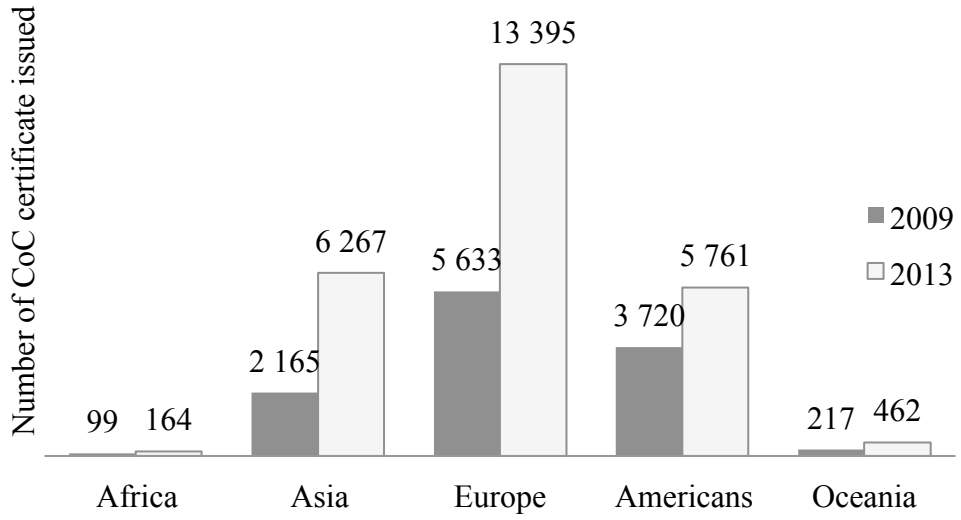

Figure 3. Increase in FSC chain of custody (CoC) certificates from 2009 to 2013 by continent (reproduced from FSC 2013a).

In Finland, the first FSC FM certificate and the first FSC CoC certificate were issued in 2002 and 2006 respectively. FSC Finland has a history of thirteen years in FM and nine years in CoC (FSC 2014e). The number of CoC certificates issued has been growing steadily (Figs. 4 & 5). One would expect that Finland has the potential to well develop forest certification schemes. Despite factors favouring the growth of certification, the truth is that the number of FSC CoC certified companies is relatively low.

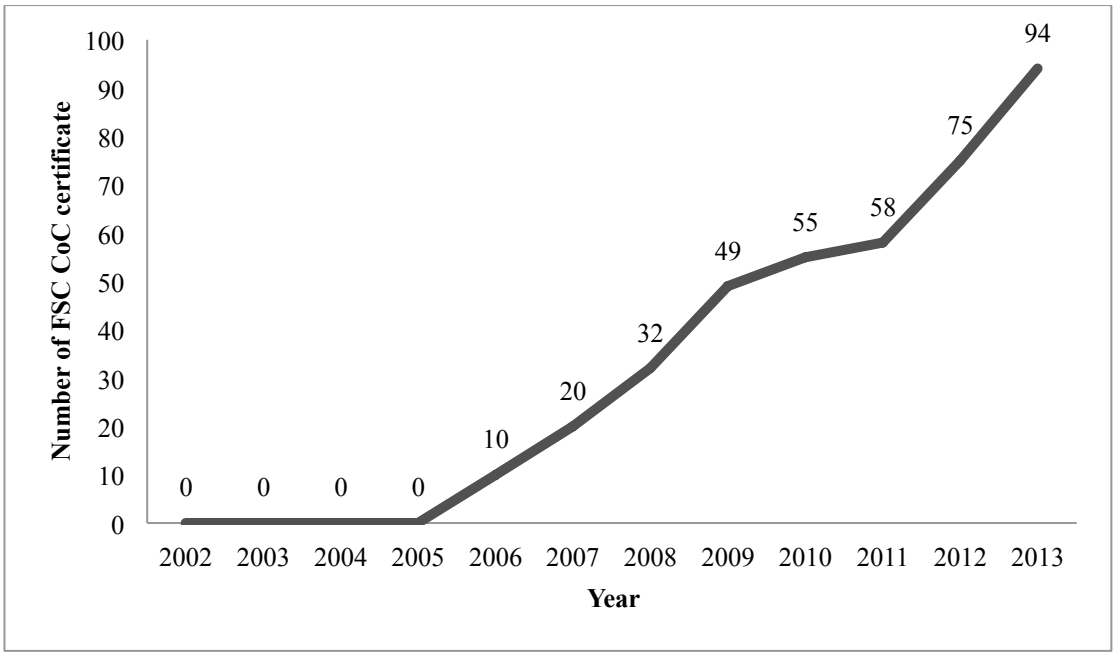

Figure 4. The growth of FSC CoC certificates in Finland from 2002 to 2013 (FSC 2014e).

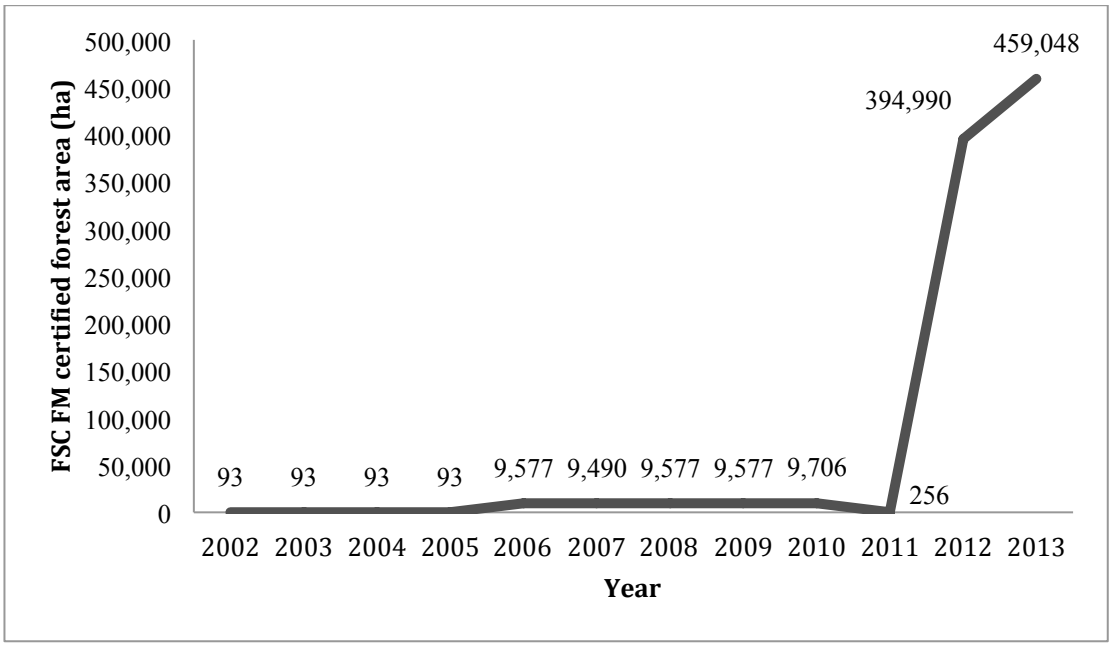

Figure 5. The growth of FSC FM-certified forest area (ha) in Finland from 2002 to 2013 (FSC 2014e).

In 2008, over 90% of Finland's commercial forested area, accounting for 20.6 million ha, has been certified with PEFC while less than 2% has been certified with FSC (Ministerial Conference on the Protection of Forests in Europe 2011). Updated data in 2014 showed that 10% of the commercial forest has been certified by FSC (FSC 2014e). There is an increment in the figure; however, the FSC CoC certification uptake rate is still relatively slow. It would be interesting to understand the underlying reasons for the low certification rate in Finland.

1.2 Factors affecting the uptake of forest certification

FSC is a voluntary market-driven forest governance system, which aims at greater efficiency in using forest resources through an expected increase in consumer demand for sustainably produced forest products (Cashore *et al.* 2004). Does the relatively slow uptake of certification rate in Finland imply an insufficient interest from the Finnish market? What are the reasons hindering the development? On the contrary, what could be the motivating factors promoting FSC in Finland when the industry is not enthusiastic about such a market-driven system? How does implementing FSC benefit an organization?

1.2.1 Problems of certification

Since FSC was established in 1993, FSC CoC certification has gained more importance in the industry over the last two decades internationally. The certification scheme has faced increased expectations to demonstrate positive changes in forest management (Johansson 2012). When these expectations were not met, disappointment regarding the scheme unavoidably turned into reduced confidence as well as negative comments on the system (Johansson 2012).

Initially, the market believed that the demand for environmental-friendly products, e.g. certified wood products, could generate a price premium (Van Kooten *et al.* 2005, Schepers 2010, Yamamoto *et al.* 2014). However, the expectation that customers are willing to pay extra for the environmental-friendly products did not bring an actual purchase behaviour (Vidal *et al.* 2005). The relatively more costly certified products, compared to its uncertified counterparts, did not result in a huge profit. Certified wood products have actually failed to deliver the expected price premiums (Durst 2006). Durst (2006) stated the producers might have accepted the reality that price premiums are unlikely to be realized in most cases. In fact, producers nowadays have much less expectations on the cost benefits resulting from certified products (Kärnä *et al.* 2003, Durst 2006, Halalisan *et al.* 2013, Toppinen *et al.* 2013).

Meanwhile, throughout the industry, there are concerns about the consumption of resources to maintain FSC certification in a company. As a matter of fact, maintaining a valid certificate does require a certain amount of effort. Operationally, the certified company has to adjust its own management system so as to fulfil the requirements in the certification standards (Durst 2006, Newsom *et al.* 2006). Human resources have to be allocated to implement and maintain the system (Rametsteiner *et al.* 2003, Vidal *et al.* 2005, Chen 2011, Johansson 2012). Certain procedures as well as documentation systems have to be developed. Financially, expenses including the audit fee, annual administration fee[2] (FSC 2013c), training costs are inevitable (Durst 2006).

For years, FSC has not been welcomed by small-forest owners for reasons of a costly certification fee and the amount of work required to maintain the system.

