A comparison in attitudes and activity among different groups of private forest owners in Noarootsi municipality, Estonia

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Master Thesis no. 150
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Alnarp 2010

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Master thesis in Forest Management, course code (SLU) EX0505, Advanced level (D) 30 ECTS (hp)

FOREWORD

This is a 30 ECTS credit thesis that was carried through at the department of Southern Swedish Forest Research Centre at the Swedish University of Agricultural Sciences in Alnarp and I have a great number of people to thank for helping me to put it together.

To start with, I owe a huge thanks to all individuals who so neatly and patiently answered this questionnaire of mine and thus provided all sorts of interesting data for me to crunch.

I could not have started this project without my supervisor at the department in Alnarp, Ola Sallnäs who encouraged me to continue although it was ”the most different thesis subject” any student had come up with so far, and who provided much help in putting together a decent paper. Also in Alnarp I have had much help from Mattias Boman in putting together a questionnaire that makes sense and from Johan Norman who lent some wise words regarding the distribution of it.

Ülo Kalm at Noarootsi Municipality board, Lars Alexandersson and Toomas Kuinberg at West Coast Forest Owners, and Sven Lillepalu at Stora Enso Timber in Tallinn have all provided very important information, good ideas and been of great help in the process of my study, not to mention how important their interest in my work has been for me to stay concentrated and mentally fit during long days in front of the computer, analyzing data and writing.

The original idea of starting this project was much influenced by Sven Karlsson, Lund, whose love for Estonia and its people inspired me much and who so kindly let me use his charming cabin during my visit to Noarootsi. He also provided an Estonian contact in Alar Schönberg who helped me distribute the Estonian questionnairies.

Least but not last many thanks to my husband Seth Zeigler who helped me a lot with reviewing the English language in this paper, and my aunt Ingrid Thelin, Lund, through whom I got in contact with Sven Karlsson and thereto gave me a lot of support and a place to stay and have the questionnaires sent to.

Sunnansjö, March 2010

Emma Zeigler

SUMMARY

Noarootsi municipality is situated in north western Estonia and has like the rest of the country had a rather turbulent history of forest ownership. The forest has been mainly privately owned at times and fully state owned during the Soviet Union area. Since the fall of the Soviet Union Estonia has gone through a privatization process in which former land owners could retrieve their farms. Many of the land owners in Noarootsi municipality had fled to Sweden during World War II and did not move back although many did retrieve their properties. The purpose of this study was to research what differences there were between the forest owners living in Estonia and those living in Sweden's attitudes and behavior regarding forest management and what influenced these. More knowledge about this may give the Estonian forestry sector a greater ability to fulfill the forest owners' objectives and improve the activity on their properties.

Data for the study was collected through a questionnaire that was sent to 145 of Noarootsi municipality's private forest owners, whereof 70 lived in Estonia and 75 lived in Sweden. In total 60 percent of the forms were returned, of the Estonians 59 percent returned the questionnaire while 61 percent of the Swedes returned it.

Forest owners living in Sweden were significantly older than those living in Estonia and also female forest owners were significantly older than male forest owners, however it was only among Estonians that the difference between females and males was significant. Naturally, only Estonians lived permanently on their properties but a greater share of the Estonian men than women lived permanently on their property. Of the survey's all respondents, a greater proportion were men than women.

Estonian forest owners' ownership objectives were in general more connected to an economically significant use of the forest than the Swedish forest owners' ownership objectives were. Swedes in general thought family ties were of greatest importance and secondly opportunity of recreation. The Estonians in general instead rated access to timber or firewood of greater importance. Family ties were important among Estonians too, but not much more than the access to residence. Estonians had in general rated most motives of acquiring of greater importance than Swedes. Pursuing forestry was rated approximately as high by both groups, but the importance of pursuing nature conservation was rated higher than forestry by Estonians and lower than forestry by Swedes. Men in general rated all motives of greater importance than women did.

Few respondents estimated their initial knowledge to be more than low. Of those who did, more were Estonian and more had acquired their properties through other ways than the land restitution process. Also, those with more initial knowledge seemed to be using or intend to use their forests for more income related reasons than other forest owners did. Women in general estimated their initial knowledge to be lower than men did. Most respondents gained knowledge since they became forest owners but there was a big variation for what knowledge sources they thought most important. Magazines and books were important for the Estonians but not so for the Swedes and this may be due to these sources in part are in Estonian and difficult for Swedes to assimilate. More important for the Swedes and on-property residents were family or friends, which may imply a wider spread forestry tradition among Swedes and those living by their forests. Information evenings and in particular forest days were important sources for cooperative members. Probably the members have better accessibility to these sources through the cooperative.

Close to sixty percent of the respondents carried out some sort of forestry measure on their own but differences between the groups were great. Estonians were much more active than Swedes, which is natural, considering the Estonians living so much closer to their properties and men were more active than women. Furthermore, more of the Estonians and men hired external help for forestry measures than Swedes or women did. But the Swedes in general hired help for a greater number of measures than Estonians did, which was much a result of a very great amount of cooperative members showing they hired help for a large number of measures. More than eighty percent felt a need to hire help in the future. There were no great differences between the groups, except for cooperative members feeling a need of help for a greater number of measures than non-members did.

Most of the respondents thought active use of the forest was important. Estonians and women in general thought it was more important than Swedes and men did. A greater amount of the cooperative members than the non-members thought active use was important and for these also the cooperative was considered the most important contact that influenced their forest management. Non-member Swedes instead rated family or friends of greatest importance, while Estonians thought the municipality had greatest influence on their forest management. A cooperative membership seem to play an important role for the activity level in the forest. Although members did not carry out the greatest amount of forestry measures on their own, they were the owners of which the greatest amount hired help, and that hired help for the largest number of measures. They also felt the greatest importance of active use and largest need of hiring future help.

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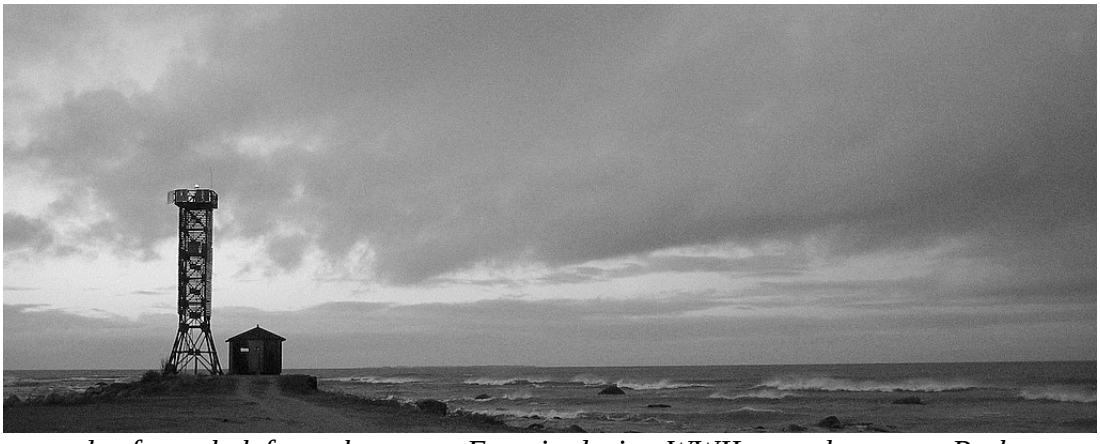
INTRODUCTION

"My older brother walked from there straight through the woods to Kegel and took the train home. He made it to the last boat and escaped to Sweden. I also ran through the woods and walked home. When I came home, the last boat had already departed and shortly also the Russians were here. Left in Estonia were we – three brothers, one cousin and my sister's husband. Now, they are all dead, only I am left"

These are the words of one of the few that stayed in Noarootsi municipality whilst several thousands of people meantime were forced to leave their homes in north western Estonia. Countless are those tragedies that took place during the Second World War (WWII) (Sarv 1994), when the little country reluctantly had to see itself become a strategic outpost, fought over by the Soviet and German powers and eventually fall under Soviet occupation (Hedin 2003). The municipality of Noarootsi has a long history of inhabitance by ethnic minorities, mainly Estonian-Swedish. However, when nationalistic ideas were spreading in Europe toward the end of the 19th century, Estonia was also influenced and by the 1930s laws for a homogeneous population and thus against ethnic minorities were becoming strict (Grubbström 2003). Furthermore, the Soviet occupation not only took much of the Estonian-Swedes' land in possession, but it as well targeted ethnic minorities and thus Estonian-Swedes eventually often had the only choice of flee or be deported. For most, the destination was Sweden. Like so many other areas in the former Soviet Union, Noarootsi's history of land owning and land owner structure thus differs much from what can be seen in Sweden. The municipality has lived through times of private ownership during occupation as well as within the free Republic of Estonia and it has seen times when all land was the property of, and run by, the state. When Estonia was declared independent in 1991, there was a strong desire to quickly return former privately owned farms to their old owners. Many people got the opportunity to retrieve their old family farms and many so did. In Noarootsi municipality approximately half of the properties were retrieved by year 2001. But through the decades of occupation many of the reconstructed farm owners had formed their own, new lives far away from their old homes and very few actually moved back. The main reasons for retrieving the farms were purely sentimental and few had an actual plan for using their properties. Use of the farm- or forestland that came with the properties has been of subordinate importance (Hedin 2003). Furthermore, a great amount of important knowledge and tradition in forestry was lost on the long way back to private ownership (Anon 2008a).



Thousands of people left northwestern Estonia during WWII, most by water. Perhaps some started their life changing journey here, at Cape Põõsaspea (photo Emma Zeigler)

The forest, as described in above quote, and as a part of the mainly agrarian Noarootsi area, might not be regarded to as forest for industrial use, but has definitely always been an essential part of life in Noarootsi municipality. Being a part of Estonia, a country where forestry has a long history (André 1999), the municipality will inevitably be influenced by the country's general forestry policies, policies that today speak of an expansion of the forestry sector (Etverk 2002). The private forest owners are important links for the opportunities of expanding the forestry sector (Kuinberg 2007). Approximately 38 percent of the country's forest land is today privately owned (Klingström 2007) and a significant part of this grows on returned properties, like the ones in Noarootsi municipality. But while the authorities and industry are begging for a higher activity in the private forests, the forest owners themselves are answering with a low level of activity. There seems to be a generally spread fear of large companies devastating the forests, as, tragically, often was the case when Estonia had just gained independence and forestry was growing (Kuinberg 2007). Also, a common view of the forest is of it as a safe pension insurance, which is growing like assets on a bank account, without any action needed to be taken (Lilepalu 2007). A custom of forest owners' associations is slowly spreading across the country, but yet there is a great caution towards collective institutions and in Noarootsi, pretty much the only forest owners who are members of any forest owner's associations are the Estonian-Swedes, of whom many are members of the "West Coast Forest Cooperative" (Kalm 2007).

Noarootsi municipality

Noarootsi municipality (Figure 1) consists of what before WWII were the three municipalities of Noarootsi peninsula, Riguldi and Sutlepa and is situated on the western coast of northern Estonia, approximately 100 kilometers southwest of Tallinn (Hedberg 1997). It has a total area of 296 square kilometers and 910 citizens in the year 2005 (Anon 2008f), a shy number compared to the 4388 people who lived in the municipality in the year 1934 (Sarv 1994). The area has a long history of Swedish settlement; new research suggest that Noarootsi was inhabited already during the Viking age or early Medieval. It has not been fully established why the Swedes moved to Estonia, but ever since they first came and settled in the area of Noarootsi they have mainly made a living from farming and fishing under privileges as well as conflicts (Grubbström 2003). By the start of WWII, approximately 60 percent of the municipality's population was of Swedish heritage (Sarv 1994), commonly known as Estonian-Swedes.

Figure 1. Map of Noarootsi municipality's situation

Pre-Soviet Estonia

What is today officially known as the Republic of Estonia has experienced hundreds of years of foreign occupation and likewise the land ownership structure has seen many changes. Already during the 13th century the Estonian territory fell under the control of the Teutonic Knights, a German Roman Catholic religious order. With these a feudalistic society was

introduced and the demands on peasants increased constantly to, by the 16th century, evolve into a strict serfdom. Although, by this time the Protestant Reformation had begun in Europe and the monastic state of the Teutonic Knights started to crack in its seams. Neighboring superpowers saw their chance to gain some ground and eventually the territory fell under Swedish rule. However, this did not end serfdom. During the Swedish era, it was the great warlords that were benefited in the respect of gaining ownership of land. Sweden lost its Baltic province to Russia in 1709, and the Russian tsar gave power over the territory to the local nobility, who immediately used it for increasing demands further on the local peasant society. Arising protests as a result of the increasing hard living conditions eventually led to an official stop of serfdom in Estonia in 1816. Although, it was not until 1856 that an actual law was formed that made it possible for peasants to buy land from the large estates. Gradually an independent farmer society was beginning to form, although large estates by year 1914 still owned 58 percent of the total rural land area (Hedin 2003). Most of the forest land was at this time in private ownership (Etverk 2002) and much influenced by German forest management that came with foresters in contact with the German minority that still lived in Estonia (André 1999). When Estonia finally became independent in 1918 one of the most important issues for the government was to make the actual farmers owners of the land that was being used and to strive for a more fair land owner structure (Hedin 2003). These ideas ended in an extensive land reform in 1919 that resulted in the forming of a good 56 000 new farms from land that the government had expropriated from the local nobility's large estates (Grubbström 2003). Furthermore, the reform resulted in an agrarian sector dominated by small family farms. However, most of the forestland was kept in government ownership, much as a security for the newly formed republic's vulnerable economy (Hedin 2003). Also, the forests that had belonged to the estates were put under state ownership (Grubbström 2003.

Soviet Occupation

The Soviet Union's first interference on Estonian territory started in the fall of 1939, when it forced Estonia to enter into a defense pact and allow Soviet military bases to be established in the country. This was particularly tangible for the people in coastal areas, like Noarootsi, since these areas were of high strategic importance for the military. Many people were already then forced to leave their homes as public access to the areas was restricted (Sarv 1994). By the summer of 1940, Estonia was completely occupied by Soviet forces. During the fall the same year all land was nationalized and the usufruct of the land was taken from all owners of farms larger than 30 hectares and handed over to small-scale farmers (Hedin 2003).

During the first half of 1941, Communistic collectivism took form in the first establishment of occasional, small-scale collective farms; kolkhozes and state farms; sovkhozes. However, the spread of Communism was put on hold when Germany later that year advanced its attack on the Soviet Union into Estonian territory and took control of the country. During Germany's three year long occupation some of the land use rights; the usufruct, was returned, but all land was kept by the German state (Hedin 2003). It was also during this period that most of the country's Estonian-Swedes fled and ended up settling in Sweden. At the same time other people, for the most part Estonians with Russian heritage, were transported to the empty homes by the occupation force (Sarv 1994). In 1944, the Soviet Union once again gained power over Estonia and this time the occupation was going to last nigh on half a century (Hedin 2003). During the war, thousands of people had left the country and although others moved in, many farms stood empty and were confiscated by the Soviet Union (Sarv 1994). Kolkhozes and sovkhozes slowly started to spread again in the mid 1940s, but it was not until

1949 that collectivism truly took hold of Estonia. In March that year a mass deporting of alleged Kulaks; the farmers with larger usufructs, took place, sending a message to other farmers to either join kolkhozes or be deported. Half a year later nearly 80 percent of all private farms had joined kolkhozes and by 1952 no private farming existed in the country. To begin with, the kolkhozes where kept small to resemble the family farms, but gradually they grew into larger, more industrialized units. By the 1980s the average kol- or sovkhoz in Estonia was an industrial unit of 7700 hectares; a complete opposite of the small interwar period family farms (Hedin 2003).

Estonia's independence and the land restitution process

Towards the end of the 1980s the Soviet Union was starting to fall apart. The then Soviet leader Mikhail Gorbachev had implemented some major political and economical reforms to open up the atmosphere of the union and winds of liberalization spread through Estonia and other Soviet states (Hedberg 2000). During the fall of 1988 the Supreme Soviet of Estonia declared the state's sovereignty and on the 20th of August 1991 Estonia finally declared itself independent (Hedin 2003). Already from the start the state has been concentrating on creating a liberal economy and thus developed one of the world's most open economies (André 1999).

Private farming had become legal again in Estonia in 1989, through the institution of a law of usufruct (Hedberg 2000). Privatization was taking place all over the Soviet Union, but Estonia wanted to take the process even further from the Soviet ideology and thus, already two months before the declaration of independence, founded a *Law of property reformation*, making private ownership a norm. This law also involved striving for restitution; the return of nationalized land to previous owners. How this process was going to develop was further established in the *Law of land reform*, which was instituted shortly after the declaration of independence (Hedin 2003). It was settled that the land owners of year 1940's land registry, or their heirs, were entitled to reclaim their nationalized properties. Where properties for various reasons could not be returned, the former owners were instead offered other land alternatively Estonian security (EVP) (Hedberg 2000). The application period for reclamation lasted until March 1993 (Jörgensen 2000). Land that had not been reclaimed by then, was sold on public auctions and if it did not find any owner there, it was kept by the respective municipalities as "land without owner" (Kalm 2007).

The main intention of choosing such a radical restitution process was to clearly declare the collectivism's expropriation of land as invalid (Hedberg 2000) and was thought of as an act of justice and compensation for the Estonian people (Jörgensen 2000). The possibility of reclaiming property was of great affectionate importance for thousands of Estonians that had been forced to leave their homes. But giving the ownership right itself such a great emphasis in the process also involved difficulties in developing a well extended private farming and forestry sector (Hedin 2003). A large proportion of those that retrieved land were by then settled far from their old properties and lived a life far from the country life. A return to family farming would for them involve a complete change of life style and thereto some major investments in time as well as money (André 1999). Not even among those who had bought properties on auctions, did there seem to be any great will of managing the properties (Kalm 2007). Another problem for the farming sector is the small sizes of the retrieved farms, which has made farming noneconomic in many cases. Furthermore it is not unusual that conflicts over owner right have arisen between people that fled during WWII and people that have moved into the previous farms, later (Hedberg 1997). Interest for the restitution process

was great, nevertheless. In 1994, nigh on 200 000 applications for retrieving property or compensation had been sent in (Hedin 2003). These resulted in the registration of 139 000 farms by 1998 (Jörgensen 2000).

Land restitution in Noarootsi has not been much different from anywhere else in Estonia. The share of registered private properties is somewhat greater than the state average. In the municipality 51 percent of the area was registered as private in 2001, as opposed to the state average of 40 percent (Hedin 2003). The great majority of the municipality's Estonian-Swedes fled to Sweden during WWII and in 1997 only about five percent of the Noarootsi population were of Swedish heritage. Still, interest for retrieving properties was high among the Estonian-Swedes now living in Sweden. Reasons for retrieving varies among these, at the municipality office they even believe that some do not even really know why they have reclaimed their properties (Hedberg 1997). Hedin's (2003) study shows, however, that the Estonian-Swedes' main reason for reclaiming was purely family ties and that very few plan on moving back. Furthermore, few have a plan for the future use of their land, even those that retrieved a fair bit of land. Among the Estonian residents a much greater portion had a wish to use the property for farming or forestry, but the actual use has mainly been for own purposes (Hedin 2003). This and Noarootsi's present very sparse population have led to little land use (Hedberg 1997).

Forestry in Estonia before 1991

Forestry has been of great economical importance for Estonia for hundreds of years. Forestry activities in the country can be traced back as far as to the 13th century (André 1999). In the early 20th century, forestry was the country's third largest industry. During World War I much of the forest and its industries were destroyed and had to be built back up when Estonia gained independence in 1919. Nevertheless the country continued its tradition, which also involved the public, through various forestry societies and arrangement of forest days, where the public took part in forestry activities. Private forests were at this time managed under the initiative and expense of the owners (Etverk 2002).

