Prospects for the market supply of wood and other forest products from areas with fragmented forest ownership structures.

Task II

Case study: Estonia

Tallinn 26.04.2010

Confédération Européen des Propriétaires Forestiers

Introduction

This case study was completed by CEPF by assistance of its member organisation – the Estonian Private Forest Union.

Case study method – three phases:

Phase 1 - available written records were reviewed and the use of a questionnaire.

Phase 2 - experts of the forest sector were interviewed based on the structured questionnaire.

Phase 3 - two focus groups were carried out.

For the focus groups - in order to have more open discussion, the participants chose to stay anonymous. A focus group involved encouraging a pre-selected group of participants to share their thoughts, feelings, attitudes and ideas on subjects of fragmented forest ownership. One focus group was rural and one was urban in order to have different perspectives based on where people were from. The interviews were recorded on digital recorder and transcribed after the sessions.

The study was carried out from December 2009 to January 2010 in Tallinn and Voru.

A number of people provided help and support to complete this study as well as finding the time in their busy schedules to actively participate. We would personally like to thank Mr Enn Part, Deputy General Director, Centre of Forest Protection and Silviculture; Mr Jaanus Aun, CEO of Estonian Private Forest Center; Mr Ott Otsmann, Managing Director, Estonian Forest Industries Association; Mrs Anne Toom, Deputy General Director, Estonian Land Board; Mr Juri Uljas, Lecturer of Psychology, Tallinn University and Mr Ants Varblane, Managing Director of Estonian Private Forest Union for their contributions and insights this study.

Mr Erki Sok, CEO of Vorumaa Forest Owners Association, with the help of his colleagues, arranged the focus group interview, which gave the perspectives of the rural owners to wood supply. Mr Mart Soobik , CEO of Tallinn Forest Owners Society helped to understand the views, practices and opinions of urban forest owners.

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Overview

1. Total forest cover of the region

1.1 In percent of the total area

The total forest land area of Estonia is 48.9 % or 2.213 Mio hectares in 2007 (Pärt et al: 3).

1.2 Development over last 10 years

During the last 50 years the area of forest land has been constantly and quite rapidly increasing from 1.42 Mio ha in 1958 to 2.25 Mio ha in 2001 (Karoles:12). During the last 10 years, the total forest cover has remained stable between 2.25-2.21 Mio hectares.

The share of forest land has remained over last 13 year's quiet stable.

TABLE 1 CHANGES OF FOREST LAND AREA (PÄRT ET AL: 14)

Year	Hectares
1994	1,938,000 ha
2000	2,249,000 ha
2005	2,264,000 ha
2007	2,213,000 ha

Source: NFI (National Forest Inventory)

1.3 Expected future development

There will probably be a continuous increase in forest area in the next decades due to low demand for cultivated land. Natural reforestation will continue to take place and forest area can expand to 2.5 Mio ha in the coming 20-30 years (Karoles:13).

2. Wood mobilisation - annual increment measurement

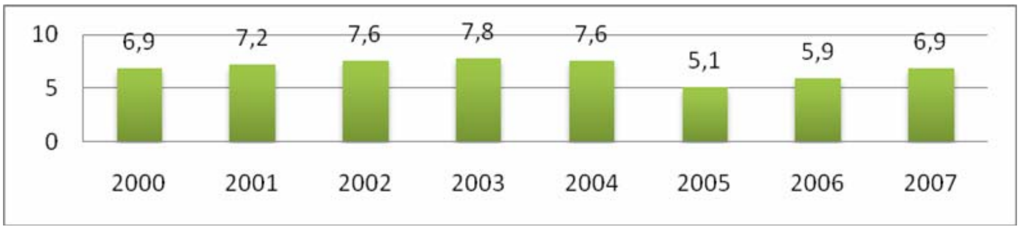
2.1 Annual harvest in cubic meters over bark

Estonian forestry statistics has two sources of information: National Forest Inventory (NFI), which is based on sample plot methodology and Statistical Office of Estonia (ESA), which data is based on forest notification - a document that forest owners are required to submit to the County Environment Service. It includes among other information on the types of felling planned and regeneration.

The NFI, which is based on multiple sample plots studies and data aggregation, has quite significant error margin, for example, the total annual harvest number has an error margin of nearly 30% (Pärt 11.12.2009). The NFI objective is to measure trends in the forests and harvest (Pärt et al: 1). The forest notification data used by ESA does not provide objective information as it shows only intention or plans to act, not actual results. For example, the owner may submit a forest notification to the respective authority for harvest, but because of changes in plans (wood price, availability of time, weather conditions) the harvest may not take place.

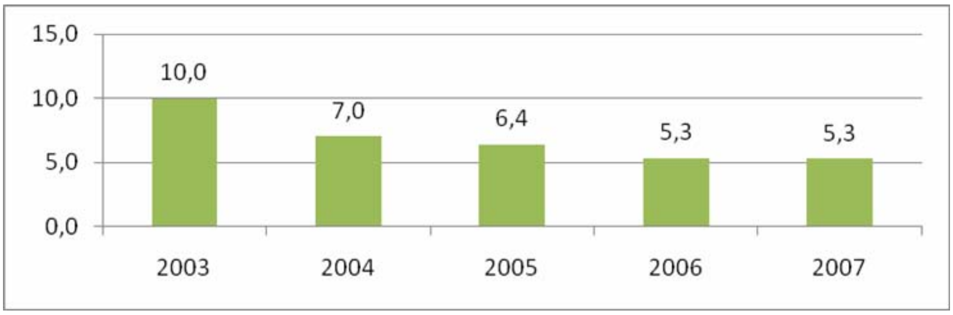
The total harvest in 2007 based on the ESA was 6,900,727 cubic metres over bark, including fuel wood (Pärt et al: 52) and based on National Forest Inventory (NFI) it was 5.268 Mio m3 over bark (error margin 28.9%) (Alderman: 60.1).

TABLE 2 ANNUAL HARVEST IN MIO M3 OB IN 2000-2007 (PÄRT ET AL: 52)



Source: ESA

TABLE 3 ANNUAL HARVEST IN MIO M3 OB IN 2003-2007 (ADERMAN: 60.1)



Source: NFI

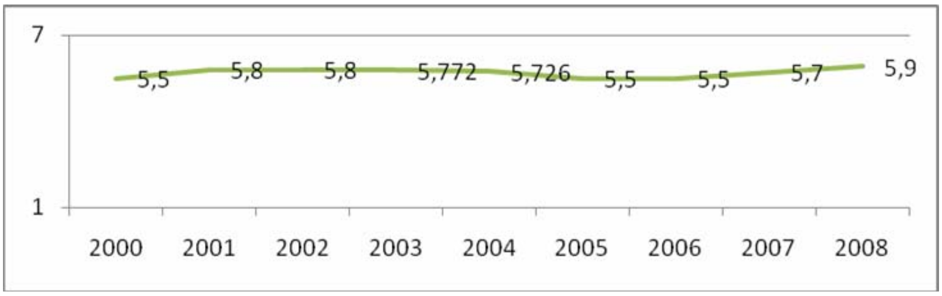
2.2 Annual increment in cubic meters over bark

The annual increment of Estonian forest is 11,919,000 cubic meters over bark in 2007, which is equal to 5.7 m3 per hectare. (Pärt et al: 10).There is no significant difference of the state forest (5.6 m3/ha) or private forests (5.8m3/ha) annual increment per hectare.