[2] Annual administration fee is an annual fee charged by FSC to each certifiation holder based on its annual financial turnover of all certified and non-certified products containing wood or wood fiber components.

This phenomenon is contrastingly obvious as these small-scale forest owners prefer PEFC to FSC (Pattberg 2005, Tolunay *et al.* 2014). PEFC stated that it was developed in response to the specific requirements of the owners of small forests in Europe (PEFC 2014a). Targeting at reducing the cost and workload of small producers upon maintaining forest certification in their companies, FSC has successively developed small or low-intensity managed forests (SLIMFs) certification in 2004 and forest management group certification in 2009 (FSC 2004, FSC 2009b). Meanwhile, with the same targets to assist small supply chain businesses, two types of CoC standards, namely group certification and multi-site certification were also developed in 2002 and 2007, respectively. The effectiveness and development of these standards are further discussed in the Discussion below.

1.2.2 Motivation for certification

The benefits of adopting FSC are categorized in four aspects, viz.: brings economic benefits, projects a positive image, serves as a knowledge-based mechanism and serves as a marketing tool.

Economic Benefits

The main economic benefit of the certification is perceived to be facilitating market access. Since FSC is the only certification scheme established by environmental groups, the scheme indirectly allowed certified organizations to communicate a business strategy of sustainable forest management to their customers (Van Kooten *et al.* 2005). The strategy helps in maintaining the competitiveness of the company in environmental-sensitive niche markets e.g. the UK, the Netherlands and Germany (Rametsteiner *et al.* 2003, Nussbaum *et al.* 2004, Durst 2006, Overdevest *et al.* 2006, Owari *et al.* 2006, Auld 2008, Johansson 2012, Moore *et al.* 2012).

Meanwhile, according to the FSC CoC standard, '*FSC CoC is an information trail about the path taken by products from the forest to the consumer…. Any change of ownership in the supply chain required the establishment of effective CoC management systems*…' (FSC 2011b). All companies along the supply chain, when ownership of the products is involved, must be FSC-certified. The requirements of FSC standards allow certified companies as the only ones having the privilege in dealing with business of FSC-certified materials. In fact, internationally, leading organizations are not only purchasing FSC-certified products, but they are also putting in place formal procurement policies requiring their suppliers to provide FSC-certified products (FSC 2015). For many producers and suppliers, certification has become a baseline requirement (Nussbaum *et al.* 2004). Durst (2006) revealed that, in developing countries, 'market access' was the priority driving force motivating producers to supply certified products. It is one of the reasons why certified companies would maintain the system even though the certification does not (yet) promise price premiums as discussed before.

In addition, certification provides the certificate holders with a useful instrument of surveillance and the convenience of 'control at a distance' over their suppliers (Klooster 2005). Mandatory fulfilment on requirements in FSC standards reduces the costs and resources required for certificate holders to monitor their suppliers (Klooster 2005). Meanwhile, since FSC CoC requires all companies possessing legal ownership of the certified materials to be certified, FSC assures every entity along the supply chain to be sure about the quantity and origin of their purchased/ received certified materials (Leslie 2004).

Positive image

Secondly, maintaining a forest certificate intends to project a positive image for the company. Kärnä *et al*. (2003) stated in his research that Finnish wood product

companies consider forest certification to be part of their corporate responsibility. He stated that forest certification is likely to be a response to criticism by environmental groups concerning the origin of wood products. Forest certification designates wood as a renewable resource and improves the 'green' image of companies (Owari *et al.* 2006). Leading environmental NGOs such as WWF and Greenpeace support FSC and actively engage in activities related to FSC (Klooster 2005). For example, WWF positively commented that FSC certification improved the conservation status and enhanced biodiversity levels in forests (WWF 2005). Adopting the certification scheme hence reduces the risk of being targeted by environmental NGOs and boycott campaigns (Johansson 2012). The argument was further supported by a recent study in China (Chen 2011), which stated that increasing the awareness of certified products can inform the general public or target customers about corporate environmental commitment and social responsibility. In fact, both Durst (2006) and Chen (2011) point out that a positive image is the second most important factor[3] for companies to possess a forest management system. On the contrary, terminating the already-acquired certificate projects a negative image on the environmental aspect of the company. This could be another reason why certified companies prefer to retain the validity of the certificate despite its not-so-profitable financial factors discussed earlier.

Knowledge-based mechanism

Thirdly, FSC functions as an information and knowledge transfer tool within the certified organization as well as between the organizations. The certified companies have to comply with the requirements in the FSC standards (Moore *et al.* 2012?). Training of employees and sharing of experiences enhanced staff knowledge on forest management (Johansson 2012). As a result, the compliance enables the certified companies to perform good forest management practices and meet high ecological standards (Overdevest *et al.* 2006, Moore *et al.* 2012).

[3] Chen stated 'Improved market access/exports' as the most important difference between a certified and an non-certified company. Durst stated 'market access' as the most important motivation factor for producers seeking certification.

Hagan *et al.* (2005) revealed, '*Landowners who were certified ... had significantly stronger biodiversity practices than landowners who were not certified*'. In addition, Overdevest *et al.* (2006) decribed FSC as a technology-transfer mechanism and as an assurance mechanism. During an evaluation process, FSC auditors transfer ecologically-based knowledge, skills and practices to the certified companies according to particular characteristics and conditions of individual organizations (Overdevest *et al.* 2006). The results of audits provide hints for continual improvements of the environmental management system as certified organizations make changes in forest management according to the standard requirements or audit findings in order to retain the validity of their certificates (Johansson 2012).

FSC involves diverse actors, including members in its three chambers (environmental, social, economic), supporters, certificate holders etc. Inter-organizationally, FSC serves as a platform to combine voluntary efforts of organization to overcome complex challenges (Pattberg 2005). In addition, FSC incorporates knowledge from various sources, e.g. International Labour Organization about Declaration on Fundamental Principles and Rights at Work into the standard (FSC 2011b). Knowledge flows within FSC as well as between FSC and the stakeholders through formal and informal meetings (Pattberg 2005). Vidal (*et al.* 2005) predicted that the direct communication amongst all actors along the supply chain would result in increased efficiencies as well as understanding of the markets.

Marketing tool

Fourthly, FSC serves as a marketing tool. Organizations with a strategic focus on environmental issues bring better customer satisfaction as it provides a positive company image to the public by launching green products (Kärnä *et al.* 2003). Certified companies see FSC as a marketing tool, which can strategically position

the company, demonstrate the company's corporate social responsibility as well as retaining and gaining market access (Moore *et al.* 2012). Overdevest *et al.* (2006) stated that FSC performed well as a signalling mechanism in the US as the scheme provided to the public an image of good practice adhering to a verifiable way. Overdevest *et al.* (2006) stated that FSC creates new marketing opportunities and helps in maintaining as well as improving relations with the public.

1.3 Study objectives

Despite the afore-discussed benefits the certification system brings, the certification rate is relatively low in Finland. The factors hindering the development of FSC in Finland are yet to be discovered. The research question is 'what are the challenges encountered by organizations acquiring FSC CoC certification upon implementing and maintaining the system and how do the certified organizations in Finland eliminate or overcome these challenges?'

This study focuses on evaluating the challenges that companies at the supply-chain level encounter, with an assessment of FSC CoC certificate holders in Finland. The study has twofold explorative aims. The primary aim of this research is to explore the difficulties organisations have encountered in obtaining FSC certificates and maintaining the system. Qualitative research was conducted to collect data addressing the challenges Finnish certified organizations encountered in using the certification system during their operation processes. The collected data were then analysed to link the relationship between various actors in the certification framework. Further analysis of the data helped in understanding the reasons for the relatively low certificate number in Finland. The secondary aim was to reveal solutions used by certified companies to overcome the challenges identified.

It is hoped that results of this research could serve as a useful reference to help potential certificate users in developing and preparing their own FSC CoC systems. Ultimately, the use of FSC CoC in Finland could possibly be encouraged.

In the next section, I describe the literature used to develop the analytical framework of this study. Then I elaborate on the methodology used in the study. Based on the views and perceptions of interviewees, a number of observed difficulties are then highlighted in the Discussion. Meanwhile, the solutions certified companies used to handle challenges were identified. Furthermore, projections of future development opportunities of FSC in Finland are discussed. Lastly, a few important points of the research results are presented in the Conclusions.

2 Constructing the analytical framework

2.1 Literature review

This section serves as an overview of the literature related to various aspects of FSC in the last decade, i.e. 2002 – 2014. In order to construct an overall analytical framework, many types of reading material including journals, laws and regulations, international standards, articles and reports were reviewed. The material covered a wide range of geographical locations including Asia, North and South America, and Europe. It also covered both developed and developing countries.

The literature review starts with the development process of FSC, which begins with the environmental movement. Klooster (2005) provided a general picture on the evolution and history. He elaborated on the development of FSC from the

environmental movement in the 1970s to its latest development in the early 2000s. Cashore (2002) and Cashore *et al.* (2003, 2004, 2005) studied how FSC, as a non-state market-driven self-regulatory system, performed its function in governing certified companies. Furthermore, Kärnä (2003) showed the successful role of FSC in environmental marketing strategies in forest industries.

In addition, Rametsteiner et al. (2003) discussed the role of FSC as a sustainable forest management instrument. Meanwhile, many studies discussed the perspectives and attitudes of various stakeholders including certificate holders, forest owners, and consumers towards FSC in Canada, China, Finland, Sweden, Russia, Romania and the United States (Vidal et al. 2005, Newsom et al. 2006, Overdevest et al. 2006, Owari et al. 2006, Chen 2011, Johansson 2012, Halalisan *et al.* 2013, Toppinen *et al.* 2013, Trishkin *et al.* 2014). Leslie (2004), Nussbaum *et al.* (2004) and Auld (2008) focused on studying the impacts of FSC. On the one hand, Durst (2006) reviewed the challenges encountered by certified companies upon incorporating FSC into the company's existing management system in developing countries. On the other hand, encouraging studies pinpointing the benefits of FSC motivated the ongoing development of FSC (Van Kooten *et al.* 2005, Yamamoto *et al.* 2014, Zhang *et al.* 2014). As diverse as many aspects of forest certification and FSC have been studied, there is a lack of studies about the development of FSC in Finland. What is more, no published study has yet conducted research on challenges encountered by Finnish FSC CoC certified organizations.