During the Soviet era, forest management was also brought under collectivism. About 38 percent of the forests were managed by the kolkhozes, 60 percent fell under state management and the last two percent were managed by others, such as the military (André 1999). Forest management deteriorated heavily during the Soviet era. All management decisions had to be authorized centrally, in Moscow, which was also where all orders regarding final felling were issued. One feature of the centralized management that certainly left its mark on Estonia's forest structure was the requirement to increase harvest volume each year. Even when the country's forests in the 60s were severely storm damaged and thus put an unusually large timber volume on the market, directives of an even larger following harvest were fixed, causing major long term management problems (Kallas 2002). Furthermore, much of the forestry knowledge that existed in the country had been lost with the many qualified foresters who fled or were deported during the war (André 1999). Nor did the Soviet Union tolerate the forest societies that had formed, and thus it terminated most of these (Etverk 2002). Therefore, even though a fair bit of well planned silviculture (Kalm 2007) and public engagement in the forest days still took place (Etverk 2002) the Soviet occupation resulted in a serious deterioration of Estonia's previously so flourishing forestry sector.

Forestry in independent Estonia

The past years of unsustainable use still show their marks on today's forestry. Although the forest area more than doubled from WWII until 1991, the extensive clear cuts during this period have created an uneven age class distribution, which, even with well planned management, has been estimated to not return to normal until year 2040 (André 1999). Thereto, there was a severe lack of silviculture in many areas during the years of occupation, which led to a great need of measures, particularly thinning, and the country is still struggling to get back on track with these measures (Klingström 2007). Furthermore, the industry was aged and worn after the years of occupation. But Estonia quickly developed international contacts to get the industry going again (André 1999) and especially the development of the sawmill industry has been rapid lately (Anon 2008a). However, while the market was opening up, the State Forestry Department; the authority for controlling the timber market and practice of forestry, was understaffed and unable to carry out proper operations for controlling. Eventually, this led to an inability to protect forests under privatization and towards the mid 1990s illegal logging and unsustainable forestry were serious problems in Estonia. Several external actors started to pressure the country to deal with its problems, leading to the Estonian Ministry of Environment forming the Estonian Forestry Development Programme in 1995 (Kallas 2002). Illegal logging has decreased since then and although it still exists, it is not regarded as a major problem today, since the introduction of certification systems and new laws (Klingström 2007). However, the Estonian forestry sector is still suffering from the great amount of untended stands, and although authorities keep promoting activities in the forests, not nearly enough forest owners, mainly private, carry out any silvicultural measures. Thereto, there is a serious lack of qualified contractors to perform needed measures (Kuinberg 2007). The past problems with illegal and unsustainable forestry have led to a rather strong environmental movement in the country and approximately 30 percent of the forest land is under protection (Anon 2005), also a result of a long period of leaving forests untouched, creating diverse forests with high environmental values (Anon 2008a). Furthermore, there is a rather big caution against unsustainable forestry among the public (Kuinberg 2007).

Conditions for forestry in Noarootsi

All of Estonia is situated within the North European temperate mixed forest region with a rich element of wetlands (André 1999). In Noarootsi, the dominating forest types are pine on sandy soils and alder on wetlands (Kuinberg 2007). As previously mentioned, the municipality has a history of mainly agrarian production (Hedin 2003). However, during the period of occupation, a substantial part of the former farmland was left untouched, allowing bushy forests to form on the previous fields and, in particular, pastures (Kalm 2007). Some former farmland have not yet developed a forest growth, but are better suited for forest planting than going back to farmland (Hedberg 2000). Furthermore, a large amount of forest was planted on former Estonian-Swedish farms, especially in the Rickul area, under the lead of Soviet authorities. These planted forests were in some areas put under rather meticulous management (Kalm 2007). As a result of this, Noarootsi today has a much greater portion of forest that could be put, or already is under management, than before WWII. Furthermore, the past lack of land management has led the municipality to set some requirements for management, such as the yearly mowing of open fields and the drawing-up and following of forest management plans (Hedin 2003).

A large portion of Noarootsi's forests is pine on sandy soils, often on former pasture (photo Emma Zeigler)

Private forest owners

By the end of the 1990's the government goal was to put 50 percent of the forest land under private ownership (André 1999). Today, nearly ten years later, approximately 38 percent of the forests are privately owned, by a total of about 50 000 individuals and with an average holding of 10-12 hectares. Thereto, a substantial area of forest land is still under privatization (Anon 2008a). With such a large proportion of private forest owners, these people's actions will also have great influence on the whole forestry sector. The sector, on the other hand, wants to influence private forest owners to manage their forests and bring wood to the industry (Lilepalu 2007). However, Estonia's private forest owners in general seem to have neither enough knowledge nor the interest to be managing their forests as wished for by authorities and the industry (Kuinberg 2007; Lilepalu 2007). For some years the land market was quite active, since many people who did not know what to use their forest land for preferred to sell it (Anon 2008a). But also, many forest owners saw their forest as a savings investment and kept the land. These are not always inactive forest owners, however, they tend to take action only when money is needed which can often be far beyond optimal time for silvicultural measurements (Kuinberg 2007). Although, the money issue can also be a reason for the general hesitation of taking action, since a current somewhat disadvantageous tax system discourages people from making money on their forests (Lilepalu 2007).

To raise interest and to help forest owners with their management, the government both regularly sends out informative newsletters about forestry and provides professional guidance (Kuinberg 2007). Each forest owner is entitled to 15 hours of counseling per year at the state's expense (Anon 2005). In Noarootsi municipality, a professional forester is available for counseling a few hours per week (Kalm 2007). However, a substantial proportion of the municipality's private forest owners do not live in the municipality; many of them are the Estonian-Swedes that fled to Sweden during WWII or the family of these. Most of the Estonian-Swedes that retrieved properties through the land restitution process chose to stay in Sweden and do not visit the municipality enough to be able to fully utilize the counseling opportunity (Hedin 2003).

The Ministry of Environment acknowledges the importance of informing the public about forestry. For this, the Ministry arranges forestry weeks and broadcasts weekly TV series about forestry. Furthermore, the Ministry acknowledges the importance of non-timber forest related values (Anon 2005). Forest by products, such as berries and mushrooms, have always been important for Estonians (Etverk 1999) and are recognized by the Ministry, which also has developed a project for cultural heritage in forests (Anon 2005). Counseling and informative magazines are also available through Estonian Private Forest Union (EPFU), an umbrella organization that was started to support the interests of private forest owners (Anon 2008b). EPFU has set a development plan for specifying general aims for Estonian private forestry and the methods for their implementations (Anon 2008c). For development of the methods, EPFU started a foundation, whose main objective is to increase sustainable, environmentally friendly and efficient forest management practices in private forests (Anon 2008d). The main function of EPFU is to gather Estonia's local forest associations and cooperatives. Currently the country has about 30 associations spread over all of the country's counties (Anon 2008e).

Forest owners' cooperatives

Cooperatives are in general founded when there is some sort of market failure occurring. There are several types of market failures (Nilsson & Björklund 2003), but typical failures in the forest owner sector include problems with getting the right price for the products and a lack of information. In Estonia in particular the need for professional counseling has made cooperatives form (André 1999). Also, it is common that private forest owners cannot find good contractors by themselves (Kuinberg 2007). However, although the cooperatives can help forest owners in many ways, there is naturally a high caution against cooperatives in the former Soviet state Estonia (Hedberg 2000; Kuinberg 2007). The cooperative organization form was severely abused during the Communistic era so when Communism was abolished in Estonia one way of forgetting this era was to also abolish any collective organization forms. Furthermore, the general view, especially among younger generations, of collective organizations as something indicating a non-functioning market economy, has slowed down the formation of cooperatives (Ivarsson & Lindberg 1993). Experiences from Noarootsi show that a cultural difference can be suspected when it comes to willingness to join cooperatives. Of the municipality's private forest owners a substantial proportion of the Estonian-Swedes have chosen to join the West Coast Forest Cooperative, while very few, if any, of the Estonians in the area, have joined any cooperative.

The West Coast Forest Cooperative was originally founded in 1999 as an association for the Estonian island Vormsi's Estonian-Swedish forest owners, under the name Vormsi Forest Association. Interest for the association grew quickly and the association expanded its operational area to include surrounding municipalities and also be open for all forest owners. Today it has grown to become Estonia's, by number of members, largest local forest owner's cooperative with its approximately 180 members. The cooperative works as a non-profit service organization for its members and its main objectives are to pursue forestry and promote the use of forest products; to help their members pursue economical and environmentally sustainable use of their forest- and farmland; to represent its members and guard their interests in contacts with other associations, the Estonian state and the municipal administration, and to give their members advice concerning their forest management (West Coast Forest Cooperative 2005). Although the cooperative today is open for all forest owners in the area and it is trying to attract more Estonians, it has noticed hardly any interest among the same (Alexandersson 2007).

OBJECTIVES

The objectives of this project are to survey Noarootsi municipality's private forest owners' behavior and attitudes towards forestry and their forest ownership. Differences between private forest owners of different ethnicity, i.e. between those living in Estonia and those living in Sweden, will be surveyed and also differences between women and men. The main research questions are:

- Is there any difference in structure between groups of forest owners?
- Is there any difference in objectives for the forest ownership?
- Is the knowledge level differing between the groups and has knowledge been acquired from different sources?
- Is there any difference in activity in the forest between the different forest owners?
- Can objectives and activity be traced to ethnicity?
- Does a forest owner's cooperative membership seem to influence the activity in the forests?

By knowing more about its private forest owners, the Estonian forestry sector will have a greater understanding about them and thus greater possibilities to reach out to the private forest owners to influence them as well as being able to better meet their needs and fulfill the objectives of their forest ownership. This study can be seen as a fore-study for this and also as an indicator for how a study like this can be expected to play out if performed on a larger scale.

MATERIAL AND METHODS

This paper, besides the previous literature review, is based on a questionnaire and a short field trip to the topical area, when also three interviews were carried out.

The questionnaire

A questionnaire can be described as a quantitative study (Trost 2007) and I chose to use a quantitative study to be able to compare the different groups of forest owners. Quantitative studies give relatively easily interpreted and representative data. The questionnaire was reviewed by a few people involved in the subject to ensure it is clear enough and the questions are formulated so that they are easily understood and the respondents will answer what is being asked. The questionnaire was translated from Swedish to Estonian, so that all respondents would receive it in their first language.

The form (Attachment 1) has 21 questions with the objectives of getting a grasp of how the forest owners view their forest ownership, how much knowledge about forestry they have, how active they are, themselves and by hiring others, what sources influence their activities and some of their thoughts for the future ownership. An introductory letter (Attachment 2) was attached to the form. It gives a short explanation of the study, that participation is voluntarily and absolutely confidential and some explanation about answering the questions. It also has my contact information.

The form and introductory letter were sent in early February via mail to 145 respondents, of which 75 were living in Sweden and 70 were living in Estonia. Approximately three weeks after the first circular a reminder was sent to those from whom an answer had not yet been received. The respondents were found through the Noarootsi municipality land cadastre. In total the cadastre had 251 properties with 10 hectares or more of forest land. Ten hectares of forest land was chosen as a lower limit for selection of respondents. Although the average Estonian forest owner does not own much more forest land than that, this limit was agreed upon as an appropriate limit by several people involved in the area's forest sector. Of the properties 53 were owned by companies and were thus directly excluded from the study. For properties that had the same owner, only one form per owner was sent. Furthermore, quite a few properties had several owners. For these, only one form was sent and it was sent to the person by whose name the property registry number was listed in the land cadastre. Occasional properties were owned by people living in other countries than Estonia or Sweden. Since they were so few (six people from four different countries) these were also excluded from the study, leaving the final 145 properties. Thus, except for the 10 hectare limit and the Estonian/Swedish resident criteria, no other selection was made. For treatment of collected data, Microsoft Excel was used.

Ethnicity of the respondents

Only forest owners living in Estonia or Sweden were considered in this study and they will be regarded to as of Estonian respectively Swedish ethnicity. A substantial number of the forest owners currently living in Sweden are of Estonian-Swedish heritage and there are probably a couple Estonian-Swedes in the group of Estonian forest owners. The ethnicity of these people was however decided by the country they currently reside in, which is the country they are listed under in the municipality's land cadastre.

The field trip

I had the opportunity to make a trip to Estonia in December 2007. For a few days I stayed in the Noarootsi area and explored it some, to get a feeling of the culture and life there. I then interviewed the chair of Noarootsi municipality and an employee at the West Coast Forest Cooperative, who also showed me around some of their activity. During the trip I also had the opportunity to meet a representative from Stora Enso Baltic, in Tallinn. With the two latter, the questionnaire was reviewed. During these interviews, all gave some interesting angles of approach to the subject which were used for the final editing of the questionnaire.

Data treatment and analysis

For treatment of collected data, Microsoft Excel was used. Many of the questions in the questionnaire asked for ratings on a four-graded attitude scale. In Excel these ratings were transferred into numbers. In those cases when there was a difference between the results of the different groups, a Z-test was carried out to determine if the difference was significant. For the comparisons between groups with very few respondents in each, no Z-test was performed since the number of individuals in the comparison was very small.

RESULTS

Response

After one reminder letter was sent, finally 87 completed forms were returned. From Estonian respondents 41 forms were returned, while 46 forms were returned from Swedish respondents. This gives an answer frequency of 60 percent for the total survey, 59 percent for the Estonian respondents and 61 percent for the Swedish respondents (Table 1).

Table 1. Response of the questionnaire

	Estonians	Swedes	Total
Mailed forms	70	75	145
Responded forms	41	46	87
Answer percentage	59	61	60

The questionnaire

Forest owner structure

Ethnicity
Of the total 87 respondents, 47.1 % were Estonians and 52.9 % were Swedes.

Gender
Of the respondents, in total 31 percent were women and 69 percent were men. Of the Estonians 29 percent of the respondents were women and 71 percent were men. Among the Swedes the percentages were 33 and 67 for women and men respectively (Figure 2).

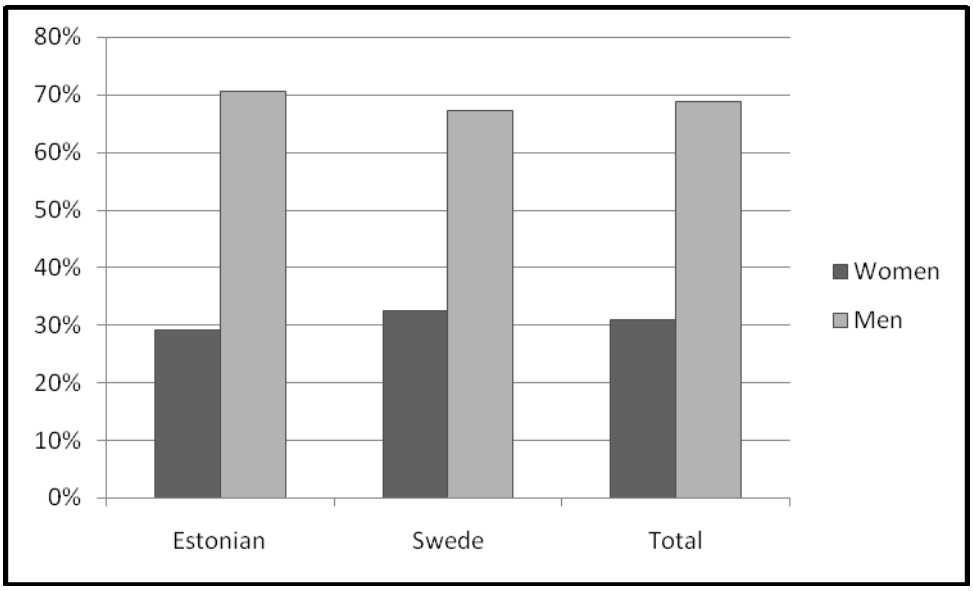


Figure 2. Gender; Question 1. Are you man or woman? (answer frequency 100%)

Age

The average year of birth among all respondents was 1945. There are some significant differences ($p<0.01$) in year of birth between the different groups. For both ethnical groups the women were older. In the group of Estonians, the women were in average nine years older than the men but among the Swedes, the difference was only two years and thus not significant. Greatest difference can be found between the ethnical groups, where Estonians in average were ten years younger than Swedes (Table 2).

Table 2. Age; Queston 2. What year were you born? (answer frequency 100 %)

	Estonians (min-max)	Swedes (min-max)	Total (min-max)
Women	1944 (1923-1960)	1939 (1923-1963)	1941 (1923-1963)
Men	1953 (1920-1975)	1941 (1923-1968)	1947 (1920-1975)
Total	1950 (1920-1975)	1940 (1923-1968)	

Testing age against whether the respondents retrieved their properties through the land restitution process or not, shows that there was a significant ($p<0.01$) difference. Those who did receive the property through the process showed the average birth year of 1940, while those who acquired their property through some other way showed an average birth year of 1952.

Way of acquiring property

A significant ($p<0.01$) majority of the respondents had retrieved their property through the land restitution process that started in the early 1990's. The answers showed that 66 % had retrieved it through the process, while 34 % did not retrieve their property through the process. Among the Estonians 51 % answered *Yes* and 49 % answered *No*, while the difference was much larger among the Swedes where 80 % answered *Yes* and 20 % answered *No* (Figure 3).

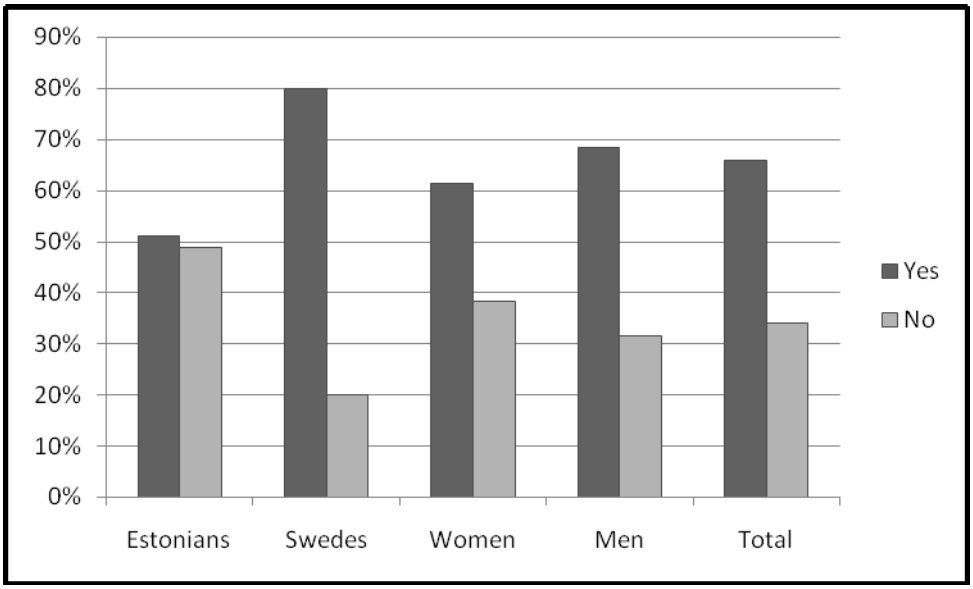


Figure 3. Acquiring of property; Question 5. Did you retrieve the property through the land restitution process? (answer frequency 97.7 %)

Testing owned forestland area against whether the respondents retrieved their properties through the land restitution process or not, shows that there was a significant ($p<0.01$) difference. Those who did receive the property through the process owned in average 22.7 hectares of forestland, while those who acquired their property through some other way owned an average of 28.8 hectares of forestland.

Time spent on property

In total, the majority answered they spend one to four weeks, which 24 % of the total respondents answered. Between the groups of Estonians and Swedes, it was only the Estonians that answered that they live permanently on their property. In total 16 % answered that they lived permanently on their property. Significantly more of the Estonian women than the Estonian men, answered that they live permanently on their property; 50 % as opposed to 28 %. Among the Swedish respondents women only dominated in the group of respondents not spending any time at all on their property; 40 % in comparison with the men's 19 %. (Figure 4).

