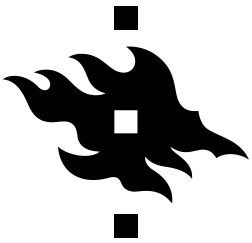

UNIVERSITY OF HELSINKI

Expert Perceptions of Non-Wood Forest Product Certification in Finland

Faculty of Agriculture and Forestry

Department of Forest Sciences

Master of Science in Forest Economics and Marketing

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Tiivistelmä — Referat — Abstract

Non-wood forest products (NWFP) refer to wild berries, mushrooms, herbs and other special NWFPs gathered from forests. Finnish forests have been certified with forest certificates (PEFC and FSC) and as organic wild collection areas. The globally largest organic wild collection areas in Finland have provided organic NWFP raw material for the commercial trade. However, NWFPs are not certified in Finland within forest certificates, unlike in some other European countries.

The aim of this study was to collect expert perceptions of NWFP certification, its possible benefits and creation of added-value, and qualifications for applying forest- and organic certificates to NWFP certification. This qualitative study was carried out in thematic interviews to Finnish experts in NWFP and forestry fields.

The results indicate that both forest and NWFP experts see the importance of NWFP certification to increase in future. Majority of interviewees appreciate the forest origin as a differentiating factor, which is important to verify. Both expert groups were familiar with organic wild collection areas in Finland. According to experts, the organic wild collection areas are possibility in the exports of NWFPs, though in domestic markets, organic labeled NWFPs rarely create added value for the customers. Majority of interviewees viewed the application of forest certificates to certify NWFPs positively. However, opinions towards it were more divided among the group of forest experts.

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Non-wood forest product, Certification, Organic wild collection area, Forest certification, Forest product, Multiple-use forestry

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Tiivistelmä — Referat — Abstract

Luonnontuotteilla tarkoitetaan metsästä kerättäviä marjoja, sieniä ja yrttejä sekä muita erikoisluonnontuotteita. Suomessa metsiä on sertifioitu sekä metsäsertifikaateilla (PEFC ja FSC) että luomukeruualueiksi. Luonnontuotteiden kaupallisessa käytössä maailmanlaajuisesti suurimmat luomukeruualueet Suomessa ovat tarjonneet kysyttyä luomusertifioitua luonnontuoteraaka-ainetta. Sen sijaan metsäsertifikaateilla ei sertifioida Suomessa luonnontuotteita, toisin kuin joissakin muissa Euroopan maissa.

Tässä kvalitatiivisessa teemahaastatteluin toteutetussa tutkimuksessa selvitettiin suomalaisten luonnontuote- ja metsäalan asiantuntijoiden näkemyksiä luonnontuotteiden sertifioinnista, sen mahdollisista hyödyistä ja tuottamasta lisäarvosta, sekä edellytyksistä soveltaa metsä- ja luomusertifiointijärjestelmiä luonnontuotteiden sertifiointiin.

Tulokset osoittavat, että sekä metsä- että luonnontuotealojen asiantuntijat näkevät luonnontuotteiden sertifioinnin merkityksen kasvavan tulevaisuudessa. Valtaosa asiantuntijoista näkee luonnontuotteiden metsäalkuperän merkittävänä erilaistavana tekijänä, jonka todentaminen on tärkeää. Molemmat asiantuntijaryhmät tiesivät ennakolta luomukeruualueet. Luomumerkki nähdään mahdollisuutena viennissä, siitä huolimatta, että kotimaassa luomusertifiointi luonnontuotteissa tuo harvemmin lisäarvoa asiakkaille. Valtaosa vastaajista näkee luonnontuotteiden sertifioinnin metsäsertifikaateilla positiivisesti, mutta metsäasiantuntijaryhmän vastaajien mielipiteet jakautuivat vahvemmin kuin luonnontuotealan asiantuntijoiden.

Avainsanat — Nyckelord — Keywords

Luonnontuotteet, Sertifiointi, Luomukeruualue, Metsäsertifiointi, Keruutuote, Metsien monikäyttö

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ABBREVIATIONS

CoC	Chain of Custody
EU	European union
FAO	Food and Agriculture Organization of the United Nations
FSC	Forest Stewardship Council
IFOAM	International Federation of Organic Agriculture Movements
NWFP	Non-wood forest product
PEFC	Programme for the Endorsement of Forest Certification

1. Introduction

1.1 Non-Wood Forest Products Field in Finland

The National Forest Strategy of Finland states that berries, mushrooms and game are economically and socially important by-products of forests (Ministry of Agriculture and Forestry 2015). In Finland, non-wood forest products (NWFPs) refer to wild berries, mushrooms and herbs and other special natural products of forest origin. The publication by Ministry of Economic Affairs and Employment Finland describes the non-wood forest products ("luonnontuotteet" in Finnish) as follows: wild and half cultivated berries, mushrooms and herbs, special natural products such as char coal, tar and other wood distillations, sap, bark, peat, birch bark, willow, moss, reed, lichen and decoration plants (Ristioja 2018).

Gathering non-wood forest products is still a common leisure activity in Finland. As a high percentage as 49.2% of Finnish households participate in collection activities, which is the sixth largest proportion in Europe. As compared to whole European level, the average share of households gathering NWFPs is only 24.5% (Vidale et al. 2015).

The economically most important non-wood forest products in Finland are wild berries and mushrooms. There is a wide range of edible berry and mushroom species, out of which only a small part is utilized. The most traded species are wild berries like bilberry[1], lingonberry[2] and cloudberry[3], and wild mushrooms boletus[4], chantarelle[5] and milk cap[6] (Maaseutuvirasto 2018).

The National Forest Strategy 2025 specifies that there are business opportunities for developing new products and services, where various sectors, such as food, biotechnology, herbal medicines, cosmetics and pharmaceutics, in addition to primary production, exploit raw materials from nature (Ministry of Agriculture and Forestry 2015). According to Ristioja (2018), there are over 750 NWFP companies in Finland, majority of which are micro sized providing employment for less than 10 persons.

[1] *Vaccinium myrtillus*
[2] *Vaccinium vitis-idaea*
[3] *Rubus chamaemorus*
[4] *Boletaceae*
[5] *Cantharellus cibarius*
[6] *Lactarius.*

Non-wood forest product field is fragmented and located in between several other sectors. The companies categorized into non-wood forest products business field operate mainly in food industry (38%) or primary production (25%) (Figure 1).

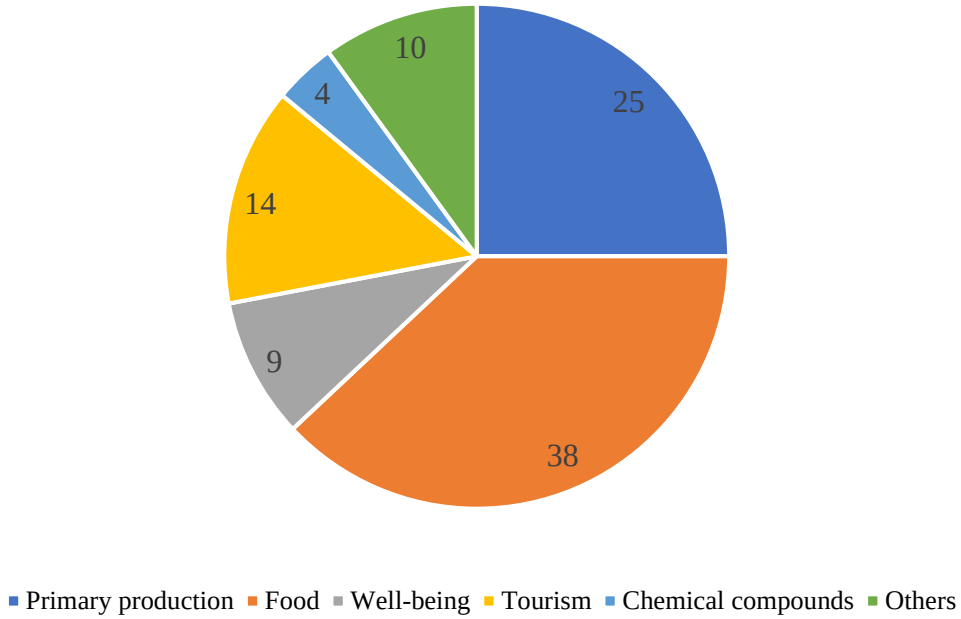

Figure 1. Lines of businesses in NWFP field in Finland. Source: Ristioja (2018).

Food industry accounts for producing of food supplements, juices, teas and other drinks, jams, powders and frozen, dried and canned products, whereas primary production consists of gathering and storing of wild berries, mushrooms, herbs, sap, resin and bark, and also of half cultivation (Ristioja, 2018). NWFP businesses operate also as tourism service and product providers (14%), as well-being enterprises (9%) and as companies specialized to produce chemical compounds, such as vegetable oils, -extracts and -powders, for the industrial use (4%) (Figure 1).

The Finnish commercial NWFP field is highly depended on the seasonal foreign pickers. In 2017, foreign pickers gathered 75% of the berries, and 17% of mushrooms for the commercial trade (Maaseutuvirasto 2018). For improving and harmonizing the conduct concerning foreign pickers, government together with berry industry enterprises signed a Letter of Intent for securing gatherers with issues such as guidance, recruiting costs and minimum living standards (Letter of Intent… 2018; Työsuojeluhallinto 2018).

The non-wood forest product sector is estimated to grow by 2025 according to the National Forest Strategy (Ministry of Agriculture and Forestry 2015). It is estimated in the report on the natural products sector that the total turnover of the NWFP field is over 300 million euros in Finland and it is expected to grow in the future (Ristioja 2018).

However, despite that the commercial NWFP utilization is predicted to increase in future, the certification possibilities are only little discussed in Finland. Kinnunen et al. (2014) addressed the strengths of Finnish NWFP field and concluded that certification and branding are strengths for verifying the large organic wild collection areas and the safety, traceability and supply chain transparency of NWFP production.

Globally, Finland holds the leading position with holding 11.6 million hectares of organic wild collection area, followed by Zambia (6.7 million ha) and India (4.2 million ha) (Willer and Lernoud 2018). The appreciation of organic certification among the NWFP enterprises is increasing and according to Rutanen (2018) currently third of the interviewed companies see it extremely necessary the organic certification of raw material, and almost a quarter rather necessary (n=39). Overall the organic market in Europe is described followingly by Willer et al. (2018): *"Relatively high shares of agricultural land, continual growth of the area, and number of operators, as well as a fast-growing market, show the exceptional dynamics that the European organic market and sector has"*.

In comparison of the certification systems in Finland, Programme for the Endorsement of Forest Certification (PEFC) has the largest share of certified forest land, followed by organic collection areas and Forest Stewardship Council (FSC) as seen in Table 1.

Table 1. Comparison of certified forest areas globally and in Finland with the selected certificates. Sources: FSC (2018); PEFC (2018); Willer and Lernoud (2018).

Certified forest area (ha)	FSC	PEFC	Organic wild collection areas*
Globally	200,634,032	307,327,956	39,319,467
In Finland	1,611,184	18,131,682	11,628,576

* includes organic wild collection and beekeeping areas

With the majority of Finnish forestland being certified with PEFC, Finland is globally one of the leading countries with its 18,131,682 hectares of PEFC certified land (PEFC International 2018d). FSC follows with its 1,611,184 hectares of certified land in Finland (FSC 2018). In addition, in Finland there is 231 PEFC and 126 FSC chain of custody holders (FSC 2018; PEFC International 2018d). There is a competitive set-up of forest certification, where FSC and PEFC share the marketplace and compete over their visibility (Nussbaum and Simula 2004, p. 11).

When looking from the global perspective, there are variety of NWFPs holding PEFC CoC or forest management certificates (PEFC International 2018a; Shanley et al. 2008, pp. 20-21) and FSC certified NWFPs (Annex 6; Shanley et al. 2008, pp. 22-27). While there is a wide range of different certification systems applied to NWFPs, Pierce et al. (2008) note that the approach of forest certification systems is the most holistic towards the entity of forest ecosystem. Laakso (2017) concludes examination of NWFPs in relation to FSC certification by raising a question: as there seems to be demand for FSC labelled maple syrup, should the Finnish FSC standard update consider including food products in its system.

1.2 Previous Studies

FAO (1995) categorization describes the importance of NWFPs from three viewpoints. Firstly, the rural populations have long tradition with a use of NWFPs in culturally and socially sustainable manner, but also to secure their livelihood. Secondly, there is urban consumers who buy NWFPs. Thirdly; the group of NWFPs traders follow the increase of urban consumers. Therefore, NWFPs are tied to global sustainability. In the 2030 Agenda and its 17 Sustainable Development Goals, (SDG), the SDG12 Ensure sustainable consumption and production patterns, is mentioned that NWFPs *"can alleviate the environmental burden of production to meet a growing world population. Responsible production and consumption of forest products already exist*." (FAO 2018).