Furthermore, most aforementioned studies were conducted as quantitative research in which questionnaires with closed-format questions were devised. The binary nature of "yes/no" or the statistical data fail to capture the nuanced analysis on the research participants. On the contrary, qualitative research provides the opportunity to comprehensively understand the study topic. As such, the current study was conducted as a qualitative research so as to thoroughly perceive the

experiences of certified companies, and comprehend factors affecting the development of the certification system in Finland.

2.2 Analytical framework

2.2.1 Defining 'challenge'

The analysis of the challenges Finnish companies encountered upon FSC CoC certification is constructed based on the analytical framework discussed in the next session. Therefore, it is logical to first mark the conceptual boundaries of 'challenge' before continuing with the structure of the framework. Cambridge dictionary (2005) defined 'challenge' as '(the situation of being faced) with something that needs great mental or physical effort in order to be done successfully and therefore tests a person's ability'. Oxford dictionary (2003) defined it as 'a task or situation that tests someone's abilities'.

On the other hand, Newsom *et al.* (2006) conducted his research on changes required by organizations in operation-level during the FSC certification process. He examined and analysed the changes in two aspects: precondition and condition. The former is a change that must be made before a certificate is granted, while the latter is a change that must be made within a given time of period after the certificate is granted in order to avoid suspension or a termination, i.e. continuing the validity of the certificate.

Achieving changes often require the effort and expenses of certain resources, e.g. manpower, financial resources. Accomplishing the necessary changes is thus realizing the organization's capability to successfully overcome challenges encountered upon certification. Merging the definition of 'challenge' from the Cambridge dictionary (2005), Oxford dictionary (2003) and the research approach

of Norman *et al.* (2006), I would extend the meaning of 'challenge' in this research as the ability of an organization to comply with the certification requirements so as to acquire the certificate, and to maintain the validity of the certificate. The challenges related to CoC certification would be explored in two stages of the certification process: upon the preparation period to acquire it and during the process in which the organization is maintaining it. Interviewees would be guided to describe the challenges in these two stages.

2.2.2 Challenges associated with the certification

As discussed earlier, FSC CoC is a forest product certification system acquired internationally across five continents (Fig. 2). As the internationalization of the forest industry has significantly accelerated and expanded since the 1990s (Zhang *et al.* 2014), it is getting more common that companies have their business across the borders. Since the companies are business-wise interrelated, the challenges encountered by each of them might affect their correspondent certified suppliers and customers. Thus, it is reasonable to construct the analytical framework with reference to findings and results of the international literatures.

In this study, challenges are categorized into two main groups: internal and external. Each type of challenges is defined below according to the literatures. In general, internal challenges are those under the control of the certified organization itself, for instance, the availability of competent personnel and financial resources. External challenges originate from factors or aspects outside the control of the certified organization, for instance, competition from other forest certification programmes. The section below elaborates each type of challenge in details.

Internal challenges

Competence

Vidal *et al.* (2005) stated that many companies have been reluctant to become certified as they considered the requirements of CoC certification to be complicated and costly. Certified organizations have to put focus on employee training so as to ensure employees are competent and educated to facilitate the implementation of certification requirements (Johansson 2012). The presence of a competent person to implement and maintain compliance of the certification system is thus crucial. However, the availability of such competent personnel is often a challenge to the certified organization. Chen (2011) stated in his research that many Chinese forest companies lack the human resources and expertise to fully comprehend the complexities of forest certification. His study reaffirmed the necessity to increase the awareness and knowledge of forest certification among manufacturers in China (Chen 2011). In fact, Rametsteiner et al. (2003) also pointed out that, in Europe, 'worker education and training' was one of the areas where non-compliance was frequently found in certification audit.

Financial resources

Meanwhile, the availability of financial resources is another type of internal challenge. The high direct and indirect cost of certification has been identified as one of the substantial factor hindering the acquisition of the system in a company (Durst 2006). Direct costs include activities such as the preparation for audits and yearly monitoring audit fees. Indirect costs include the costs incurred to improve the existing management and operation systems, so as to reach, at least, the minimum requirements of the certifiable standard level. Indirect costs are considerable if the company is significantly lagging behind the required level of the certification standards (Durst 2006).

Vidal *et al.* (2005) stated that large companies usually have a quality management

system already in place (e.g. ISO 9000), which facilitates the implementation of CoC and so help in lowering the unit costs. The opposite argument is valid then – small companies have to pay a higher cost to attain the certification. The argument was seconded by Auld (2008). He stated that small operations face higher costs of compliance owing to the high fixed costs of preparing for, paying for, and responding to a certification audit. As a matter of fact, a study conducted by FSC agreed that the direct and indirect costs of achieving and maintaining FSC certification for medium and small producers have generally remained prohibitive (FSC 2009a).

External challenges

Insufficient marketing, insufficient demand

Dust (2006) stated that there was insufficient demand for certified products in the global market. Marketing of certified wood products to final consumers appears to be ineffective. There is little recognition from private end-users. Though the research was conducted in developing countries, it is believed that the demand for certified goods is ultimately required to sustain the growth of certified forest products' markets internationally. Chen (2011) reported that, in China, forest certification was not required by customers and it was not a prerequisite for wood product manufacturers to operate their business in the sector. He concluded that low awareness of forest certification among the general public precluded the associated potential benefits of the certification (Chen 2011).

As discussed earlier, the FSC CoC certification system is a market-driven mechanism. Sufficient desire from end-users to purchase the certified products is a necessity to develop the mechanism. However, when certified products cost more than their uncertified counterparts, the willingness of consumers to purchase the 'costly' certified products is low. The development of the system is thus adversely affected by the insufficient willingness of consumers to purchase the

certified products. FSC CoC certification demands are hindered by the high cost of the certified products (Cashore 2002, Cashore *et al.* 2003, Cashore *et al.* 2005, Durst 2006, Chen 2011).

Uncertain cost benefit

Meanwhile, there is a close relationship between demand and price premiums (Vidal *et al.* 2005). An earlier study also found that Finnish companies believed that environmental products bring price premium (Kärnä *et al.* 2003). Vidal *et al.* (2005) stated that a great demand for certified wood products is needed for price premiums to become a reality. The low demand on certified products did not project an image that CoC certification is capable of generating attractive cost benefits. In fact, many researchers found that the uncertainty between costs and benefits associated with certification hinders the uptake of certification in general (Van Kooten *et al.* 2005, Klooster 2005, Chen 2011). The willingness of consumers to pay premiums associated with certified products is unclear. A majority of supply chain buyers is not willing to pay premiums, nor are most consumers willing to pay more for certified wood (Overdevest *et al.* 2006). These findings raise questions about the extent of development on market-raised incentives for certified wood products (Overdevest *et al.* 2006). Vidal *et al.* (2005) stated that an expressed willingness to pay does not always translate into purchase behaviour. Hence, price premiums do not necessarily happen, as expected, along with the demand for environmentally friendly products in the market.

Changes in standard requirements

As per the UK-based forestry and wood promoting company, the industry might welcome the new ISO CoC for the fact that ISO standards do not change very often (FSC 2014f). Such an opinion implies that the changes of FSC standards are often and the changes have posed some difficulties for certified companies in the

industry. Practical work experience of the author[4] in South East Asia coincided with the above. Certified companies often encounter difficulties to catch up with changes related to the standard. They have to allocate resources, in terms of time, finance, competent personal, if necessary, to learn, plan, accommodate and implement the necessary amendments along with changes in the standard.

Competitor programmes

As discussed in the Introduction, forest certification schemes could be endorsed by a few organizations. A lot of them have also developed standards for CoC certification, e.g. CSA and SFI (Vidal *et al.* 2005). The availability of other forest certification schemes offer choices to potential certificate user companies and hence, the availability of other forest certification schemes translates into another type of challenge to the development of FSC. The two main competitor programmes (1) PEFC and (2) ISO are discussed below.

(1) PEFC

Among the existing CoC certification systems, many studies refer to the Programme for Endorsement of Forest Certification (PEFC) as the main competitor of FSC (Pattberg 2005, Moore *et al.* 2012, Tolunay *et al.* 2014, Trishkin *et al.* 2014). In fact, FSC and PEFC together account for some 98% of the world's FM and CoC certificates (FSC 2013b). The better and faster PEFC develops, the more challenge it poses to the development of FSC. Cashore *et al.* (2003, 2005) stated that supply side members' decisions to support FSC are strongly influenced by how well the competitor programme balances costs and benefits. The better the competitor programme balance costs, the more welcome such a competitive programme would be. As a result, less number of FSC certificates would be adopted in the market (Cashore *et al.* 2003).

[4] The author has been working for an international CB for 5 years as an auditor, conducting audits including FSC and PEFC certification in South East Asia.

(2) ISO

On the other hand, the International Standard of Organization (ISO) might become another keen competitor of FSC. Since 2013, the organization has been developing a CoC standard on forest-based products (ISO 2013). The development of the new standard has aroused international attention in the forestry industry. In the FSC General Assembly 2014[5], several actors expressed their opinion towards the development of ISO CoC. A UK-based forestry and wood promoting company stated that 'The ISO system doesn't change very often… the industry likes it... a lot of companies are interested …' On the other hand, a Swedish forest products and packaging company stated that 'If ISO develops a CoC standard, they would be likely to manage three CoC certificates… [all CoC standards] to be as similar as possible.' A representative of a CB stated 'I would not support ISO CoC if it is intended as a first step toward an ISO forest management standard…' (FSC 2014f) FSC and PEFC have jointly expressed opposition against ISO developing a new CoC system (FSC 2013b, FSC 2013d). The ISO CoC standard is still in a developing stage. The date of its launch has not been officially released yet.