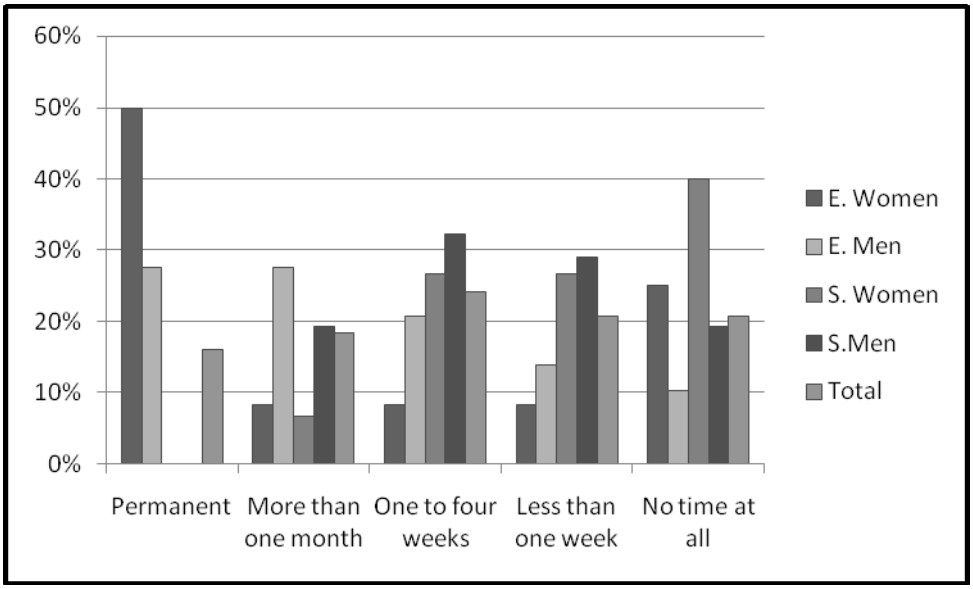


Figure 4. Time spent on property; Question 7. How much time do you spend on your property? Time per year. By gender and ethnicity (answer frequency 100 %)

None of the Swedes lived on their property, naturally. Therefore, all comparisons on-property residents versus non-residents only includes Estonians. Fourteen Estonians answered they live on their property, while 27 Estonian respondents answered that they live away from their property. The groups will continuingly be regarded as residents (on property) respectively non-residents (away from property).

Testing residents against whether the respondents retrieved their property through the land restitution process or not, shows that there was a significant ($p<0.01$) difference. Of those who did receive the property through the process an average share of 12 % lived on their properties, while an average of 24 % of those who acquired their property through some other way lived permanently on their property.

Residence in municipality where property is situated

A significant percentage of the respondents did not live in the same municipality as their property; 74 % as opposed to the 26 % living in the same municipality as their property. However, among the Estonians the difference was very small; 51 % lived in the same municipality and 49 % of the respondents in a different municipality. Among the Swedes, a majority of 98 % answered they did not live in the same municipality. There was a difference between Estonian women and men, where the emphasis on the scale for the Estonian women was "live in the same municipality", which was the answer of 67 % of the respondents. Among the Estonian men the difference was not large; 45 % in the same municipality and 55 % outside the municipality. (Figure 5).

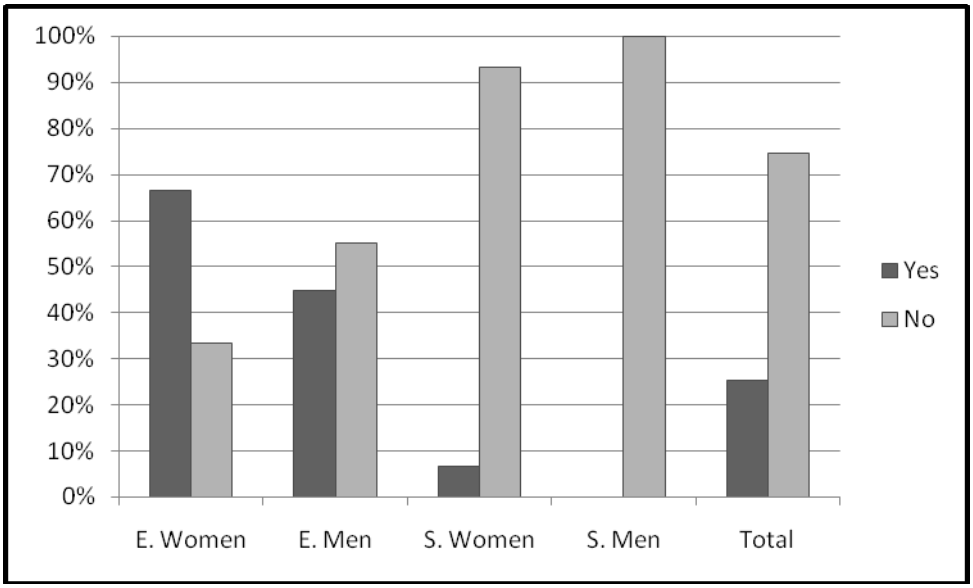


Figure 5. Residence in municipality where property is situated; Question 6. Do you live in the same municipality as your property? By gender and ethnicity (answer frequency 100 %)

Property area

The majority of the properties had a significantly ($p<0.01$) larger proportion of forestland than any other type of land. In total, the average land distribution was 25 hectares of forestland, 9 hectares of farmland, 1 hectare of yard and 2 hectares of other land, which make an average total of 37 hectares property area. Estonians in general owned slightly less forestland than the Swedes. However, the Estonians owned a significantly ($p<0.01$) larger area of farmland than the Swedes and also a greater amount of land, in total. There was a significant difference in area between Estonian men and women, where the average holding was a total of 45 hectares owned by Estonian men and 25 hectares owned by Estonian women, while there was no difference between Swedish men and women (Figure 6).

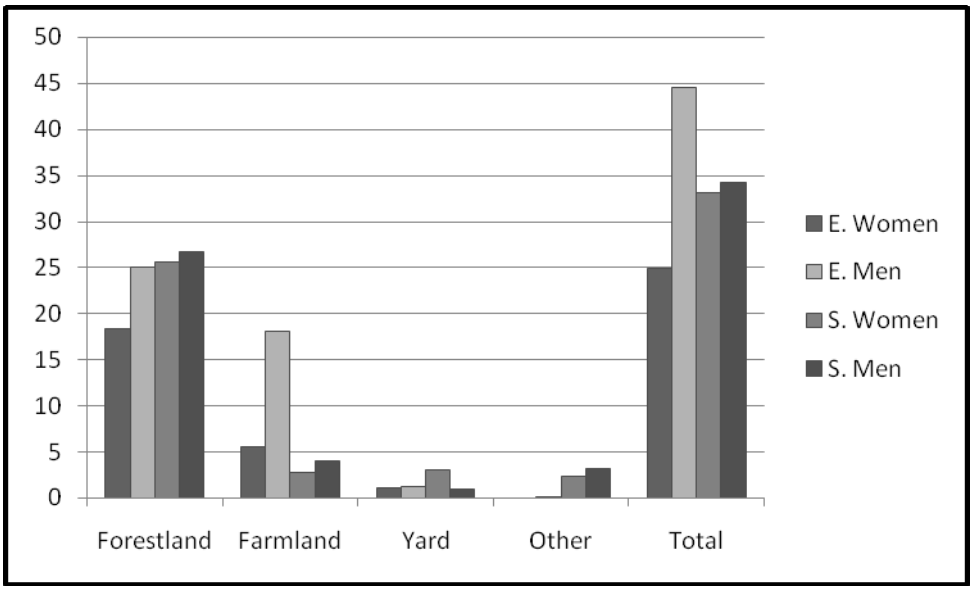


Figure 6. Property area; Question 4. Area of property. In hectares. By gender and ethnicity (answer frequency 98.9 %)

On average, residents owned more land than non-residents. However, the amount of forestland on the properties was in general slightly less than the non-resident average. On the other hand, residents owned substantially more farmland. The residents owned in average 41.2 hectares of land, of which 16.1 hectares was forestland, while the non-residents in average owned 37.6 hectares of land, of which 26.8 hectares was forestland (Table 3).

Table 3. Difference in property area between residents and non-resident. Area in hectares

	Forestland	Farmland	Yard	Total
Residents	16.1	24.0	1.1	41.2
Non-residents	26.8	9.4	1.2	37.6

Forest owner cooperative membership

In total, the majority of the respondents answered that they are not members of any forest owners' cooperative. This answer was given by 64 % of the respondents. There were significant differences ($p<0.01$) between the groups; 97 % of the Estonians were not members while among the Swedes 36 % were non-members. Of the women 73 % were not members and of the men, 60 % were not members (Figure 7).

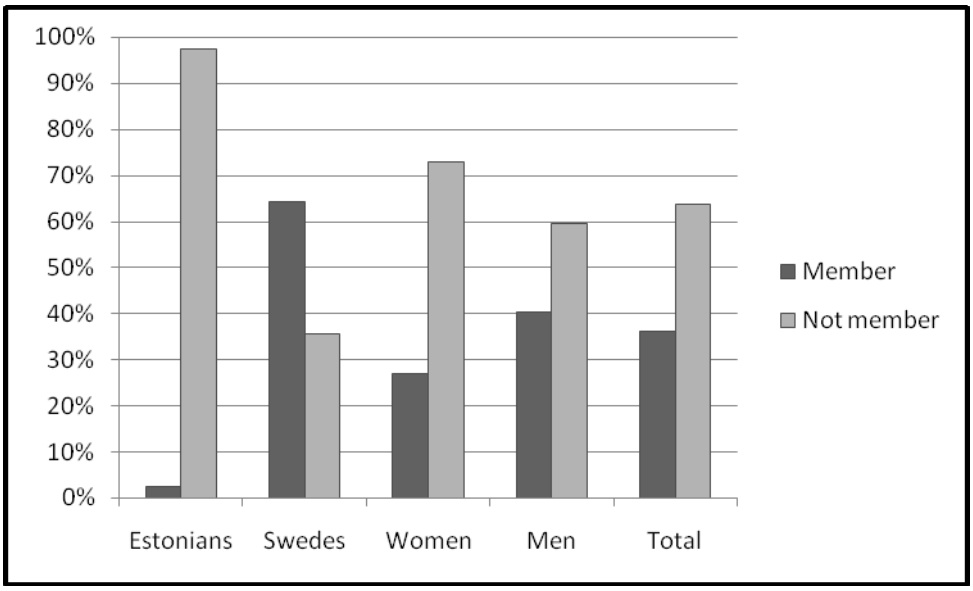


Figure 7. Forest owner cooperative membership; Question 18. Are you a member of any forest owners' cooperative? (answer frequency 95.4 %)

Since there was only one member of any forest owners' cooperative in the group of Estonians, the following comparisons between members and non-members excludes Estonians and only present the results of forest owners of Swedish ethnicity. Among the Swedes, there were 30 respondents who stated that they were members of a forest owners' cooperative and 16 respondents who were not members. On the question whether non-member respondents believe a forest owner cooperative membership could help them carry out more forestry measures, the emphasis on the scale was *Don't know*, which 43 % of the total respondents answered. Of the total, 28 % answered *Yes*. There were no significant differences between the groups (Figure 8).

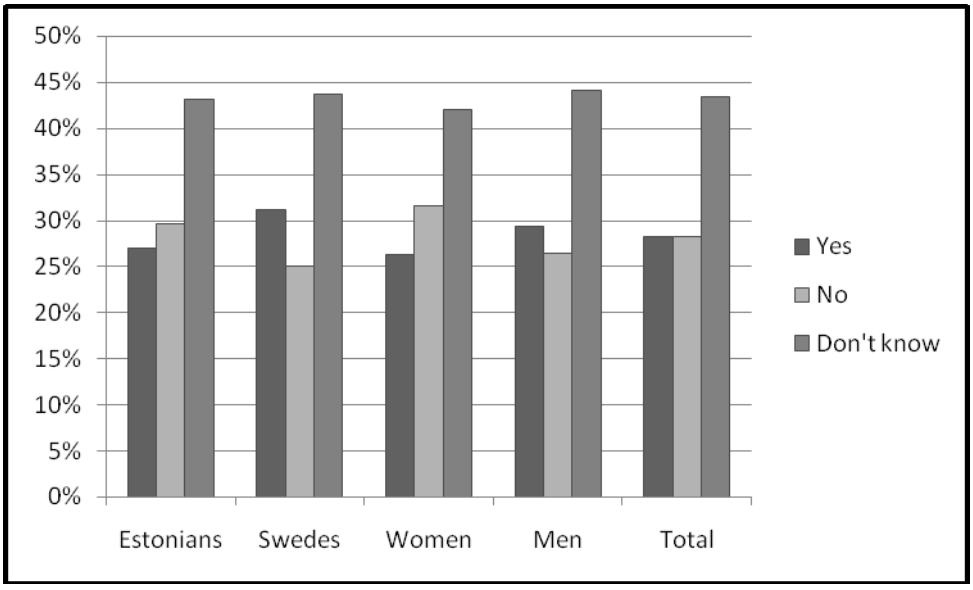


Figure 8. Forest owner cooperative membership; Question 18.2 Do you think that a membership in a forest owners' association could help you carry out any of the forestry measures mentioned in question 15? (answer frequency 95.4 %)

Cooperative members spent more time per year than non-members on their properties. Among the members, *One to four weeks* got the greatest amount of answers. It was chosen by 40 % of the member respondents. Most of the non-members answered *No time at all*, which got 50 % of the answers. None of the respondents lived permanently on their property (Figure 9). The group of members spent more time on their property than the average Swede, but less than the average Estonian (compare Figure 4).

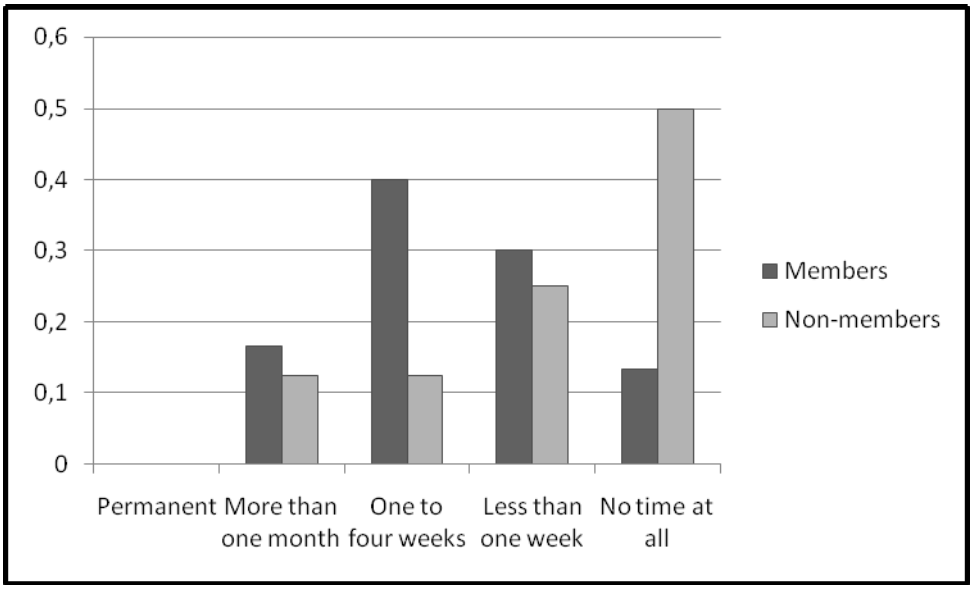


Figure 9. Question 7. How much time do you spend on your property?

Forest owner objectives and attitudes

Family ties was rated of greatest importance in total and by all groups, except the Estonians. The Estonians rated *Access to timber or wood* somewhat higher. Least importance was in total given to *Access to hunting or fishing*. This was also the motive with least importance for all groups, although the Swedes also rated *Access to a residence* as low. *Access to a residence* was among the top three motives within the group of Estonians. In general, men gave somewhat higher rates than women.

Opportunity of income

In total the emphasis of the scale for the motive *Opportunity of income* was rating 1; no importance. Of the total respondents, 49 % gave this answer. Rating 3 or 4; average or great importance, was given by 22 % of the total respondents. There was no significant difference between the groups (Figure 10).

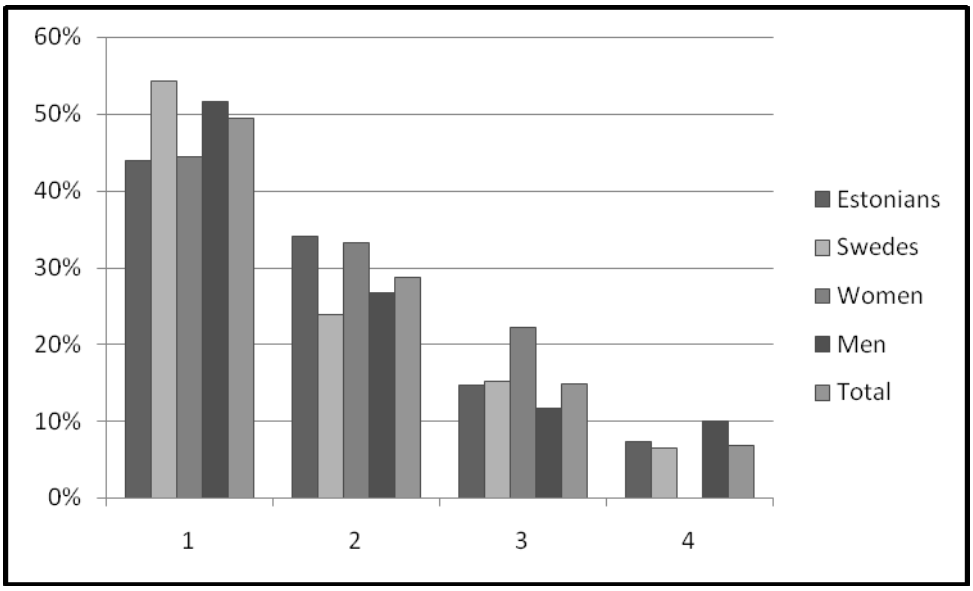


Figure 10. Importance of motive; Question 8. How great importance did the following motives have for your obtaining of the property? *Opportunity of income*. Scale 1-4, 1=No importance at all, 4=Great importance. (answer frequency 100 %)

Family ties

For the motive *Family ties* the emphasis was in total rating 4, with 56 % of the respondents rating the motive this high. Rating 3 or 4 was in total given by 70 % of the respondents. There was a significant difference ($p<0.01$) between Estonians and Swedes. Of the Estonians, 46 % rated *Family ties* 3 or 4, as opposed to the Swedes, of whom, 91 % gave the same answer. Among the Estonians the emphasis lies on rating 1; no importance, which was given by 49 % of the respondents. (Figure 11).

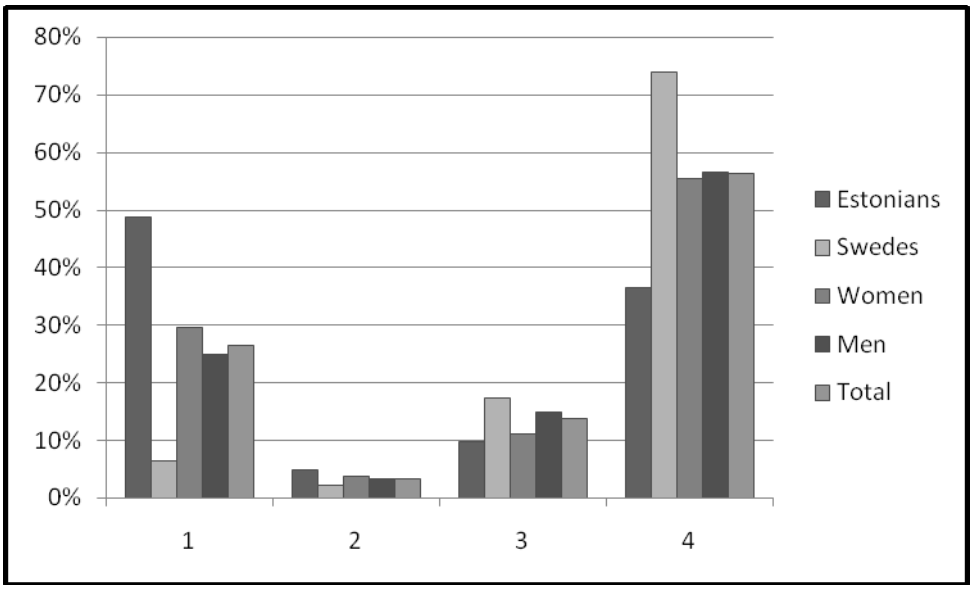


Figure 11. Importance of motive; Question 8. How great importance did the following motives have for your obtaining of the property? *Family ties*. Scale 1-4, 1=No importance at all, 4= Great importance (answer frequency 100 %)

Testing importance of Family ties against whether the respondents retrieved their properties through the land restitution process or not, shows that there was a significant ($p<0.01$) difference. Of those who did receive the property through the process a share of 84 % rated Family ties of average or great importance, while of those who acquired their property through some other way a share of 41 % rated the motive as high.