2.3 Development over last 10 years

The annual increment has been rather stable since year 2000 and is 5.5-5.9 m3 per hectare including all tree and ownership types.

TABLE 4 ANNUAL INCREMENT IN M3 OB PER HECTARE 2000-2008

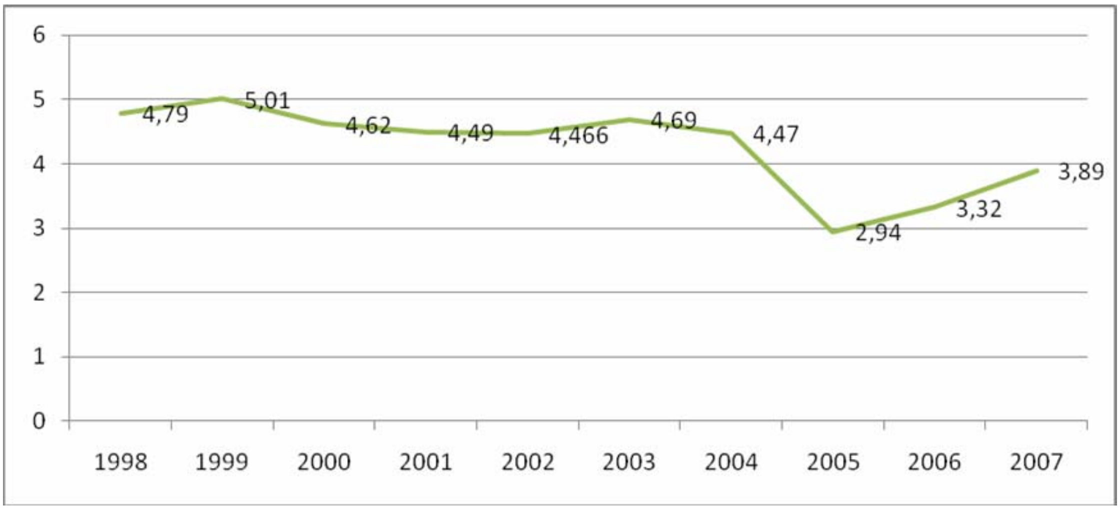


Source: ESA

The existing Estonian Forestry Development Programme 2011-2020 foresees annual felling volume to be 12.6 Mio m3 ob. Over the last years, only half of this volume is harvested.

Table 5 shows that the felling was high in the first years of 2000 and dropped in 2005. The explanation of this change is that increase is related to the fact that owners' who received the land in the process of restitution started to manage their own forests, fast development of forest industry and rising demand on foreign markets. It was followed with regression caused by restructuring of the economy, unfavourable tax regime for forest owners and increasing cost to harvest. (Ministry of Environment: 2010). Also, year 2005 witnessed a major storm event in the Nordics, which dramatically increased low cost wood availability. The harvest did start to pick-up in 2007 because of lack of supply and rising prices. Russian Federation introduced export taxes and the industry in Estonia and Scandinavia lacked the input material (Pärt et al: 47). After the peak years of 2007 and 2008, the harvest has slowed down again (Pärt 11.12.2009).

TABLE 5 INTENSITY OF FELLING (M3 OB/HA/YEAR) (PÄRT ET AL: 49)



Source: ESA

By tree types mainly the broadleaves are under-harvested. From 2001 to 2007 90% of coniferous and only 40% of broadleaves wood increment was harvested (Pärt 11.12.2009).

2.4 Expected future developments

Both forest owners and the forestry industry have raised concerns over the low felling rate. The Ministry of Environment is preparing a new Estonian Forestry Development Programme 2011-2020 and has issued Background Information Document, which says that following issues must be addressed:

- A sustainable supply for wood industry must be available
- Wood as energy source should be used in order to tackle climate change
- Forest owners interest to manage forest must be increased

It is expected that wood demand will rise in coming periods because of demand in traditional wood industry, energy sector and the overall economic viability for forest owners (Otsmann 20.12.2009), (Varblane 8.01.2010).

3. Legal uncertainty regarding forest ownership

3.1 Restitution process

After Second World War, during the period of Soviet occupation the state became the sole owner of forests. In that period forest were managed by state forest enterprises, by collective and state agricultural farms and by the military forest enterprise. After regaining of independence in 1991 the restitution and privatisation process started.

3.2 Process description

The land and forest nationalised by the state in 1940 is now being returned to the owners or their inheritors or privatised by selling pursuant to law. It estimated that nearly 400,000 hectares of forest land is still subject of privatisation (Pärt et al: 42). Government is organising auctions and numbers of claims are still in revision process. The Ministry is planning to draft a new legislation to speed-up the process, including mandatory deadlines to finalise the restitution (Toom 16.12.2009).

4. How can the forest in the region be characterised

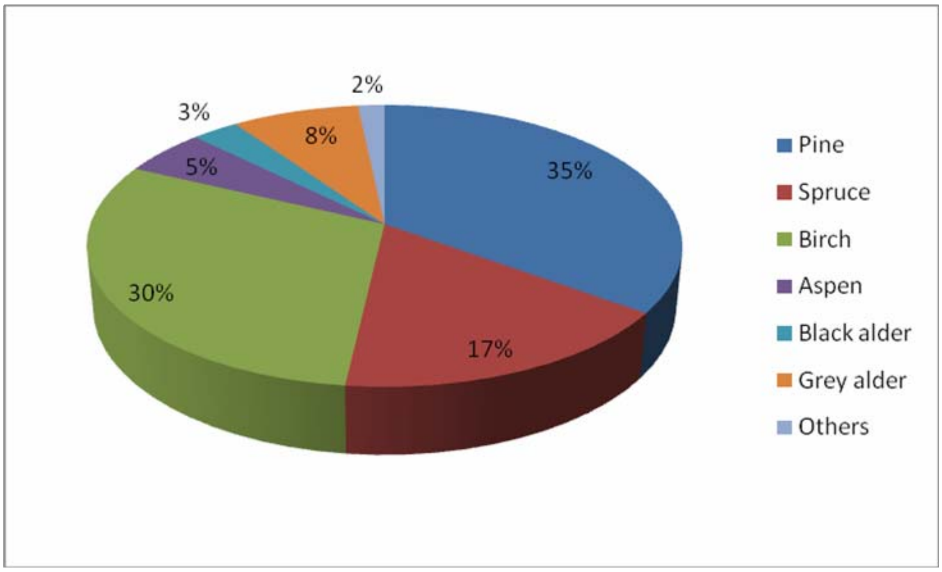
4.1 Average stock per hectare in cubic meters over bark

Average stock is 204 m3 o.b. per hectare (Pärt et al: 4). In state forests it is 211 and in private forests 200 o.b. per hectare (Pärt et al: 5).