There are several dimensions to look at when assessing the economic importance of non-wood forest products. To limit the scope, this section focuses on Finnish and European perspectives to utilization of NWFPs. According to presented above (FAO 1995) categorization, the focus is on urban consumers and NWFP trading. In Europe

the emphasis on NWFPs regards the products and services for niche-markets and well-being, while in, for instance, tropics, the focus is mainly on livelihood aspects (Wiersum et al. 2018). By framing this section to Europe, the object is to present a relevant operational environment, which shares somewhat similar focus on NWFPs. However, it should be noticed that even in European level there is regional variation about utilization of NWFPs. Wiersum et al. (2018) point that while the socio-economic and cultural characteristics differ in Europe, the forest conditions, such as ownership structure between public and private, and access rights towards NWFPs, form some changing operational environments within Europe.

One dimension is the socio-economic circumstance in the country. Stryamets et al. (2015) note the intensity of NWFPs gathering highly depended on socio-economic situation of the collector: for the Ukrainian and Russian gatherers, NWFPs provide food, medicine and essential financial income, while for Swedish gatherers the reason to gather NWFPs were mainly recreational. Also, in Finland the recreational NWFP gathering is still a common activity compared to other European countries (Vidale et al. 2015). Several Finnish studies have produced evaluations about the recreational meaning of NWFP gathering. For instance, Kangas and Markkanen (2001) compared rural and urban occupants engaging to wild berry picking. Pouta et al. (2006) described the Finns, who participate in wild berry picking, and showed that the berry picking indicates the rural lifestyle. Vaara et al. (2013) followed berry picking during 1997-2011 in Finland and stated that at the end of the period, Finnish households found berry picking still as a popular leisure activity. During that follow-up period, Vaara et al. (2013) noticed that in 2011 there was the highest share of foreign pickers. The questions have been raised about the evaluation of commercial utilization of NWFPs with foreign pickers in accordance Everyman's right. For instance, Peltola et al. (2014) have surveyed in Finland the "social license" of wild berry gathering by foreign pickers. Foreign pickers are today typical for berry industries in Finland and neighboring countries. In the context of Swedish wild berry industry, foreign pickers are therefore also studied by for instance Eriksson and Tollefsen (2018) and Woolfson et al. (2011).

Another aspect to NWFP production is its's connection to the forest management decisions. The co-production of timber and NWFPs are studied in production and optimization models (Calama et al. 2011; Kilpeläinen et al. 2017; Kucuker and Baskent 2017; Miina et al. 2010; Tahvanainen et al. 2018). Studies have also predicted and

modelled berry yields (Kilpeläinen et al. 2016; Turtiainen et al. 2016). The Finnish Natural Resources Institute publishes annually national seasonal forecasts of wild berry and mushroom yields, which is available for households and commercial gathering purposes (Salo 2015). During the last years, there has been objectives of developing raw material supply and technologies of NWFPs refining in the NWFP field (Favén and Rainosalo 2014; Rutanen 2014; Rutanen 2018).

It is acknowledged, that there are challenges to collect systematic and comparable statistics about the economic importance of NWFPs, which is however important in order to produce reliable data for decision makers all over the world (Prokofieva et al. 2017; Wahlén 2017). In Finland, Agency for Rural Affairs conducts annual MARSI-statistics of prices and amounts of wild berries and mushrooms that are sold in the field. The data has limitations of forming information about the small-enterprise and household sales (Maaseutuvirasto 2018).

In previous literature, NWFP certification is viewed especially from the perspective of tropical countries. For instance, Guillen (2003), Pierce et al. (2008) and Shanley et al. (2008) have examined the NWFP certification in the global south. Certification can act as a differentiating factor for products in the markets (Guillen 2003; Pettenella et al. 2006), and Pettenella and Maso (2009) note that differentiation is a marketing strategy especially for NWFPs directed to specialized high-end markets. In addition to differentiation, Amici et al. (forthcoming) sees that indicating sustainability and specific qualities, such as local origin, by NWFP certification and branding, is offering a tool for traceability.

Vidale et al. (2015) found out in their survey about NWFPs that voluntary certification of the organic material was seen most important marketing tool for wild mushrooms by European interviewees. Interviewees from Serbia, Slovenia and ESP also appreciated the forest management (ie. FSC and PEFC) certification for serving the same purpose (Vidale et al. 2015).

Globally there are multiple certification systems, which are applied to NWFPs: FSC, FairTrade and IFOAM have all specific angles to NWFP production and trade (Pierce et al. 2008). Table 2 presents examples about the variety of certification systems applied to NWFP certification.

Table 2. Examples of certification systems applied for NWFPs. Modified from Amici et al. (forthcoming); FAO (2018); Pettenella and Maso (2009); Belcher and Schreckenberg (2007).

Indication for	Certification systems
Sustainable Forest Management, Chain of Custody	PEFC, FSC
Wild certification	FairWild
Organic certification	European Commission Regulation on organic International Federation of Organic Agriculture Movements (IFOAM)
Environmental performance certification	EU Ecolabel
Quality and food safety certification	ISO 22000 Food Safety Management ISO 9001 Quality management
Socio-economic aspects	Rainforest Alliance Fairtrade Labelling Organization (FLO)
Origin, geographical indications and traditional specialties certification	EU geographical indications: Protected Designation of Origin (PDO) Protected Geographical Indication (PGI) Traditional Speciality Guaranteed (TSG)
Other	Non-GMO, No animal testing, VegeCert

For instance, in comparison of Finnish and Italian Boletus mushroom enterprises, it was noted that the Italian case was categorized an innovative specialty product -oriented with the origin label certification EC Protected Geographic Indication (PGI), whereas Finnish company focused on operating in mass-markets and developing gathering systems without any certificates (Secco et al. 2009).

NWFPs and forest certificates are little discussed in the Finnish context. For example, Laakso (2017) examined legal and administrative aspects of compatibility of Finnish FSC Standard and NWFPs focusing on environmental regulation. Peltola (2014) com-

mented that forest certificates and organic labels are utilized generally for NWFP products, which provide information for the customer about the origin of product. In addition to these certificates, Peltola (2014) points out that NWFPs can be marketed with the term “wild”, which is not based on any standardized criteria.

1.3 The Aim of the Study

The aim of this study is to get a better understanding of the current state of non-wood forest product certification in Finland. For this purpose, especially features of forest certification and organic certification systems are discussed.

Yet, as far as it is known, of these certificates, only organic certified NWFPs exists in Finland. PEFC and FSC are however applied to Finnish forestry and wood products widely. Due to applicability of forest certificates to NWFPs globally, it is possible to see the markets for NWFP products, which would originate from PEFC or FSC forests and landowners holding these certificates.

The objectives of this study are to find out the perceptions and attitudes towards non-wood forest products certification among the experts in the fields of NWFP and forestry. Experts can have opinions on how the Finnish national standards of forest certificates will align with NWFPs in the future. Consequently, the aim of this study is to analyze how the meaning of NWFP certification is seen currently, how certification is being applied and how it will develop in the future.

The research questions are

1. Does the verification of origin for non-wood forest products create additional value for the product, and if yes, in what way?
2. How are the certificates of FSC, PEFC and organic applied to non-wood forest products?
3. How do the Finnish experts in the forest and NWFP field understand the expected benefits of NWFP certification?

2. Theoretical Framework

2.1 Discussion of Terminology – Defining NWFP

This study coherently uses the definition “non-wood forest product” (abbreviation NWFP). In 1995 it was agreed to be defined as follows "*Non-wood forest products consist of goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests*” (FAO 1999). The definition originates from tropical forestry and times back to the end of 1980s (Mantau et al. 2006).

The “Preliminary classification of forest and tree products” was presented by FAO in 1995, which divided the forest products into three groups: wood products, non-wood forest products and forest services, as seen in Figure 2. According to this classification, non-wood forest products consist of both animals and plants.

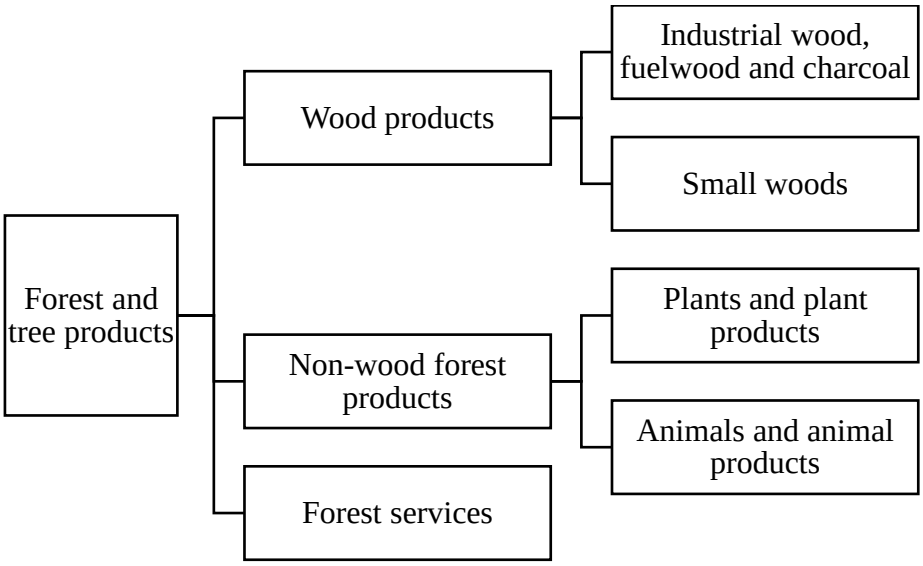

Figure 2. FAO categorization of forest and tree products. Source: FAO (1999).

The harmonization of the definitions was seen necessary due to a wide range of terminology related to NWFPs (FAO 1999). FAO (1999) acknowledged the utilization of terms such as that “non-timber forest products” (abbreviation NTFP), “minor forest products”, “byproducts of forests”, “non-wood goods and benefits”, “non-wood goods and services”, “other forest products”, “secondary forest products”, “special forest products” for the same denotation. For instance, the terms “wild plant” and “collection

of wild plants" are coherently used by EU documentation in discussion of organic wild collection (EUR-Lex 2007). Furthermore, the term "wild food" is common for scientific journals and reports of industry, and the Finnish Sector report exploits the term "natural product" as a translation for Finnish term "luonnontuote" (Ristioja 2018). Belcher (2003) notes richness of terms, such as "wild products" and "natural products", by different organizations. The forest certification systems have defined NWFPs. According to FSC Product Classification (Annex 6), the products are divided into three groups: wood products, pulp and paper products and non-timber forest products (FSC 2013). FSC (2017) defines non-timber forest products as "*All forest products except timber, including other materials obtained from trees such as resins and leaves, as well as any other plant and animal products. Examples include, but are not limited to, seeds, fruits, nuts, honey, ornamental plants and other forest products whether they were originated inside a forest system*.". Non-wood forest products according to PEFC are "*Products consisting of goods of biological origin other than wood, derived from forests and Trees outside Forests*[7]" (PEFC Council 2018).

Due to high diversity of definitions, the literature data retrieval of this study is based on using the terms non-wood forest products, non-timber forest products, natural products, wild food, wild berries, wild mushrooms, wild collection and organic collection to cover the whole range.

Defining of NWFPS is largely debated for issues it includes. According to Amici et al. (forthcoming) terms "non-wood forest products" and "non-timber forest products" are widely used in forest standards, while these terms have not been assimilated by the markets and other certification schemes, which seem to prefer "wild". The "non"-beginning of both NWFP and NTFP definitions is criticized for its negative indication (Belcher 2003). In addition to its negative approach, the definition NWFP excludes services and all woody products as its main message (Belcher 2003). Mantau et al. (2006) assess that term NWFP excludes woody raw materials but instead, the NTFPs include small wood and wood for fuel. It can be argued, that "non-wood" seems to

[7] Refers to trees found on lands that are not categorized as 'forest' nor as 'other wooded land'. They include trees (isolated, linear and groups or stands of trees and tree systems) found in rural landscapes (e.g. on farms, in fields, pastures and various forms of horticulture and agroforestry systems, in hedges, along roads and streams) and in urban settings (e.g. on private or public lands and along streets)" according to FAO (2010).

exclude some products, such as sap water or chaga mushroom, which both originate from trees, if the definition “non-wood forest products” is strictly followed. However, these products do not belong to the group of traditional wood products either.

Due to complexity of the definition, the FAO classification is modified for different purposes. In Figure 3 categorization is based on division of timber products and non-timber forest products, which then are divided into two groups: wood, fuelwood, poles and wood derivates, and to non-wood -group. In this study, by referring to NWFPs, it covers the non-timber forest products as seen in Figure 3 – both wood and non-wood, and also follows the specification by Ristioja (2018) as described in Chapter 1.1.

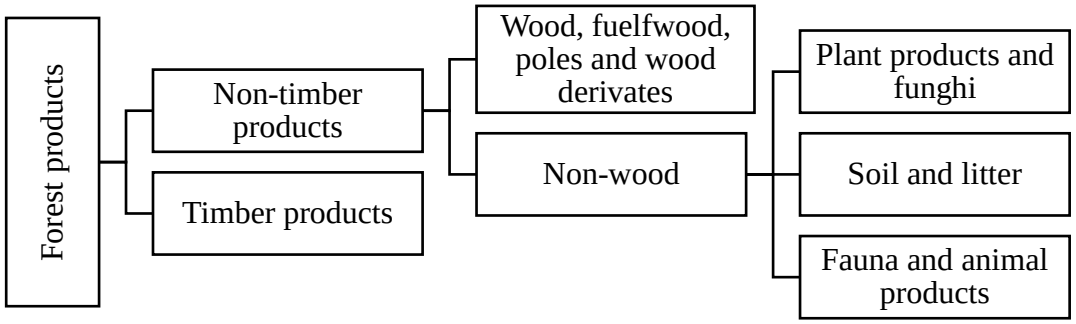

Figure 3. Forest products categorization. Source: Prokofieva et al. (2017) modified from FAO (1999).