An analytical framework is thus constructed by collating all the afore-mentioned challenges (Fig. 6). The results are presented in-line with the structure of the analytical framework. In the Discussion (Section 5.2), the author will discuss, compare and contrast the results of this study with those from the literatures. Eventually, the framework guides the study to answer the research questions in the Study objectives above. Results will be analysed according to the structure of the analytical framework.

[5] The FSC® General Assembly is FSC's highest decision-making body. The assembly has been held every three years since 1996. The 7th FSC General Assembly 2014 took place in Spain in September 2014.

Figure 6. Analytical framework on types of challenges encountered by FSC CoC certified companies.

3 Methods

Qualitative research methods are commonly used to gain an understanding of underlying reasons, opinions and motivations. It provides insights into the problems or helps in developing ideas or hypotheses (Punch 2005). Qualitative research is used to uncover trends in thought and opinions, and explore issues in some situations (Punch 2005). This study attempts to explore the challenges certified companies encountered and the solutions companies used to overcome these challenges. Through conducting a qualitative research, individual interviews help in creating a picture of what is happening on-the-ground which, in turn, allows an in-depth understanding of the experiences of each certified company. The interviews provide information for a thorough analysis on the experience of each certified company. Meanwhile, the available sample size (96 certified

companies in Finland) was relatively small and so statistical data collected from the available sample size would neither be representative to formulate nor uncover patterns. Hence, quantitative research, which requires a big sample pool, might not be suitable in this research. Therefore, qualitative research, with the capability and power to answer my research questions, was found to be a suitable study method for this study.

3.1 Selection of companies

The deliberate sampling method was used in this study. It is a strategy that the sample is drawn from the population in a deliberate or targeted way, according to the logic of the research (Punch 2005). As discussed in the Introduction, Finland was selected as the case study country and data were collected through interviewing FSC CoC certified companies in Finland. Non-certified companies were not targeted in this research, because it is assumed that non-certified companies have none, or little experience to share. The list of FSC CoC certified companies and background information, including company name, location, first year of certificate issued, contact details, types of certified product and website for each certified company were obtained from the FSC database (http://info.fsc.org) in April 2014. Background information was used to aid the interviewee categorization and the selection process, which is elaborated below.

The three largest wood industry companies in Finland, namely, UPM, Metsä and Stora Enso and most, if not all, of their subsidiaries have already been certified (http://info.fsc.org). Theses companies have their own forest supply, resources and relatively strong capital background. According to the European Commission Fact Sheet 2012 Finland, 99.7% of enterprises in Finland are SME. It is logical to assume that most of the non-certified companies in Finland do not possess business backgrounds as strong as the three largest wood companies. The

experiences of these three companies in implementing and maintaining FSC CoC certificates are expected to be very different from the non-certified companies. In view of the ultimate aim of this research – attempt to increase the uptake of certificate number in Finland - it would not be practical to evaluate the experiences of these large companies. Therefore, these three companies and their subsidiaries were excluded from the sampling process. All remaining Finnish FSC CoC certified companies became targets of the research. Thus, the collected data were expected to represent mainly SMEs in Finland. These companies have characteristics in terms of capital, resources, supplier groups and client groups similar to those of the non-certified FSC CoC ones. Hence, the challenges they encountered would be more relevant to those who have not yet been certified. Meanwhile, the solutions or methods these certified companies used to handle these challenges are considered to be relatively applicable to the non-certified companies.

All certified companies were categorized into two enterprise forms and two product types. Each interviewed companies' background was checked against this categorization (Table 1) so as to ensure that the study results represent companies from both forms and types. The criteria for categorizations are detailed below.

Firstly, interviewees are categorized based on product types. According to the categorization of product types of the FSC CoC standard (FSC 2011a), certified products are categories into three types: wood, pulp-and-paper, and non-timber forest products. With reference to the FSC database (FSC 2014e), all certified companies in Finland are dealing with wood and pulp-and-paper products; hence all companies interviewed in this research belonged to these two categories. The limitation of this research is that there are no data representing companies selling non-timber forest products. Since there is only one FSC CoC standard, all certified companies have to fulfil the same set of criteria as stated in the standard. It is assumed that non-timber forest product companies could also use the results

of this research as a reference to develop their FSC CoC system. The interviewees in this research represent both wood products and pulp-and-paper products.

Secondly, interviewees were categorized based on enterprise forms: trading and processing/manufacturing. The two varies in a few aspects including, but not limited to the amount of capital involvement, labour intensity and operational pattern. For example, generally, a trading enterprise has a 'buying and selling' operation pattern while a processing/manufacturing enterprise processes raw materials. Vidal *et al.* (2005) stated in their research that company size is an important factor affecting the adoption of FSC CoC. It would be interesting to know, upon the process to fulfil the requirements in the certification standard, if the two forms of enterprises encountered different challenges. The interviewees in this research represent both trading enterprises and processing/manufacturing enterprises.

Table 1. Categorization and examples of sampled companies.

Product type	**Enterprise form**	
	Trading	Processing/Manufacturing
Wood products	• Round wood trading company • Furniture import/ export company	• Sawmill • Engineered wood product manufacturers
Pulp-and-paper products	• Pulp trading company • Paper trading company	• Paper/pulp mill • Printing factory

During May – August 2014, based on the categorization, excluding the three largest wood industry companies and their subsidiaries, all certified companies in Finland were invited to participate in the research by email. Each of the targeted interviewees was then contacted through follow up phone calls. The phone calls benefited the research in two ways: the researcher can explain the research objectives to the potential interviewees directly and attempt to achieve a high

response rate with reliable answers. A total of six companies, representing both enterprise forms and both product types participated in the research (Table 2). The interviews were conducted through phone calls and by emails. It should be noted that the sampled companies participated in the research as they fit with the selection criteria as elaborated above, but not for another reasons.

Table 2. Enterprise forms and product types of the interviewed companies.

Certified company number	Enterprise form		Product type	
	Trading	Processing/ Manufacturing	Wood product	Pulp-and-paper product
1		X		X
2		X	X	
3		X	X	
4	X		X	
5	X		X	
6		X		X

3.2 Semi-structured interviews

The interviews were semi-structured. During the interviews, an interview guide with a set of questions aiming at looking for answers to the research questions was used. Flick (2009) stated that a semi-structured interview encourages interviewees to speak freely about their experiences. The interview guide was used in a flexible manner so that it did not limit the topics that were relevant to the discussion while keeping the focus on the research questions (Flick 2009).

Before the actual interview was conducted, the questions in the interview guide were pre-tested with two certified companies to ensure interviewees understood and could correctly interpret the questions. The pre-test helps in checking if the interviewees understand the terminologies of the questions in the interview guide, to check for biased, misleading or confusing questions and to verify the quality

and comprehensiveness of the retrieved information (Owari *et al.* 2006). These two companies were located in China. Since this study focuses on the case study in Finland, the results of these pre-tested companies were not included in the research. After the pre-test interviews, any ambiguous questions were refined or eliminated from the guide. The revised interview guide was then used throughout all the interviews.

The interview guide was focused on two areas: 1. What were the challenges? 2. How did the companies handle the challenges? According to the development stages of a certification system, the certified companies were asked to describe the challenges as well as the solutions in two stages: upon the preparation period to acquire the certificate, and during the process in which the organization is maintaining the certification.

Within each company, a single interviewee was targeted. As per FSC standard requirement, the certified company '*shall appoint a management representative as having overall responsibility and authority for the organization's compliance with all applicable requirements of the standard*' (FSC 2011b). The person interviewed was always the FSC management representative of the company. In smaller companies, the interviewees were typically top management; while in lager companies, the interviewees were the operation or sales manager. Although interviewing only one person within a company may have some disadvantages, it was assumed that the interviewed persons had an accurate perception of the company and also has good knowledge of the FSC CoC system. Organization names and staff names were kept anonymous so as to protect the identity of the interviewee and to encourage them to express their opinions freely. Companies were labelled with a numbering system. The product type and enterprise form of each interviewed company are presented in Table 2.

All participant companies first replied through email to a set of open-ended questions selected from the interview guide. The questions were relatively broad so as to encourage the respondents to tell their company's own 'story' and experience upon the certification process. Collecting responses by email alleviated the problem of language barriers by granting interviewees enough time to formulate their responses. It was assumed that respondents found it more comfortable and confident to give their replies in written English rather than speaking English. Afterwards, a phone interview was conducted with each of them so as to understand deeper and more thoroughly the contents and reasoning of their 'stories'. Transcripts of the interview contents were retained for later use upon data analysis.

3.3 Data analysis

Thematic analysis is used in this research. Collected data were segmented, categorized, summarized and reconstructed in a way that captures important concepts in the data set. It enabled the author to search for patterns of experience within the data set. Collected data would be grouped and clearly descripted in patterns (Lisa 2008).

A list of known themes was created as listed in the analytical framework (Fig. 6) described earlier. Using thematic coding, data collected through the semi-structured interviews were categorized into the anticipated internal and external challenges. All data bearing the same theme were retrieved and analysed together. Throughout the analysis, the relevance of each theme to the research question and to the data set as a whole was considered. As a result, an integrated analysis would eventually be developed (Lisa 2008, Flick 2009).

4 Results

The key results of this study are presented in two sections: i) respondent profile, and ii) challenges and related solution.

4.1 Respondent profile

All participating companies are located and have registered their businesses in Finland. They were all certified against the FSC CoC certification system and possessed valid FSC CoC certificates upon the data collection period of this research. In total, six certified companies took part in the research. Two of them were in the trading sector while the other four were in the processing/manufacturing sector. In terms of product type, four companies were dealing with wood products while the remaining two had their businesses in the pulp-and-paper product market.

Among the six companies, two had less than 49 staff, two had 50-99 staff and the remaining two had 100-199 staff. The two companies with less than 49 staff were in the trading business while the four with more staff number had business involved processing/manufacturing. Meanwhile, the annual turnover of each interviewed company was asked as one of the background questions. Five companies had an annual turnover of less than € 50 million and one with more than € 50 million.