4.2 Shares of coniferous/non-coniferous wood

Pine (35%), spruce (17%), birch species (30%), grey alder (8%) and aspen (5%) are the most important tree species of the Estonian forest. The stands of other tree species represent only a small part of forests.

TABLE 6 DISTRIBUTION OF FOREST LAND BY DOMINANT TREE SPECIES (PÄRT ET AL: 5)



Source: NFI

4.3 Shares of abandoned and/or unmanaged forests, and the role fragmented ownership

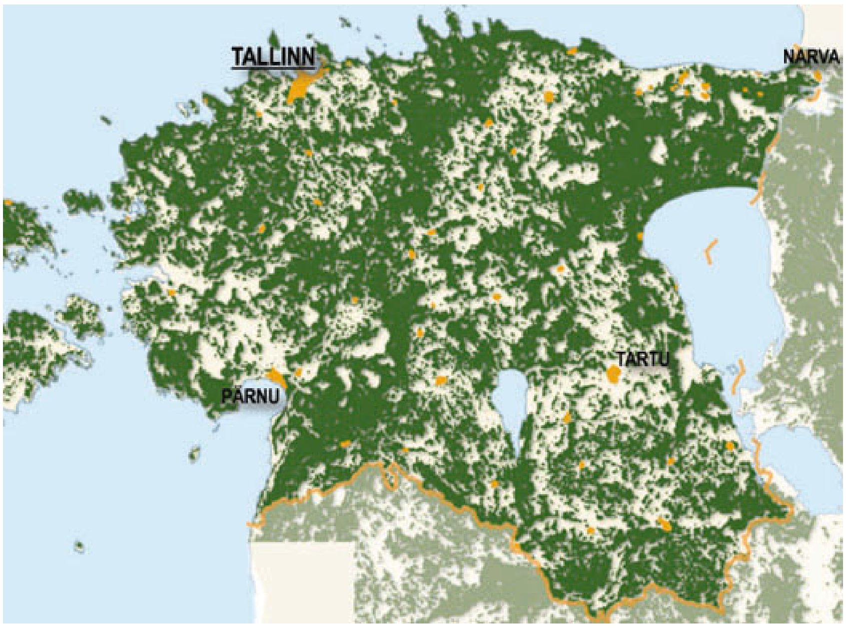
There is no reliable statistics on abandoned or unmanaged forests. However, certain insights are available looking at the statistics. Based on NFI of 2008, total 465,100 ha of forest needed some type of forest management (pre-commercial thinning, thinning or clear cutting). The private owners had majority of that forest or 317,300 ha (total private forest area is 699,138 ha) (Adermann: 58).

The focus groups were asked of the potential reasons of the unmanaged forests and the response was that owners are not interested (Focus Group One 4.01.2010).

4.4 General topographic situation that may influence wood harvesting in the regions forests

Estonia is flat country with highest point 318 m. The forest covers all the country, being more dominant in eastern, central and south-western regions.

TABLE 7 DISTRIBUTION OF FOREST IN ESTONIA



4.5 Describe the tree age (class) distribution in the regions forests?

The average tree age in commercial forest is 56 years; in private forests its 53 and state forests 60 years (Adermann: 12). From the overall low harvest, broadleaves have been even less harvested. Today 32,000 hectares of grey alder is older than 41 years and is most vulnerable. The latest felling age for grey alder is 40 and the forest is degrading (Pärt 11.12.2009).

TABLE 8 AGE CLASS DISTRIBUTION IN THE FORESTS IN (ADERMANN: 20.1)

Age class (years)	Ha	%
…20	279,200	13.5
21…40	399,500	19.4
41…60	618,700	30
61…80	445,100	21.6
81…100	199,300	9.7
101…120	72,200	3.5
121…140	30,900	1.5
141…	17,800	0.9
Total	2,062,800	100

Source: NFI

4.6 Other factors (e.g. forest fire risk, accessibility for leisure, climatology and wildlife conservation) that may influence wood harvesting in the regions forests

The wood harvesting season in Estonia is mainly in the winter when temperature goes below zero to make remote areas accessible. However, Estonia is bordered from north and west by the Baltic Sea and with climate change warmer winters may not allow felling in forest as the ground is wet and soft. Hot, dry summers would cause bans to go to forests because of forest fire threats.

Wildlife conservation has a significant impact to forest management in Estonia. Almost one third of the forest land is under some type of protection (Pärt et al: 133)

TABLE 9 FORESTS UNDER PROTECTION (PÄRT ET AL: 133)

Forest category	Area	From the total country forest area
Protected forests	182,300 ha	8.2%
Protection forests	497,800 ha	22.5%
Habitat protection forests	8,400 ha	0.4 %

Source: NFI

4.7 Other factors may be important to describe the case study region in context to mobilisation from fragmented forest ownerships

The other factors are related to the infrastructure and logistics for wood mobilisation and taxation rules. Estonian forest have poor infrastructure in terms of forest roads and access to more remote estates. The tax system is not favourable for the private person as they cannot deduct forest related expenses from their taxable income. The Estonian roads have limits on vehicle weight and this limits truck usage and efficiency with often half-full trucks transporting the wood (Aun 18.12.2009).

Regional wood markets

1. Structure of the regional wood markets, in terms of ….?

1.1 Wood sellers (forest owners and companies)?

1.1.1 What is the number of forest owners?

In Estonia, privately owned forest is split between two major categories: private juridical persons and private physical persons. Majority of the non-state owned wood is owned by private physical persons, who are considered in this study as fragmented forest owners. There are 48,935 private physical owners who own 514,967 ha of forest land (average 10.5 ha) (Pärt et al: 40).

State owned forest is managed by State Forest Management Centre that manages 825,534 ha. There are also 14 thousand private juridical persons, who own 184,171 ha forest land (average 13.1 ha). Private juridical person is a legal institution providing certain taxation benefits and is a more economical way to manage forests.

1.1.2 The average (of the last 5 years) amount of wood that different ownership size categories within the fragmented private forest owners have sold to markets.

There is no well established data on wood sold on the market by different ownership categories. The NFI data shows felling in forest land by ownership types, however, the error percentage is significant.

TABLE 10 FELLINGS BY OWNERSHIPS CATEGORY (M3 OB). (PÄRT ET AL: 66)

	State forest	Private physical persons	Juridical private forest ownership	Other state forest and no ownership
2003	4,034,000 m3	3,431,000 m3	1,929,000 m3	324,000 m3
2004	2,537,000 m3	2,606,000 m3	1,466,000 m3	229,000 m3
2005	2,208,000 m3	2,161,000 m3	1,747,000 m3	200,000 m3
2006	2,617,000 m3	1,428,000 m3	729,000 m3	424,000 m3
Average	**2,849, 000 m3**	**2,407, 000 m3**	**1,468, 000 m3**	**294,000 m3**

Note: Data is based on NFI and the error is +/- 20%.