2.2 The Selected Certificates and NWFPs

Certification is an example for consumer transparency in value-chain, in which the economic actors of the value-chain together with certification bodies trace the value-chain to inform customer about the product and process quality and sustainability (Mol 2015; Mol and Oosterveer 2015). According to Ugarte and Swinkels (2015, pp. 87-88), the main elements of certification systems are the standards and system for quality control. Standards define the principles and criteria concerning the sustainability aspects, while the quality of control consists of chain of custody and level of assurance (Ugarte and Swinkels 2015, p. 87). In Figure 4 is presented the actors in the certification system and their tasks and relations.

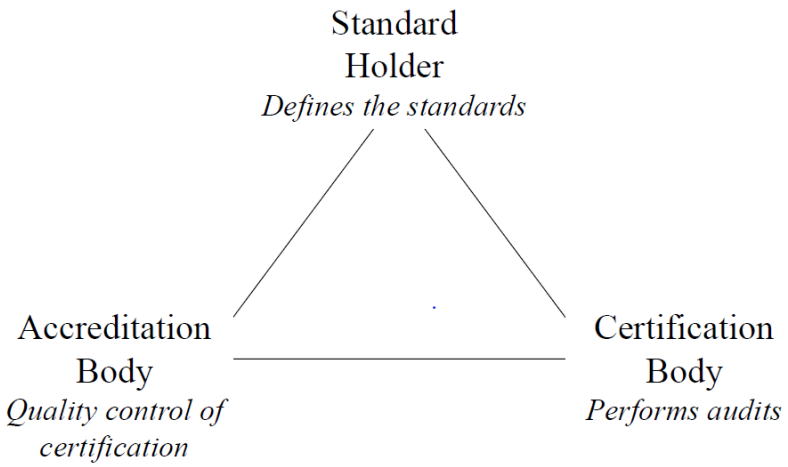

Figure 4. Actor structure in certification system. Source: Ugarte and Swinkels (2015, p. 88).

Similarly to Ugarte and Swinkels (2015, p. 88), Nussbaum and Simula (2004, p. 15) state that forest certification systems to on three elements: accreditation, standard and certification as presented in Figure 5.

Firstly, the standards define the requirements, which form the certification basis that must be followed. Secondly, the certification itself is seen as a procedure, where the certification body is involved to assess whether the standard requirements are reached. Thirdly, the accreditation confirms the organization conducting certification process is capable to provide consistent and convincing outcomes (Nussbaum and Simula 2004, p. 15).

Labelling, also seen in Figure 5, is an outcome of certification system. The difference between label and certification system is explained by (Committee on Certification… 2010) as followed: *The label is a symbol indicating compliance with certain standards, and often is the last, or "customer-facing" element of a certification system. The certification system, by contrast, spans the market from producer to end customer, involves continual interactions among these various stakeholders in the value chain, and entails numerous processes that are not easily communicated by a consumer label."*

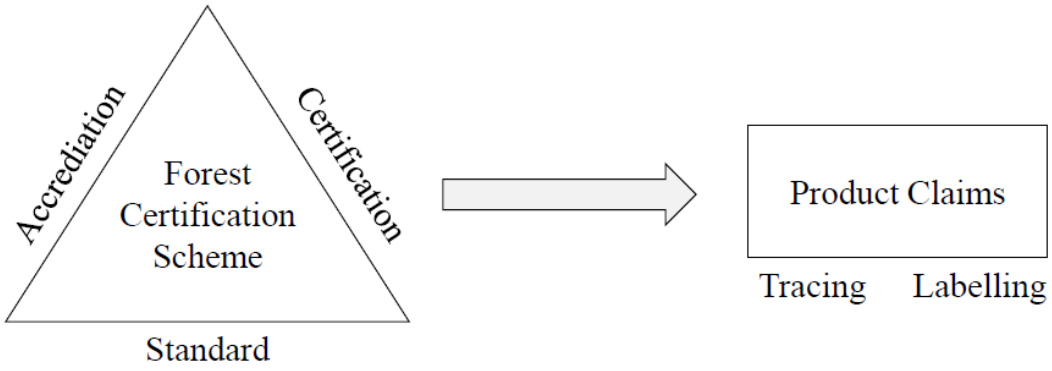

Figure 5. Forest certification system. Source: Nussbaum and Simula (2004, p. 15).

The discussion about integrating NWFPs to FSC started already in mid 1990s (Pierce et al. 2008). In 1999, Mexican chicle latex[8] was granted a FSC label as a very first NWFP (Guillen 2003; Shanley et al. 2008). The progression of FSC certified chicle latex was not strong, due to weakening global demand for the product and the label did not guarantee market prospects, as it was non-recognized by the buyers, to whom there was excess in supply and sustainability was not in the top of the agenda (Pierce et al. 2008). Also, PEFC has ran campaigns about certifying wild food products in Spain (PEFC International 2018b) and mushroom traceability in Canada (PEFC International 2018c).

The experience gathered from forest certification during the decades and the consideration of sustainability of all, economic, social and environmental, factors could be addressed for other natural resource sectors as well and to new applications for forest certification, such as carbon sinks and other environmental services (Nussbaum and Simula 2004, pp. 214-219). However, while the forest certification can provide a model for NWFP certification, the timber-focused standards cannot be directly applied to NWFPs since these are more complex group of variety of products, with different social and ecological aspects (Guillen 2003, p. 4).

The current Finnish standards of both forest certificates PEFC and FSC discuss about NWFPs only little and mainly in the context of multipurpose use of forest (PEFC, see Annex 1) and multiple use of forests (FSC, see Annex 2). Respecting the Everyman's

[8] Refers to *Manilkara zapota*.

right is remarked in both forest certification standards (Annexes 1 and 2). Currently only PEFC refers to organic wild collection areas in their standard (Annex 1). Organic wild collection may be based on either NWFP gathering according to Everyman's right or on permission of landowner, depending of the NWFP gathered (Evira 2018).

The basic requirements of organic plant production are applied to the production of organic NWFPs in organic wild collection areas with a few other conditions: there is only organic accepted substances used during the last 3 years and the gathering does not harm the stability of the natural habitat and species in the area (Annex 3; Evira 2018).

Today, the largest united wild organic collection areas are located to Northern Finland (Ristioja 2017). The organic wild collection areas are formed either by the land owner or by the model of determination (Evira 2018). The Ministry of Agriculture and Forestry of Finland (2018) has publicized information of development of electric service for organic wild collection areas that is aimed to be take into operation during NWFP season in 2019.

The government authorities conduct the control and documentation of organic wild collection areas (Evira 2018). Instructions of NWFP gathering from organic wild collection areas concern for instance avoiding certain distances to roads, lists of prohibited substances and emphasize that berries must be sold to a buyer who belongs to organic control system (Arktiset aromit 2014). Currently there is no difference in price for gathered raw material between organic and conventional berry (Maaseutuvirasto 2018).

2.3 Legislation in Finland: Everyman's Right and Taxation

The Everyman's right provides a possibility for all, despite nationalities, gather NWFPs from the Finnish nature. The basis of the Everyman's right is to move, stay, camp temporarily and utilize non-wood forest products in the other landowner's land without landowner's consent (Tuunanen et al. 2012).

Ministry of Environment of Finland assesses the Everyman's right enabling the gathering of wild berries, mushrooms and plants, and fallen to ground branches, leaves, needles or barks. However, according to Everyman's right it is forbidden to fell or

damage the alive or dead trees, or take twigs, branches, roots, barks, leaves, resin or other parts of the tree without the consent of the landowner. For instance, Everyman's right does not apply to gathering chaga mushroom (Tuunanen et al. 2012).

One can gather NWFPs for own purpose, but also sell NWFPs for commercial operators. Regarding NWFP gathering there are some special taxation exemptions in Finland. These exemptions from taxes apply to both NWFPs gathered in accordingly to Everyman's right (wild berries, mushrooms) and NWFPs gathered with landowner's permit (chaga mushroom, spruce sprouts) (Verohallinto, 2015).

According to Income Tax Act the natural cones, berries and mushrooms and natural plants and parts of those plants, which are gathered for use as human nutrition, medicine or medicine production are not considered as taxable income when the gatherer signs over the products without processing. The exception is, if the income is considered as a salary. Only wild berries and mushrooms can be sold without Value Added Tax (Verohallinto, 2015).

2.4 Summarizing the Conceptual Framework

The conceptual framework of this study presented in Figure 6, is based on Finnish operational environment for NWFPs. The value-chain of NWFPs can be described as being rather long with a multifaceted structure. The chain begins from the forest ecosystem, the origin of NWFPs, where forest ecosystem services co-produce simultaneously also other products and services (Kniivilä et al. 2011).

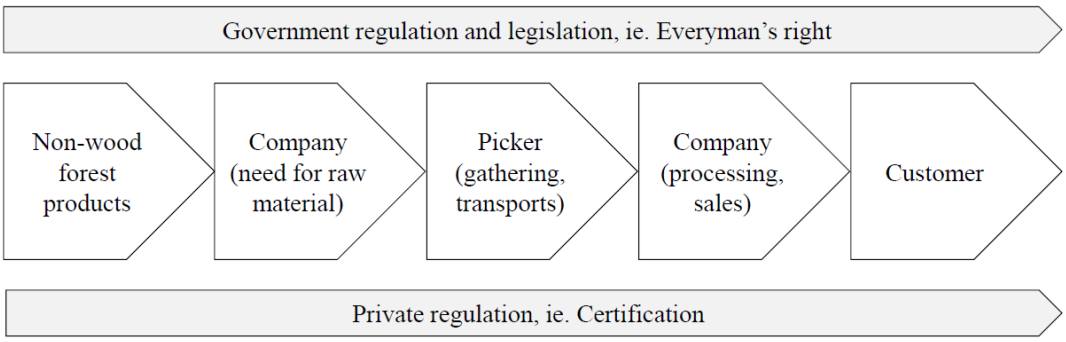

Figure 6. Conceptual framework for the NWFP value-chain and it's regulatory framework. Modified from Favén and Rainosalo (2014); Niemi (2012).

The actors in the chain can be different kind of organizations, even individuals, who act on gathering NWFPs from forest and may have therefore a loose connection to shareholder companies (Belcher and Schreckenberg 2007). There are multiple intermediary actors in the value-chain, while in this conceptual framework presents only the most common actors. To understand the nature of NWFP value-chain, it should be noted that there may be several companies acting in the same value-chain. In addition, the gatherer often acts independently in the chain due to special characteristics of NWFP taxation in Finland.

This value-chain is framed by two types of regulation: private and government based. Government regulation according to legislation refers to for instance Everyman's right, while certification, which is particularly discussed in this study, represents a form of private regulation. Private sector driven regulation is not legally binding and does not replace the government regulation: it can be integrated within it and at some level compensate it (Vogel 2008). By presenting this conceptual framework the relation of certification towards other actors in value-chain is indicated.

3. Research Methodology

3.1 Data and Data Collection

Interview data is a possibility to explore ground, that is only little known or even unknown, to enlarge the context of discussed by the interviewees and to find multifaceted responses (Hirsjärvi and Hurme 2015, p. 35). The semi-structured approach was chosen because the NWFP certification in Finland is in its initial stages and qualitative methods offer an effective way of studying perceptions towards it. This study aims to understand the stage of NWFP certification in Finland today and to survey its future, and therefore the question wording "how" used is common for qualitative studies.

Alastalo and Åkerman (2010, p. 313) note that the selection of interviewees in expert interviews is based on the knowledge that they are supposed to have about the ongoing process that is being studied or are chosen based on their institutional positions. Thematic interviews of this study have a semi-structured nature. All questions were formed as open-ended (Annexes 4-5). The thematic interview consists of four themes, each of which comprises of three to four questions. Firstly, forest origin and its ability to bring added value, secondly the state of certification of NWFPs today in Finland, thirdly to explore the expert views on the future of the certification and benefit sharing, and to explore fourthly the connection between forest certificates and NWFPs.

This study used a convenience sampling to identify the interviewees. The interviewees were selected based on their availability, on their expertise background, as followed by Alastalo et al. (2017, pp. 181-182) definition of expertise as an outcome of activity or interaction: it may be cause of for instance institutional position or professional duties. The data set consists of 13 personal interviews. Due to cross-sectoral nature of the non-wood forest products and the focus of this study on organic and forest certificates, it was important to interview experts from both and forest NWFP fields. A person can be perceived as an expert, when she or he has the special knowledge about the research topic, which no other or very few have (Alastalo et al. 2017, pp. 182-183).