Opportunity of recreation

The motive *Opportunity of recreation* had its emphasis on rating 1, for the total amount of respondents, with 45 % giving this answer. In total, rating 3 or 4 was given by 36 % of the respondents. There were some significant differences ($p<0.01$) between the groups. The proportion of Estonians who rated the motive 3 or 4 was 32 %, while 39 % of the Swedes gave this answer. Of the women, 30 % rated *Opportunity of recreation* 3 or 4, as opposed to the men, of whom 38 % rated it this high (Figure 12).

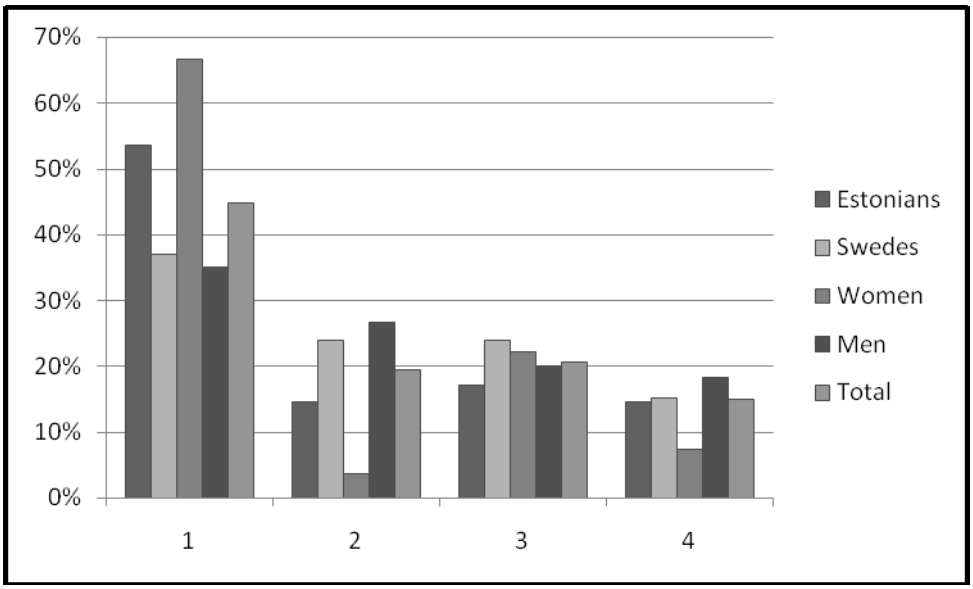


Figure 12. Importance of motive; Question 8. How great importance did the following motives have for your obtaining of the property? *Opportunity of recreation*. Scale 1-4, 1=No importance at all, 4= Great importance (answer frequency 100 %)

Access to a residence

The emphasis of the motive *Access to a residence* lies on rating 1; no importance at all. In total 64 % of the respondents gave this motive the lowest rating. In total, 26 % answered 3 or 4. There is a significant difference ($p<0.01$) between Estonian and Swedish ratings, a greater proportion of the Estonians than the Swedes rated this motive 3 or 4; totally 41 % of the Estonians rated 3 or 4, while 13 % of the Swedes rated this motive 3 or 4 (Figure 13).

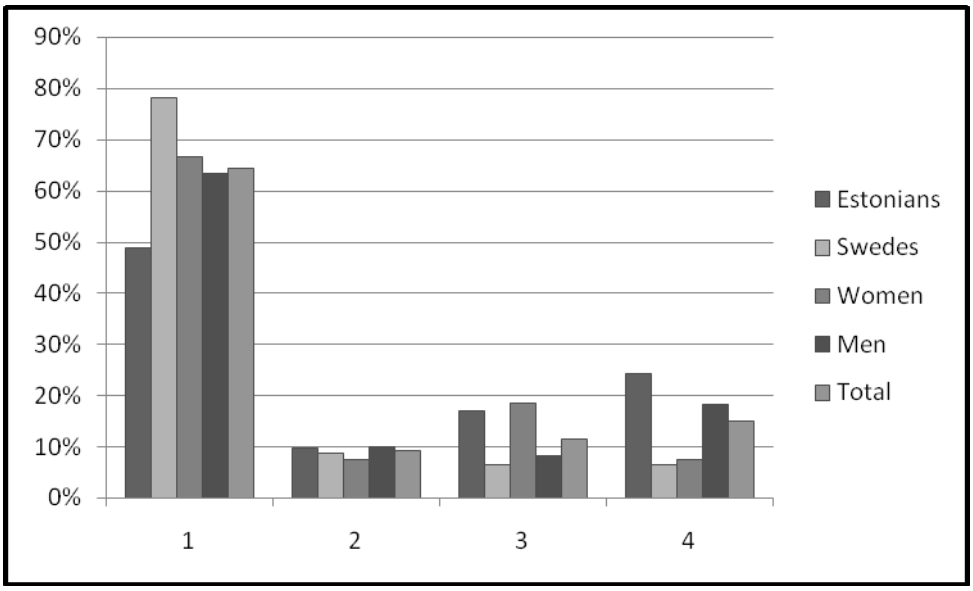


Figure 13. Importance of motive; Question 8. How great importance did the following motives have for your obtaining of the property? *Access to a residence*. Scale 1-4, 1=No importance at all, 4= Great importance (answer frequency 100 %)

Pursue forestry

Of the total respondents, 47 % gave the motive *Pursue forestry* lowest rating, making this the emphasis of the scale. In total, rating 3 or 4 was given by 31 % of the respondents. There are significant differences ($p<0.01$) between the groups. In the group of Estonians, 39 % rated forestry 3 or 4, while the proportion of Swedes that rated it 3 or 4 was 24 %. The proportion of women that gave this motive rating 3 or 4 was 15 %, as opposed to the 38 % of the men who rated it that high (Figure 14).

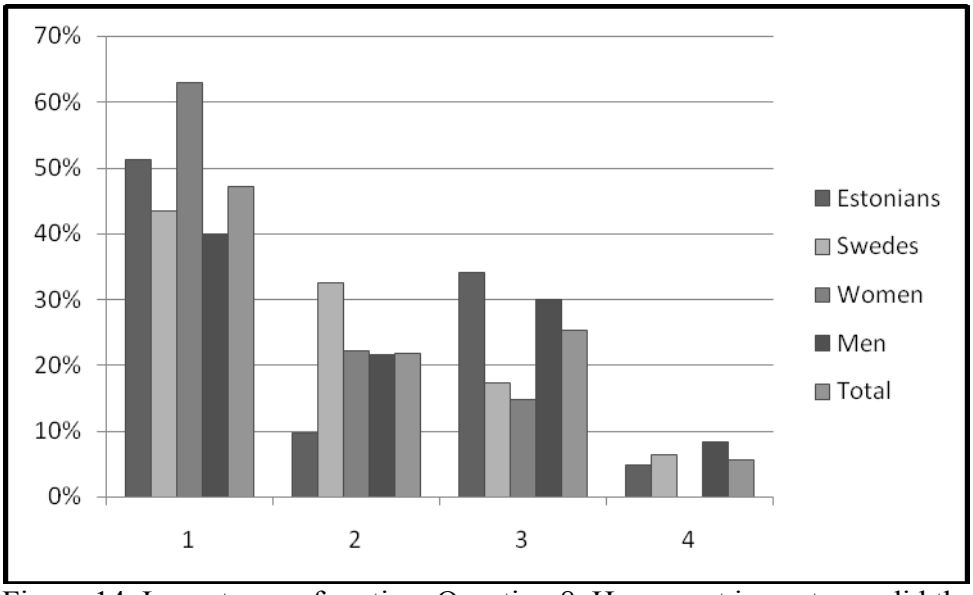


Figure 14. Importance of motive; Question 8. How great importance did the following motives have for your obtaining of the property? *Pursue forestry*. Scale 1-4, 1=No importance at all, 4= Great importance (answer frequency 100 %)

Pursue nature conservation

There is an emphasis on the lowest rating for the motive *Pursue nature conservation*. In total 48 % gave this motive the rating 1. Rating 3 or 4 was given by 33 % of the total respondents. There were significant differences ($p<0.01$) between the groups. Of the Estonians, 44 % rated *Pursue nature conservation* 3 or 4, while 24 % of the Swedes did. Of the women, 19 % rated this motive 3 or 4, as opposed to the 40 % of the men who gave this answer (Figure 15).

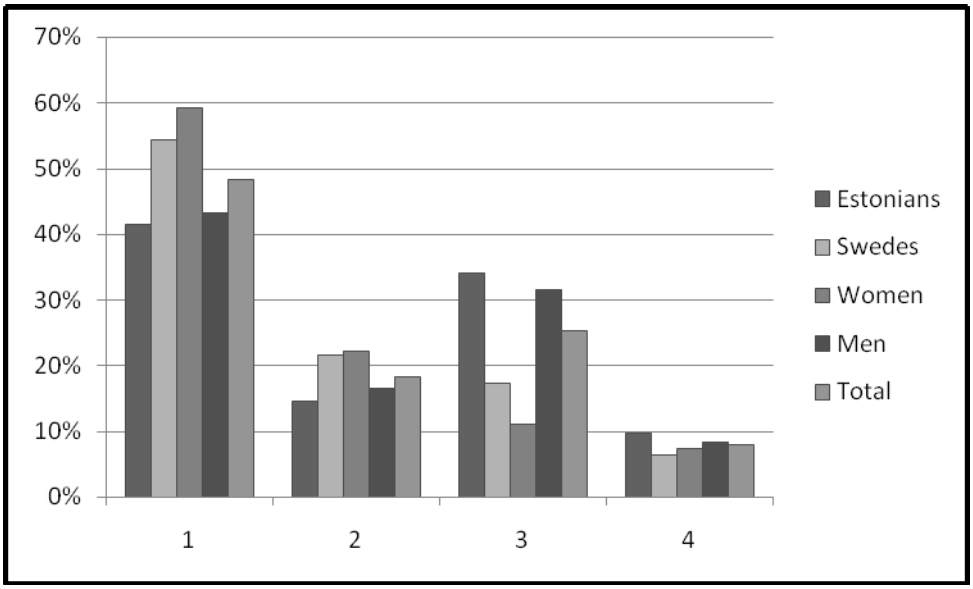


Figure 15. Importance of motive; Question 8. How great importance did the following motives have for your obtaining of the property? *Pursue nature conservation*. Scale 1-4, 1= No importance at all, 4=Great importance (answer frequency 100 %)

Access to timber or firewood

The total's rate for *Access to timber or firewood* has its emphasis on rating 1, with 46 % giving this rating. Rating 3 or 4 was given by 37 % of the total respondents. There was a significant difference ($p<0.01$) between Estonians and Swedes, where 59 % of the Estonians rated the motive 3 or 4, while 17 % of the Swedes gave this rating. The emphasis of the scale for the Estonian respondents was rating 3; average importance, which was given by 46 % of the respondents (Figure 16).

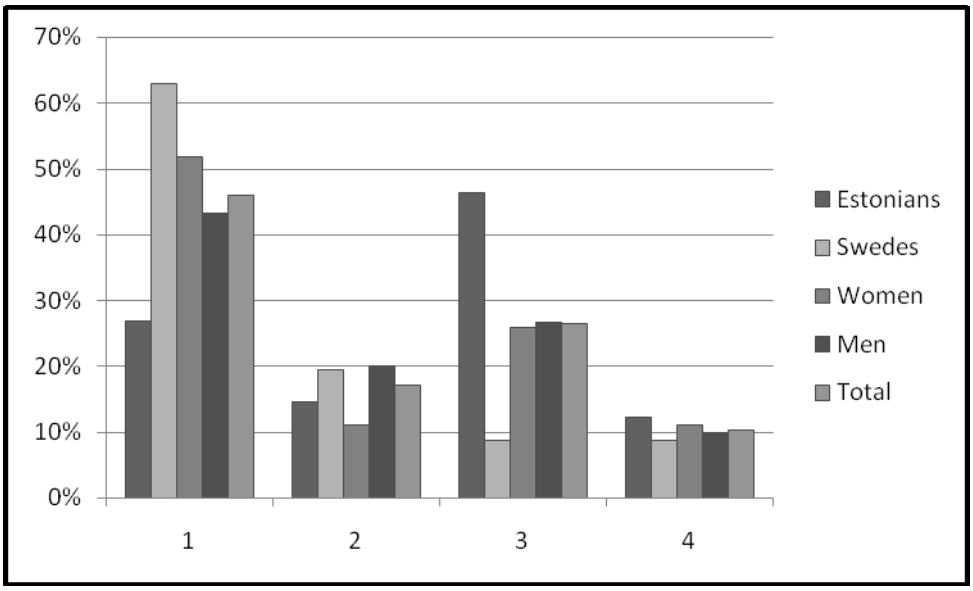


Figure 16. Importance of motive; Question 8. How great importance did the following motives have for your obtaining of the property? *Access to timber or firewood*. Scale 1-4, 1=No importance at all, 4= Great importance (answer frequency 100 %)

Forest owners' knowledge level and acquiring of knowledge

Knowledge level

In total, the emphasis was alternative 2, *Little knowledge*. Of all respondents, 44 % answered they had little knowledge about forestry. Alternative 3 or 4 was chosen by 23 % of the total respondents. There was significant differences ($p<0.01$) between the groups. Of the Estonians 37 % answered that their knowledge was 3 or 4; average or great, while 11 % of the Swedes gave the same answer. Of the women, 19 % gave rating 3 or 4, as opposed to the men, of whom 25 % gave this rating (Figure 17).

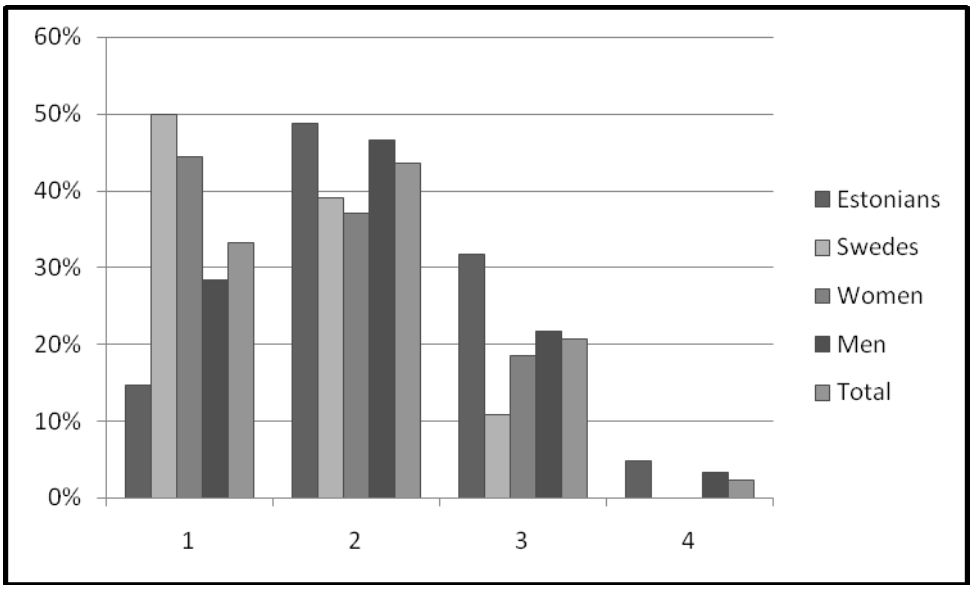


Figure 17. Knowledge level; Question 9. How large would you estimate your knowledge about forestry was at the time when you gained ownership of the property? Scale 1-4, 1=No knowledge at all 4=Great knowledge (answer frequency 100 %)

Respondents that estimated their knowledge level to be average or great, in general owned larger properties than respondents that rated their knowledge level as none or little. However, the amount of forestland was in general less for the respondents with greater knowledge. More of them lived in the municipality where their property was situated and furthermore, a greater share spent more than a month or lived permanently on their property. Fewer of the respondents with an estimated greater knowledge level had retrieved their property through the land restitution process (Table 4).

Table 4. Differences in property acquirement and size, spent time and nearness to property

Share in %	Land rest. process retr.	Spent time > 1 month	Live in municip.	Property size (in hectares)	
				Total	Forestland
More knowledge	40	45	40	46	22
Less knowledge	74	30	21	33	26

Respondents with a greater knowledge level in general rated the acquiring motives *Income opportunities, Access to a residence, Pursue forestry, Access to timber or firewood* and *berries or mushrooms* and *pension insurance* of greater importance than respondents with an estimated lower knowledge level. Other motives were rated of lesser importance by higher knowledge respondents than other respondents (Table 5).

Table 5. Differences in motives for acquiring

Share in % that rated average or great	Income opport.	Access to res.	Pursue forestry	Timber/ firewood	Berries/ mushr.	Pension ins.
More knowledge	30	30	35	45	25	30
Less knowledge	19	25	30	34	10	15

Change in knowledge level

In total, the majority of the respondents thought their knowledge about forestry had increased, with 64 % answering *Yes*. There was a significant difference between the groups. Of the Estonians, 73 % answered *Yes* while 57 % of the Swedes thought their knowledge had increased. Of the women 44 % thought their knowledge had increased as opposed to the men of whom 73 % answered *Yes* (Figure 18).

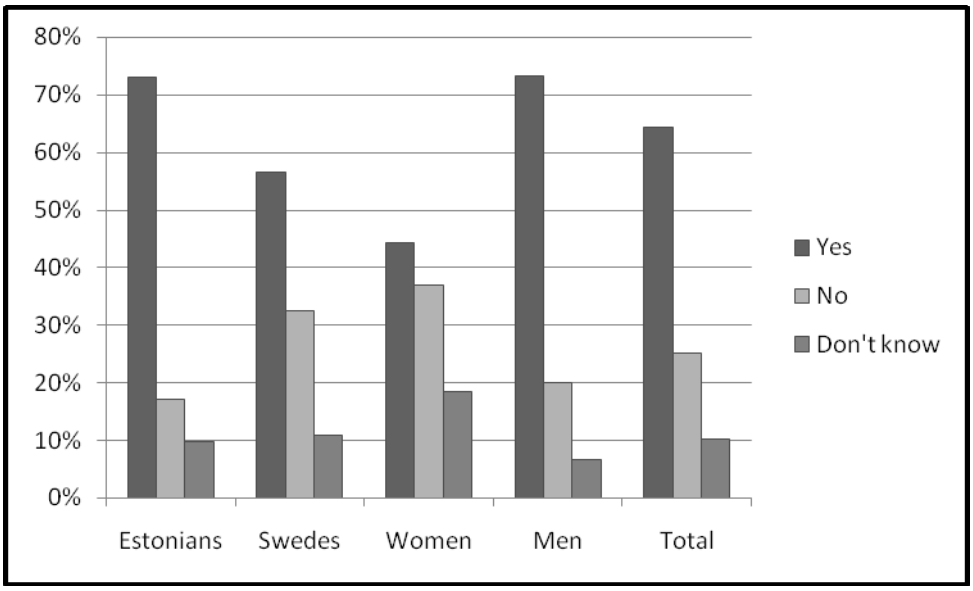


Figure 18. Knowledge level change; Question 10. Do you think that your knowledge about forestry has increased since you became owner of the property? (answer frequency 100 %)

Cooperative membership's influence on change in knowledge level

A substantially larger proportion of the members answered that they believe their knowledge about forestry had increased. Of the members, 77 % thought their knowledge had increased, while only 19 % of the non-members thought they had gained knowledge since they became the owners of the properties (Figure 19). The members' answers resembled the Estonians' answers more closely than the average Swede's answer (compare Figure 18).