In respect of private owners, also their own use must be considered. It is difficult to estimate the share of their own use and what volumes are sold to the market.

1.1.3 The average amount of wood that fragmented private forest owners (and different ownership size categories within this group - if available) have harvested for their own use (firewood, construction etc.)

There is no statistic or study on the volumes that owners harvest for themselves. In one focus group it was estimated that up to 10% of total felling could be considered as own use (construction, firewood) (Focus Group One 4.01.2010). However, it is difficult to cross-check this data.

1.1.4 The development on the round wood sellers market structures and significant changes over the last approx. 10 years, as well as ongoing trends.

The market has two main sellers – State Forest Management Centre (SFMC), private juridical persons and private physical persons. State Forest Management Centre has been the largest seller of the material. Table 10 shows that average of 2003-2006 harvest from state was 2.8 Mio m3 o.b., and private physical persons are not far behind with 2.4 Mio m3 o.b. However, the state has been a more stable supplier then private owners.

In the future we will see more consolidation (Varblane 8.01.2010). Within the private owners, the land share of private juridical persons will increase and the number of physical persons will start slowly to decrease because of selling their forests and forming of bigger estates (Pärt 11.12.2009). Another expert believed that Scandinavian forest companies will increase the purchase of forest land so the number of fragmented owners would be expected to decrease (Varblane 8.01.2010),

The Focus groups, where owners were dominate, believed that private forest owners sold volume share will increase as the sales are becoming more organised and owners associations have gained trust (Focus Group One 4.01.2010).

Based on this feedback it could be concluded that private owners remain an important part of the market and due to consolidation and higher share of engagement and their role will become even more important in the future.

1.2 Industrial buyers

1.2.1 The number of industrial buyers in the region

Estonia has very concentrated buyer’s structure. The dominant industrial buyers are entities belonging to Swedish and Finnish forest companies, which buy material for local paper mills and export material for their pulp mills in Sweden or Finland. Estonian Fund for Nature did in 2005 a study on Wood Procurement Practices and Policies of Estonian Enterprises.

TABLE 11 WOOD BOUGHT BY THE MAIN COMPANIES IN 2005 (KOHV: 10)

Name	Activity	Buying volume m3 ob
AS Stora Enso Mets*	Wood buyer	1,900,000
AS Metsaliitto Eesti	Wood buyer	874,000
AS Lemeks	Wood buyer	600,000
AS Holmen Mets	Wood buyer	500,000
AS Nor-Estwood	Middleman	500,000
AS Södra Eesti	Middleman	265,000
AS UPM Kymmene Forest	Middleman	200,000
OÜ Vara Veski	Independent sawmill	62,000
AS Erapuit	Independent sawmill	15 000
AS Balcas	Independent sawmill	170 000
TOTAL		**5 086 000**

*Stora Enso Mets has corrected its 2005 buying volume in Estonia to be 1.7 Mio m3 o.b. (Tust 26.04.2010)

The study introduces following buyer categories:

- Wood buyer definition.- company who offer forest harvest services and buy cutting rights. These companies objective is to supply wood for their mills in Estonia and pulp for their pulp mills in Finland and Sweden. Stora Enso (mother company in Sweden), Metsaliitto Eesti (mother company in Finland), Lemeks (Estonian owners) and Holmen Mets (mother company in Sweden) buy nearly 80% of total harvest.

- Middleman definition - mainly companies which buy assorted material and do not offer services in forests. Their main objective is to supply wood for mother companies in Scandinavia.

- Independent sawmill definition - local sawmills producing logs and log products. (Kohv: 11).

In 2005, the total harvest was 5.1 – 6.4 Mio m3 o.b (5.1 is ESA and 6.4 is NFI number) and the three types of companies listed above bought 5,086 Mio m3 o.b. of material. The table demonstrates a very high level of concentration of wood buyers in the Estonian market, with mainly Finnish and Swedish industrial buyers having the dominant position.

1.2.2 How did the numbers develop during the last 10 years (approx.)?

The statistics on buyer's structure development is not available. Estonian Forest Industry Association does not keep records on the total industry development and performance. According to Ott Otsmann, Managing Director of Estonian Forest Industry Association, all major industries have been growing (not including last years of economic crises). The export of round wood has decreased. Local industry role as buyer has increased and the reason has been increased due to local demand. Pulpwood is all exported (Otsmann 20.12.2009).

Estonian Fund for Nature published in 2009 a study on Wood Procurement Practices and Policies of Estonian Enterprises which was an implementation using the same method then the 2005 year study (Kuresoo: 2009). This allows for the same companies volumes to be compared over this time.

TABLE 12 WOOD BOUGHT BY THE MAIN COMPANIES IN 2005 AND 2007 (KURESOO ET AL: 22)

Name	Activity	Buying volume m3 o.b. in 2005	Buying volume m3 o.b. in 2007
AS Stora Enso Mets*	Wood buyer	1,900,000	1,000,000
AS Metsaliitto Eesti	Wood buyer	874,000	580,000
AS Lemeks	Wood buyer	600,000	500,000
AS Holmen Mets	Wood buyer	500,000	510,000
AS Nor-Estwood	Middleman	500,000	480,000
AS Södra Eesti	Middleman	265,000	343,000
AS UPM Kymmene Forest	Middleman	200,000	250,000
OÜ Vara Veski	Independent sawmill	62,000	114,000
AS Erapuit	Independent sawmill	15,000	15,000
AS Balcas ***AS Toftan in 2007****	Independent sawmill	170,000	270,000**
Total		**5,086,000**	**4,062,000**

Note: *Stora Enso Mets has corrected its 2005 buying volume in Estonia to be 1.7 Mio m3 o.b. and in 2007 1.23 Mio m3 o.b. (Tust 26.04.2010). ** in 2007 study AS Balcas was replaced with AS Toftan.

The buyer's market structure as such remains quite stable if year 2005 is compared with 2007. Stora Enso decreasing volume is more of a single isolated business case, while all the buyers keep their position in top list and most of them buy similar volumes when compared year on year. The buying volumes of the companies in study decreased, but not evenly across the categories. Major buyers bought less wood, while kept the dominant position, the middleman companies have done better. Their buying volumes are dictated mainly by demand of pulp mills in Scandinavia. The independent mills supply mainly the local construction sector and changes are relatively insignificant (Vara Veski change is related more to the study methodology and definitions) (Kuresoo et al: 21).

In 2007, the total harvest was 5.3 – 6.9 Mio m3 o.b. (5.3 is NFI and 6.9 is ESA number) which was a slight increase over 2005. Apart from Stora Enso, the companies in Table 12 continued to buy fairly similar volumes of wood. This demonstrates that the buyer's market is well developed and the structure has not changed significantly over the years.