Alastalo et al. (2017, pp. 181-182) emphasize that expertise cannot be ability or permanent quality of an individual, but it is what people do. Criteria for selecting the experts from both fields was reasonable as this study aimed to discuss especially NWFP certification in FSC, PEFC or organic, and therefore to have expertise of all these certificates equally represented. However, not all experts were specialized to

certification. The chosen experts work in research, associations, government and companies in Finland. As seen in Table 3, of the total 13 interviewees, 6 experts have background in forestry, and 7 have background in non-wood forest products field. Two of the experts had background of both, but they were classified accordingly the current task of an expertise.

Table 3. Number of interviewees in organizations and their backgrounds.

Number of interviewees in organizations and with different backgrounds			
	Forestry	NWFP field	*total*
Experts	2	4	6
Company representatives	1	2	3
Certification experts	3	1	4
total	6	7	**13**

There were six experts interviewed from research community, associations and government, three experts representing companies and four expert interviewees coming from certification associations and auditing companies (Table 3). The average length of the interview was 37 minutes. The longest interview lasted 60 minutes and the shortest 18 minutes.

Alastalo and Åkerman (2010, p. 321) mention that while the anonymity of interviewees has become like a standard in the qualitative research, it is noticeable that especially in conducting analysis concerning experts acting in the limited field the anonymity and analysis form a hard balance between complete content analysis and identification. Even small clues may lead to identification of other actors in the field (Alastalo and Åkerman 2010, p. 321). In this case there is a limited number of both forest certificate and organic wild collection experts in Finland, but in this study, the combination of two fields restricts the straight identification of interviewees.

The chosen interviewees were firstly contacted by email and secondly by phone. In the email message the interviewee was requested for the interview and the topic of the study was introduced. In addition, it was mentioned that the names of the interviewee

or the organizations, they represent, will not be public. All interviewees were agreeable to be interviewed as eventually in the contact by phone. One requested interviewee however suggested another person from the same organization to be interviewed, as it the topic was more closely devoted to coworker's specialization.

The interviews were conducted during May 2018 and September-October 2018. All the interviews were face-to-face personal interviews. Only one interview took place in public space, while other interviews were located to the conference rooms. The interviews were conducted in Finnish, as it is the first language of interviewees and enables them to freely express their thoughts. Each interviewee was also asked permission to record the interview.

At the beginning of the interview, interviewer introduced the topic shortly. Firstly, the interviewee was asked to tell about his or her background in order to classify background from forestry and/or non-wood forest products field. Secondly, it was asked, whether interviewee was familiar with forest certification. This question was added later on to the beginning of the interview, as it was noticed that the meaning of forest certification, either using PEFC or FSC, were unknown or not fully understood for some interviewees. If the interviewee was not familiar with the forest certification, then it was introduced using a definition as "an indicator of responsible forestry, and there are wood products such as paper and wooden furniture certified with that".

The basis of interview is asking questions and receiving answers, but also balancing between preparing themes and developing questions to secure information availability by directing the discussion into essential issues, but at the same time leaving enough latitude on how the situation evolves (Hirsjärvi and Hurme 2015, p. 103). In addition to the structured interview form, there were open question to be asked. At the end of the interview all respondents were asked, if they had some thoughts or opinions about the topic they had not yet mentioned and wanted to emphasize or summarize.

3.2 Analysis

The purpose for analysis of qualitative data is to clarify the data to form new information (Eskola and Suoranta 1998, p. 100). There are limitless choices approaching qualitative analysis for the data: variety of different techniques is large, while there are

only few standardized (Eskola and Suoranta 1998, p. 87; Hirsjärvi and Hurme 2015, p. 136).

Hirsjärvi and Hurme (2015, p. 136) describe the qualitative analysis to begin already during the interview, when there is a chance to outline the patterns of the observed phenomenon. Especially in the expert interviews, the data gathering and analysis are closely linked together – so closely, that the analysis cannot be separated as its own process stage (Alastalo and Åkerman 2010, p. 312).

The timing for the analysis is significant for multiple reasons. There is a chance the data sample can be complemented or clarified, if the data processing and analysis take place shortly after the data gathering (Hirsjärvi and Hurme 2015, p. 135) and it improves the quality of interviews (Hirsjärvi and Hurme 2015, p. 185). The transcriptions took place shortly after the interview, so the analysis was continuous. To support the analysis, during the interviews there were notes taken.

Noticeable is, as Nikander (2010, p. 363) points out, that transcribed speech is always a product of the decisions and observations the researcher has made and for that reason, there are always imperfections. To understand decisions made during the transcription phase, it is explained in the following way. In this study, the transcriptions were written in Finnish, which was the language used in all the interviews. By transcribing in Finnish, the transcriptions followed the exact order of the discussion and interviewee's decision of words. Also, there were additional questions asked, and these discussions led by the questions were also transcribed. It was decided to leave out repetitions and filler words from transcription. Also, if the interviewee corrected his statements, for instance the choice of words, only the correction was transcribed.

This study follows inductive reasoning, which is based on the gathered data (Hirsjärvi and Hurme 2015, p. 136). Eskola and Suoranta (1998, p. 110) emphasize the importance of fully knowing the data: reading the transcribed data repeatedly will prepare it for further analysis as the researcher becomes more familiar with it. In this study the same person conducted the interviews and transcriptions. The data became familiar from these both angles for the analysis purposes. However, reading the complete transcriptions repeatedly provided better general understanding of the gathered data. However, the data itself does not form results: the researcher must work actively to create

the analysis and interpretation (Eskola 2018, p. 180). In this study, it was noticed during the data gathering that the original perceptions of the topic were confirmed in the preliminary results.

The starting point for thematic analysis is to explore the research questions through highlighting the themes in the gathered data, to find and then classify the essential themes in text (Eskola and Suoranta 1998, p. 126). In this study, the analysis was based on the themes categorized in the question form, which were however further modified during the analysis, as some themes were united due to close link to one another and repetition in responses. The analysis was conducted by thematization of the data. The expert groups of forestry and NWFP field were compared during the analysis, but also the whole sample was studied to see if there is cohesion between the groups in responses.

Acknowledging the subjectivity of the researcher is characteristic for the qualitative study, and the researcher is seen as the crucial instrument for assessing the reliability of the study (Eskola and Suoranta 1998, p. 152). Researcher influences the data in multiple phases of the study, such as data gathering, interpretations, definitions, and therefore it is crucial that the documentation, on what the decisions during the research are based on (Hirsjärvi and Hurme 2015, p. 189). In this research, the same researcher formed the question form, conducted the interviews and transcribed the data. Due to that it decreased the possibility for misunderstanding of questions asked and provided thorough familiarization to data. All interviews followed the same face-to-face interview method which is extensively described below. Customary definition of reliability is that the same result is derived from two parallel research methods, which is however seen implausible, as human behavior is strongly depended on the context, place and time (Hirsjärvi and Hurme 2015, p. 186).

In this study, it was possible to interview the experts, who were firstly intended by convenience sampling. The experts presented equitably NWFP and forestry fields and representatives from different certification systems. However, it is also cause for criticism: yet the topic is the certification, multiple experts work related to or are otherwise involved to certification system, it creates a chance that the experts appreciate the certification systems more than experts overall.

One critical point of analysis was the translations from Finnish into English, which was conducted simultaneously with the analysis by the researcher. The aim of the translations was to translate comprehensively the content. In the following analysis, to improve transparency direct citations from the speech are used to give authentic voice to interviewees.

According to Eskola and Suoranta (1998, p. 154), validity is perceived from two viewpoints: internal and external. Internal validity concerns the logical concordance of theoretical and conceptual definitions, while external refers to links between construction, conclusions and data – all influenced by the researcher (Eskola and Suoranta 1998, p. 154). The diverse sample and high level of expertise among the interviewees ensured the internal validity of this study.

4. Results

4.1 The Forest as an Origin of Non-Wood Forest Products

To understand the special characteristics of Finnish NWFPs, the experts were asked to comment on how Finnish NWFPs differ in the markets. Experts emphasized the habitat as the main special characteristic of the Finnish NWFPs. Experts from both forestry and NWFP field, mentioned factors influencing quality, such as Northern light, air quality, soil and arctic location. It was stated, that these qualities effect on for instance the flavors of NWFPs. Also, Kurppa et al. (2015) have addressed similar characteristics about bilberries from arctic origin.

It was noticed that between Finnish and Swedish NWFPs there are no really differences, but compared to for instance Ukrainian NWFPs, there are more clear differences: concentration of anthocyanin is decreased, and heavy metal contents increased. Two NWFP experts discussed anthocyanin concentration especially. In the following, NWFP expert mentions that anthocyanin levels are valued by the buyers:

> *"In Bilberry [market], it is clearly noticeable that the Northern habitat influences the quality, [I mean] the chemical quality of the product: the number of anthocyanin, which buyers appreciate."* NWFP expert

However, the same NWFP expert pointed, that bilberry is the only NWFP there exists data about the nutritional characteristics and in some cases, Finnish NWFPs do not differ at all in the NWFP markets. NWFP expert emphasized in his example that firstly, the buyers' look for better qualities, and secondly, they seek for large volumes:

> *"Last summer we discussed with a Chinese consultant that we need to indicate the Russian chaga mushroom has inferior quality compared to the Finnish, and the second question was if we can supply it enough. They are not interested in few batches, but steady flow, tons annually."* NWFP expert

The differences of Finnish NWFPs in comparison to other NWFPs were also questioned by some forestry experts. One forestry expert commented that she would not be completely sure whether there are clear differences, while the habitat in forest influences positively. Another forestry expert pointed out that there are other unpolluted forests abroad, from where NWFPs originate. Two forestry experts expressed their thoughts about images, that affect, as it follows:

"So, we are told, that [the Finnish NWFPs] appreciate the purity. No heavy metals, or others, like there are elsewhere. These are images, partly." Forestry expert

"Then somewhere in a Parisian marketplace, they are selling the same mushrooms, Horn of plenty[9] *92 euros per kilo. Prices are on point."* Forestry expert

Two NWFP experts commented that in addition to pure forest habitat, the brand, image and the story behind the product are important factors to differ Finnish NWFPs. NWFP expert described the branding decisions, as follows:

"Can we say it is natural, nutritional, easy-to-use, supports your wellbeing; what is the way you build the brand and how you communicate about it? If we look at the origin labels [in the NWFPs], those are quite small labels." NWFP expert

In addition to the purity of habitat, NWFP expert stated that the forest as an origin should be looked from the sustainability perspective and also communicated to customers:

"If we could demonstrate the supply chain for instance in the following way that it is originates from forest and by the time it is gathered, no inputs are used. Now we do not take benefit from that. To measure water print, carbon print, would be absolutely something to associate." NWFP expert

One forestry expert linked Finnish NWFPs to small-scale businesses, such as family businesses and small enterprises, which he saw as positive values. Everyman's right was mentioned in multiple interviews by forestry and NWFP experts. It was described as a special characteristic associated to Finnish NWFPs. Two forestry experts expressed their thoughts of Everyman's right as it follows:

"I do not know if it is value for marketing, but this Everyman's right, like these are democratic berries. But are these? Compared to some circumstances, for sure [these are]. It is pretty hard to productize, the thought, because it is totally utopian idea in many countries." Forestry expert

[9] Horn of plenty is a mushroom, *Craterellus cornucopioides.*

"Finland has the story. It is exceptional, about purity and ecosystem services and about Everyman's right, which is this huge social miracle in the world." Forestry expert

Experts were asked, what NWFP characteristic they see important to verify by certification. In the majority of responses, the origin and purity were mentioned repeatedly by both forestry and NWFP experts. This citation by NWFP expert sums up the overall opinion for the verification needs:

"Forest origin as such has to be verified. Another is the purity of nature. If we compare countries, where the density of living is totally another than in Finland. In that way we can demonstrate the differences that are gathered from sparsely populated areas." NWFP expert

However, the origin can be defined and observed from multiple perspectives: for some experts, the origin meant the origin from Finland, or from Europe, while the origin was also seen as the origin from forest. NWFP expert mentioned origin from Finland, Europe or Nordic countries important to verify if the target is to export NWFPs. He based his view on an example from Japanese fair, where the origin from Nordic countries was valued as follows:

"They bought bilberry based on the Nordic origin. If the bilberry batch was gathered from Nordic countries, it increased the interest category of the buyers remarkably." NWFP expert

The origin was attached to the traceability, and value-chain verification. The forestry expert compared the traceability of NWFPs to traceability of timber as follows:

"*If we sell spruce sprout syrup, moose game, or chaga mushroom, or whatever, we need to know it originates from Finland, from forests, and pretty detailed from where exactly. It has some common with how today we must know from where the timber originates from – almost in the forest stand level. Absolutely it should be the same."* Forestry expert

Additionally, one forestry expert stated that everything about the origin is interesting, and described the micro and macro levels of origin followingly:

"Macro level is that from which country it originates, and micro level is that it is not gathered between highways." Forestry expert

It was mentioned by a few interviewees that the certification is only one tool for verification. NWFP expert stated that the origin could be demonstrated for the customer also in other ways, such as representing the production chain transparently by filming and displaying it for customer.