According to the European Commission (European Commission 2015), SMEs are defined as '*... enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding €50 million, and/or an annual balance sheet total not exceeding €43 million*'. With reference to the respondent profile (Section 4.1), five interviewed companies (Companies 1, 2, 4, 5 & 6) had fewer than 200

staff and an annual turnover of less than € 50 million. Hence, these five interviewed companies were SMEs. The last company (Company 3) with fewer than 200 employees had a turnover of more than € 50 million was classified as a non-SME. The involvement of both SME and non-SME companies in the research provided diversity to the study results and captured the opinions of both enterprise types. However, it should be noted that with the majority of participating companies being SMEs in this research, the results speak mainly to the experiences of certified SMEs.

Among all interviewed companies, three attained the certificates in 2009, the remaining three attained certificates in 2010, 2011 and 2012 respectively. That is, all of them attained certificates for two to five years. All stated that FSC sales contributed to less than half of the companies' annual turnover. In fact, one of the interviewed companies stated that there has been no FSC order for the last three to four years. All of them stated that FSC sales contributed to less than half of the company's annual turnover. In fact, many specified that less than 10% of its turnover came from FSC sales. One of the companies declared that there had been no FSC order in the previous few years. The annual turnover data suggested that FSC has not brought a considerable profit to any of the interviewed companies, nor has it acted as a critical factor in sustaining their business. Despite these undesirable financial factors, none of the interviewed companies intended to terminate the use of the system. The benefits being FSC-certified as discussed in the section Motivation for certification, and could be credited as the reasons for continuing with certification.

4.2 Challenges and related solution

4.2.1 Internal challenges and related solution

Competence

Company 1 (pulp-and-paper manufacturing company) stated that at the beginning stage of the certification process, the biggest challenge was to train their staff and to bring awareness of the system into the company. The company organized training in small groups so as to focus the need of each staff and to ensure staffs' understanding of the relevant requirements. Company 2 (wood product manufacturing company) mentioned that the management representative himself was familiar with the requirements of FSC but much effort was put into training staff. It has developed a forest department in which one of the responsibilities was to implement and maintain the FSC system in the company. Meanwhile, the company maintained a close relationship with its CB, which timely and directly provided updates and changes related to the FSC to the certified company. It was not a difficult task for this particular wood product company to acquire and maintain FSC. Company 3 (wood product manufacturing company) stated that a certain amount of effort was put to training staff about specific requirements, e.g. FSC claims on FSC documents. The staffs learnt about FSC requirements and changes by themselves. Meanwhile, a consultant agent was employed to assist in the maintenance of the certification in the company.

Financial resources

Company 1 continued that, they have not received an FSC order for three to four years. The company stated that '…the expenses for the annual audit is fixed, however, it [FSC CoC] did not generate any income to us.' A similar opinion was voiced by company 4 (wood product trading company) 'there was not enough orders placed…. we need more FSC business'.

4.2.2 External challenges and related solution

Insufficient marketing, insufficient demand

Companies were all asked about what percentage of their FSC sales was exported. Four companies (Companies 1, 2, 3 & 4) had more than 70% of FSC sales as export orders: two of them export their products to the Netherlands and the UK; one of them export products to China; and one to Demark. The remaining companies (Companies 5 & 6) had half or more of FSC business within Finland.

Company 4 expressed its opinion on the challenges this company encountered 'the market [for FSC products] is small'. The interviewee pointed out that customers showed their interest towards certified products as there were many enquiries on FSC goods, however, only a small amount of the enquiries turned into successful orders. And the volumes of the successful orders were usually relatively small. The actual demand for FSC-certified products in the market remained relatively low.

On the other hand, Company 5 commented the low certification rate in Finland 'Finland has so much wood[6] that the public does not usually pay attention to the origin of the wood used in their products. Educating the public about the rainforest situation (deforestation) and increasing the awareness of FSC to the public are essential to help in stimulating the FSC CoC certification growth rate. The public would start to appreciate FSC once they understand more about it; thereafter, the demand for certification would increase'.

Uncertain cost benefit

When Company 1 was asked about the possible reasons why their customers did not request FSC certified products, the interviewee stated that from his experience

[6] Finland has over 70% forest-covered land area (FAO 2010).

and knowledge of the industry with consideration of the current economic trend in Europe ‘we decided to go for the certification as our customers had enquiries about FSC… however, after we acquired the certificate, because of the financial crisis in Europe, generally, no one is willing to pay extra for the certified product’. He further noted that ‘a certified product is always more expensive than its non-certified counterpart as the cost of a certified product included the training of staff to learn the certificate requirements, extra set of documentation has to be developed etc.…’. Company 5 (wood product trading company), which sells outdoor kitchen appliances, pinpointed that ‘Price matters!’ Since wooden materials have been getting more expensive over the last few years, and the wooden part constitutes only a small structure of its product, the company has been designing new models in which the amount of wood required is reduced so as to reduce the production cost of the products.

Keen competitor programmes

When Company 1 was asked how it would describe the FSC CoC market in Finland, the interviewee directly stated that ‘Nationally, FSC is not so popular, I think PEFC is more popular’. Company 3 has been certified with PEFC before acquiring FSC certification. The company stated that they have to pay extra attention not to mix the requirements of the two standards ‘… they [FSC and PEFC] are similar, but they are not the same… there have been some trouble maintaining the two schemes simultaneously’. The challenge of competitor programmes appears also at the supplier level. As mentioned earlier, Company 4 pointed out that ‘in Finland, most certified forest was PEFC-certified… it is difficult for forest owners to get FSC [certification]…. they believe it is not necessary to be FSC-certified.’ Companies encountered difficulties searching for adequate FSC-certified wood in Finland. The challenge related to limited supply of FSC-certified wood would be elaborated in the following section (Section 4.2.3). Although most interviewees expressed their concern on the development of FSC, Company 2 was being optimistic that FSC has potential in Europe, as big buyers like IKEA consumes and prefers FSC to PEFC.

4.2.3 Challenges not categorized in the analytical framework

Apart from the anticipated challenges described in the analytical framework, a few other types of challenges, which have not yet been identified in the literature review, were discussed by the interviewees. They are categorized as, and elaborated below ;

- Limited supply
- Lack of motivation for change
- Long trademark approval time

Limited supply

Three companies (Companies 2, 4 & 6) stated that insufficient supply was the main challenge to maintain FSC CoC certification in their companies. The insufficiency of FSC materials was mentioned in two aspects - variety and amount. Company 2 mentioned that 'In Finland, FSC FM certified forests belong mainly to those large wood industry companies who keep certified wood as a supply for their subsidiaries and their own production. As a result, there is not much FSC-certified wood available for local industry'. Company 4 stated, 'There is not enough supply of FSC certified wood in the market… most forest owners prefer PEFC to FSC, which is cheaper and easier to achieve… For most forest owners, PEFC is good enough'. In terms of variety, Company 6 (pulp-and-paper manufacturing) stated that it would supply what the customer requested. Very often customers requested a specific type of paper and there was no FSC-certified supplier for such type of paper. Instead of recommending an alternative certified-paper, the company would provide the requested non-certified paper to the customer.

Lack of motivation for change

It was mentioned by both paper-and-pulp product (Company 1) and wood product (Company 3) companies that guiding staff to understand the reasons why the company needed FSC was one of the biggest challenges during the system implementation stage. The staff did not feel comfortable in accepting new standards and new requirements. They worried that the changes might eventually alter the existing operation procedures, which they were used to before the implementation of the system. Company 3 provided sufficient training to staff. The interviewee stated, 'The process to get FSC CoC was not so complicated as many feared it to be'.

Long trademark approval time

Company 6 stated that the long trademark approval process has been one of their main challenges. The approval process takes time: it varied from 2 hours to a few days. Since the company could start mass production only after the logo has been approved by its CB, with a tight production schedule for most orders, the shipment would be delayed if the logo approval process takes a few days. The company was fed up with the situation, "we could 'speed up' the process only by submitting the artwork to our CB for approval as soon as we have received it from the customers. Then it is up to the CB how long the logo approval process would take". The company stated that they have no ultimate solution yet.

5 Discussion

5.1 Analysis of the findings

In this section, findings including challenges and solutions illustrated in the Result (Section 4) are thoroughly analysed. According to the analytical framework, the findings are thematically coded, where appropriate, into the pre-structured fields.

Findings that do not fit into the fields are identified further discussed below, in four groups: internal findings, external findings, expected findings not observed and new findings.

5.1.1 The fundamental internal challenge – competence

No single challenge was mentioned by all participants in this research. Under the category of internal challenges, three companies mentioned 'competence' while two mentioned 'financial resources' as the challenges they encountered. The results reflected that, for FSC CoC certified companies in Finland, 'competence' was a more common challenge than 'financial resources'.

Competence

Three companies described 'competence' as a challenge to maintain certification. According to FSC standards, competence is a requirement applicable to all CoC operations. Clause 1.1 of the standard (FSC 2011b) states that "*The organization shall appoint a management representative as having overall responsibility and authority for the organization's compliance with all applicable requirements of this standard.*" Meanwhile, it specifies that "*All relevant staff shall demonstrate awareness of the organization's procedures and competence in implementing the organization's Chain of Custody management system*." It is one of those fundamental requirements that has to be fulfilled by all certified companies.

Competence could then be understood as a two-level requirement. Firstly, the company has to appoint a management representative who has to ensure the overall compliance of the certified company; secondly, staff handling FSC-orders should be competent in their own responsibilities. All interviewees who

mentioned ‘competence’ as a challenge stated that the challenge was about training their staff, but not training the management representative. This finding corresponds to Rametsteiner *et al.* (2003), who stated that ‘worker education and training’ was one of the areas where non-compliance was frequently found in certification audits.