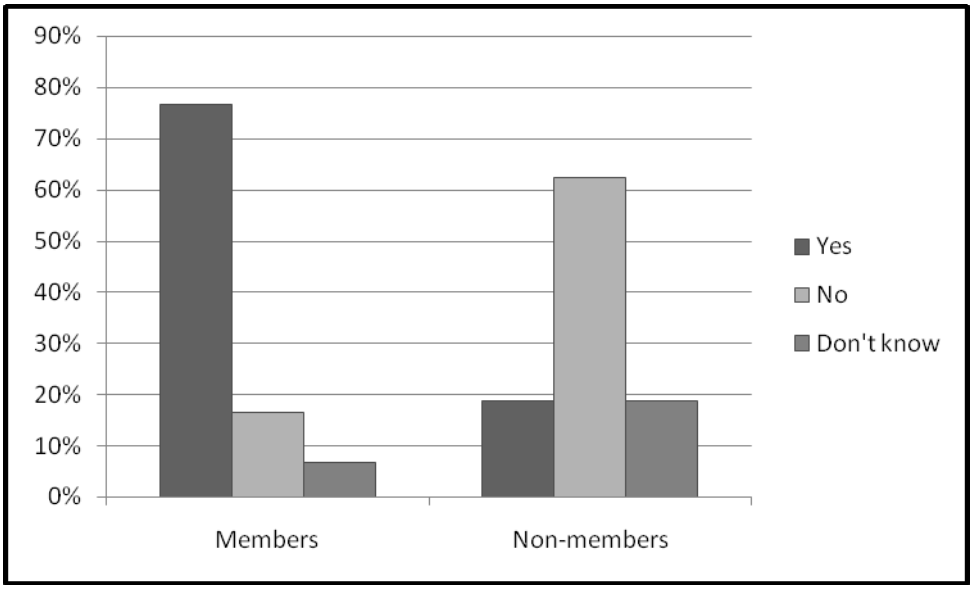


Figure 19. Influence of cooperative membership; Question 10. Do you think that your knowledge about forestry has increased since you became owner of the property?

Sources of knowledge

The source of knowledge that got the highest ratings in total was *Family or friends.* However, only the groups of Swedes and men did rate this source highest. Estonians and women gave greatest importance to *Magazines*. *School or university* was given the total lowest ratings.

Magazines

In total a majority of the respondents answered that *Magazines* had no importance at all as a source of knowledge about forestry, with 39 % giving this answer. Rating 3 or 4 was given by 36 % of the total. There was significant differences ($p<0.01$) between the groups. Of the Estonians, a proportion of 53 % gave *Magazines* a rating 3 or 4, while 21 % of the Swedes answered that *Magazines* had average or great importance (rating 3 or 4) as a source of knowledge. Of the women, 31 % rated the source 3 or 4, as opposed to the 38 % of the men, who rated it 3 or 4. A majority of the Estonians (40 %) answered that *Magazines* had average importance, making rating 3 the emphasis of the scale for this group (Figure 20).

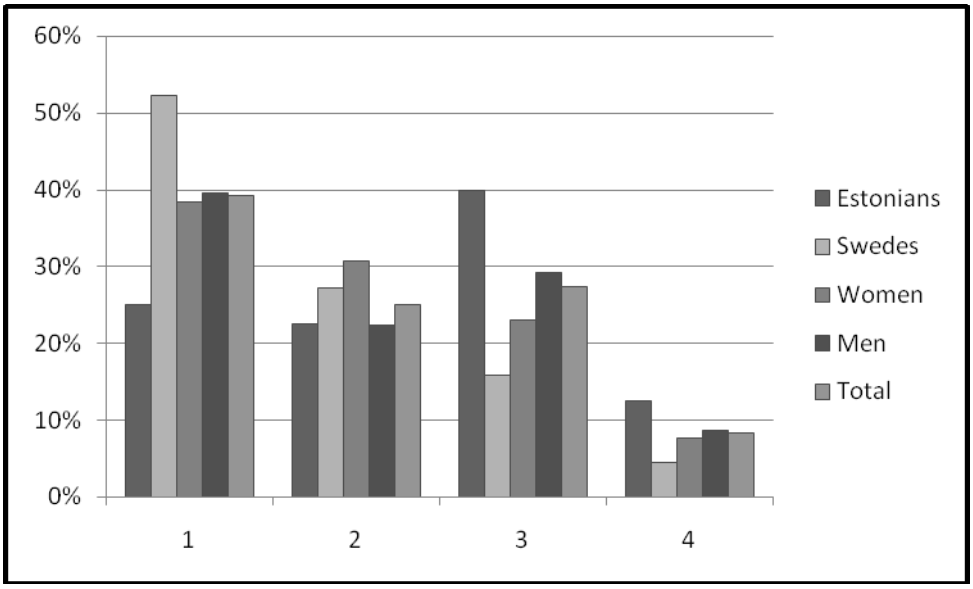


Figure 20. Importance of knowledge sources; Question 11. How great importance have the following sources of knowledge about forestry had for you? *Magazines*. Scale 1-4, 1= No importance at all, 4=Great importance (answer frequency 96.9 %)

Books

For *Books* as a source of knowledge, the emphasis of the total respondents was rating 1, with 50 % giving this answer. The proportion of the total respondents that rated it 3 or 4 was 33 %. There was a significant difference ($p<0.01$) between Estonians and Swedes. A proportion of 50 % of the Estonians rated *Books* 3 or 4 as opposed to the 18 % of the Swedes rating *Books* as high. There was also a significant difference ($p<0.01$) between women and men, where 23 % of the women rated *Books* 3 or 4 and 38 % of the men rated it 3 or 4 (Figure 21).

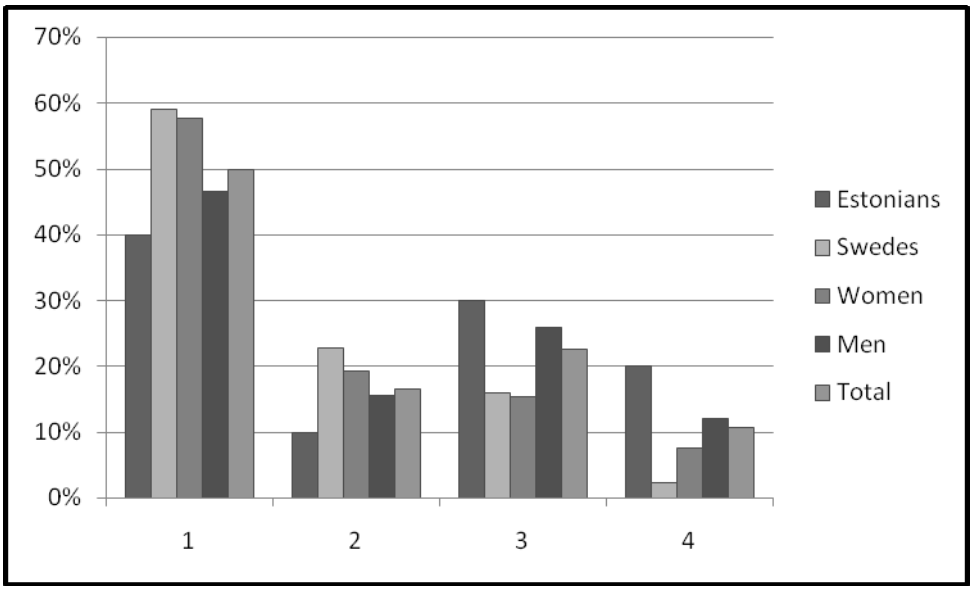


Figure 21. Importance of knowledge sources; Question 11. How great importance have the following sources of knowledge about forestry had for you? *Books*. Scale 1-4, 1= No importance at all, 4=Great importance (answer frequency 96.9 %)

Forest days

The emphasis on how *Forest days* was rated is 1, which was what of 62 % of the respondents rated this source of knowledge. In total, 20 % of the respondents rated *Forest days* 3 or 4. There is a significant difference ($p<0.01$) between Estonians' and Swedes' ratings, where 15 % of the Estonians rated 3 or 4 as opposed to the Swedes, of which 25 % rated *Forest days* 3 or 4 (Figure 22).

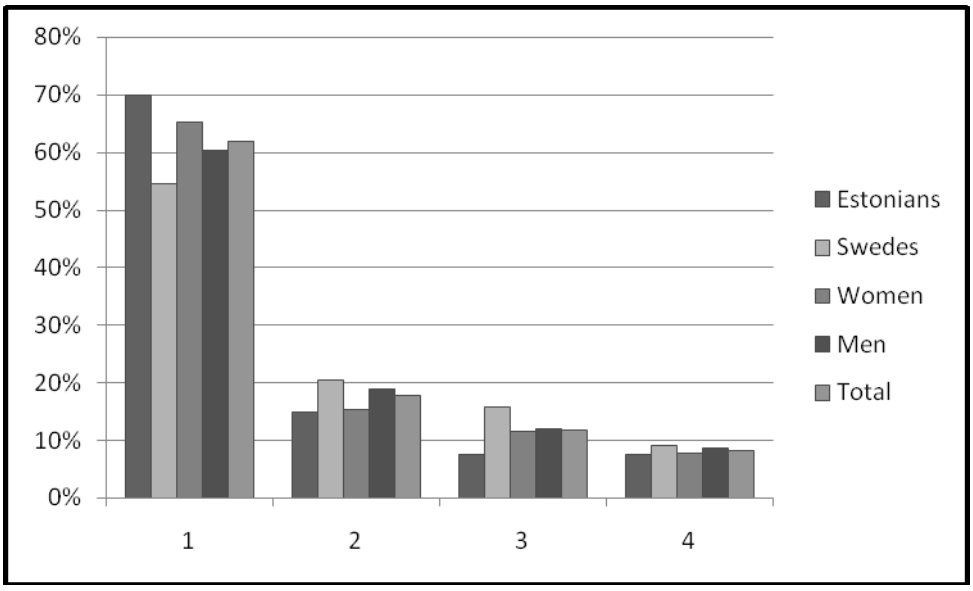


Figure 22. Importance of knowledge sources; Question 11. How great importance have the following sources of knowledge about forestry had for you? *Forest days*. Scale 1-4, 1= No importance at all, 4=Great importance (answer frequency 96.9 %)

By forest owner cooperative members *Forest days* was rated as a much greater source of knowledge than by the non-members. The portions of each group that rated *Forest days*

average or great (3 or 4) were 39 % and 0 % by the members respectively non-members (Figure 23). The non-members' answers were closer to the average Estonian's answer than to the average Swede's answer (compare Figure 22).

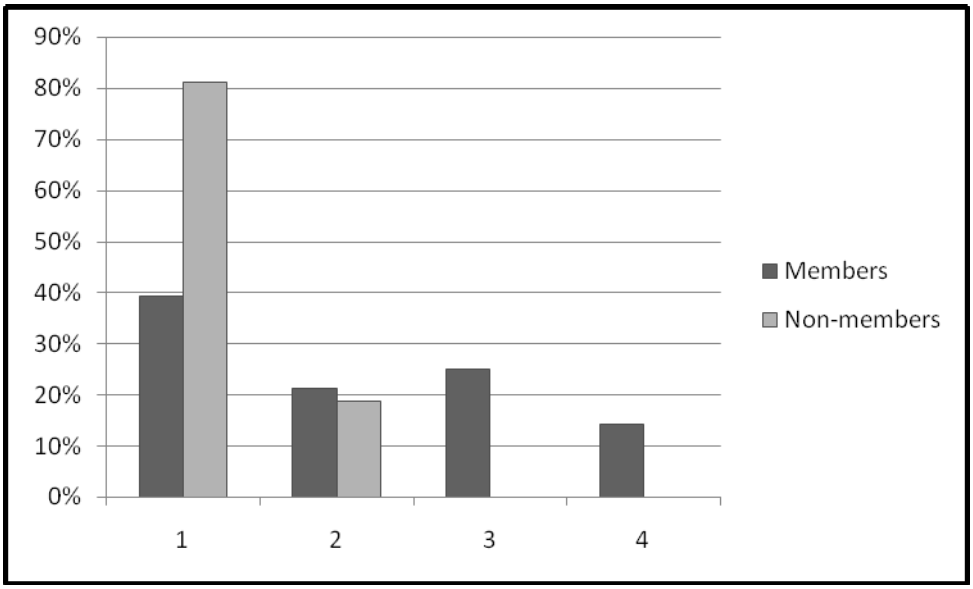


Figure 23. Importance of knowledge sources; Question 11. How great importance have the following sources of knowledge about forestry had for you? *Forest days.* Scale 1-4, 1=No importance at all, 4=Great importance

Information evenings

In total, the majority rated *Information evenings* 1, with 54 % answering this rating. Rating 3 or 4 was given by 25 % of the total respondents. There were significant differences ($p<0.01$) between the groups. Of the Estonians, 20 % rated *Information evenings* 3 or 4, while 30 % of the Swedes gave this source the same rating. Among the women, a proportion of 15 % rated it 3 or 4 as opposed to the men, of whom 29 % rated *Information evenings* 3 or 4 (Figure 24).

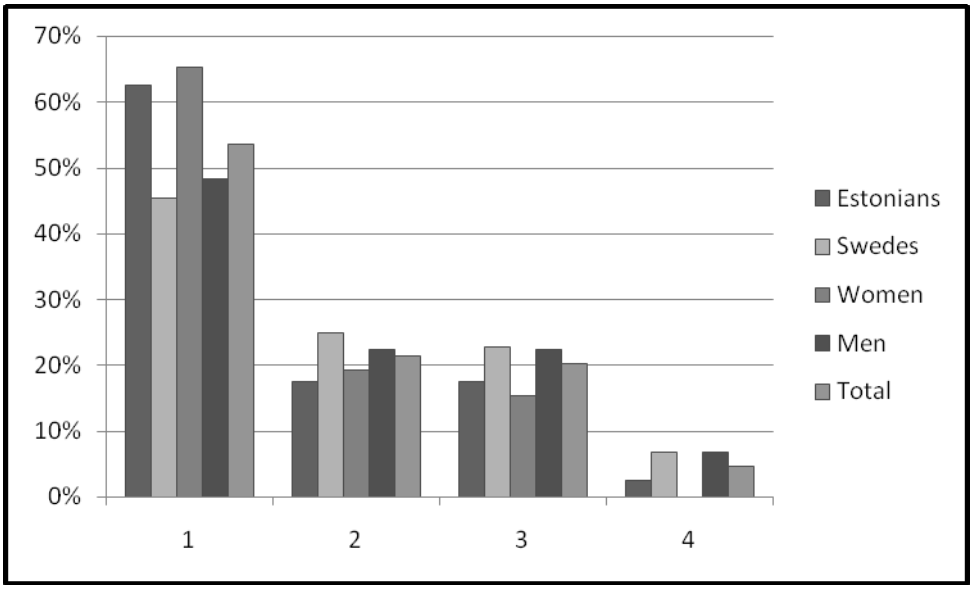


Figure 24. Importance of knowledge sources; Question 11. How great importance have the following sources of knowledge about forestry had for you? *Information evenings*. Scale 1-4, 1= No importance at all, 4=Great importance (answer frequency 96.9 %)

Also *Information evenings* got a higher rating in average by the cooperative members than by the non-members. It was rated 3 or 4 by 39 % of the members, while merely 13 % of the non-members gave this rating (Figure 25). Also here, the non-members' answers were closer to the average Estonian's (compare Figure 24).

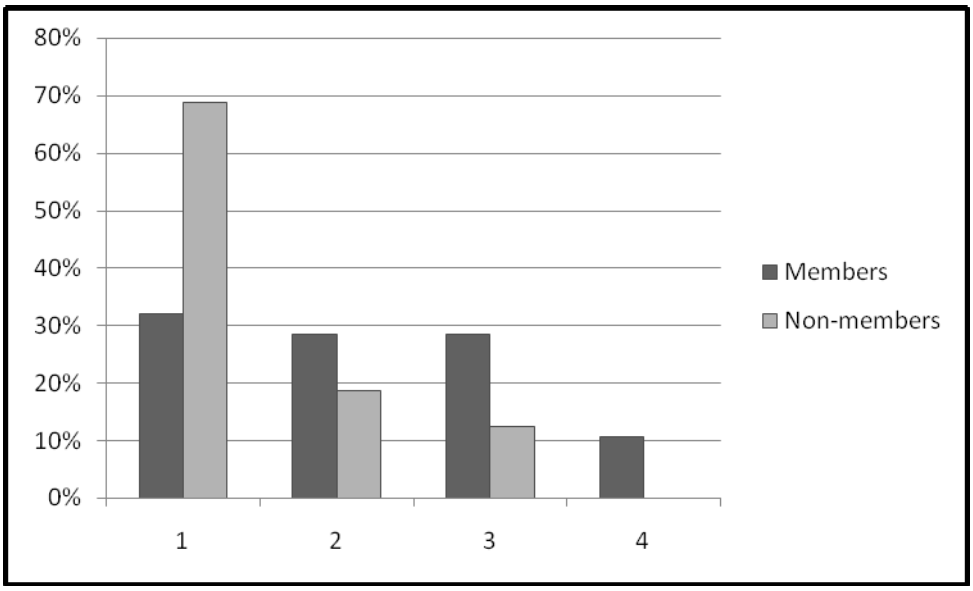


Figure 25. Importance of knowledge sources; Question 11. How great importance have the following sources of knowledge about forestry had for you? *Information evenings.* Scale 1-4, 1=No importance at all, 4=Great importance

Family or friends

For the knowledge source *Family or friends*, the emphasis was rating 1, with 42 % of the total respondents giving this answer. In total, 38 % of the respondents rated *Family or friends* 3 or 4. There was a significant difference ($p<0.01$) between men and women, where 31 % of the women rated it 3 or 4 while 41 % of the men rated this source 3 or 4 (Figure 26).

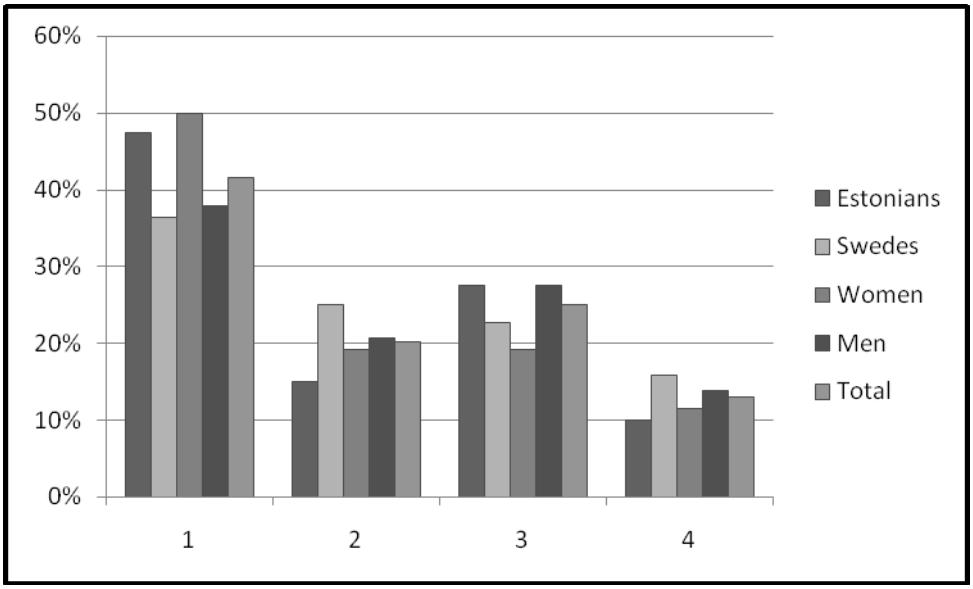


Figure 26. Importance of knowledge sources; Question 11. How great importance have the following sources of knowledge about forestry had for you? *Family or friends*. Scale 1-4, 1= No importance at all, 4=Great importance (answer frequency 96.9 %)

Testing residents against non-residents show that residents in general rated all sources of knowledge lower than non-residents did. Only *Family and friends* was rated higher (Table 6).

Table 6. Difference in importance of sources of knowledge

Share in % that rated average or great	School/ Univ.	Mag.	Books	Forest days	Info. evenings	Family/ friends
Residents	14	50	36	7	14	62
Non-residents	23	54	58	19	23	23

Forest owners' activity

Forestry measures carried out by forest owners themselves

In total, the most common forestry measure that was carried out was *Pre-commercial thinning*, which 38 % of the respondents had marked. In all groups *Pre-commercial thinning* was marked by most, however, among the women also *Thinning* was marked by the same percentage. In average, 1.3 measures had been marked by the total respondents. There were significant differences ($p<0.01$) between the groups. Estonians had in average marked 2.2 measures and the average Swedish respondent marked 0.5 measures. In the group of women, the average was 0.9 measures and in the group of men, the average was 1.5 measures. In total, 42 % of the respondents did not mark any measures at all. Also in this, there were significant differences ($p<0.01$) between the groups, where 8 % of the Estonians did not mark any measures at all and 73 % of the Swedes did not mark any measures. Among the women, 59 % had not marked any measures, while the same answer was given by 22 % of the men (Figure 27).