1.2.3 Total average over the last 5 years - annual buying volume by industrial buyer category and/or by assortments (m3 o.b. or m3 u.b. - specify) (add time series data if it is possible).

The available statistics do not have buying volumes. NFI has data on the felling by assortment - logs are the key assortment followed by the fuel wood. Over the years, the split assortment remains fairly stable.

TABLE 13 FELLINGS BY SORTMENTS IN 2002-2006 (PÄRT ET AL: 69)

Assortment	2002		2003		2004		2005		2006		AVERAGE	
	1000 M3 OB	%	1000 M3 OB	%	1000 M3 OB	%	1000 M3 OB	%	1000 M3 OB	%	1000 M3 OB	%
Logs	3,611	31.3	2,919	29.3	2,068	29,5	1,853	29	1,555	29.3	**2,401**	**29.9**
Small logs	1,490	12.9	1,345	13.5	898	12,8	768	12	689	13.0	**1,038**	**12.9**
Pulpwood	2,547	22,1	1,992	20	1,374	19.6	1,196	18.7	1,075	20.2	**1,637**	**20.4**
Fuel food	2,159	18.7	2,200	22.1	1,558	22,2	1,518	23.8	1,115	21	**1,710**	**21.3**
Residuals	1,719	14.9	1,496	15.0	1,114	15,9	1,045	16.4	878	16.5	**1,250**	**15.6**
Totals	**11,526**		**9,953**		**7,012**		**6,380**		**5,310**		**8,036**	

1.2.4 Total annual buying volume by industrial buyer category and/or by assortments during the last 10 years (approx.)?

No official statistics exists regarding total annual buying volume by industrial buyer category or assortment. Table 13 indicates fellings by assortments over the last years.

1.2.5 Share of domestic and imported volume?

In 2007, import of round wood to Estonia was 1.423 Mio m3 ob. Russian Federation is the main import country with 83.5 % of total import. The second most important partner is Sweden with 0.106 Mio m3, followed by Latvia with 0.075 Mio m3 (Pärt et al: 162). Sweden`s high share of import is explained by severe storms in year 2005 which generated high volumes of wood available to the region markets. Latvia is southern neighbour of Estonia with easy access to Estonia.

1.2.6 In case of pulp mills, panel mills and heating plants: share of sawmill residues?

This data is not covered with official statistics. According to the information from Estonian Forest Industry Association, the panel, energy and pulp industry uses around 1 Mio m3 o.b. of sawmill residues (Eesti Metsatöösliit: 10).

1.2.7 1.1.7 Number of traders between forest owners and industrial buyer category by industrial buyer category (with or without forest owners associations and forest operators and forest management companies)

The information on number of traders is not available and the category as such is not well established in Estonia. Estonian Fund for Nature 2005 study introduced following sellers categories: physical private person (i); long-term partners (ii), who are legal entities owning and managing forest and also trading forest, irregular sellers (iii),(who are legal entities selling forest on random bases and State Forest Management Centre (iv) (Kohv: 11). Out of those typologies, long-term partners and irregular sellers could qualify as traders; however, the number of entities is unknown.

1.2.8 Annual wood volumes transferred by regional traders between forest owners and industrial buyer category by industrial buyer category?

Such data is not available; however, Estonian Fund for Nature 2009 study provides some insights to the volumes traded by different sellers' categories.

TABLE 14 SHARE OF DIFFERENT SELLERS IN BUYERS VOLUME IN 2007 (KURESOO ET AL: 24)

Name	Private physical person	Long-term partners	Irregular sellers	State Forest Company
AS Stora Enso Mets	10%	60%	5%	25%
AS Metsaliitto Eesti	18%	49%	3%	30%
AS Lemeks	5%	55%	25%	15%
AS Holmen Mets	5-10%	63-68%	2-5%	20%
AS Nor-Estwood	10%	70%	5%	15%
AS Södra Eesti	5%	89%	1%	5%
AS UPM Kymmene Forest	0%	20%	20%	60%
OÜ Vara Veski	0%	20%	0%	80%
AS Erapuit	0%	50%	50%	0%
AS Toftan	0%	49-54%	4-6%	42-45%

The main seller's categories are long-term partners and state forests. The category long-term partners include private juridical companies, whose ownership is usually starting with few hundred hectares of forest land. They also participate in forest management, trading and offer services to other forest owners. The volume bought directly from private physical persons is very low, even lower than irregular sellers. This does not mean that physical persons sales are so low. Estonian private physical persons, who own roughly third of the forest land, sell their material to companies (traders), who in this categorization are defined as *long-term partners* and *irregular sellers* (Kuresoo: 17). The information on the share of traded material and their own material is not available.

1.2.9 Indicate the development on the wood buyer's market structures and explain any significant changes over the last approx. 10 years, as well as ongoing trends.

Wood buyers market has been rather stable over the last few decades with mainly Scandinavian companies dominating on the market and buying the majority of harvests (see Table 12). The future of the current structure depends on the trends and development in European and Nordic markets, to which Estonia is strongly integrated. For example in 2008

Stora Enso has implemented many optimization exercises and reduced its production capacities globally, including closing of 170,000 m3 capacity Paikuse saw mill.

Another development is establishment of forest owner's central association United Forest Owners (UFO). It has been seen as positive development for the wood market, which is traditionally dominated by the industrial buyers. UFO is expected to offer better price, service reliability and transparent pricing (Focus Group One 4.01.2010, Focus Group Two 7.01.2010).

1.3 The structure of the regional wood markets in terms of other market participants

1.3.1 Number of direct private buyers/consumers (mainly fuel wood, but not limited to it).

There is no statistics or research data available on the number of private and direct buyers. The focus group did not want to speculate on the potential number.

1.3.2 1.2.2 Availability and capacity (e.g. consider also their age structure, etc.) of harvest contractors or forest operators? (Capacity in m3 o.b. or m3 u.b. – specify with or without forest owners associations).

There is no research data available on the total availability of contractors and capacities. In the low years of 2005-2007 many contractors left to work abroad. In 2008 the Estonian Forest Industry Association claimed that all in all 63 harvesters and 300 operators are needed if the felling would be 12,5 Mio m3, which is annual felling volume by Estonian Forestry Development Programme 2011-2020 (Luua Metsanduskool: 12). The forest owners claim, that they see a gap of the number of operators in coming years to achieve the planned volume (Focus Group One 4. 01.2010).

1.3.3 Indicate the development of other market participants and explain any significant changes over the last approx 10 years as well as ongoing trends.

There is little data or research done on other market participants. Private consumption of wood and trading between persons remains strong element in country life culture and will continue.

1.4 Other structural market factors

1.4.1 The average the average distance between different types of sellers (e.g. fragmented private forest ownerships) and different types of buyers (km)?

The average distance is around 60 km (Otsmann 20.12.2009).

1.4.2 1.3.2 What are average harvesting costs to forest road by ownership category? (Excluding stumpage sales) (€/m3 o.b. or u.b. - specify)

Clear felling is 10.9 €/m3 (o.b.) and thinning is 14.1-16 €/m3 (o.b.) (Otsmann 20.12.2009).