Since both SMEs (Companies 1 & 2) and the non-SME (Company 3) encountered similar problems concerning training, which reflected that competence is a common type of challenge for both types of enterprise. In addition, it is notable that all three companies that mentioned ‘competence’ as a challenge were in the manufacturing sector. It seemed that ‘competence’ was more an issue in the manufacturing sector than in the trading sector. The manufacturing sector is rather a labour intensive industry as compared to the trading sector. It is logical to assume that relatively more resources, including time and capital, are required to arrange training for a bigger workforce than a smaller one. It is also reasonable to assume that ensuring the competence in a certified company becomes more difficult as the number of staff increases. Thus, it requires more effort to ensure FSC-competence in a manufacturing company than in a trading company. Johansson (2012) stated that the effort required to put focus in employee training is crucial. Meanwhile, Chen (2011) noted that certified companies in China are encountering problems regarding the lack of human resources to ensure the company is fully complied with the requirements in the standard.

Certified companies have been handling challenges using different strategies. Here, the strategies are grouped into three categories. Firstly, some certified companies act proactively to obtain updates of information related to FSC. For example, they visit the FSC web site periodically to gather the latest trends, news and changes related to the standards. All standards, guidelines and other information could be downloaded freely from the FSC web site. Secondly, companies intend to maintain a good relationship with their CBs, which provide

them with timely information on changes in FSC. In this way, these certified companies are kept posted on relevant changes and receive notifications as soon as there are any changes and new information about FSC. Thirdly, some certified companies acquire services from consultant companies, which are specialised in giving advice and assisting companies to maintain the certification system. These consultant companies provide services including system set up, training, document revision and pre-audits to the certified companies. The cost of consultancy services varies and it depends on factors such as the scale, nature of business, and size of the certified company.

Financial resources

As discussed in the analytical framework, there are two types of expenses: direct and indirect costs (Durst 2006). In this study, only direct costs were mentioned by one of the interviewees as a type of challenge. He described the annual audit fee as an inevitable fixed cost for maintaining the FSC system in his company. As a matter of fact, FSC recognized that the cost of audits conducted by CBs is relatively high for SMEs. In order to reduce the cost of having the CoC certification, FSC developed group certification in 2002 and multi-site certification in 2007. The former certification targeted small operations, making CoC financially accessible to them. The later targeted larger companies operating at different locations. In 2014, FSC merged and simplified the two certification standards and brought forward the certification system 'Chain of custody for multiple sites' (FSC 2014c). FSC has been continually improving its certification types so as to reduce the unit costs for certified companies and make the certification more attractive, financially, to individual SMEs (Durst 2006).

Additionally, the interviewee of Company 3 mentioned that being already certified with PEFC eased the implementation process of FSC in his company. Although the interviewee did not directly state in what way did the co-existence of another certification system help in maintaining FSC in his company, the situation

could be analysed by referring to the study of Vidal *et al.* (2005) and the report of Auld (2008). They both stated that large companies with quality management systems already in placed helps in facilitating the implementation of FSC CoC and also help in lowering the unit costs of preparing for, paying for and responding to a certification audit. My finding is thus in line with the results of the above studies.

5.1.2 The crucial external challenge – keen competitor programmes

According to the analytical framework (Fig. 6), four types of external challenges were identified from the literature review. Only three of them ('insufficient marketing, insufficient demand', 'uncertain cost benefit', 'keen competitor programmes') were discussed by the participants in this research; 'changes in standard requirements' was not mentioned at all by any of the participants. Three participants discussed the impacts of competitor programmes. The results reflected that 'keen competitor programmes' was the most influential external challenge encountered by the participants of this research.

Insufficient marketing, insufficient demand

Four participating companies stated that over 70% of FSC-certified products that were ordered were for export. Two of them had their main clients in the Netherlands and in the UK; one had its main clients located in China; one had them located in Demark and in Sweden. The results were in line with the finding that FSC is strong in environmentally sensitive niche markets such as the Netherlands and the UK (Rametsteiner *et al.* 2003, Nussbaum *et al.* 2004, Durst 2006, Overdevest *et al.* 2006, Owari *et al.* 2006, Auld 2008, Johansson 2012). No company had more than half of its FSC business in the domestic market. The situation indicated that the market of FSC-certified material is not strong in Finland.

Two companies stated that 'insufficient marketing and insufficient demand' was a challenge. They were both in the trading sector. This result suggests that such a challenge is more of a concern for trading rather than manufacturing enterprises. With reference to the literature review, both studies conducted by Durst (2006) and Chen (2011) discussed about the need for an increment on the marketing of FSC so as to increase the demand for the certification in the market. Durst (2006) conducted his research targeting developing countries while Chen (2011) conducted his study in China. Despite the difference in location and time, the same challenge was found as one of the determined factors affecting the development of the certification system. The interviewee from Company 5 voiced its opinion about the relationship between marketing and demand. It empirically supported the argument of Durst (2006) and Chen (2011).

FSC is aware of the importance of marketing "*Consumer awareness is a critical success factor for FSC. When consumers recognize and express a preference for FSC, it is an important pull factor for companies to adopt certification*" (FSC 2012a).

FSC has launched various events to promote itself. For instance, the 'FSC Marketplace' was launched in 2012 as an online platform aiming at helping users in finding suppliers and buyers of FSC products and materials across international borders. The platform is currently in English and FSC has been planning to extend the availability of the website in other language (FSC 2014a). Meanwhile, 'FSC Friday', which started in the UK in 2008 is an annual event celebrating the world's forests globally (FSC 2014d). The event involves entities from different sectors, for example, schools, business, and forest owners. Each country celebrates the event in a different way (FSC 2014d). For example, in 2014, FSC Finland celebrated the event by sending out 'FSC Friday postcards' to both certified and non-certified holders while in the UK, Aberystwyth University

hosted a Green Fayre, featuring FSC material, to promote green living (FSC 2014d).

In order to evaluate the effectiveness of the marketing strategies, since 2010, FSC has employed a third party to annually conduct the 'Global Market Survey' amount all certificate holders. The survey is also aimed at understanding the certificate holders' perceptions of FSC and the public recognition of the FSC logo (FSC 2012b). It showed that the public's recognition of the FSC logo has increased globally. For example, awareness of the FSC logo in Switzerland has remained high at 67% and at 68% in 2009 and in 2011 respectively. Meanwhile, awareness of the FSC logo in the UK was notably raised from 24% in 2009 to 43% in 2011 (FSC 2013a) (Fig. 7). It would probably be beneficial for Finland to change its marketing strategies to those countries that have already received marked recognition. It is hoped that improvement of the marketing strategies could raise publics' awareness of FSC and eventually enhance the demand for FSC-certified goods in the market nationally.

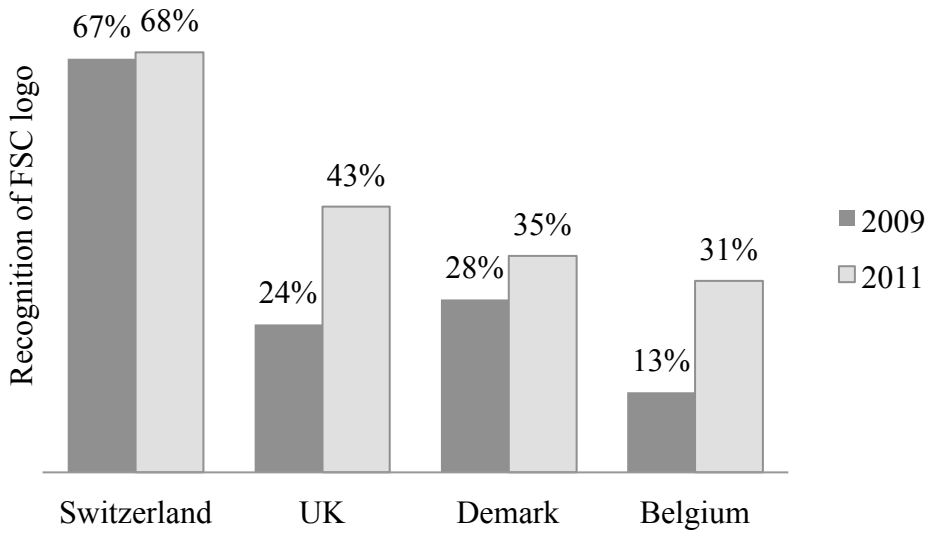

Figure 7. Increased recognition of the FSC logo from 2009 to 2011 in four European countries (reproduced from FSC 2013a).

Uncertain cost benefit

Although in the early stage of forest certification, price premiums were considered a potential advantage, many certified companies nowadays do not, anymore, consider getting a price premium as a relevant benefit (Van Kooten *et al.* 2005, Klooster 2005, Vidal *et al.* 2005, Durst 2006, Halalisan 2013, Yamamoto *et al.* 2014). Companies 1 and 6 stated that neither industry producers, nor consumers have shown willingness on paying a price premium for certified products. This result confirmed a 'mature' way of thinking in view of the perceived benefits of CoC certification. It might be true that FSC CoC certification is not (yet) capable to deliver price premiums, nonetheless, the system does bring other sorts of benefits to the certified companies (Vidal *et al.* 2005). I agree with Vidal *et al.* (2005) that it is necessary to clarify the types of benefits resulting from CoC certification so that companies do not have misguided expectations (Vidal *et al.* 2005). For example, Nussbaum *et al.* (2004) discussed about the relevant benefits to market access '*…the South African paper sector which sought certification early and successfully captured a share of the market for certified paper in Europe (particularly the UK, Netherlands and Germany). Several South American companies have had similar experiences with production of certified plywood, doors and garden furniture where the ability to supply certified products provided access to a high value market which provided an economic return on the investment in certification'*. For more benefits in adopting certification, see the Motivation for certification section above.

Keen competitor programmes

(1) PEFC

Without prompting, both SMEs (Companies 1, 2 & 4) and the non-SME (Company 3) discussed about the influence of PEFC on the FSC system. Keen competitor programmes posed considerable challenges to companies regardless of

the size of the enterprises. It should be noted that interviewees in this study named no forest certification programme other than PEFC. The results reflected that PEFC is a well-known main competitor of FSC in Finland. Such a finding corresponded to the argument that 'PEFC has been the main competitor of FSC' in various studies (Pattberg 2005, Moore *et al.* 2012, Tolunay *et al.* 2014, Trishkin *et al.* 2014).