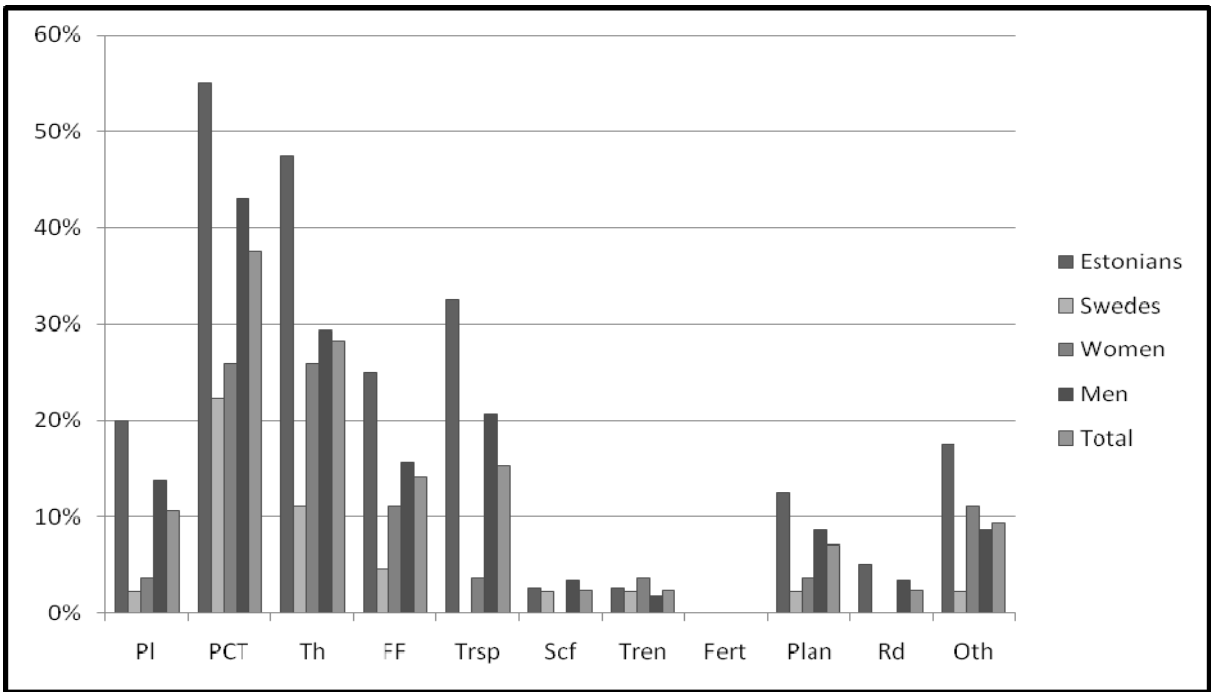


Figure 27. Forest owners' activity; Question 13. Mark the forestry measure(s) that you yourself currently are taking on your property. Pl=*Planting*, PCT=*Pre-commercial thinning*, Th=*Thinning*, FF=*Final felling*, Trsp=*Timber transport*, Scf=*Soil scarification*, Tren=*Trenching*, Fert=*Fertilizing*, Plan=*Forest management planning*, Rd=*Road construction*, Oth=*Other* (answer frequency 97.7 %)

Forestry measures that forest owners currently hire help for

The most common forestry measure to hire external help for was in total *Thinning*, which was marked by 41 % of the total respondents. Also among the Swedes, the men and the women this was the most common answer. However, among the men, the same percentage had also marked *Timber transport*. *Timber transport* was the most common answer among the Estonians. On average, the total group of respondents had marked 1.85 measures. There was a significant difference between Estonians and Swedes, where Estonians had marked 1.6 measures and Swedes had marked 2.1 measures on average. In total, 27 % did not mark any measures at all. There were significant differences ($p<0.01$) between the groups. Of the Estonians, 25 % did not mark any measures, while 31 % of the Swedes gave this answer. Among the women, 33 % marked no measures, while 26 % of the men had not marked any measures (Figure 28).

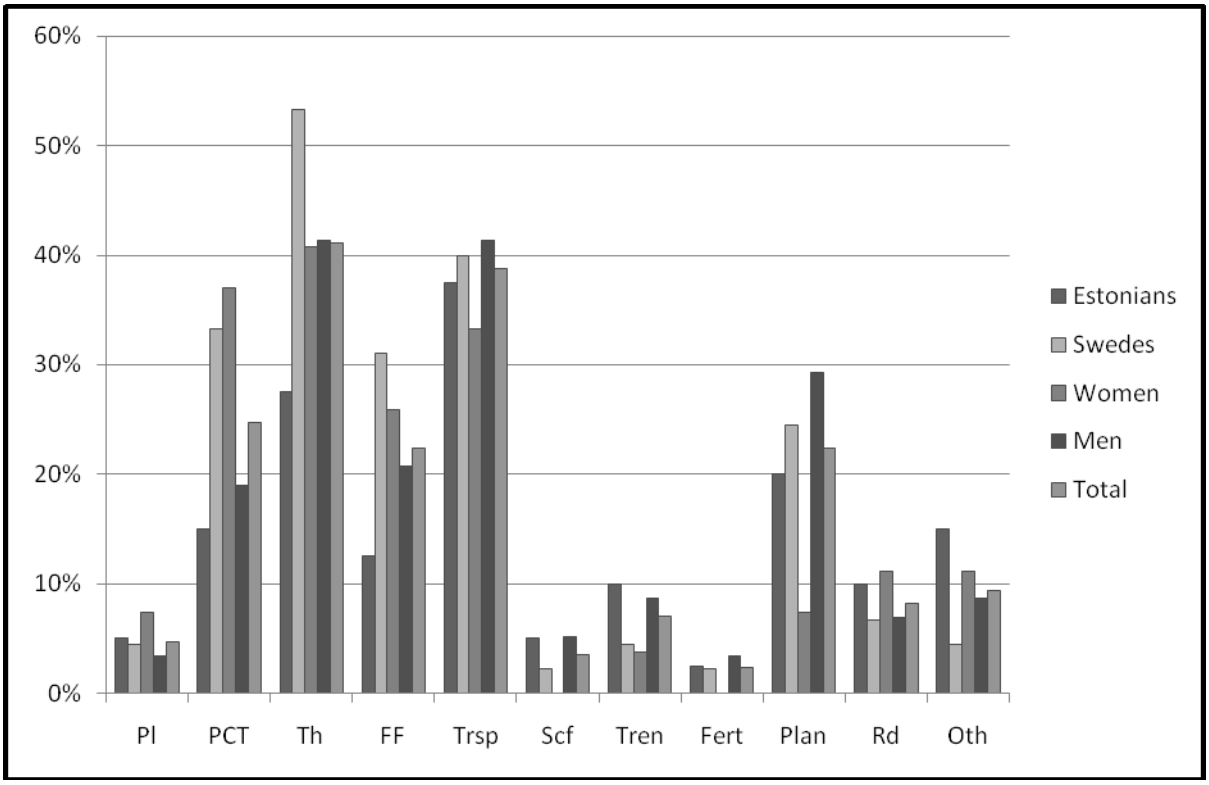


Figure 28. Forest owners' activity; Question 14. Mark the/those forestry measure(s) that you currently hire external help for on your property. Pl=*Planting*, PCT=*Pre-commercial thinning*, Th=*Thinning*, FF=*Final felling*, Trsp=*Timber transport*, Scf=*Soil scarification*, Tren=*Trenching*, Fert=*Fertilizing*, Plan=*Forest management planning*, Rd=*Road construction*, Oth=*Other* (answer frequency 97.7 %)

There was a very clear difference between members and non-members regarding the number of forestry measures that they hire external help for. Members had marked more different measures and a greater portion of them answered they did hire external help. The average member marked 2.8 measures, while the average non-member marked 0.6 measures. Both groups had most marks on measure *Thinning*, although the non-members had as many marks on measure *Timber transport*. Only non-members had marked *Other.* In total, 71 % of the respondents marked one or more measures. Of the members, 93 % marked one or more measures, while 31 % of the non-members marked one or more measures (Figure 29). The non-members' answers resembled the Estonians' answers more than the Swedes' answers (compare Figure 28).

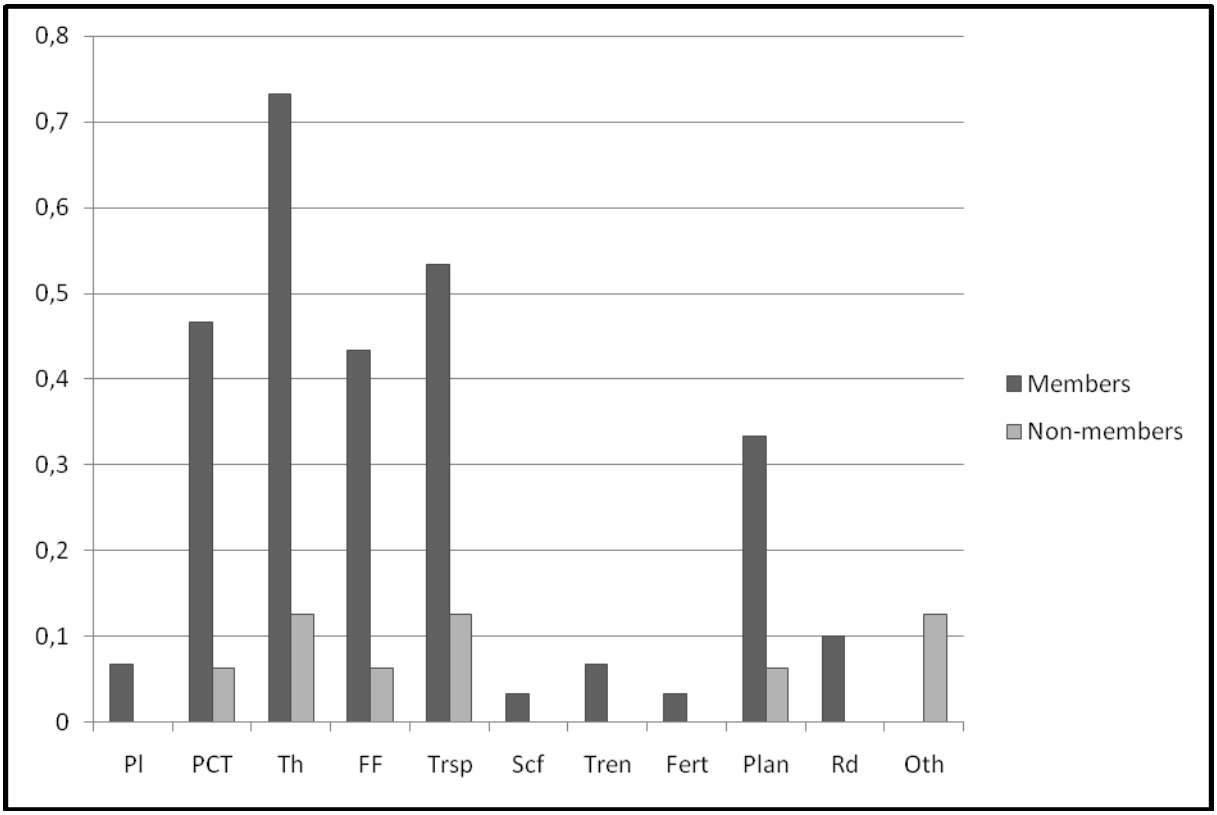


Figure 29. Forest owners' activity; Question 14. Mark the forestry measures that you currently hire external help for. Pl=*Planting*, PCT=*Pre-commercial thinning*, Th=*Thinning*, FF=*Final felling*, Trsp=*Timber transport*, Scf=*Soil scarification*, Tren=*Trenching*, Fert=*Fertilizing*, Plan=*Forest management planning*, Rd=*Road construction*, Oth=*Other*

Forestry measures that forest owners feel a need to hire help for in the future
In total, the most common forestry measure that the respondents felt a future need to hire help for was *Thinning*, which 53 % of the respondents had marked. *Thinning* was marked by the majority in all groups, except the Estonians, of whom more had marked *Timber transport*. On average, 3.4 measures had been marked by the total respondents. In this, there were no significant differences between the groups. In total, 18 % of the respondents did not mark any measures at all. Here, there were significant differences ($p<0.01$) between the groups, where 20 % of the Estonians did not mark any measures at all and 16 % of the Swedes did not mark any measures. Among the women, 14 % had not marked any measures, while the same answer was given by 18 % of the men (Figure 30).

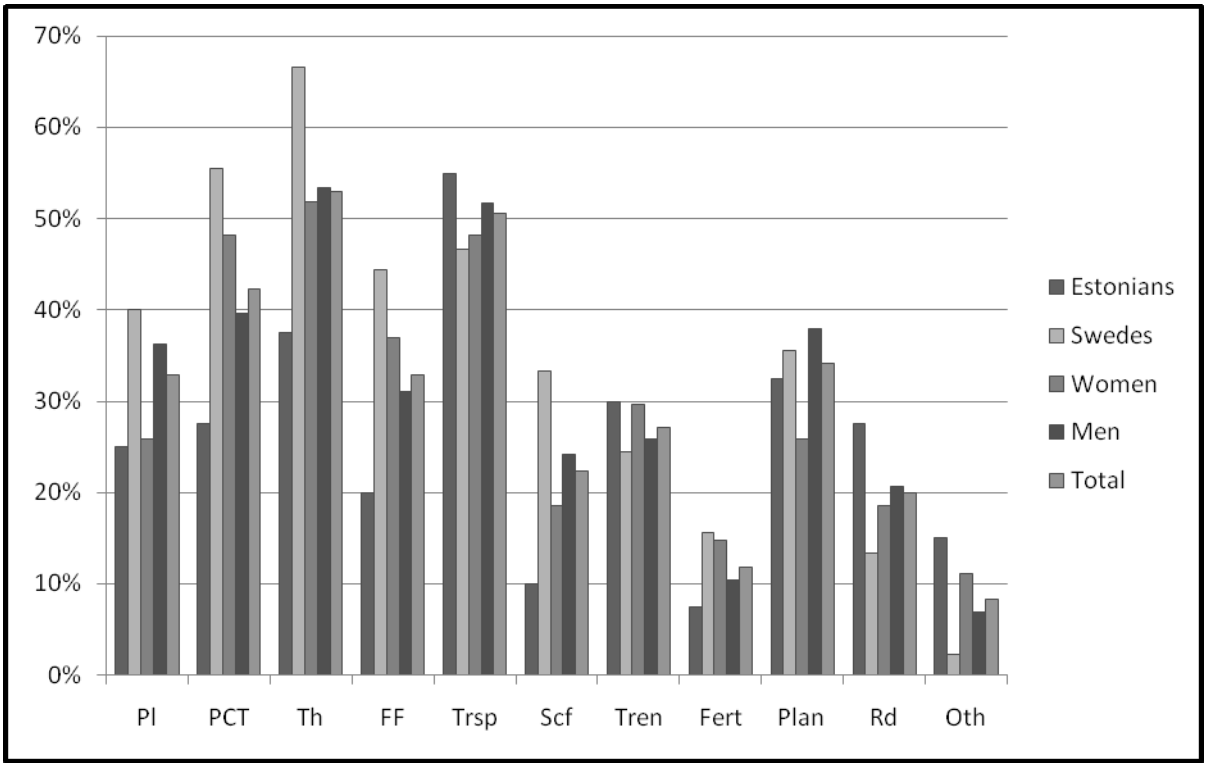


Figure 30. Forest owners' activity; Question 15. Mark the/those forestry measure(s) that you feel a need to, to in the future hire external help for. Pl=*Planting*, PCT=*Pre-commercial thinning*, Th=*Thinning*, FF=*Final felling*, Trsp=*Timber transport*, Scf=*Soil scarification*, Tren=*Trenching*, Fert=*Fertilizing*, Plan=*Forest management planning*, Rd=*Road construction*, Oth=*Other* (answer frequency 97.7 %)

Also on this question the trend was that cooperative members marked more measures than non-members did, although the difference was not quite as large as on the question above. Within both groups, all measures had been marked, with the exception for *Other*, which had only been marked by members. The average member marked approximately 4.2 measures, while the average non-member marked approximately 2.7 measures. Most marks had by both groups been given *Thinning*. *Planting, Final felling, Soil scarification* and *Trenching* had a more than hundred percent difference between the groups (Figure 31).

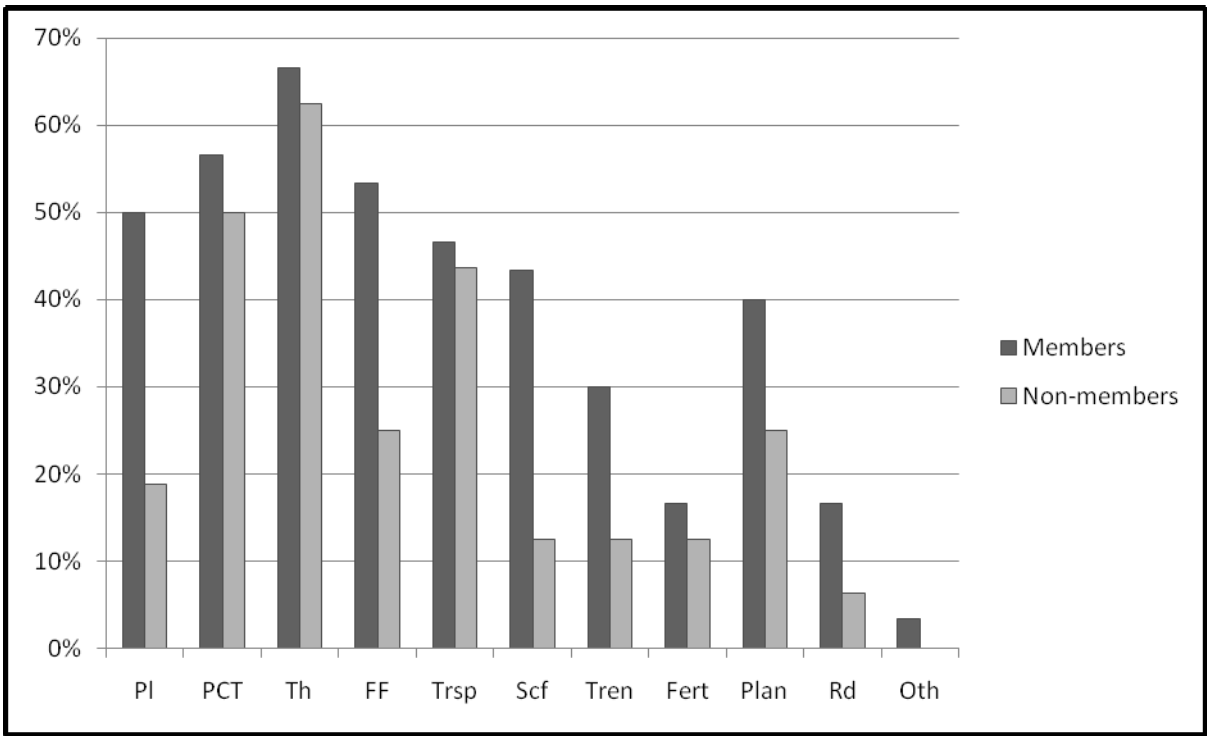


Figure 31. Forest owners' activity; Question 15. Mark the forestry measures that you feel a need to, to in the future hire external help for. Pl=*Planting*, PCT=*Pre-commercial thinning*, Th=*Thinning*, FF=*Final felling*, Trsp=*Timber transport*, Scf=*Soil scarification*, Tren=*Trenching*, Fert=*Fertilizing*, Plan=*Forest management planning*, Rd=*Road construction*, Oth=*Other*

Residents in general were more active on their own in their forests and also hired external help for more forestry measures than non-residents. However, residents marked less measures that they feel a need to hire help for in the future (Table 7).