The purity of a product is necessity to indicate in some markets according to NWFP expert. A few NWFP experts also stated the nutritional ingredients are important to verify by certification. One NWFP expert commented that the Finnish companies should strive to maintain "Finnish quality" referring to country image of a small country, where the NWFP field is formed of small enterprises. One forestry expert emphasized that the certification decisions are depended on the NWFP products and target markets. NWFP expert stated that NWFPs for food purposes, the purity and safety are essential.

Overall sustainability of NWFPs is considering all environmental, social and economic aspects, and it was mentioned important to verify according to forestry expert, who stated it, as it follows:

> *"Responsibility, that behind the product, forest operation, has been acknowledged the all elements of sustainability are, in my opinion, good and important matters."* Forestry expert

As it was further asked about the origin of NWFPs in value-creation, the majority of the interviewees perceived the origin of NWFPs from forests as a value creating factor. Two NWFP experts advocated that the value added of forest origin depends on, whether NWFPs are observed globally or domestically in Finland. In Finland the value of NWFP forest origin is not seen that remarkable. Also, one forestry expert described the valuation of forest origin in Finland, as it follows:

> *"I claim, that in Finland forest is so close and obvious, that Finns have not been awakened to understand the value their own super foods. That we prefer to buy goji berries over bilberries."* Forestry expert

The added value depends also on which of the markets NWFPs are targeting at. The target markets define the value of the forest origin – if it even exists. NWFP product selection is diverse and not available in all markets and in all product groups, thus it can be of a value in itself that NWFPs originate from forests and are not cultivated.

The special characteristic attached to the origin is the image of Finland, which is seen pure, natural and arctic. Origin from Finland is for some buyers' reason to buy, as it was pointed out that the habitat is the core of the NWFP. The important factors of the unique habitat are caused by the long and snowy winters together with other clearly separate seasons, like warm summers, providing good quality, both physical and nutritional. Forest origin, purity of forests and naturalness are images for marketing which are not yet utilized efficiently, which NWFP expert points it out as follows:

> *"The forest origin is a marketing asset, which we already have and should be used, as it is special, worth marketing."* NWFP expert

The marketing and branding were seen crucial, whether the forest origin creates added value. The forest origin has to be demonstrated for the customer, as for all customers it may not be obvious, with verified methods.

> *"The origin has to be something the customer wants. For example, we want honey produced from the forest. That is the basis. But the value-chain has to be verified – that it really originates from there."* Forestry expert

> *"Forests are experienced, seen, understood, more natural, compared for instance to cultivation."* Forestry expert

Also, interviewees had experience from global markets, where the forest origin was difficult to understand, and it demanded a lot of explanation.

> *"When we were in Japan in a food fair, almost all the companies asked, and with some I had to even argue, that these [NWFPs] grow in forests and are not cultivated."* NWFP expert

> *"Entrepreneur, who was planning on marketing to Taiwan, said that they had to show the whole process there, write it out and illustrate. […] We should be able to show the nature origin and production chain without inputs. And none there will know, if they are not told, because they are not familiar with our operational forest environment."* NWFP expert

However, two experts stated that there is no value added about the forest origin inherently. Both interviewees mentioned the organic certification, which is on demand in the markets. Organic is seen sufficient with its strong brand, and therefore holds added value, which is not due the forest origin. Company representative stated that they have

not faced value added of the forest origin. Their customers consider the organic product is adequate and have not asked about the origin of the NWFPs. However, the same company representative said they still meet customers, who ask about the system of irrigation, and therefore it is not clear that the NWFPs originate from forests, where there are not inputs, such as watering, used.

The experts were also asked to comment how the forest origin of NWFPs can be verified for the customer. In their responses, the experts emphasized dependence on producers' branding decisions and certification possibilities. Non-wood forest product experts stated that the forest origin of NWFPs from the customer perspective may be currently hard to recognize, and it cannot be taken granted that the customer can identify or acknowledge the origin. It was mentioned, that among NWFPs, ceps are mostly perceived as forest products, while bilberries are many times mixed with cultivated blueberries, even they have different nutritional value. The confusion about wildly grown bilberry and cultivated blueberry in global markets was mentioned repeatedly in multiple interviews. It was also questioned whether the customers sufficiently appreciate the forest origin.

The NWFP companies stated, no assumptions of customer's recognition of the forest origin can not be made regarding NWFPs. Especially, in the imports and B2B-markets there is need for further explaining it, as mentioned in the following citations:

> *"It is not necessarily clear for all customers that the product even is [from forest] … Yet we speak about wild and non-cultivated. We explain the customer; especially in b2b environment it is challenging. In addition, we have this product line. We tell in the website, from where the product comes from."* Company representative

> *"One cannot never assume that the customer knows. In my opinion, you can see it [the forest origin] in the product but still cannot assume. The general knowledge may be missing. Of course, it depends whether you ask customer here or in German big city."* Company representative

Forest origin can be addressed as "wild". Few experts discussed about term "wild" and some preferred it. Wild was discussed from organic perspective as well. One NWFP expert stated that the organic NWFP should be marketed as "wild organic", instead of organic, due the fact that wild origin is a differentiating factor, while organic consists

of both cultivated and non-cultivated ingredients. However, there was debate about the understandability of "wild" for an urban citizen from different environment, as the following citation by NWFP expert describes:

> *"We asked the local actors in Japanese fair, how they understand the wild, organic and Finland and what to emphasize in marketing. About wild, they had no clue what is would mean. So, it depends. This kind of citizen, grown in urban environment, does not necessarily have sense – only built and modified environment."* NWFP expert

It was also argued, whether the forest origin itself is of importance for the customer. The forest origin may be associated with variety of themes, to which the customer's valuation can be directed.

> *"I do not know whether it is the forest origin, what interests the customer, or is it mainly the purity. Or are the customer interested about the forest by caring about the forest conservation."* NWFP expert

It was mentioned in several interviews, how in Finland wild berry and mushroom picking is still seen a common activity, and due that, there is knowledge in Finland to identify NWFP forest origin. In organic certification, the unpolluted and naturalness are seen important factors for the customer as organic certification provides verification no pesticides or fertilizers are being used in production. It was stated by a few experts that in Finland the organic wild gathering areas and organic certification are for some hard to understand, as it seems like all the wild berries and mushrooms would be organic directly. However, the pesticide use is not the only indicator, the organic certification of NWFPs provides, according to NWFP expert:

> *"I think the meaning of the organic certification is the traceability and documentation. And of course, for the consumers especially from abroad, where this kind of forest and collection are not everyday life as for us."* NWFP expert

The forest origin can be demonstrated by marketing decisions, such as branding, packaging, text information and other visual representations, labels and logos, were mentioned currently utilized to indicate the forest origin. However, it is decision by the producer or marketer, on-whether they will emphasize the forest origin or other qualities in their marketing activities. This opinion was described as follows:

"More likely we are depended on what kind of information the producer, or the marketer, wants to emphasize in the marketing decisions. We have products that have forest origin, that are not wanted to market by it, but with other marketing arguments." Forestry expert

"The forest origin has to be a part of a brand and explain why it is special, that it originates from forest. This whole Finnish forestry concept is unknown globally; it has to be opened up and then tell about it and demonstrate it benefits for the customer." Forestry expert

In the previous citation, the forestry expert points out that Finnish forestry is not known globally and to demonstrate the forest origin, the PEFC and FSC chain of custody labels were mentioned as an example on how certification is carried out in forestry. The whole value chain is seen important, if it is wanted to explain credibly that the origin is from certain source.

Few experts mentioned that in the future the forest origin could be shown by the solutions from technology to trustworthy indicate it. An example from agricultural product traceability, QR-codes, was mentioned in few interviews:

"If we look at the pattern from agriculture, there one can locate for instance with QR-codes the barn, where to milk or eggs are produced. Or one can watch live stream from the area." NWFP expert

Overall, the NWFP certification seems to be in its early stages in Finland. It was stated by the experts, that currently the NWFP certification is lacking common practices in Finland. As asked, which certifications systems are familiar for certifying Finnish NWFPs, organic certification was mentioned by all the experts. It is noticeable that in addition to organic certification there was only a few other certification systems stated to be applied for NWFPs in Finland. Repeatedly in interviews were mentioned labels, which indicate the Finnish origin, such as Joutsenlippu and Avainlippu. Also, the category of cosmetics certification and systems, such as Ecocert and Cosmos, were mentioned. NWFP expert emphasized that the situation with cosmetics certification confusing due to its multiple labels and certification schemes, as follows:

"In the natural cosmetics field there are multiple different certification systems with multiple logos. Some groups follow and support some specific labels, but there is majority of Finns, to whom those tell nothing." NWFP expert

One NWFP expert mentioned ISO2200, ISO2600, Kosher and Halal certified NWFPs in Finland. Another NWFP expert mentioned there are differentiated product labels, which provide customer information with for instance, the "gluten free" and other allergen information labels, in NWFPs. In addition, some local labels were also mentioned.

Several experts stated, that they do not know which kind of certification systems are applied to NWFPs in Finland, which led to discussion, whether it is due to lack of knowledge, or the lack of application of certification systems to NWFPs.

The experts were also asked how they see benefit sharing of NWFP certification in value chain. It was mentioned by majority of experts that in the ideal case, the distribution of benefits derived from the certification is seen directed to all actors in the value-chain, while in the reality the sharing of benefits derived from the certification are rarely divided among all the actors in the value-chain.

Firstly, the importance of deriving value for the customer was mentioned as a condition for any certification. Therefore, the customer's willingness to pay and valuation of certification were seen crucial factors, as described in the following citations:

"The benefit has to be for the customer, like what organic promises, what it means. Overall, the benefit of certification is for the customer - that kind of immaterial." Company representative

"It cannot end up being unprofitable for the producer. The point is if the customer is willing to pay for the additional price, that there is the brand created for the product." NWFP expert

It was especially mentioned that the gatherer and the actors in the beginning of the value-chain should benefit from NWFP certification. However, one company representative mentioned that currently in organic certification there appears no additional price for the gatherer, whether NWFPs are gathered from organic wild collection or from the forests not specified as organic by the certificate. In multiple interviews, the

role of a gatherer was seen crucial to success in seasonal business, as in the following the NWFP expert describes:

> *"Also, the gatherer should receive a share. Not that the retailer takes the largest share, but that the whole chain could receive what belongs to each. We will run out of gatherers soon if they cannot even get their wage costs."* NWFP expert

One company representative therefore pointed, that through the success of NWFP company the whole value-chain benefits. Another company representative stated that from the company perspective, the gatherer already receives sufficient wage, especially compared to wage levels elsewhere. The cost structure for the companies in Finland is higher in comparison to competitors in market. The company representative described the price competition as follows:

> *"We have good gatherer prices if you compare elsewhere. But of course, the living standards are different. Costs for companies are higher. We cannot compete with price, for instance with prices in Eastern Europe. I do not know, from where one could take it that the gatherer would benefit of organic [collection]."* Company representative

During the discussion of value-chain, most of the interviewees saw the gatherer as the first actor in the value-chain. Few forestry and NWFP experts mentioned also that depending on the specific NWFP being discussed, the forest owner was perceived as an actor in the value-chain. This referred to Everyman's right and forest owner's possibility to earn from NWFPs. Critique of certification and benefit sharing was directed to the actors, who operate in end of the value-chain, in the customer surface, such as retailers.

4.2 Application of Forest Certificates and EU Organic labelling to NWFPs

During the first interviews it was noticed that it was not self-evident, whether the chosen certification systems, especially FSC and PEFC were at all known among all the interviewees. All the interviewees, either forestry and NWFP experts, stated knowing the organic certification. Many of interviewed NWFP experts were specialized in organic certification, while forest certificates were not that familiar. One third of NWFP

experts stated knowing the main differences of the PEFC and FSC systems, whereas two thirds had only heard about it mentioned or did not know the certificates. Interviewed forestry experts work in connection to forest certification systems and all of them are familiar to both FSC and PEFC, but mostly focused mostly in either one in their work.

The perception of importance of NWFP certification divided the experts into two classes: half of experts stated it to be important, while another half stated it partly important or important in some conditions. It was referred to diverse NWFP field by "important in some conditions", as it consist of with different raw materials, products and markets, and so on in some cases the certification is important, while in some others not.