Company 4 stated that, in Finland, when a forest owner has to choose a forest certification programme, he prefers PEFC to FSC. Referring to the theory of Cashore *et al.* (2003, 2005) in the analytical framework, competition from other programmes reduces the incentive for a company to consider a particular programme. The better the competitor programme could balance the costs, the less welcome FSC would be. PEFC declared that it was founded in response to the specific requirements of owners of small forests in Europe (PEFC 2014a). Tolunay *et al.* (2014) stated that some certified organizations, especially those small-scale forest owners, claimed it was relatively easier to fulfil the criteria of PEFC standards. Likewise, Pattberg (2005) stated in his study that 'standard [PEFC] is less strict; it is cheaper than FSC, attracting most companies in `times of diminishing returns'. The competitive advantages of PEFC pose an indirect threat to the development of FSC.

In Finland, as of 2014, the number of CoC certificates issued by PEFC doubled that by FSC (Table 3). Meanwhile, the certified forest area of PEFC is 44 times larger than that of FSC (FSC 2014e, PEFC 2014b). The amount of certified forests thus has a direct influence on the amount of available certified-wood, hence that of CoC certificates in the market. When forest owners choose PEFC over FSC, comparatively less FSC-certified material is available in the market. Hence, the number of FSC CoC certificates will be correspondingly less than that of PEFC CoC certificates. The amount of available certified forests is discussed in details in the next section.

Table 3. FSC and PEFC certificate numbers and certified areas in Finland in June 2014 (FSC 2014e, PEFC 2014b).

	FSC	PEFC	PEFC > FSC
CoC certificate number	97	199	~ 2 times
Certified forest area (ha)	461 786	20 619 716	~ 44 times

Some of the requirements of FSC standards and that of PEFC standards are similar. For example, both FSC and PEFC standards require a clear separation and identification of certified products from non-certified ones[7]. Though the two systems are directly competitive, a company could actually be certified with both standards. In fact, having PEFC already in place allows a company to change less in its system to adapt to the requirements of FSC. It could be an advantage for a company to prepare itself for FSC in the future. However, companies certifying with both systems must take extra care about handling each FSC and each PEFC order. Mixing up the two systems, for instance by using wrong labels, could possibly result in the termination of the certification system.

(2) ISO

Despite the similarity of the two-certification systems and the inconvenience of maintaining them simultaneously in a company, no interviewee explicitly expressed the need to merge the two CoC systems in the market. Results in my study could not confirm the claim made by ISO regarding the need in the market to have only one CoC certification standard. It is possible that there has not been such a request from a certified company in Finland. Nevertheless, in case there is such a need, the reason that this study could not reflect the need could be: (1) during the interview, no question directly dealt with the merging of the two

[7] The requirements were stated in FSC-STD-40-004 (V2.1) Clause 4.2 segregration and in PEFC ST 2002:2013 clause 3.2.1 physical separation

standards (2) the study sample size was six companies; it was too small to be representative of the opinions of all certified companies in Finland.

ISO claimed its reason of setting up the new CoC standard was '*to unify the current standards…. and to reduce the cost of double … certification*' (ISO 2014). Meanwhile, it declared that the standard would not be applicable to forest management (ISO 2013). Without certifying the origin, it is doubtful how the certified materials could be properly traced back to its origin so as to ensure they were sourced from sustainably managed forests. Furthermore, it is uncertain that if the new ISO CoC standard could really replace the already-existing two standards (FSC CoC and PEFC CoC), or if it will be the third CoC standard adding on top of the other two in the market. I agreed with Richard Bradley, Chairman of Accreditation Services International, that '*People can make whatever claim they like, it's the credibility that will be called into question. The publication of an ISO standard won't change that situation. What claim is important to the market is the key*' (FSC 2014f).

5.1.3 Expected finding not observed

My results showed that not all challenges listed in the analytical framework were observed in Finland. One of the expected challenges was not observed in the empirical data of this study. Below I analyse the possible reasons leading to the unobservable expected finding.

No interviewee mentioned their concern regarding the challenge 'changes of the requirements in FSC standards'. This type of challenge was expected, in the analytical framework, based on the opinion of an UK organization and my audit experience in South East Asia. This research was conducted in Finland. The

expected challenge and this research were conducted in different countries. It is possible that the challenge 'changes of requirements in standard' has not been a problem for certified companies in Finland, but it is a problem in the UK and South East Asia. In this case, the fact that some interviewees have been maintaining a close relationship with their CBs, which constantly provides FSC-related updates, helps. Moreover, the fact that some companies use consultancy services might contribute as another reason that they did not experience much problems in following up the change of requirements. On the other hand, it is possible that the changes of standards do pose a problem in Finnish certified companies. However, this opinion was not shown here as, again, the sample size of six companies might not be big enough to be representative of the opinion of all certified companies in Finland.

5.1.4 Emergent challenges

A few of the challenges described by the participants were not discussed previously in the literatures reviewed. These challenges were categorized according to the definition of internal and external challenges as discussed in the Analytical Framework.

Three types of challenges identified by the participants were not listed in the analytical framework of the research: 'limited supply', 'motivation', and 'long trademark approval time' were mentioned by three, two and one company, respectively. Limited supply was one of the most mentioned challenges in this research. Companies expressed this concern included both trading and processing/manufacturing enterprises, and both wood and pulp-and-paper product type industries. The results did not reveal a specific concern on such a challenge from enterprise form, nor product type industry.

Limited supply

Half of the participating companies encountered difficulties in searching for suppliers to provide a sufficient quantity and/or variety of FSC-certified materials in Finland. Why are the suppliers in Finland not keen on being certified against FSC? The situation is analysed in a two-level way: international and national.

Since the early developmental stage of forest certification, PEFC CoC has been a keen competitor of FSC CoC (Section 5.3.1). Apparently, for some forest owners, it is less complicated to be certified with PEFC than with FSC (Pattberg 2005, Tolunay *et al.* 2014). Research conducted by Durst (2006), Boström (2012) and Newsom *et al.* (2006) confirmed that the wide gap between existing management standards and requirements of FSC FM certification has been one of the reasons in reducing the willingness of forest owners to attain FSC FM certification. FM-certified organizations are obliged to adjust quite a lot in their original management systems to fulfil certain requirements in FSC standards. The challenge is even more exacerbated when the human and financial resources needed to effectively raise the standards are insufficient. The FSC office pointed out that there was a great gap between what was stated in the standards and what was implemented in the field. It meant that some existing practices in certified companies do not comply with the requirements in the standards (Boström 2012). It does not seem simple, at least to forest owners, to be FSC-certified.

Meanwhile, Company 2 claimed that, in Finland, most of the FSC-certified forests were owned by large wood enterprises, e.g. UPM, Stora Enso and Metsä who supply certified materials mostly to its subsidiaries or for its own production. In view of the claim made by Company 2, the situation of FM-certified forest in Finland was analysed. FSC national office in Finland provided the data of FSC FM-certified forest in Finland. During the research period, there were six FSC FM-certified companies, accounting for a total of 461 786 ha of FSC-certified

forest in Finland (FSC 2014e) (Table 4).

Excluding UPM, Stora Enso and Metsä, the remaining certified companies would be Innofor and Kosken which owned, respectively, 704 ha and 1 394.2 ha of FSC-certified forests in Finland (http://info.fsc.org). They account for about 2 000 ha, which is less than 0.5% of the total FSC-certified forests. In Finland, if the assumption that the big companies retain the certified wood to supply for their own production is valid, it is not difficult to imagine why there is a shortage of FSC-certified wood supply for FSC CoC certified SMEs in Finland.

Table 4. Area of certified forests of FSC FM-certified companies in Finland in June 2014 (FSC 2014e)

FM-certified company	Certified forest area (ha)
Innofor Finland Oy[8]	704
Kosken kartano[9]	1 394.2
Metsä Group	34 682
Stora Enso OYJ Wood Supply Finland	2 358
UPM-Kymmene Corporation	389 658.9
UPM-Kymmene Corporation – FM Group Scheme	32 988.9

The challenge encountered in FSC FM certification in Finland contributed to one of the reasons hindering the development of FSC CoC in Finland. Since factors affecting the supply of certified wood are not under the control of the certified company, 'limited supply' is considered an external challenge.

[8] The certificate of Innofor was terminated in Aug 2014.
[9] As of Mar 2015, 'Kosken Kartano' is renamed as 'Koskis Gård'.

Lack of motivation for change

Both pulp-and-paper SME (Company 1) and wood product non-SME (Company 3) encountered resistance against the implementation of the system at the beginning. It seems such a challenge exists irrespective of product type and enterprise size. The association of change with loss of one's control, one's routines, and one's traditions are to be cited among the main motives for resisting change (Sillince 1999). In order to bring support to a change, it is essential that the change itself is desirable and necessary (Sillince 1999). Since the willingness to change is an intrinsic feeling of staff, 'lack of motivation for change' is considered as an internal challenge of certified companies.

Some of the factors identified by Hitt *et al.* (2005) that contribute to the reluctance to change are cited here: inertia, lack of adequate information, lack of clarity and lack of capabilities:

Inertia. People found it easier to stay the same way they used to be. There is no immediate necessity, nor risk to make a change.

A lack of adequate information about both the need for change and what its outcomes are is another factor.

Lack of Clarity. In case the outcomes of the change are not clear, people tend to resist to the change. The possible future uncertainties make people fear of the new movement.

Lack of Capabilities. When people doubted about their capability to implement a change, they tend to resist movement. (Hitt et al. 2005).

The level of resistance could possibly be reduced effectively by several methods. For example, sufficient awareness training could explain to the staff the necessity and the influence, both benefits and drawbacks, of implementing the system;

specific and adequate technical training before implementing the system could enhance the competence of staff to handle forth-coming changes. It is believed that reducing uncertainties associated with implementing the system could effectively reduce the resistance to change. As said by one of the interviewees, 'the process to get FSC CoC was not so complicated as many feared it to be.