1.4.3 What are average transportation costs from forest to industrial buyer? (m3 o.b. or m3 u.b. - specify) (Consider a difference also between ownership categories)

The average transport cost is 0.063 EUR per m3 (o.b.) per km (Otsmann 20.12.2009).

1.4.4 The approximate volume (if possible) of informal market segments (subsistence, supply to family members, neighbours, wood stolen from forests or forest roads, etc.) not covered by wood supply statistics to be? What is the particular role of fragmented ownership in this market segment?

Statistics based on National Forest Inventory (NFI) study includes the informal felling as the study is done on several sample plots and aggregated into national data. Private physical persons who live near their forests take their fire wood from their forests as well as for construction; also they deliver the material to larger market. There is no data or estimation how much this volume could be.

1.4.5 Estimated informal market segment growth trend

The informal market size and volumes is not well documented, but they are existing in the form of wood for relatives and friends (heating, construction), the market segment is expected to stay stable and on approximately the same level (Focus Group One 4. 01.2010, Focus Group Two 7. 01.2010).

1.4.6 Reliability of actual felling statistics in the region - is a systematic over-/underestimation and how well are small properties covered?

The harvest statistic is based on national forest inventory study and this covers all the country and the over and underestimation stays within the statistic error margin (Pärt 11.12.2009). The error margin can be very significant, for example, when NFI reports on fellings by ownership type, the relative error is 31% to 45%. There is not regularly collected data on wood sales

1.4.7 Market information access by ownership category - flow of information

The forest ownerships are divided into 3 categories: private juridical persons (companies), state forest company and private physical persons.

For the private physical persons relevant channels are the local forest association, local private forestry advisor / consultant (provided by government free of charge) and various media. The first point of contact for forest owner is the advisor, who gives the basic information the owner should know about - the rights and responsibilities and guidelines for further action. If the owner decided to join local forest owner's association, more information, training and networking is available for them. The foundation Private Forest Center (PFC), established in 1999 offers advice, training and financial support to forest owners. PFC runs webpage dedicated to private forest owners, finances a newspaper supplement - Private Forest publishing, forest related television programs and other communication programs (Aun 18.12.2009).

The impact of word-of-mouth should not be underestimated when dealing locally with the forest management issues and those who live near the forest. Often they tend to be well informed. While owners who live near their holdings said they are well informed on the forest issues, the forest owners who lived in cities raised lack of information as obstacle to be more active on the market. The owners who live away from the forest and whose primary work is not forest related, feel incompetent to manage their own forest. “I do not have information what are the prices, conditions and if I can make a good deal. The buyers often recognise this and sometimes take advantage of their power position. We do not effectively share this information among ourselves" (Focus Group Two 7. 01.2010).

1.4.8 Wood quality requirements by buyer category - Do requirements and quality available differ?

The requirement of wood quality does not by large extent differ by buyer category. There is no research or data available what volumes of material meet what quality requirements of buyer.

2. Typical wood sales methods /contract types / marketing channels in the region

2.1 Description of sales methods /contract types / marketing channels (e.g. standing, auction, long-term contract, ad-hoc on individual basis, etc.)

The main sales types are the sales of cutting right and sales of the assortment. The sales can be based on long-term contract or ad-hoc base. Generally, long-term contracts are used by State Forest Management Center (SFMC) and private owners who sell on an ad-hoc base.

2.2 Importance of these sales methods /contract types / marketing channels in the region - sales method percentage to the total sales

There is no sales statistics based on the various sales methods available. Considering the mix of the sellers and volume delivered to buyers (Table 12, 14), most of the wood is sold on an ad-hoc bases. Even though Estonian Fund for Nature 2009 study on Wood Procurement Practices and Policies of Estonian Enterprises introduced a type of seller called Long-term partner, the actual contracts continue to be on a more on ad-hoc base (2-3 months). The long-term partner definition is more related to customer relationship then a long-term supply agreement.

2.3 Sales methods / contract types / marketing channels by assortment - percentage of sales method percentage to the total assortment sales

The data on sales method by assortment is not available. However, based on the focus group participants and expert opinions logs are usually sold by assortment, but for the rest of the material the sales method varies (Focus Group One 4. 01.2010). SFMC to whom logs are main revenue generator sells logs by assortment.

2.4 Importance of the sales methods / contract type / marketing channels by ownership category - sales method as a percentage of total sales by ownership category - including different categories of fragmented private forest owners

In SFMC, timber is sold mainly at negotiated prices under long-term contracts, less likely; by tender with preliminary negotiations or by auction. A long-term contract guarantees stability for both the purchaser and vendor and presupposes stable development of the customer. Contracts with terms for up to five years and include annually negotiated volumes and, as a rule, prices are negotiated for 3 month periods. Prices are usually negotiated based on the value of timber. Sale of cutting rights is very limited.

Private juridical persons (companies), sell assortment by the use of short-time contracts (2-3 months). Together with SFMC they form the core supplier group for buyers.

Sales of standing cutting rights and sale by assortment after felling are the two main sales methods that are dominant among private physical persons. Vast majority of sales are done on an ad-hoc bases (Aun 18.12.09; Focus Group One 4. 01.2010).

2.5 Category comparison of fragmented private forest owners - sales methods / contract types / marketing channels

There is no documented evidence on how private physical persons sell their wood in Estonia. It is expected that ad-hoc sales and cutting right sales would be dominant. The size of forest is relatively small and level of organisation too low in order to establish various management schemes.

2.6 Development of sales methods /contract types / marketing channels and explain significant changes over the last 10 years – expected trends

There is no recorded information on the historical sales methods and trends are difficult to identify.

3. Characterise wood sellers and buyers

3.1 forest owners'

3.1.1 Share of "organized" (e.g. in owners associations, loose groups, cooperatives, co operations, unions) and "un-organized" forest owners and, if possible, by fragmented private forest owners

Estonia has very high number of forest owners, approximately 55,000 and only 2,500 or less than 5% are organised into local forest owners association. However, the organised owners represent 154,000 ha of forest lands or 21% of the total area (Aun 10.01.2010).

3.1.2 Share of wood sales by "organized" and "un-organized" forest owners and, if possible, by fragmented private forest owners - by assortment and / or buyer category

Such data is not available in Estonia.

3.1.3 Types of organized forest owners associations in the region - loose groups, cooperatives, co operations and unions

Estonian forest owner’s organisation has two levels: local and national. The local organisation is local owner’s association, usually on County or Municipal level. On national level, there is Estonian Private Forest Union (EPFU), where the 40 local owners associations that are members. EPFU is government level lobbying and interest group organisation.

Certain local associations have united into a central association United Forest Owners (UFO) – 10 Forest Associations have set-up an economic scheme to provide stable and secure sales channel for owners. UFO is looking for long-term sales schemes with buyers mainly outside Estonia (Aun 18.12.09).