While the NWFP certification for Finnish markets and Finnish customers was not seen highly important, the urbanization was seen as a link to the increasing importance of certification. It was noted that along with the increasing trend of urbanization, the nature, origin or forest are not familiar for the customers and therefore the verification was seen more important. For the marketing NWFPs abroad, the certification was seen as a highly important tool for presenting the growing conditions and habitat. In some cases, the certification is a total necessity for even penetrating the markets. In the following citations, two NWFP experts described the situation of certification in exports:

> *"If we go somewhere abroad, where they do not understand the conditions in Finland, then it is more important."* NWFP expert

> *"In exports it is absolute necessity that you have some certificate. You can not necessarily enter any market, unless some big buyer has their own system."* NWFP expert

Experts pointed out the company and customer viewpoints towards certification. Certification provides benefits for companies to compete in markets and information that the customer longs for, as it follows:

> *"I believe there are [NWFP] markets also without certification, but it frames and creates competitiveness and eases the market entry, possibly it is a guarantee for entering the market."* Forestry expert

> *"The consumer surface longs for verified methods, whether it was bilberry or conference room table – and certification it is. There are no other tools today.*

These work, are not perfect, but actually are the only ones, which can operate in the chain." Company representative

Experts described their images of certification variedly. For instance, the certification was seen as a tool for a guarantee, but also as a marketing strategy for differentiation in the NWFP market, as follows:

"Certification is one tool for differentiation. If there is effective marketing communication, the health qualities and habitat can be presented for the consumer, but the certification always provides credibility to that." NWFP expert

"Markets are competed. Many uses certificates, which are known abroad and under some brands there are hazard analysis and critical control points certificates or some other. These are worth using." NWFP expert

While all interviewees saw NWFP certification as being at least relatively important, also criticism towards certification was brought up regarding the cost and benefit-relation. One expert criticized forest certification for its for its "talking politics" -nature, and mentioned the challenges of certification, such as bureaucracy and costs, as those form a question of profitability especially for small enterprises. Few experts noted that there are challenges of certification – there is no value if the customer cannot recognize the label or mark, and the meaning behind it. One crucial factor is the criteria certification is based on. In the following example, a forestry expert describes the importance of criteria:

"The criteria [for certification] has to be clear. If we certify some NWFP, for instance cloud berry. What is it then? What it has to qualify, what criteria? That is the basis." Forestry expert

The slightly positive perception towards certification was addressed by two forestry experts as follows:

"There seems to be more and more malpractices and due that the interest of customers will increase towards these systems." Forestry expert

"Not any of these [certification systems] are watertight, and due that, I do not see it inevitable. But on the other hand, if it can create a standard, that by buying this certified product I may be relatively certain of some things, it could be good." Forestry expert

The large organic wild collection areas in Finland were known for all the interviewees, and all the interviewed experts stated that organic certification is utilized for NWFPs in Finland. Some experts also mentioned detailed label Leppäkerttu-label. Organic label was seen especially suitable for NWFP food products. The organic certification of NWFPs was mentioned in each interview, but many experts, especially from forestry field, stated that it is not adequate as it only indicates the pesticide use. It was stated that organic label would ignore other aspects of sustainability. In addition, there was addressed critique about agricultural background of organic certification, to which the system is based on. One forestry expert mentioned the discussion about applying organic certification to timber logs and questioned it harshly. The setting on how NWFP certification is approached from forestry- and agriculture-based certificates is presented in Figure below.

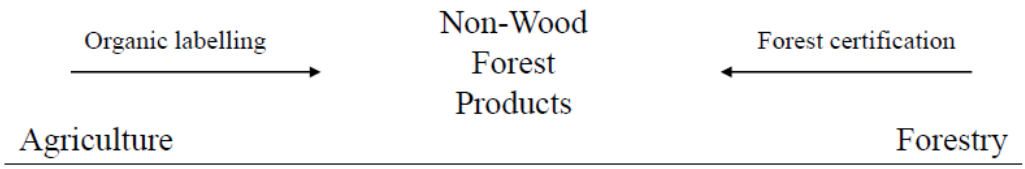

Figure 7. Angles of approach towards non-wood forest products certification.

Forestry expert stated the concern of the lack of comprehensive sustainability as the main difference between of organic and forest certification, as if follows:

> *"Forest certificates include not only the environmental aspect, but the social and economic dimensions and dimension of sustainability of wood production. Forest certificates do not forbid the fertilization and root and butt rot[10] prevention, but set boundaries on where and how, with what kind of substances. If you compare forest certificates, the focus is on the origin and what kind of is the management and use of nature resources, while organic begins with the end-*

[10] Refers to *Heterobasidion annosum* and *Heterobasidion parviporum*.

product and what kind of raw materials for the end-product is used. How we begin to observe, is different." Forestry expert

For some interviewees the forest certificates FSC and PEFC were not familiar and they had no strong opinion about applying forest certificates to NWFPs. It was emphasized, that the customer has to be the one to ask for the label or mark, and the customer has to value the certificate.

"If the customer is taught to understand what the background of the label is, what is means. Does it emphasize the purity, quality or what? If that background does not matter to the customer, the whole label does not matter." NWFP expert

The concept of social responsibility was mentioned in multiple interviews. A company representative stated that the social responsibility is not demanded by the customers and therefore the demand for NWFPs from the sustainable forests is far in future:

"If today the responsible consumers do not ask, how the collectors are, how far it is that they will be asking how the forest is. But probably it is the future, at some point." Company representative

The interviewed company representatives had not faced demand for the PEFC or FSC certified NWFPs. Either the organic certified NWFPs are demanded in all cases. NWFP company pointed that even as they are specialized to exporting NWFPs, the organic certified products are not asked by their B2B-customers:

"Some of our customers have organic production line, but not even they have asked for organic. […] None of the new customers have asked for organic either. And it [organic] is increasing, quickly increasing. We'll see how it will go, where it will lead to." Company representative

The main difference in comparison of organic wild collection areas to forests not specified as organic by the certificate, experts mentioned the documentation and utilization of only organic approved fertilizers or pesticides during the three last years. All interviewees pointed this difference, but majority of them also stated overall there is only very little fertilizers used in Finland and utilization of pesticides is not part of Finnish forestry operations. Other factors affecting the purity of NWFPs mentioned by experts

were locations of factories and refuse pits, birds spreading trash, transportation and highways, to which organic wild collection instructions take a stand on.

The use of fertilization in organic wild collection areas was compared to forest certificates, where organic forbidden fertilizers are accepted in PEFC and FSC forest certification systems. It was mentioned that the difference on how fertilizers in Northern and Southern Finland are used is notable. Due that the organic wild collection areas in the Northern Finland have been simple to establish, where use of fertilizer is non-existent, and government owns large forest areas. As the organic accepted fertilizers are available for forestry, NWFP expert noted that in the future these could replace the non-organic approved fertilizer use, as this citation describes:

> *"If we can promote the organic way of thinking further, that we might start to think about if the fertilizers, which remove it from organic for some time, could be replaced with organic accepted fertilizers."* NWFP expert

The experts perceived that in Finland the organic wild collection areas do not make a great difference to forests not specified as organic by the certificate, but if observed from global perspective, the difference in forest management and fertilizer use can be remarkable.

All the experts stated that currently they are not familiar with forest certificates FSC or PEFC to be applied to NWFPs in Finland. However, a few forestry experts mentioned it could have been possible with the current standards. One forestry expert mentioned that there had been a question for producing PEFC certified honey from Finland, to which they had denied due the lack of certain knowledge, on whether the bees had gathered the nectar from exactly from the PEFC certified area. Also, another forestry expert pointed that there has been a question from customer about applying PEFC to NWFPs.

Instead, from the international markets, majority of the experts could mention PEFC and FSC certified NWFPs. The application of forest certificates to NWFPs was more familiar to forestry experts than to NWFP experts. All the forestry experts were familiar to FSC and/or PEFC application to NWFPs, while only third of NWFP experts stated knowing NWFPs certified with forest certificates.

In Finland, the NWFP certification on forest certificates is a relatively new idea and the possibilities for applying forest certification for the NWFPs are not publicly known. There were seen possibilities for increasing the economic importance of NWFPs in Finland by applying forest certification to NWFPs. The model can be taken from abroad, for example Italy, where for instance FSC is largely applied to NWFPs. Forestry expert explained this as follows:

> *"I argue, that if we take the road for promoting certification, it will create competitiveness for Finnish NWFPs and lifts those up compared to countries, where there is not. For instance, FSC is already seen in certain countries quite a lot in NWFPs."* Forestry expert

Examples of NWFPs applied with forest certificates, mentioned by the interviewees, were PEFC certified honey, beer and Spanish boars and FSC labelled nuts, berries, maple syrup, cork and Iberico ham. Experts named that, forest certification systems have been applied to NWFPs in Southern Europe and Canada. Especially Italy was mentioned for its PEFC application to NWFPs. Also, in China, NWFP certification is remarkable, and they have developed their own system to follow PEFC for NWFP certification. Forestry expert commented following about the importance of NWFPs:

> *"Actually, they speak quite a lot about NWFP certification in Southern Europe."* Forestry expert

Few forestry experts emphasized that the economic importance of NWFPs influences the utilization of FSC and PEFC labels in NWFPs in Southern Europe. There the NWFPs provide a larger share of income from the forests than in Finland, where the timber is the economically most important forest product and other forest products rarely provide any additional income for forest owners. Everyman's right was also mentioned to constitute the operational environment, where other forest products than timber do not only belong to forest owner but are common for all. It was elaborated in the following citations:

> *"In those countries, where the NWFPs have had an important role already before, holding significant market value, it has been carried to the national standards possibility to certify NWFPs [with FSC]."* Forestry expert

"Point there is that the economic value of mushrooms and berries in many places may be in excess of value of timber. It also tells how all forests in Italy are not for timber production. NWFPs are essential forest products. For us in Finland it has been mainly the trees, because the trees, this origin we have told about [in certification], has hold the largest economic value here. And as the Everyman's right then sets it aside, like these are not my berries, anyone can come and pick them, it forms dissimilar situation." Forestry expert

The perceptions whether forest certificates could create added value for NWFPs divided strongly the opinions of the experts. While majority of the experts stated that there might be chances for creating added value via forest certificates, some pointed it absolutely can, and some did not see added value at all. Experts, who did not see added value derived from NWFP certification with forest certificates consisted of both NWFP and forestry experts. NWFP expert pointed out that there may be added value in some markets and in some cases but saw the organic labelling most suitable for NWFPs designated for food purposes. Another NWFP expert emphasized that the forest certificates are unknown, and it would demand a lot of communication for the customer that label could be recognized and appreciated in the buying decision. One forestry experts with doubts towards forest certification application to NWFPs pointed that these systems are not currently exhaustive for NWFP certification, and should be developed further, if there is interest to apply forest certificates to NWFPs. Also, it was mentioned that there are quite a lot doubts in the forestry field towards applying forest certificates to other products than timber as it may cause confusion for the original purpose. These concerns were described as follows:

"Certification in these forest stakeholder groups, which decide and utilize this forest certification, have, on an average, quite a lot doubts, as I have seen it, that it [forest certification] should not be confounded with [NWFPs], that this should be kept as forestry matter, as forestry is in outline understood." Forestry expert

"In a way that demand, no one can expect that kind of and there has not been added value momentum [in applying forest certificates to NWFPs]. These are mainly in the interest of wood product industry, in the eyes of customers of

forest industry, these forest standards, otherwise elsewhere. These have not spread to food industry." Company representative

"In my opinion, these current criteria [of forest certificates], are not one-to-one compatible to these NWFPs. These are more related criteria to forest management, sustainable forestry." Forestry expert

Current FSC and PEFC certification systems have been developed for forestry purposes to certify timber products. One viewpoint was, according to few experts, that forest certificates were perceived more suitable for NWFPs, which originate from trees as the forest certificates are based for timber production, as follows:

"I could imagine for instance in sap production it could be functional, because it originates explicitly from the tree. And in some chaga mushroom products. Products like this type. Or in some wooden products, or other, I see it can be beneficial in furniture industry. Because it is more [linked] to forests and timber, than to what grows in tree roots." Company representative

"I, and probably everyone in Finland, perceive forest certificates specifically for trees. And if we have certified Christmas tree, of course, and spruce branches and wreaths, of course, but the honey. It's there and there… And [certified] beer is far-fetched. Sauna whisk, why not. Or chaga mushroom – it does not grow without trees. I think there has to be somehow the connection to trees." Forestry expert

Some experts saw the possibility for gaining added value from forest certificates important, but it was described that the result is depended on how the forest certificates will be benefited, how those succeed and how the markets adopt it. The NWFP companies emphasized, that they are constantly following trends, customer appreciation and chances for creating additional value. Certification provides one tool for that. However, the company representatives described that eventually the demand for certifications is dictated by the customers, as follows:

"If it is organic certified product, which originates from certified forest… I see that in future it might be factor for added value. Currently I do not see it, that anyone would… It might be that somebody asks tomorrow, but no one has asked yet. Of course, you should be proactive, that when someone understands to ask,

you should already have it. Other [competitors] will not probably have it and you will have competitive advantage at that moment." Company representative

"For our operations the certifications have not been topical. We have not, for instance, started to seriously start to sort out those. During the last 3-4 years in the end of the season, I have started to google, look information about certification. There is so much about organic, but what else there might be. And on behalf of customers it has not been a requirement." Company representative

The experts, who perceived positive possibilities of applying forest certificates to NWFPs mentioned that it would highlight the role of the forest owner in the NWFP supply chain. The forest certificates were seen not only a benefit of demonstrating the forest origin for the NWFP company, but also tool for engaging forest owners to NWFP production, as is stated in the citations by NWFP and forestry experts:

"[Forest certificates] can engage the forest owners, actually to value more this NWFP field, as it becomes part of their system. It is important factor. Secondly, it demonstrates the difference to cultivation production, meaning it indicates raw materials are grown in forests, not in fields." NWFP expert

"I see that at its best, exploitation and gathering of NWFPs from the forest could support, not only the economic benefit that the forest owner would attain, but it could support the other objectives the forest owner has. It could support the objectives for biodiversity or climate." Forestry expert