Long logo approval time

Company 6 expressed their concern regarding the long duration required to approve trademarks. What is a trademark approval process? According to the FSC standard, certificate holders are obliged to seek approval for all FSC trademarks used (FSC 2010b). The standard stated that '*The [certified] organization shall submit artwork of all new reproductions of FSC trademarks to the CB for approval*'. The duration to approve a trademark is decided by the CBs (citation). It is not under the control of the certified company. Therefore, it is categorized as an external challenge.

Provided that CBs could reduce the time required for trademark approval, the production process of the certified company could be speed up. The duration required to approve an FSC trademark by each CB depends on many factors, e.g. the handling capacity of the CB, and whether sufficient information related to the trademark has been submitted from the certificate holder to its CB (FSC 2010b). According to FSC Finland (https://fi.fsc.org), there are eight registered CBs providing FSC CoC certification services in Finland. Only one of the CBs has explicitly specified the required trademark approval time on its website. Such information could be useful for certified company as they could estimate the lead-time for their production process. Reasonable logo approval duration and a simple approval process could reduce the waiting time of certified companies. Resolving the problem associated with logo approval duration reduces the hindrance of FSC certification.

On the other hand, FSC actually agreed to certain flexibilities on the approval process. The trademark standard (FSC 2010b) stated that '*Provided that the organization establishes a good record of correct trademark use, it will not be necessary to re-submit labels for the same product type or with the same placement on the product, or for repeated use of promotional artwork*'. It is up to the CB if such circumstances could be applied to a certified organization. Undoubtedly, for certified companies who would like to benefit from such a convenience, extra caution on the correct use of the trademark is required. Some CBs actually established guidelines to assist certified companies to use the trademark correctly[10]. What is more, in view of the enquiries and the tremendous possibility of misusing the trademark, in 2012, FSC issued various documents regarding the correct use of the trademark, for instance, 'Trademark Quick Guide for Certificate Holder' and 'FAQ on trademark use - by FSC Certificate Holders'. Certificate holders could make good use of these materials and develop a good record on the correct use of the trademark so as to further discuss with its CB the possibility of not submitting logo approval for re-production use. Such a change could be a win-win situation as it reduces the workload of CBs on one hand and speeds up a certified company's production process on the other.

5.2 Looking forward

Results of this empirical research revealed thoughts and concerns of certificate holders towards the development of FSC CoC in Finland. During the interviews, participating companies discussed not only the challenges, but also their projection and expectation on the future development of FSC CoC in Finland. Together with some information from the literature, two aspects on the future

[10] DNV (http://www.dnv.in) and Nepcon (http://www.nepcon.net) provide guidelines on the use of trademark on their websites.

development of FSC CoC are briefly discussed: legal requirement and national public procurement policy.

Legal requirements

In 2010, the European Parliament enacted a legally binding EUTR, which came into effect on the 3rd of March 2013. EUTR prohibits the '*placing on the market of illegally harvested timber or timber products derived from such timber*'. The Regulation requires all forest industries, including the entire market chain, in the European market to ensure that their products are not from illegal harvesting (European Commission 2010). While the Regulation covers markets inside the EU, the timber can be originated inside or outside the EU. Being certified with FSC itself does not resemble as a compliance with the EUTR, but the requirements of FSC FM and CoC certification schemes provide traceability information that addresses certain elements for the implementation of EUTR (FSC 2010a). For example, FSC material is recognized by NEPcon[11] as low (negligible) risk in putting illegal timber or derived products on the market (FSC 2014b). Some interviewee believed being FSC-certified as an advantage over EUTR. The European Commission (2010) stated that Sweden exported 70% of its sawn wood products, 8 million m^3 of which was exported to Europe. Owing to the requirements of EUTR, it was reasonable for Johansson (2012) to address EUTR as one of the reasons leading to Sweden's wood companies' great interest in forest certification.

Legal requirements regarding timber use at the European Union level pose an impact on the development of forest certification. A verification tool that tracks the source of the wood and provides safeguards with respect to legality becomes important. Promoting such relevancy between FSC requirements and EUTR elements might have a positive impact on the development of FSC.

[11] As of 2014, NEPcon was recognised by the European Commission as the only monitoring organization for all EU Member States.

National public procurement policies

As discussed earlier in the Introduction, many leading organizations have introduced forest certification systems into their procurement policies. In fact, the system has also been incorporated into some national public procurement policies. Johansson (2012) stated that some countries such as the Netherlands and the UK specified in their 'green' public procurement policies that suppliers for public construction projects have to be certified against forest certification systems. Some countries are increasingly accepting private forest certification schemes as evidence of legality and sustainability when purchasing timber (FSC 2015). Public procurement policies hold the potential to increase certification uptake (Johansson 2012). No related national policy has yet been imposed in Finland. Some interviewees believed that government and the public sector involvement in support of the forest certification schemes could possibly encourage their adoption in the private sector.

6 Conclusions

Forest certification has been considered a useful instrument to promote forestry responsibility globally. This research provides answers to the question of why FSC CoC, being one of the most commonly used forest certification systems in Europe, has not yet achieved a promising influence in Finland. The research questions 'what are the challenges encountered by organizations acquiring FSC CoC certification upon implementing and maintaining the system and how do the certified organizations, in Finland, eliminate or overcome the challenges?' are important to ask as this helped in revealing the underlying reasons of the puzzle.

When comparing the results of this study with the expected challenges in the analytical frameworks (Fig. 6), there were a few differences. According to the

analytical framework, there are two and four types of internal and external challenges respectively. However, the final results showed that three types of internal challenges and five types of external challenges were observed in Finland (Fig. 8). One of the expected challenges was not observed from the interviewees while three types of challenges discussed by the interviewees were not mentioned in any of the literatures reviewed. It is noted that no single challenge was mentioned by all interviewed companies. Certified companies encountered different challenges. Among all the identified challenges in this study, 'Competence' was the most mentioned internal challenge while 'Limited supply' and 'Keen competitor programmes' were the most mentioned external challenges.

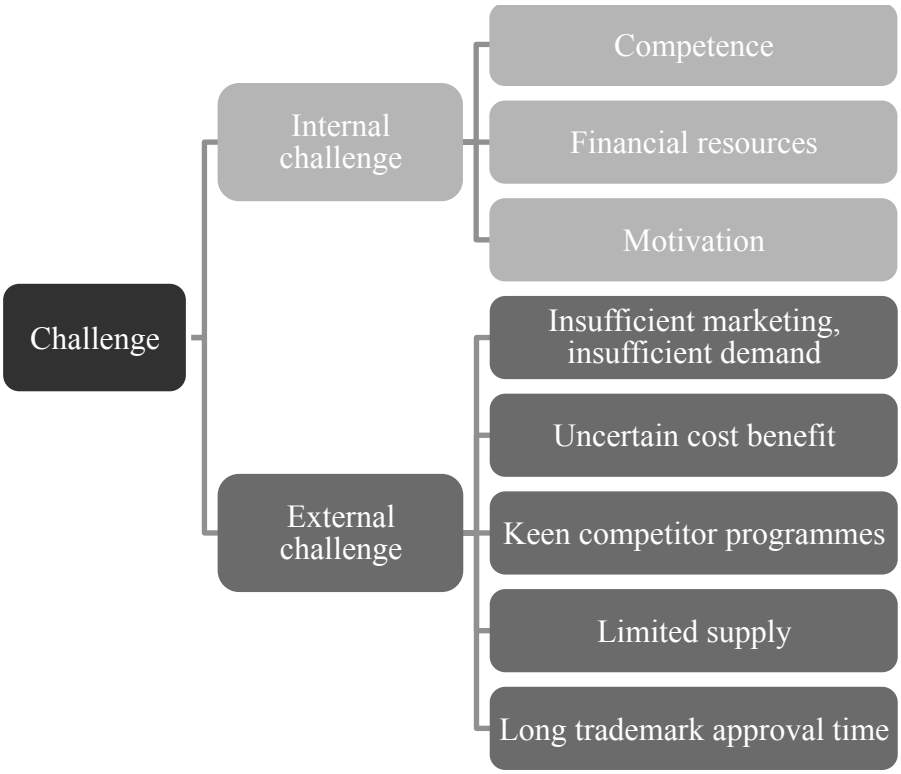

Figure 8. Summarized study results concerning the types of challenges encountered by the six FSC CoC certified companies studied in Finland.

Empirical evidence illustrated that the decisions of certified companies in Finland to implement and maintain FSC COC certification are influenced by a complex group of factors. In view of the fact that there are more external than internal challenges, it is assumed that certified companies alone are not able to increase the uptake of FSC CoC certification in Finland. Instead, the enhancement of certification uptake is more likely a result of the joint collaboration of various actors including but not limited to certified companies, the forestry sector, CBs and the national office of FSC in Finland.

Since one of the most mentioned challenges was related to the limited supply of FSC-certified wood in Finland, the insufficient supply of FSC-certified wood could be one of the root causes of low FSC CoC certification In Finland. Research on how to increase the amount of FSC FM certification nationally could be useful. Meanwhile, involvement of forest certification schemes in the national public procurement policy could possibly be a valuable driving force for the uptake of both FSC FM and FSC CoC.

Despite the small sample size of the study, this qualitative study enabled in-depth discussions with each interviewee. Since the semi-structured interview did not set a boundary for the discussion, it encouraged each interviewee to express his concerns, and described in detailed what sorts of challenges the company encountered. Meanwhile, the qualitative research methods also allowed the participants to discuss, without constrains, about the solutions they employed to deal with the difficulties. Nevertheless, the results of this study could set a baseline for further quantitative research, which might involve a larger sample size to further explore, for example, what types of challenges are prevailing in Finland.

As discussed in the Introduction, FSC is an international scheme involving various actors. A further comprehensive study including the forestry sector, the supply chain, the final consumer, as well as the CBs and FSC would be needed to develop a full picture of how each of them could collaborate and put effort together in developing the scheme nationally and internationally.

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