Table 7. Difference in activity

Number of forestry measures	Taken currently, by themselves	Taken currently, by hired externals	Future need of hiring externals
Residents	2.7	2.1	2.8
Non-residents	1.9	1.3	2.9

Importance of active use of forest

The emphasis on the scale is 3, which 42 % of the total respondents answered. Rating 3 or 4 was given by 81 % of the total respondents. There was a significant difference ($p<0.01$) between the groups. Of the Estonians, 87 % rated the importance of using average or great; 3

or 4, while 76 % of the Swedes gave this rating. Furthermore, rating 3 or 4 was given by 85 % of the women and 79 % of the men (Figure 32).

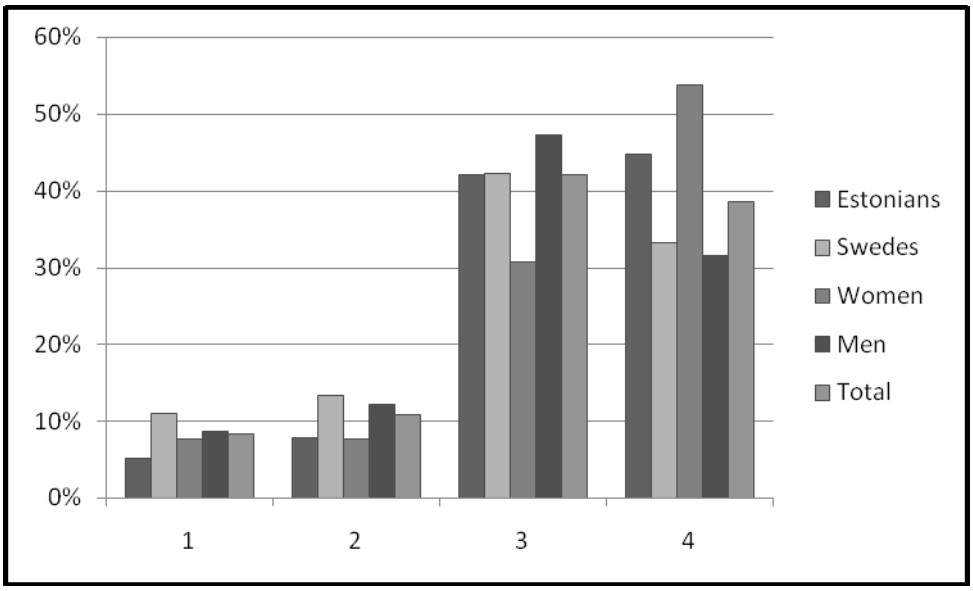


Figure 32. Importance of active use; Question 16. How important is it for you that the forest on your property in some way is actively used? Scale 1-4, 1=Not important at all, 4= Very important (answer frequency 95.4 %)

It was much more important for the cooperative members than for the non-members that the forest is actively used. A fairly large amount of the non-members answered that they thought it was of average importance (3), however among the members, a much greater portion had answered it was of great importance and there was a substantial difference between the two groups when judged by the whole above half of the scale, which 86 % of the members and 56 % of the non-members had rated (Figure 33). The members' answers resembled the Estonians' answers more than the Swedes' answers (compare Figure 32).

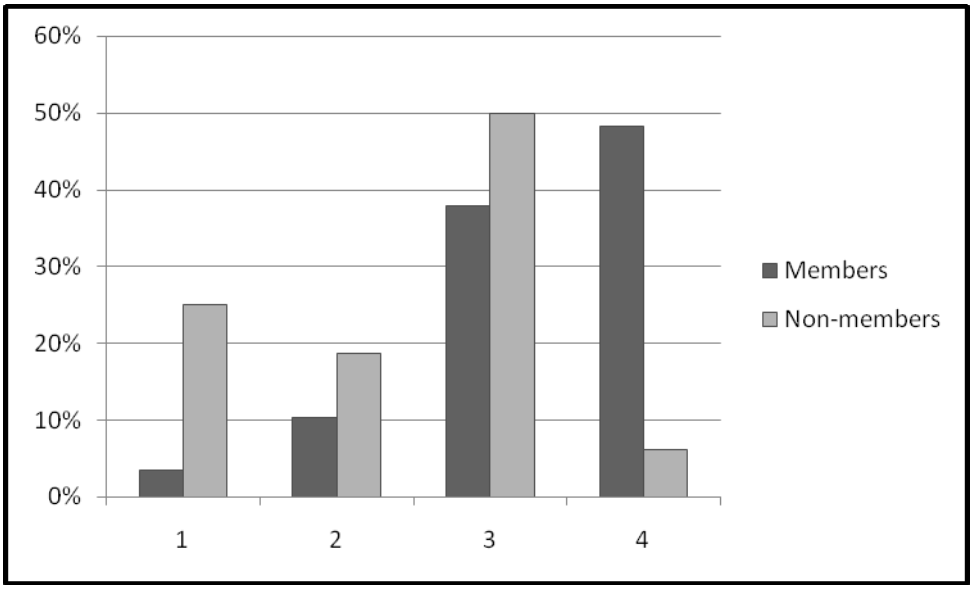


Figure 33. Importance of active use; Question 16. How important is it for you that the forest on your property in some way is actively used? Scale 1-4, 1=No important at all, 4=Very important

Importance of contacts
Municipality was the contact that in total was given the greatest importance. This was also true for all the groups, except the Swedes, who gave *Forest owners' cooperatives* the greatest importance. Among the Estonians, this was the motive that got the lowest rating. On the other hand, the Estonians gave *State authority* a much higher rating than Swedes did. Men gave all motives higher ratings than the women did. *Family and friends* was rated almost the same by all groups.

Municipality
In total, the majority rated *Municipality* 1, with 42 % answering this rating. Rating 3 or 4 was given by 37 % of the total respondents. There were significant differences ($p<0.01$) between the groups. Of the Estonians, 44 % rated this contact 3 or 4, while 31 % of the Swedes gave it the same rating. Among the women, a proportion of 26 % rated it 3 or 4 as opposed to the men, of whom 42 % rated *Municipality* 3 or 4 (Figure 34).

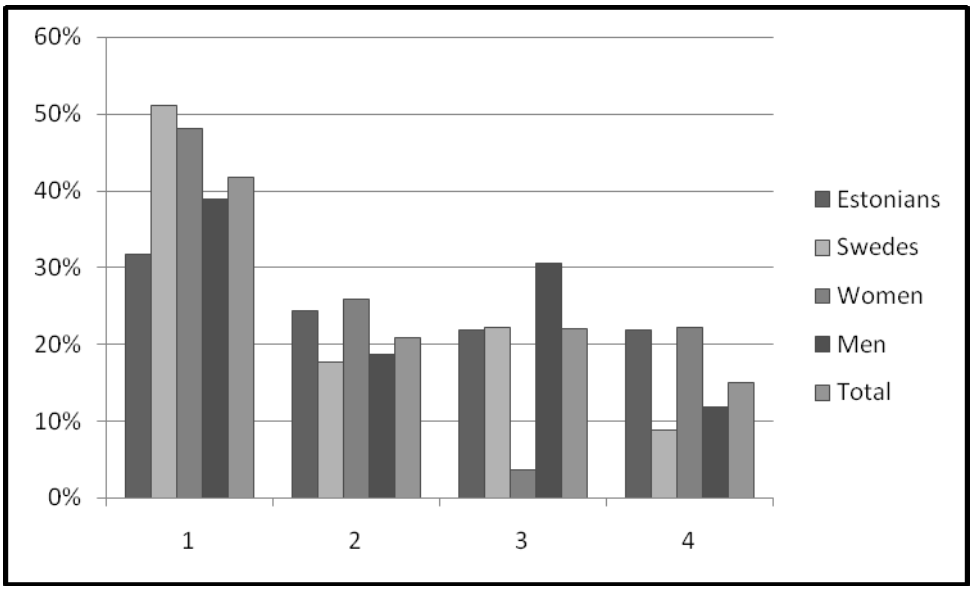


Figure 34. Importance of contacts; Question 17. How great importance have the following contacts had for how you manage your forest? *The Municipality*. Scale 1-4, 1= No importance at all, 4=Great importance (answer frequency 100 %)

The *Municipality* was rated of greater importance by cooperative members than by non-members. Among the members a share of 43 % rated it of average or great importance, while 20 % of the non-members rated the *Municipality* as high.

A greater share of those respondents who rated influence of *Municipality* average or great lived in the same municipality as their property than those who rated *Municipality* of lesser importance. These forest owners were also more active themselves or by hiring external help in their forests than other forest owners. However, they did not feel as great of a need to hire external help in the future, as other forest owners (Table 8).

Table 8. Difference in activity and residential municipality

Number of forestry measures	Currently themselves	Currently externals	Future need	Live in municip. (%)
Municipality important	1.5	2.1	3.5	30.3
Municipality not important	1.1	1.7	3.3	22.2

Forest owners' associations

For the contact *Forest owners' associations*, the emphasis on the scale is 1, which 56 % of the total respondents answered. Rating 3 or 4 was given by 37 % of the total respondents. There was significant differences ($p<0.01$) between the groups. Of the Estonians, 10 % rated the importance of this contact average or great; 3 or 4, while 61 % of the Swedes gave this rating. Furthermore, rating 3 or 4 was given by 30 % of the women and 40 % of the men (Figure 35).

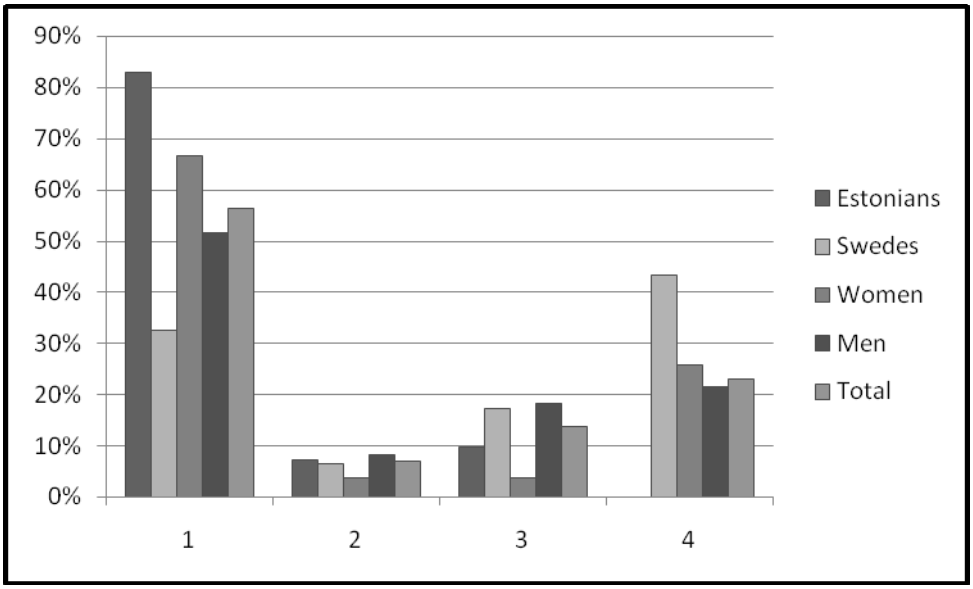


Figure 35. Importance of contacts; Question 17. How great importance have the following contacts had for how you manage your forest? *Forest owners' associations*. Scale 1-4, 1= No importance at all, 4=Great importance (answer frequency 100 %)

Family or friends

In total, the majority of the respondents rated *Family or friends* 1, with 52 % giving this answer. This contact was rated 3 or 4 by 37 % of the total respondents. There were no significant differences between the groups (Figure 36).

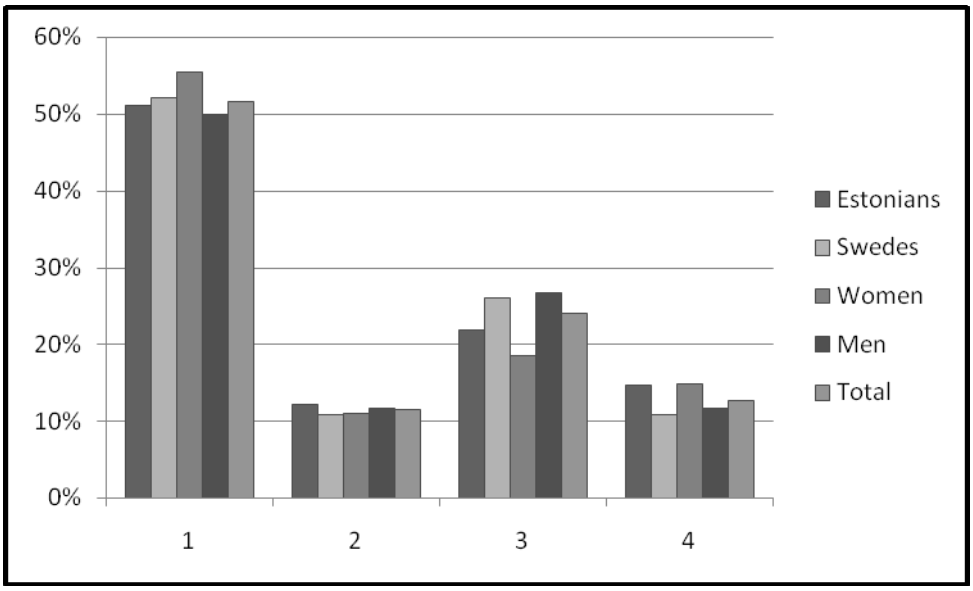


Figure 36. Importance of contacts; Question 17. How great importance have the following contacts had for how you manage your forest? *Family or friends*. Scale 1-4, 1= No importance at all, 4=Great importance (answer frequency 100 %)

DISCUSSION

Material and methods

The questionnaire

Putting a questionnaire together requires a lot of reviewing and collaboration with different people involved in the subject to help the survey meet its objectives as effectively as possible. It is important and difficult to make it clear enough and write the questions so that the respondents answer the question you are asking. Furthermore, the alternatives must be made sufficiently different yet inclusive so that all possible answers can be represented on the survey. It was therefore important to have a few different people review the questionnaire. However, I did not send out any trial questionnaire which would have permitted a few respondents to review and comment upon the form itself and thus missed that opportunity to discover non logical formulations. The results from this study should therefore be used with care when generalizing characteristics of these groups of forest owners.

I had to use a translator for the questionnaire and this may be a source of discrepancy in the study, since the translated questions might not have the very same meaning as the original questions. However, the translator has spoken both Swedish and Estonian since birth and works as a forester in the area in point. With him, the questionnaire was reviewed thoroughly before it was translated, so this source of discrepancy should have been minimized as much as possible.

Another problematic factor that several people warned me of was the respondents' ability and willingness to answer. It is well known that many of the forest owners, especially the Estonian-Swedes, are of advanced age and might have difficulties answering the questionnaire completely. Some might even have died already. On the other hand, I was more worried that the Estonian forest owners would choose not to answer the surveys. I was told by several people that Estonians in general still carry some suspicion against studies like this and

that I should not expect a large number of answers. Luckily, these suspicions were wrong and, as the result part shows, I received an acceptable amount of answers from the Estonians.

The municipality's land cadastre that was used for selecting respondents was not completely updated. It turned out that a number of the people from the registry had moved and some had died. I managed to localize most of the Swedish forest owners using the internet based people search engine Eniro, and I also had access to the West Coast Forest Cooperative's member registry, which helped me in finding the right addresses. For the Estonian respondents I had no access to any secondary registry and thus had to rely on the land cadastre only. I did receive a few late answers from Estonian respondents who kindly noted that the address was wrong and they thus could not answer the form earlier.

Ethnicity

I chose to assign the different respondents the ethnicity of the country they currently resided in while the questionnaire study was ongoing. However, a large amount of the forest owners living in Sweden and also some of the forest owners living in Estonia should actually be regarded to as Estonian-Swedes; many were even born in Estonia and moved to Sweden during the Second World War. These people will have a differing cultural background, and they probably will have been influenced by different sources than other Estonians or Swedes, or sources that these two groups will have also been influenced by, but separately. Therefore, it might have been more correct to also sort out the Estonian-Swedes. However, then the problem of definition arises. It can be questioned who should be regarded as an Estonian-Swede. The questionnaire was sent not only to those who were born in Estonia and fled to Sweden, but also to second or even third generation Estonian-Swedes. These later generations might not regard themselves as Estonian-Swedes and might have already lost the connection with the family's old home-country and thus it is questionable what ethnicity they actually belong to. Furthermore, there was at least one Swedish respondent without Estonian-Swedish background, but who had other contacts with Estonia and even planned on moving there. However, it is probable that most respondents have spent most of their lives in the country that they were listed under in the land cadastre; thus I believe that separating Estonians and Swedes would be a legitimate ethnicity divide of the respondents.

Structure of participating private forest owners

Private forest owners that own ten hectares or more of forestland are approximately divided half and half on Estonian and Swedish ethnicity, with Swedish ethnicity being slightly predominant. Thus, the Swedish representation in this group of forest owners is smaller than the Estonian-Swedish share of landowners by the start of WWII. This may have several reasons. Firstly, it is probable that Swedish citizens had fewer incentives to retrieve properties in Estonia. Another probable reason could be that fewer Swedes than Estonians acquired properties if they did not have any close family ties since before, which is supported by the fact that far less Swedes than Estonians acquired their properties through other ways than the land restitution process. Furthermore, a greater share of the Swedish forest owners in the area might own less than ten hectares of forestland. The survey showed that a greater share of properties with a lesser area of forestland were retrieved through the land restitution process and since a greater share of the Swedes acquired their property through the land restitution process, this may indicate that there will be more Swedish forest owners among those with less than ten hectares of forestland.

The share of men among the respondents was greater than the share of women. There were no records of the share of women among the Estonian forest owners that the questionnaire was

sent to. However among the Swedes, 32 percent of the original questionnaire receivers were women which can be compared to the 33 percent of women among the Swedish respondents. So there does not seem to be any significant difference in response between Swedish women and men. The share of women among the Estonian respondents was 29 percent. These lower shares of female forest owners go well in line with the traditional gender distribution among forest owners in the Nordic countries as shown in Lidestav & Ekström's (2000) study. Their study shows that the tradition of forestry has historically been much stronger among men than women and, thus, it is plausible that this is also an important reason for the lower share of female forest owners in Noarootsi.

The Swedish respondents were significantly older than the Estonian respondents. Furthermore, the group of respondents who retrieved their properties through the land restitution process were significantly older than those who did not. The majority of the Swedes retrieved their properties through the land restitution process so an explanation to the Swedes' older age is that these Swedes probably are the sons and daughters or other close relatives of those who owned the properties by the start of WWII.

Naturally, only Estonian respondents lived permanently on their properties. In average, those who lived on their properties owned more land. However, these owned less forestland than non-residents. Instead, they owned a great deal more farmland. It was in particular the Estonian men who owned more farmland, and also a greater share of the Estonian men lived on their properties. Furthermore, a greater share of those who did not acquire their properties through the land restitution process lived on their property, which may indicate that they in particular acquired their properties to be used for farming. One Swedish woman answered she lived in the same municipality as her property but explained this with her being a registered citizen both in Sweden and Estonia. Yet a fair amount of the Swedes indicated that they spent more than a month per year on their properties.

While nigh on 65 percent of the Swedes were forest owner cooperative members, only one Estonian was member. Most likely the Swedes in this survey were members of West Coast Forest Cooperative, which started as a mainly Estonian-Swede association, so probably Estonians have not had the same opportunities or incentives to join the cooperative in the past, even if the cooperative today is open for all forest owners in the area. This survey does not show the reasons for the low interest among Estonians, but there are probably several of them. Suspicion towards cooperatives may still exist to some degree, and the low interest may also be related to the intense privatization that is taking place in the country. Estonian forest owners may be more individualized and desiring to manage their forests on their own to a higher degree than Swedish forest owners. On the other hand, a good 26 percent of the Estonians did believe a membership could help them carry out more forestry measures, which may indicate an existing interest and that more Estonians will join cooperatives in the future.