There were diverse perceptions presented, also expressed at personal level, of PEFC and FSC certification systems. However, experts from certification associations rarely expressed their own perceptions. Many experts stated, that the certification brand has to be strong in order to its effectiveness to added value creation. Generally, FSC was seen better known according to both NWFP and forestry experts. Due to that it was pointed there to be a chance it might be able to deliver added value for its supporters. A NWFP expert describes his thoughts as follows:

"Organic [label] is very well-known, PEFC not that well-known. Some FSC, which is already recognized from wood products, furniture, toys and others – if it could be used attached to NWFPs. It would remarkable." NWFP expert

However, organic certification does not indicate the wild forest origin, as organic label applies also for cultivated products. Therefore, the organic NWFPs are considered as if they were crop husbandry, like the following example shows:

> *"Organic label is known globally as a label for cultivated products. It is not perceived for NWFPs at all. In this regard, PEFC label could be developed to refer more to the origin. It would require this label and other short verbal explanation in the packaging. I think it is good and agreeable thing."* NWFP expert

There was some inconsistency about the perceptions on which one of the forest certificates, FSC or PEFC, considers NWFPs more precisely currently, as seen in the following citations:

> *"In FSC, they have thought about this NWFP issue a bit further, as there is FSC certified NWFPs available, but I think that at least in PEFC it has been one sentence there [in the standard], this wild collection area thing."* Forestry expert

> *"FSC has an aim to certify other than timber. PEFC I do not know that well, but there it has been easier. They have had for a long-time the possibility to PEFC certify, for instance, bilberries, but it has not really taken off."* Forestry expert

One forestry expert commented that PEFC exploits the definition "forest-based materials", which is seen to cover all products from the forest. Interpreted like that by viewing forests comprehensively, it gives an impression that NWFPs could hold the PEFC label already in Finland. Forestry expert described the possibilities followingly:

> *"Basically, the starting point is that sustainable forestry, all products from forest, fulfil the requirements. We have just not exploited it. Even now it may have been possible, that have for instance spruce sprouts with PEFC. Or birch sap. Or bilberries."* Forestry expert

Another forestry expert commented that there is a conflict in between applying forest certificates to NWFPs, as the NWFPs may be lost due to forestry operations, as follows:

"Collected from the PEFC certified forests, as long as there are bilberries." – Forestry expert

On the other hand, several experts mentioned that the forestry operations, such as harvesting, may support co-production of some NWFPs, as the citation by NWFP expert states:

"There are not shockingly big conflicts in between forestry and berry and mushroom gathering. Of course, with mushrooms more." NWFP expert

Two forestry experts connected NWFP production as a possibility to control the increasing amounts of timber harvesting as the NWFPs may provide additional income possibilities for the forest owner. The following citation by forestry expert describes the thought:

"In future, as the demand for timber and harvested amount of timber threatens to increase all the time, perhaps over the sustainable level, if the NWFP field would become strong in that sense that it would be considered as the sustainable harvested amounts of timber are valued and the sustainable forestry is defined. And not like, NWFPs over timber production, like it would be more interesting for forest owner, because quite many NWFPs require forestry to the background support in order to, be enough bilberries, to get raspberries[11], to false morels[12] to show up. That these would be synchronized with our forestry. That there would be an incentive for the forest owner for multi-production, it would be important." Forestry expert

4.3 The Future of NWFP Certification in Finland

During the interviews it was discovered that all the certification systems are ongoing processes with changes and updating of all their standards. It appeared, that PEFC and particularly FSC consider including the NWFPs in their standards and both are also viewing possibilities develop the systems together with organic wild collection. One NWFP expert mentioned there to be changes and challenges with the current organic

[11] Refers *to Rubus idaeus*.
[12] Refers to *Gyromitra esculenta*.

wild collection, whereas the cooperation of certificates may be possibility to develop also organic certification further.

> *"Now we are living difficult times concerning [organic] certification. In that sense, the connection to other certificates is interesting, because it might be one way to, if we could, cooperate somehow with those, to arrange this organic certification conveniently."* NWFP expert

The interviews indicated the ongoing debate about the development of organic wild collection areas in Finland. The questions concern interpretation of wild collection instructions and data availability. Some forestry experts argued strongly the inadequacy of applying organic certification to forests, because there are only few aspects it considers in sustainability framework, and the original purpose of the organic is in the agriculture. Diversity of opinions is elaborated by the following quotes:

> *"If you look at the organic criteria, it is loose - it does not guarantee anything in practice. And in my opinion, organic does not even apply to forests, as it was designed for agriculture. Yet I think it has its place, looked from the customer perspective."* Forestry expert

> *"If we start to certificate trees in organic, there is a risk for the current organic label, as it will be revealed, how the forest certificates - for instance Finnish FSC, holds over 300 individual rules on how to act and determines the stage of environmental conservation, which is compared to basis of organic something totally different category."* Company representative

> *"These forest certificates are signs for responsibility, in which all the dimensions of responsibility are considered. As such those are more exhaustive compared to organic. Organic in forests does not actually acquire anything else, but no fertilizers or urea in root and butt rot prevention. Practically, anything else you can do, only not to use these substances."* Forestry expert

However, the majority of the experts stated the importance of NWFP certification to increase in the future. Especially the organic certification was named to increase its meaning, especially in international markets. Organic was described as well-known globally. The global recognition was mentioned important factor and recreation of new national or local labels was criticized, as the following citations present:

"[Organic] has importance in global trade already, while in Finland only - not that much." NWFP expert

"Maybe those Finnish separate certificates, that we are trying to create ourselves, will probably stay in marginal." NWFP expert

However, there are issues about organic certification that will be further discussed in future, as a company representative stated:

"Organic certification especially - the importance increases. For sure there will be questions inside organic; what kind of organic, referring to this organic bilberry jam product recall. I believe the radioactivity issues will be widely discussed with customers." Company representative

Overall the roles of verification of origin, certification and other labels and claims were seen to increase the importance due to global markets. The importance of certification was linked to the customer trends, such as environmental awareness, naturalness or "back to roots". The global customer demand was however mentioned as a crucial point, whether the certificate will be established in the markets. For instance, the research was mentioned as a chance to map the possibilities for different certifications, while the markets finally make the decision, whether it will be necessity. Company representative commented the following:

"From your side, perhaps, comes the interest to research and develop, and it promotes it. Just as it will be seen in the market to provide some additional, it will help to advance it to increase the importance." Company representative

Also, one forestry expert pointed that certification is a tool for providing customer information. He explained it as follows:

"If the consumer and company clients want to know the real origin of material, this [certification] is one good tool for conveying the good origin in the product chain until the consumer. It depends, whether it will happen for NWFPs, hard to say, but actually, why not, if it happens for many other products." Forestry expert

Two experts linked NWFPs to Finnish bioeconomy strategy as a part of bioeconomy transformation. Forestry expert pointed that bioeconomy transformation aims to high-

light different forest-based products but there is adversarial debate about forest resources going on in Finland. On the other hand, another forestry expert pointed how bioeconomy is based on standardization and therefore, the NWFPs will more discussed in future. The following citations present the link between NWFPs and bioeconomy:

> *"We are at a stage of misunderstandings. Some think that bioeconomy only wants to lobby felling more and more trees, to destroy the nature. And no-one in forestry thinks this way. It is confrontation. Starting from the natural tourism, until the last chemical of bioeconomy factory and all in between that – berry-based products, game, berry tourism, hunting tourism, fishing tourism – is all bioeconomy."* Forestry expert

> *"Bioeconomy evolves standardization ahead. I see [the certification of NWFPs] will be highlighted in the future."* Company representative

One forestry expert mentioned that there have been preliminary discussions about applying forest certification for game. The discussion participants have been the certification applicant, certification authority and auditing companies. The auditor stated the certification to be possible, but the certification process currently is stagnated. Forestry expert described this process followingly:

> *"Maybe this party [certification applicant] still explores it; it is not yet carried out. Because then, in the production chain, that berry picker or equivalent, if the practise would be similar to forest certificate, it would be in the certificate scope descriptions, in coverage description, mentioned that which products it covers. Thinking about forest, it could be pine and spruce sawing and bilberry marketing. Something like that it could be."* Forestry expert

The interview themes focused on organic and forest certifications application to NWFPs but while these were discussed many experts from both NWFP and forestry fields led discussion towards more exhaustive certification schemes and development of those. The development of certification has evolved so that currently the need is to demonstrate the influences of production chain. In comparison to the forest certificates, which show the "how" it is produced, the following citation by company representative emphasizes how reporting the influences of production is more and more valued:

"Those customers, whom were firstly interested about FSC, want now verification, numerical information, about the actual influences." Company representative

Regarding NWFPs, the multiple-use of land and coproduction of timber were mentioned worth demonstrating for the customer, as this citation describes:

"Finnish forest ecosystem could appear as an example for joint production of ecosystem services, like "how to use a land". […] We produce industrial scale timber, and then these NWFPs, other operational services, from carbon sinks to water resource planning, and we do not have any tool for addressing it numerically, in some foot or hand print, or other label, to indicate it." Company representative

Few experts connected the NWFPs to global food production, where NWFPs can provide sustainable model for food production, as there are no inputs included in the production chain. The following citation describes this perception of NWFP expert:

"Collected from forest and no inputs. This would be amazing if one could compare it to other products." NWFP expert

Some experts mentioned certification schemes, which can report the influences of the production, such as life-cycle assessments, foot print, water print and carbon print. The following citations present the development ideas for NWFP certification:

"At what stage people will start to demand for foot prints? I believe it is future." NWFP expert

"We could demonstrate that within this bilberry product in the forest has committed X amount of carbon, has produced X amount of clear water and Y, Z biodiversity values, and in addition these and those ecosystem services. That is more extensive, more difficult way." Forestry expert

5. Discussion and Conclusion

The aim of this study was to identify perceptions towards NWFP certification in Finland among experts in NWFP and forestry fields. Table 4 summarizes the main findings of this study. Based on it, all the experts saw the increasing importance of NWFP certification in the future. The experts appreciated the forest origin of NWFPs, also to communicate it for customers. Using the certification provides a possibility for verifying the origin. The concept of organic wild collection areas was known among both NWFP and forestry experts. However, most of the NWFP experts were not familiar with the forest certificates or with the idea of certifying NWFPs by using a forest certificate, which may be accounted for faint utilization of forest certificates for NWFPs.

Table 4. Summary of expert perceptions towards NWFP certification.

Theme	Forestry experts (n6)	NWFP experts (n7)
The meaning of certification of NWFPs in future	Increases	Increases, especially organic
NWFP factors important to verify by certification	Origin Traceability Value-chain Purity of nature Responsibility	Origin Purity of nature Nutritional qualities Safety; pesticide use, radioactivity
Valuation of forest as an origin	Majority sees value added about forest origin, two do not	Majority sees value added about forest origin, two do not
Importance of NWFP certification	Half of experts see it important, half in some conditions	Over half of experts see it important; three in some conditions
Ideal benefit sharing of certification for the value-chain	Whole chain; forest owner mentioned by three experts, gatherer mentioned by one expert	Whole chain; gatherer mentioned by four experts, forest owner mentioned by two experts
Familiarity to organic wild collection areas in Finland	All experts were familiar	All experts were familiar
Familiarity with FSC or PEFC certified NWFPs	All experts were familiar	Only minority were familiar
Perceptions of application of forest certificates to NWFPs	Four experts viewed chance positively, two were doubtful	Five experts viewed chance positively, two were doubtful

The preliminary conception that the NWFP certification in Finland is relatively new for the field was confirmed during the interviews. Therefore, the method of interviewing the experts was appropriate to understand this relatively new phenomena. The sample, which consisted of experts from both forestry and NWFP portrayed some lines of the NWFP field structure, which is located to multiple lines of businesses in Finland (Ristioja 2018).

During the interviews, it was noticed that the complexity in defining NWFPs affected how the interviewees viewed the NWFPs. There was no given definition of NWFPs for the interviewees, so when looking at the results, it should be noticed that the NWFPs were understood in many ways. While majority of interviewees discussed of wild berries, mushrooms and herbs, for some interviewees it also included for instance, game, as for some not. In addition, it should be noticed that the NWFPs consist of food products, but also of other product categories.

When using a small convenience sample like in this study, the generalizability of findings is limited. Therefore, these results only provide ideas and perceptions on how the NWFP certification is perceived among experts, how they perceive certification to evolve in future and what issues need to be considered in the development processes. As a limitation, it should be noted that the selected certificates cannot be evaluated for their market value or customer value, since only individual opinions of experts can be represented. However, if the NWFP certification will be promoted further, these themes are clearly essential topics for future research.

Based on the interviews and literature review, there is an increasing interest towards NWFPs. Currently, the Finnish NWFP field is relatively marginal compared to for instance forestry, which has been essential for Finnish economy. However, the results of this study suggest that there is currently an interest for developing Finnish forest certificates to increase the part of NWFPs in their systems. As there is greater economic importance of NWFPs in other countries, they have an incentive to discuss NWFPs in the global forest certification decision-making boards, and therefore the NWFP certification is integrated to the debate in the forestry field in Finland as well.