3.1.4 How do these association work, by type? Their legal set-up, activities including beyond timber sale -, who has initiated them and why? Is there a linkage to special sales methods?

The organisations have different roles and responsibilities (Table 15). The overriding concern is inability to sustain the operations of local owners associations and EPFU without government support. Currently the cost represents approximately half of the respective organisation budgets. In long term, the owners plan to finance these organisations via revenues UFO will earn in the coming periods (Aun 10.01.2010).

TABLE 15 OWNERS ASSOCIATIONS TYPES AND OBJECTIVES

Type	Legal set-up	Who initiated, owners, members	Activities/Objectives	Financing
Forest Association	NGO or Cooperative	Forest owners in municipalities	co-operation of owners, education, members interest protection	PFC grant, members fee
Estonian Private Forest Union (EPFU)	NGO	local forest associations	government social partner	PFC grant, members fee
Private Forest Center (PFC)	Foundation (100% Gov)	Ministry of Environment	advise for forest owners financial support for owners (grants)	State budget
United Forest Owners (UFO)	Central association (profit entity)	10 local forest associations, EPFU	improve wood sales opportunities earn revenues from wood sales	PFC start-up grant & own earnings

The only organisation related to wood trading is UFO, which is looking to agree long-term wood supply contracts with industrial buyers in the Nordic and North-European regions.

3.1.5 What is the degree / level of organization of forest owners and how is it expected to develop in future? How are the memberships in associations, cooperatives etc. expected to develop in the future?

The current structure of local organisations and EPFU is mainly financed by governmental grant and there are concerns how truly viable this system is. If there is a shift of focus in government policy the organisations could lose their income, which would impact their functionality. Currently, local organisations do not see this as possible threat (Focus Group One 4. 01.2010), EPFU has drafted a long-term strategy (Varblane 8.01.2010):

- Institutional reform - EPFU should not be an umbrella organisation of local forest owner's organisations, but rather one single organisation, with strong territorial departments.

- Functional reform - EPFU plans to start management of government grant programs instead of Private Forest Center (PFC). There has been policy implementation experiences, where government hands certain administrative task over to relevant third parties (for example Estonian Hunters Association is now responsible for certain licensing and control procedures, that historically have been duties of the government office). EPFU sees this as an opportunity to strengthen the relationship with the forest owners, give better quality input for policy makers and receive compensation for administrative tasks and implement projects.

- Income reform. EPFU objective is to become fully independent from government financing. This has driven the decision to participate as commercially interested member in UFO, whose dividends would make up a substantial share of EPFU income.

3.1.6 Is there a trend towards increased cooperation between small / fragmented private forest owners?

The overall organisation level of forest owners remains very low when less than 5% of forest owners are organised into local organisations. It is difficult to predict future trends of co-operation. The Focus Groups included local owner's association members; they did not have clear opinion on the future of integration. The EPFU sees more consolidation to come. Varblane believes that smaller forest ownership estates will start to consolidate. Organised number of forest owners is estimated to grow to 3000 and they would represent more than half of private forest land (Varblane 8.01.2010). The outlook is that the less fragmented forest owners tend to co-operate and the small owners remain inactive or very loosely engaged with each other.

3.2 Wood industry side (including forest operators)

3.2.1 Share of "organized" and "un-organized" industrial buyers (by buyer type)

The Estonian industrial buyers, the forest industry, are organised into one lobbying organisation Estonian Forest Industries Association (EFIA), which has 45 members. EFIA estimates that 70% of the mechanical wood industry produced is by their members (Otsmann 20.12.2009). EFIA is only a lobbying organisation, not a business organisation.

3.2.2 Share of wood bought by "organized" and "un-organized" industrial buyers (by buyer type) (add time series data if possible)

Estonia does not have “organised” wood buyers, so all wood is bought by “unorganised” buyers.

3.2.3 Types of organized industry associations (cooperatives, co operations, unions)

See 3.2.1

3.2.4 How do these associations work - legal set-up, activities of timber procurement and beyond - who initiated them and why? - is there linkage to special sales methods?

The Estonian Forest Industries Association is an NGO and the founders are the major players in the forest industry. They work as lobbying organisation and are not engaged with trading activities, the organisation is financed fully by the membership fees (Otsmann 20.12.2009).

3.2.5 3.2.5The degree / level of organization of industrial buyers - expected to developments in future

There are no expected future changes expected. The buyers' level of organisation and co-operation objectives and formats are expected to remain as they are today.

3.3 Cross forest owners and wood industry associations

There are no cross forest owners and wood industry associations in Estonia.

3.3.1 Share of type of forest owners and by type of industrial buyers in cross forestry-industry associations

This format does not currently exist in Estonia

3.3.2 Share of round wood sold / bought by cross forestry-industry associations

The format does not currently exist in Estonia

3.3.3 How do these cross forestry-industry association work? Legal set-up, timber sales activities and beyond - who initiated them and why? Is there linkage to special sales methods?

The format does not currently exist in Estonia

3.3.4 Is there a trend towards more vertical cooperation or integration involving small owners?

In 2009 central association UFO was established, which objective is to improve the wood selling opportunities for Estonian forest owners. UFO is looking for buyers among Scandinavia and Northern-European forest industries to sign long-term supply agreements. The wood would be sourced primarily from the members' forests, but also from other private forests. This would create closer vertical co-operation compared today's ad-hoc sales of wood.

3.3.5 What is the general atmosphere of the relationship between forest owners especially fragmented private forest ownerships and the industry?

The relationships between forest owners and the industry is good and both parties carry out joint activities like press-events etc. (Otsmann 20.12.2009), (Aun 18.12.09), (Focus Group One 4.01.2010).

4. How do wood prices and wood price changes influence the regional supply?

4.1 In context to forest ownership structure - describe different reactions by ownership category and assortments.

The Estonian wood supply is influenced by two major streams: state forest supply and supply from private forest owners.

- State Forest Company is the most stable supplier of the material and their sales has been in 2004-2006 between 2.2-2.6 Mio m3 per year (Table 10). Their objective is to have sustainable forest management in place, which means entering into long-term contracts with buyers. Price is reviewed over certain agreed to period, but the volume is not re-negotiated.

- Private physical persons sales strategy is not researched, but the owners claim to follow prices closely and decide ad-hoc on the harvest decision. Private owner want to maximise their revenues and try sell when prices are high (Focus Group One 4. 01.2010). Their sales have been in 2004-2006 between 1.4-2.6 Mio m3 per year (Table 10).

4.2 Price developments during the last 10 years (by assortment - (add time series data if possible)

While there is little consistent price information available on the sales deals of the total market, the State Forest Company price statistics gives an idea of the price development. These prices are related to the sales of state forest under long-term contracts and private owners ad-hoc sales deals can vary significantly.