Objectives of participating private forest owners

The ratings of different objectives of acquiring show that Estonians to a higher degree than Swedes had an intention of using their properties for more practical reasons. The absolute most important objective among the Swedes was family ties and second greatest importance was given to recreation opportunities. Furthermore, the cross analysis shows that it was in particular those who retrieved their property through the land restitution process that rated family ties of great importance. Since a greater share of the Swedes did retrieve their properties, it is probable that most of the Swedes had more affectionate objectives. The

Swedes were also significantly older than the Estonians which leads to the interpretation that a greater share of the Swedes felt a strong tie to the property and wanted to retrieve it to be able to revisit old family memories, but that most had lived too long in Sweden and were not ready to move and instead intended to use their property more as a vacation retreat.

Family ties was also an important objective among the Estonians, but most important was the access to timber or firewood, where several respondents explained that it was in particular the firewood that was important. It is not surprising that firewood was so much more important for Estonians than Swedes, considering the different forest owners' possibilities to use the wood or that it is probably easier for Estonians to sell the firewood, since they will most probably know the area better than Swedes. Access to a residence was also rated high. However, neither income opportunities nor pursue forestry was rated very high which may imply that the average Estonian was not looking for a farm to live fulltime off of, but more so wanted a place to live or a place to provide wood for domestic needs.

Interesting to notice is also that Estonians had rated pursue nature conservation of greater importance than pursue forestry, which furthermore differs from the Swedes' objectives, where the two were rated about the same, with a slightly greater importance for pursue forestry. It is probable that the past years of unsustainable forestry in Estonia have led the forest owners to look at their forests from a more conservationist perspective. Another probable reason is that the municipality and the country in whole lately have recognized many sites with high nature values and that this has influenced the Estonian forest owners to a higher degree than it has influenced the Swedes. The environmental perspective of forests is important also in Sweden, but the Swedish forestry sector seems to not have experienced the drastic changes in forestry, with firstly such an unsustainable management and then a strong environmental movement, as in independent Estonia.

Men in general rated the different objectives of acquiring of greater importance than women did. Men in general also spent more time on their properties and had rated opportunity of recreation of greater importance than the women did. Probably a greater share of the men feel a stronger need of somehow using their property. According to Lidestav & Ekström (2000) forestry traditions are to a less extent carried to younger female generations than to younger male generations and probably it is not much different with other features related to a property. This may explain the seemingly lower interest among women.

Knowledge level and sources of knowledge

Few of the respondents estimated their knowledge level to have been average or great by the time they gained ownership of their properties. On average, Estonians had estimated their knowledge to be greater than the Swedes did. Furthermore, the cross analysis shows that a much greater share of those that did not retrieve their properties estimated their knowledge level to be greater than what those who retrieved their properties did. Whether this truly reflects reality or not can not be told from the survey, but it is probable that the respondents with a greater estimated knowledge level acquired their properties for practical use and with intentions of income opportunities to a higher degree than other respondents did since they may have had greater knowledge about the opportunities. Although the share that thought active use of the property is important did not differ between the different forest owners, those who estimated their knowledge to be greater rated objectives that relate to a use; those that may bring an income, of greater importance than the others did. In general, forest owners with more knowledge also spent more time on their properties than others did and a greater share

of them lived in the municipality. Their properties on average had a greater total size, but a slightly smaller area of forestland, which might imply that it was in particular those respondents who lived on their properties and used them for farming that had a greater initial knowledge level.

Among Estonians as well as Swedes the majority thought they had gained knowledge about forestry since they obtained their properties. However, there was a great variation between the groups in whom had gained the knowledge, where more men or Estonians than women or Swedes had gained knowledge. Sources of knowledge varied between the groups. Magazines and books were of greatest importance for Estonians, but not nearly as important for the Swedes. It is probable that those informatory papers that are sent out in Estonia are a major part in this. One Swedish respondent commented that much of the forestry related information was in Estonian, which may imply that it is harder for Swedes to take advantage of material that is distributed by the municipality and other Estonian sources.

Instead, Swedes had to a greater extent gained knowledge through family or friends. Other important sources for the Swedes were forest days and Information evenings. Forest owners' cooperative members in particular rated the two latter sources high. Among the Swedish non-members, family or friends and also books were more important. Looking more closely at the Estonians, it appears that on-property residents regarded family or friends as an important source of knowledge, while non-residents had gained more knowledge from books or magazines. This may indicate differences in forestry traditions. Estonia has as mentioned earlier gone through times when much of the private forestry traditions were lost and one interpretation of this is that residents will have better access to knowledge through family or friends, either from the family having been on the property through generations and thus learned from one generation to another, or through neighboring forest owners. Non-residents, on the other hand, may not have the same close connection to other knowledgeable forest owners and to a greater degree have to rely on books and magazines for information.

Forestry tradition, in particular among private forest owners seems to have been much more consistent in Sweden and it is probable that the forest owners of Noarootsi municipality will have a greater access to knowledge through family or friends in Sweden, even if they do not live on their properties. However, while family or friends was the most important source of knowledge for Swedes in general, Swedes, that were forest owners' cooperative members rated forest days and information evenings of even greater importance. Probably, these are days and evenings arranged by the cooperative. These events may in much be appreciated mainly as social events, as the dominating cooperative in the area is the West Coast Forest Cooperative, which was started in part as a gathering point for Estonian-Swedes, but nevertheless the events are important sources of knowledge.

Women in general estimated their initial knowledge lower and less of them thought they had gained knowledge than men did. Once again the survey cannot determine the accuracy of this estimation. However, magazines and family or friends were rated of greatest importance by women in general. The seemingly overall importance of these sources for all groups goes well in line with Lidestav & Nordfjell's (2002) study, which shows that most private forest owners gain knowledge about forestry on their own, through personal studies or through their father. The same study also shows that forest days were another important source of knowledge. That forest days have not been rated as of great importance in the present study, as in Lidestav & Nordfjell's (2002) study may not only be a result of low interest, but also a result of a low range of forest days. Arranging public forest days in the municipality might be a good way of

spreading knowledge among Estonians, especially when considering that forest days have a long tradition in the country. Furthermore, distributing more information in Swedish would probably be helpful for the Swedish residents. Even if the Swedes may have many opportunities in Sweden to gain knowledge, there are probably a number of specific features of Estonian forestry that Swedish residents do not get to take part in. By specifically aiming some of these measures towards women a greater interest might be awakened and thus greater opportunities of spreading knowledge could arise.

Forestal activity

In total, nigh on sixty percent of the respondents carried out some sort of forestry measure on their own. However, the differences between different groups of forest owners were great. Estonians were much more active in their forests than Swedes were, which seems natural, considering that Estonians are living much closer to their properties and that the residents in this study show a much greater activity than non-residents. The most common measure taken was pre-commercial thinning, also an expected result, since it can be considered a fairly easy measure to take. Women were much less active on their own than men were. This result goes well in line with Lidestav & Ekström's (2000) study, in which it was shown that the degree of forestal activity among females was lower than among men.

More than seventy percent of the total respondents indicated that they hired external help for one or more forestry measures. Most commonly help was hired for thinning, which was true for all groups except Estonians, of whom as great of a share had marked timber transport as thinning. Furthermore, more of the Estonians answered they hired help, however Swedes on average hired help for a greater amount of measures than Estonians did, which may be a result of Estonians performing more measures on their own and thus not having as great of a need to hire help as Swedes do. However, this also correlates with membership of a forest owner's cooperative. Members showed they hired external help to a greater extent as well as for a greater number of measures than non-members did. According to Kuinberg (2007) West Coast Forest Cooperative works much as an all around forest manager and most of its members leave it completely up to the cooperative to manage their forests. It is therefore probable that these respondents marked more measures than are currently taken. However, even if they are not currently taken, the forest owners are still currently hiring help with the intention of having the measures carried out.

Also when it comes to hiring external help, women were less active than men, which further supports Lidestav & Ekström's (2000) results. Residents hired external help for a substantially greater number of measures than non-residents did, even if they were more active in the forest on their own. Probably it is easier for residents to find help to hire, since they most possibly will have more contacts in the area and thus better opportunities to find help, possibly through neighboring forest owners.

An even greater share of the respondents; more than eighty percent, answered they felt a need to hire help in the future. Also here, thinning was the general greatest need, although among Estonians a greater share marked timber transport. Although Estonians and men had marked fewer measures, the differences between the groups in feel of future need were not great. Cooperative members marked substantially more measures than non-members did.

The majority of the respondents thought it was important that their forest was being actively used. Of the total, approximately eighty percent thought this was of average or great

importance. A greater share of the Estonians than of the Swedes and a greater share of the women than of the men thought it was important. It is probable that the Estonian's closeness to their properties make them more aware that measures may need to be carried out which they, as shown earlier, also do. However, fewer forest owners that lived in the municipality than others thought active use was important. Therefore, ethnicity might have a greater influence in this matter. Forest owners living in Estonia may have been influenced by the informative newsletters that are distributed in the country. Furthermore, "active use" may be interpreted differently by different forest owners depending upon their objectives.

Interestingly, a greater share of the women than the men thought it was important to use their forest actively, even though the women showed themselves to be much less active and did not feel as great of a need to hire help as the men did. However, to regard active use as important does not necessarily mean also taking action.

A greater share of the cooperative members than of the non-members considered active use important and they were also the group that hired externals and felt a future need to hire externals for the largest amount of forestry measures. Of all the tested groups of forest owners the cooperative members group had the greatest share who thought they had gained knowledge since they obtained their properties, while most of the same group estimated their initial knowledge to be either little or none. One interpretation of this is that gain of knowledge is very important for possible gain of interest. Interest and knowledge were mentioned as important features that seemed to be lacking among Estonian forest owners. But to increase other forest owners' interest and activity it seems important to firstly increase their knowledge. This is also the intention of the informatory newsletters and TV-shows that are currently being distributed in the country. However, it might be difficult to mediate a whole lost forestry tradition through those channels. Forest days proved to be successful information events among the cooperative members and it is probable that they could be in Estonia too. To make them more diverse, they could for instance be arranged by both government institutions and forestry companies or cooperatives and in cooperation with the municipality, to make them not only forest days, but also a combined cultural, historical and nature event. Those who have family ties to the municipality could thus learn more about their families' history and those who only have the property as their tie to the area could still learn more about the area itself. If the forestry part is being weaved in with the area's other features like this, it may display forestry more as a traditional part of the country, than many other information sources could, especially since forest days historically have attracted many Estonians. The municipality was rated as the most important contact for forest management by the Estonians, followed by state authorities, so by involving them further interest might be won.

The municipality offers professional help for private forest owners and this seems to be appreciated by the Estonian respondents. Swedes seem to some degree also take advantage of this opportunity, however the municipality did not have nearly as great importance as influence for how the forest is being used for the Swedes as for the Estonians. Furthermore, of those who thought the municipality was of average or great importance, a greater share also lived in the municipality. The most important contact among the Swedes was the forest owner cooperative. However, this was only true for those who were cooperative members. Other Swedish forest owners had rated family or friends as the most important contact. They had also rated the municipality of much lesser importance than the members did. Members in general spent more time on their properties than Swedish non-members did. Thus, a reason for the municipality's greater importance for the members might be the greater opportunities

of taking advantage of the municipality's professional forest counselor. It may also be a result of the cooperative itself providing help in contact with the municipality.

Influence of ethnicity

This survey show many significant differences between the Estonian and the Swedish forest owners of Noarootsi municipality. While some differences probably are the results of distance to the property some can be traced back to cultural differences. A greater share of the Estonians used their properties with intentions of economical income, which probably is a result of them living in the country since this brings them much closer to their properties and gives more opportunities to work in their forests. Also it will give them better opportunities to more updated knowledge about how to manage their forests according to the country's desire and how to carry out needed measures. Shorter distance also showed to be positively correlated to higher current activity in the forest and a greater incentive of acquiring a property in the municipality even if not for mainly family related objectives.

The most significant difference that can be traced back to cultural variations was in cooperative membership. While forest owners' cooperatives in Sweden have held a strong position as a help for private forest owners, cooperatives in Estonia have been more or less frowned upon as a relic of the past, forced upon, collective system. However, interest for cooperatives seems to be growing and if the cooperatives can show success in helping the private forest owners' achieving their individual goals, their status should grow and they should become more attractive for more forest owners. Another difference that seems to have cultural origin was the importance of nature conservation as motive for acquiring the property. Although forestry was rated as high by the Estonians as the Swedes, nature conservation had been rated higher than forestry by the Estonians, while lower than forestry by the Swedes. This may be a result of and indicate greater caution in Estonia against unsustainable forestry often related to illegal logging, that so recently has been present in Estonian forestry, while the same kind of major issues have not recently been a part of the Swedish forestry sector.

CONCLUSION

There was some significant differences in structure between the groups of forest owners. Those that retrieved their property through the land restitution process were in general older than those who did not. It was in particular the Swedes that retrieved their properties, while a larger amount of the Estonians, particularly the Estonian men, were younger and obtained their properties through other ways, such as purchase on the real estate market. The latter also in general owned more land, especially farmland and lived on their property.

Forest owner objectives differed between the groups. For those who retrieved their property and for most Swedes objectives of the affectionate kind but also recreational objectives were of absolute greatest importance, while Estonians had rated objectives that can be related to domestic utilization, such as firewood or access to a residence of greater importance. Still, nature conservation was rated of greater importance than forestry by Estonians but not by the Swedes. Forestry practice has traditionally been more common among men than women in Nordic countries and also in this study men in general rated all objectives of greater importance than women did.

Few respondents estimated their knowledge level to be very high but Estonians and men on average estimated their knowledge level higher than Swedes and women did. Estonians in general appeared to take greater advantage of magazines and books, than Swedes did. However, those Estonians that lived on their property had gained more knowledge from family and friends. The average Swede also held family and friends as their most important source of knowledge. Differently from other respondents the cooperative members had rated information evenings and forest days as most important knowledge sources.

Estonians and men were more active on their own in the forest than other forest owners. They also hired more help, although the earlier hired help for a smaller number of measures than Swedes. The forest owner cooperative members was the group who felt the greatest need for hiring help in the future, while the difference between other groups was not very great. Furthermore the members was the group of whom the greatest portion thought active use of the forest was important.

Ethnicity influenced activity as well as objectives. Estonians were more active on their own than Swedes were. Also Estonians had more economic objectives for their forest ownership, although they also showed a greater interest in pursuing nature conservation on their properties. Ethnicity also influenced the forest owners' joining of forest owners' cooperatives, where a much greater share of the Swedes than the Estonians were members.

The degree of activity in on the forest owners' properties was influenced by whether the owners were forest owner cooperative members or not. In this study only among Swedes the two groups were comparable, but among those the members showed a much greater activity than non-members.

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ATTACHMENT 1. Introductory letter

Best forest owner!

My name is Emma Åkerberg and I am a forestry student at the Swedish University of Agricultural Sciences (SLU) in Alnarp, Sweden. In my program it is included to write a thesis over one semester. I have long been interested in the situation of Estonian private forest owners after the 1990s land restitution process. After coming in contact with West Coast Forest Cooperative and Stora Enso, I have chosen to write my paper on attitudes of private forest owners in Noarootsi municipality and if there are any differences in attitudes between resident Estonians and Estonian Swedes. To conduct this study I need your help.

This questionnaire has been sent out to 145 randomly selected, private forest owners in Noarootsi. Your participation in this study is of great importance for the quality of my results and I hope you take the time to complete the questionnaire. The answers will be treated confidentially, i.e. persons or properties will not be connected to the answers. The number in the upper right hand corner is a temporary number, so that I can keep track of who has answered so that I do not send out unnecessary reminders. It will be cut off the sheet as soon as I have received your answer.

The questions have set answers and I ask you to please mark the alternative that best agrees with your opinions. In some cases you can mark several alternatives. It is important that you answer all questions, even if you do not think the alternatives match your opinions perfectly. You are very welcome to add your own comments.
In many cases there are several owners to one property. If that is the case, you are welcome to fill in the questionnaire together with other part owners.

Return the completed form in the franked and addressed answering envelope, thankfully before the month of February 2008!

Please do not hesitate to contact me if you have any questions or thoughts regarding the questionnaire or my study!

Emma Åkerberg
Phone number: +46 (0)13 70142 or +46 (0)73 022 02 51
E-mail: w03emak1@stud.slu.se

Thank you on beforehand for your participation!

Alnarp, the
Emma Åkerberg
Student
Master of Science in Forestry

ATTACHMENT 2. Questionnaire

1. Are you man or woman? ID-number: _____

   □ Man □ Woman

2. What year were you born? 19_____

3. What year, after the declaration of independence in 1991, did you retrieve or acquire the property? _____

4. Area of the property

   Forestland_____ ha Farmland_____ ha Yard_____ha Other_____ ha

5. Did you retrieve the property through the land restitution process?

   □ Yes □ No

6. Do you live in the same municipality as your property?

   □ Yes □ No

7. How much time do you spend on your property?

   □ Permanent
   □ More than one month per year
   □ One to four weeks per year
   □ Less than one week per year
   □ No time at all

8. How great importance did the following motives have for your obtaining of the property?

	Large	Average	Little	None
Opportunity of income	□	□	□	□
Family ties	□	□	□	□
Opportunity of recreation	□	□	□	□
Access to a residence	□	□	□	□
Pursue forestry	□	□	□	□
Pursue nature conservation	□	□	□	□
Access to timber/firewood	□	□	□	□
Access to hunting/fishing	□	□	□	□
Access to berries/mushrooms	□	□	□	□
Pension insurance	□	□	□	□
Other: _____	□	□	□	□

9. How great would you estimate your knowledge about forestry was at the time when you gained ownership of the property?

   □ Great □ Average □ Little □ No knowledge at all

10. Do you think that your knowledge about forestry has increased since you became owner of the property?

□ Yes □ No □ Don't know

11. How great importance have the following sources of knowledge about forestry had for you?

	Large	Average	Little	None
School/university	□	□	□	□
Magazines	□	□	□	□
Books	□	□	□	□
Forestry days	□	□	□	□
Information evenings	□	□	□	□
Other: _____	□	□	□	□

12. Does your property have a valid forest management plan?

□ Yes □ No

13. Mark the/those forestry measure(s) that you yourself currently are taking on your property.

□ Planting
□ Pre-commercial thinning
□ Thinning
□ Final felling
□ Timber transport
□ Soil scarification
□ Trenching
□ Fertilizing
□ Forest management planning
□ Other: _____

14. Mark the/those forestry measure(s) that you currently hire external help for on your property.

□ Planting
□ Pre-commercial thinning
□ Thinning
□ Final felling
□ Timber transport
□ Soil scarification
□ Trenching
□ Fertilizing
□ Forest management planning
□ Other: _____

15. Mark the/those forestry measure(s) that you feel a need to, to in the future hire external help for.

□ Planting
□ Pre-commercial thinning
□ Thinning
□ Final felling
□ Timber transport
□ Soil scarification
□ Trenching
□ Fertilizing
□ Forest management planning
□ Other: _____

16. How important is it for you that the forest on your property in some way is actively used?

□ Very important
□ Averagely important
□ Not very important
□ Not important at all

17. How great importance have the following contacts had for how you manage your forest?

	Large	Average	Little	None
School/university	□	□	□	□
State authority	□	□	□	□
Forest companies	□	□	□	□
Forest owners' coop	□	□	□	□
Family/friends	□	□	□	□
Other: _____	□	□	□	□

18. Are you a member of any forest owners' cooperative?

□ Yes → Has your membership involved a higher activity in forestry measures on your property than if you had not been a member?

□ Yes □ No □ Don't know

□ No → Do you think that a membership in a forest owners' association could help you carry out any of the forestry measures mentioned in question 15?

□ Yes □ No □ Don't know

19. Who do you believe is the owner of your property 10 years from now?

□ Me
□ Close relative
□ Other private person
□ Company

20. Do you believe that the area of forestland belonging to the property has changed in 10 years?

□ Yes, increased area of forest land
□ Yes, decreased area of forest land
□ No change
□ Don't know

21. How great importance do you believe the following motives will have for the future ownership of the property?

	Large	Average	Little	None
Opportunity of income	□	□	□	□
Family ties	□	□	□	□
Opportunity of recreation	□	□	□	□
Access to a residence	□	□	□	□
Pursue forestry	□	□	□	□
Pursue nature conservation	□	□	□	□
Access to timber/firewood	□	□	□	□
Access to hunting/fishing	□	□	□	□
Access to berries/mushrooms	□	□	□	□
Pension insurance	□	□	□	□
Other: _____	□	□	□	□

Thank you very much for your participation!