Both forestry and NWFP experts emphasized in the interviews that the origin of NWFPs is an important factor to be verified. Origin, however, can be defined as origin from forest, or from arctic area. The arctic origin is seen as a differentiating factor for

instance for the special characteristics of the light and location impacting on wild berries (Kurppa et al. 2015). The country of origin being Finland was seen adequate in some cases. In comparison to agricultural products, the origin of non-wood forest products, "wild", can be a differentiating factor. While organic label is recognized for cultivated products, it does not indicate the forest origin. Forest certificates then seem to indicate sustainable forest origin. But are they applicable only for wood products?

The distinction, what to certificate and with what certificates was largely debated among especially forestry experts. It was pointed out, that NWFPs, which originate from trees, such as chaga mushroom and sap water, could be more easily seen to be certified with FSC or PEFC, while for instance bilberries, growing underneath the trees are not seen suitable to be included in the forest certification. It should be noticed that as applying forest certification to NWFPs is relatively new idea in Finland, the first step for agreeing new applications could be the perception to acknowledge NWFPs originating from trees to be certified with forest certificates. However, according to other view expressed in the interviews, the forest was seen holistic, and therefore all the products derived from forest could be naturally included to the forest certification systems. NWFP experts had no strong perceptions about applying forest certificates to NWFPs and approached it as an opportunity, while emphasized the importance of organic labelling and stated its importance to increase.

As it was pointed out that none of the discussed certificates (FSC, PEFC and EU organic) are not fully suitable for certifying NWFPs, there were also development ideas mentioned in the interviews. For instance, in multiple interviews there was discussion on how agriculture- and forestry-based certificates interlink currently and in the future: question is whether forest certificates and organic wild collection will be developed jointly further. There are multiple questions for development agendas; one of which is that the fertilization is currently being inconsistent between forest certificates and organic wild collection. The development of all these certification systems are currently ongoing and this study addresses only some of the questions to be asked.

The forest certification system has approached sustainability from economic, social and environmental aspects, while in other natural resources sectors, for instance organic certification in agricultural sector, have addressed only some factors of sustainability (Nussbaum and Simula 2004 pp. 218-219). During the interviews it was stated

that for instance social sustainability scandals might easily ruin the reputation for the country-of-origin-image. In Sweden, Woolfson et al. (2011) have proposed to take best practices for global governance of migrant workers and corporate social responsibility to agenda concerning migrant berry gathering. In Finland, where pickers rarely have an employment contract, government has given instructions on Letter of Intent… (2018), see also, Työsuojeluhallinto (2018), and some companies have emphasized the social responsibility by certification. If the country-of-origin is highlighted, the social sustainability should be also considered to taken to the next level. In the forest certification systems, the aspects for social sustainability are already addressed.

The fact that NWFPs grow without financial inputs is a strength also as looked from the viewpoint environmental sustainability. The forests provide food without inputs in Finland, as NWFPs grow in their natural habitat with no watering systems provided. The whole NWFP production is based on multiple-use for the land together with timber and other ecosystem services (Kniivilä et al. 2011). It may be obvious to most Finns with the long traditions and still active NWFP gathering (Vidale et al. 2015), but the results suggest that the demonstration of the sustainability of NWFP production could be a competitive advantage for the NWFPs globally. In the global markets, the NWFP production is not necessarily understood without demonstration. There is a chance, that verified demonstration might create added value for the products.

Overall, the discussion on how organic certification is applicable on forests and whether to certify NWFPs within forest certificates indicate that the barriers of natural resources management seem to diminish, and therefore the future interest is on the development of certification systems which provide more comprehensive verification. The question no longer is, whether it is agriculture or forestry, but how the natural resources, the land areas, are utilized and what the influences on the area according to all aspects of sustainability are.

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Annexes

Annex 1. NWFPs in PEFC Finland Standard. Source: PEFC Finland (2014).

PEFC Finland Standard Criteria for PEFC Forest Certification Issued in 2014
Criterion 27: Everyman's rights shall be safeguarded Criterion: Opportunities for free moving, access and stay in forests as well as for collecting forest products according to Everyman's rights shall be safeguarded. Indicators: There is not a significant amount of verified restrictions to the Everyman's rights. Everyman's rights include, among others - e.g. walking, skiing or bicycling - temporary camping on other person's land - gathering of berries, mushrooms and some other nature products - gathering of dried twigs, brushwood, fallen cones and nuts The following activities are not included in Everyman's rights: - setting fire - damaging trees or bushes - driving in motor vehicles on terrain - gathering of protected plants, lichens and mosses - making feeding places for game - damaging seedling stands and cultivated land - littering the environment An opportunity for the use of the Everyman's right and its limitations depend on the dominant type of land use on the area. Additional information about the Everyman's right can be obtained from the

guidebook “Everyman’s rights – Legislation and practice” (Finnish environment series 30/2012) prepared by the Ministry of Environment.
Criterion 29: Preconditions for multipurpose use of forests shall be promoted
Criterion: Accessibility on recreational trails possibilities for hunting and game management and agreement based collection of organic forest products shall be enhanced in order to safeguard the preconditions for the multiple use of forests.
Indicators: No soil scarification or stump removal shall take place on recreational trails. Canopy biomass shall not be left on trails. Any permanent constructions on trails shall be safeguarded in forestry operations. When the monitoring of nature management indicates that 90 per cent of a trail length is intact (in forestry operations), when the trail has not been made inaccessible or there has been ensured an alternative trail, the accessibility on the trails is taken into consideration as required by the criterion. Forest and hunting organizations collaborate for preventing damages caused to game, promoting game keeping and safeguarding game habitats. In context of collecting organic products, the publicly available information required on the use of fertilizers, pesticides and herbicides is openly accessible organized by authorities and if necessary for those estates where forest owner, or a person he/she has authorized, has made an agreement regarding the compliance with the guidelines for production of organic products. In order to safeguard living conditions of game, broadleaved trees are left as supplementary seedlings in seedling stands dominated by coniferous species.

Annex 2. NWFPs in FSC Standard for Finland. Source: Finnish FSC Association (2010).

FSC Standard for Finland Dated 2010
3.1.5 Cultural and multiple use of forests Access to and recreational use of forests is free for all in Finland. The everyman‟s rights (freedom to roam) bestow on all people a free right to use land owned by others to travel on foot, skis, bicycle or horseback, provided that they do not cause any damage. Other activities freely permitted on other people‟s land are picking wild berries and mushrooms. The use of motor vehicles and making fire in forests, however, always require permission from the landowner. Forests are an important environment for recreation in Finland. The most common forms of recreation in forests are hiking, berry-picking, hunting, camping, cross-country skiing and orienteering. Forests also provide a setting for relaxation, meditation and communing with nature. The most important non-wood products which have an economic value are game, berries, mushrooms and lichen. The greatest value in economic terms is game, particularly moose. In Northern Finland, reindeer management is also regionally significant. The volume of nature tourism has increased in recent years.
5.4 Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.
5.4.1 The forest owner should create circumstances for multiple use of forests by favouring operations that in the long term consider activities such as collection of mushrooms and berries as well as game management. Verifiers: Management plan, guidelines, field inspections, forest owner’s and stakeholders’ interviews.

5.4.2 S The forest owner shall consider routes and structures important for ecotourism and recreational use by:

a) preserving recreation routes, marked trails and structures of recreation areas in regional plans and municipal master and local plans while performing forest operations, and

b) implementing forest regeneration on a small scale in the vicinity of hiking trails marked in the regional plan.

Verifiers: Management plan, regional and municipal plans (V, VR, VL, recreation routes), field inspection, stakeholders' interviews.

5.4.3 S The forest owner shall not restrict the use of forest roads without a reason.

Verifiers: Field inspection, interviews.

Note: Restrictions of use may be justified for reasons such as seasonally poor roads, dumping of waste or abuse of everyman"s rights.

Annex 3. NWFPs in organic labelling. Source: EUR-Lex (2007).

Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products.
Article 12 Plant production rules 1. In addition to the general farm production rules laid down in Article 11, the following rules shall apply to organic plant production: (a) organic plant production shall use tillage and cultivation practices that maintain or increase soil organic matter, enhance soil stability and soil biodiversity, and prevent soil compaction and soil erosion; (b) the fertility and biological activity of the soil shall be maintained and increased by multiannual crop rotation including legumes and other green manure crops, and by the application of livestock manure or organic material, both preferably composted, from organic production;(c) the use of biodynamic preparations is allowed; (d) in addition, fertilisers and soil conditioners may only be used if they have been authorised for use in organic production under Article 16; (e) mineral nitrogen fertilisers shall not be used; (f) all plant production techniques used shall prevent or minimise any contribution to the contamination of the environment; (g) the prevention of damage caused by pests, diseases and weeds shall rely primarily on the protection by natural enemies, the choice of species and varieties, crop rotation, cultivation techniques and thermal processes; (h) in the case of an established threat to a crop, plant protection products may only be used if they have been authorised for use in organic production under Article 16; (i) for the production of products other than seed and vegetative propagating material only organically produced seed and propagating material shall be used. To this end, the mother plant in the case of seeds and the parent plant in the case of vegetative propagating material shall have been produced in accordance with the rules laid down in this Regulation for at least one generation, or, in the case of perennial crops, two growing seasons; (j) products for cleaning and disinfection in plant production shall be used only if they have been authorised for use in organic production under Article 16.

2. The collection of wild plants and parts thereof, growing naturally in natural areas, forests and agricultural areas is considered an organic production method provided that:

(a) those areas have not, for a period of at least three years before the collection, received treatment with products other than those authorised for use in organic production under Article 16;

(b) the collection does not affect the stability of the natural habitat or the maintenance of the species in the collection area.

3. The measures necessary for the implementation of the production rules contained in this Article shall be adopted in accordance with the procedure referred to in Article 37(2).

Annex 4. Questionnaire in Finnish.

1. Alkuperä ja luonnontuotteen lisäarvo

- Luoko metsäalkuperä luonnontuotteelle lisäarvoa? Jos, millaista?
- Kuinka asiakas voi tunnistaa luonnontuotteen metsäisen alkuperän?
- Kuinka villi metsäinen alkuperä voidaan todentaa asiakkaalle?
- Mitkä ominaisuudet näet vientiluonnontuotteen asiakasryhmille tärkeinä ostopäätöksen kannalta?

2. Sertifiointi tänä päivänä Suomessa

- Millaisia sertifikaatteja tiedät luonnontuotteilla olevan tänä päivänä Suomessa?
- Minkä tekijän todentaminen sertifioinnin keinoin olisi tärkeintä luonnontuotteille?
- Kuinka suomalainen luonnontuote eroaa muista luonnontuotteista? Eroaako se?

3. Tulevaisuus ja hyötyjen jakautuminen

- Miten näet luonnontuotteiden sertifioinnin tulevaisuudessa? Kasvaako vai laskeeko luonnontuotteiden sertifioinnin merkitys tulevassa?
- Onko luonnontuotteiden sertifiointi tärkeää? Miksi se on/ei ole tärkeää?
- Kuka hyötyy luonnontuotteiden sertifioinnista?
- Kenen pitäisi hyötyä luonnontuotteen sertifioinnista?

4. Metsäsertifikaatit ja luonnontuotteet

- Eroaako luomusertifioitu metsä ei-sertifioidusta metsästä? Jos, kuinka?
- Tiedätkö maailmalta tai Suomesta, mitä muita kuin puutuotteita, kuten luonnontuotteita, metsäsertifikaateilla voi sertifioida?
- Voiko metsäsertifikaatti luoda ’muille kuin puutuotteille’ lisäarvoa?

Annex 5. Questionnaire in English.

1. The Origin and Added Value of Non-Wood Forest Products

- Does the forest origin create added value for non-wood forest products? If so, what kind of?
- How can the customer recognize the forest origin of the non-wood forest product?
- How can the wild forest origin be verified?
- What are the characteristics valuable for the buying decision of the imported non-wood forest products?

2. Current Certification in Finland

- What kind of certificates for Finnish non-wood forest products are you familiar with?
- What are the factors of non-wood forest product do you see important to be verified by certification?
- How does the Finnish non-wood forest product differ from other non-wood forest products – if it differs?

3. The Future and Benefit Sharing

- How do you see the future of non-wood forest product certification in the future? Will the importance increase or decrease?
- Is it important to certify non-wood forest products? Why, why not?
- Who benefits from the non-wood forest products certification?
- Who **should** benefit from the non-wood forest product certification?

4. Forest Certificates and Non-wood Forest Products

- Does the organic certified forest differ from a forest not specified as organic by the certificate? If so, then how?
- Do you know any non-wood forest products certified with forest certificates from Finland or abroad?
- Can forest certificate create added value for the non-wood forest products?

Annex 6. FSC Classification for NWFP products. Source: FSC (2013).

N1	Barks
N2	Soil conditioner and substrates for plants
N3	Cork and articles of cork
N4	Straw, wicker, rattan and similar
N5	Bamboo and articles of bamboo
N6	Plants and parts of plants
N7	Natural gums, resins, oils and derivatives
N8	Chemical, medicinal and cosmetic products
N9	Food
N10	Other non-timber forest products (not elsewhere classified)