TABLE 16: STATE FOREST MANAGEMENT CENTRE SELLING PRICES (€/M3) (RMK: 2009)

Price €/m3	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
pine log	38.8	38.1	40	411	42.9	47.7	51.7	57.1	78.5	72.3	43.1
spruce log	42.8	43.9	45.4	46.2	47.4	50.8	51.3	54.9	72.4	61	41
birch veneer log	-	-	-	-	-	-	83.6	86.7	101.2	116.5	107.2
birch log	37.8	40.1	40.8	42.8	45.1	48.7	45	45.6	60	73.5	40.8
aspen log	19.6	19.1	20	21	22.1	23.6	27.2	29.9	38.7	43.9	25.2
pine pulpwood	18.3	18.3	19.9	20.3	20.3	24.5	26.7	20.8	43.8	38.5	17.8
spruce pulpwood	19.7	20.1	21.5	23.1	23.5	28.8	29.1	23.2	46.5	37.4	18.4
birch pulpwood	18.6	17.7	18.4	19.6	19.5	23.2	30.4	26.1	41.7	35.8	18.8
aspen pulpwood	10.9	10.1	10.8	11.3	11.74	12.8	14.7	11.8	11.8	12.2	13
fuel wood	6.2	6.2	6.6	8.3	9.4	11.1	13.2	14.1	19.4	23.5	15.3

The Estonian wood market prices are strongly driven by the dominant trade practices (i.e. ad-hoc sales and volatile demand). The growth of 2006-2008 is related to increased wood demand

and the boom of the economy, which created both local and international demand (construction, export, etc). When the economic crisis hit wood prices in the market reacted immediately in Estonia. Varblane notes that the wood market size in Estonian and sales practices created a high level of volatility. For example if a major single industry needs input material, it would offer high price, expect ad-hoc sellers and when the need is over, they immediately reduce buying. This practice does not support development of sustainable supply solutions (Varblane 8.01.2010).

4.3 Wood supply price elasticity by owner categories and/or assortments

Both state and private forest sales prices are elastic. For example, the State Forest Company long-term agreement include clause for regular sales price review based on market trend. Private forest owners sell mostly on ad-hoc price which depends on the demand of the specific time moment.

5. The role of forest authorities regarding fragmented private forest ownerships participation in the wood markets concerning …

5.1 Guidance or control on harvests of fragmented private forest ownerships

Private forest advisor and consultants are financed by government and can be considered as representatives of forest authority. Forest advisors are engaged in general guidance. For example, an inexperienced owner wants to harvest its forest, the advisor would give him or her guidance where to buy services, how to organise the sales of wood, and what requirements must be fulfilled. From supervisory / regulatory point of view, the harvest is supervised by Environmental Inspectorate.

5.2 Guidance or control on wood sales of fragmented private forest owners

Authorities do not intervene into wood sales, but consultants and advisors give guidance, see 5.1.

5.3 Forest regulations

In Estonia Ministry and Environment and its agencies are responsible for drafting and implementing forest regulations. They have very important role as the political leadership is with the Minister him / herself.

5.4 Wood trading regulations

Wood trading as such is not regulated in Estonia; however certain aspects are related to regulations. The highways roads network is managed by department under Ministry of Economy and the forest owners and industry have close dialogue on the maximum truck weight limits. The goal is to achieve better economy of the total value chain of wood mobilisation.

5.5 Forest or wood related taxes

There is no wood or forest related taxes, apart from income tax and VAT.

5.6 Forest or wood related subsidies

A government agency, Private Forest Centre, (PFC) and Estonian Agricultural Registers and Information Board provide support schemes to forest owners. The rules and application process are worked out by PFC, owners and ministries (Aun 18.12.2009).

6. Interests of forestry stakeholders (e.g. chambers of agriculture and forestry, forestry NGOs, environmental NGOs) - barriers and support in …

6.1 Harvest activities of fragmented private forest ownerships? (by type of organisation).

Wood trading has not been in the main focus of Chamber of Commerce or other industry and trade representative bodies. At the same time, Green NGOs like Estonian Fund for Nature have forest and wood trading as one of their areas of activity. Estonian Fund for Nature did in 2006 and 2009 study on Wood Procurement Practices and Policies of Estonian Enterprises, with the objective to promote transparent and legal wood trading (Kohv: 6). In Focus Groups, the green NGOs activities in general were described critically, there seems to be a negative feeling by forest owners as the Green NGOs create negative reputation of felling (Focus Group One 4.01.2010).

6.2 Wood sales of fragmented private forest ownership (by type of organisation)

Overall the fragmented forest owners or private physical persons wood trading activities have not been of special interest to the stakeholders.

6.3 The overall framework conditions relating to harvest / wood sales of fragmented private forest ownerships

The overall framework would be mainly affected by public opinion on the impact to the health of the forest in Estonia. The public opinion surveys show that there are prevailing opinions that there is too high of a rate of fellings and too much illegal harvesting (Ariko Reserv). This perception does not support politicians to set-up policies that would facilitate wood trading.

One expert believes that the Green NGOs fundamentally distrust forest owners and want that the forest ownership would be in hands of major corporations. They believe this would make it easier “partner” and easier target then the fragmented, small estate owners (Varblane 8.01.2010).

7. How are the wood markets in that region most likely to develop in the future?

7.1 Regarding prices (by assortments)? Reasons for changes (by assortments).

Wood prices in Estonia are volatile and difficult to predict; because of the current buyers’ structure, the prices depend mainly on Finnish and Swedish prices and industry demand.

The general opinion is that log prices will remain stable and this market has well developed demand and supply. The pulp wood price is expected to decrease as the demand will drop. But fuel wood is expected to be on high demand in coming periods with increasing prices, which is result of changes in the energy sector (Otsmann 20.12.2009), (Focus Group One 4.01.2010).

7.2 Regarding supply (by assortments)? Reasons for changes (by assortments)?

There is no research available of the future demand and supply, so experts and focus group participants were asked.

Log supply will remain stable, but fuel wood and pulp supply will increase up to 2 times driven by energy use (Otsmann 20.12.2009), (Focus Group One 4.01.2010). The government is currently preparing Forestry Development Programme 2011-2020, which should address the problems of low levels of fellings compared to the increment. Fuel wood demand is growing because of energy needs (Aun 18.12.2009).

7.3 Demand by assortment -Reasons for changes by assortment

Please see 7.2.

7.4 Structure - changes in numbers / size of suppliers and buyers. Reasons for these changes

The volatile wood market makes future development evaluation difficult and experts do not have clear picture of what is going to happen. The main buyer's group is closely linked with forest industry in Sweden and Finland. Any changes will be the result of strategic decisions made in those companies rather than any developments in Estonia.

One local development is the increasing interest of energy producers towards fuel wood and this consumption is expected to increase. Sellers structure will remain similar to today's set-up, with potential that newly created central association UFO will become as one of the key suppliers (Aun 18.12.2009),(Otsmann 20.12.2009), (Focus Group One 4.01.2010).

7.5 Imports (In the case studies of entire countries "imported" means from outside the country, for case studies of regions "imported" means from outside the region)

Round wood import has dropped over last years. Historically, the main import country has been Russian Federation. As there are no signs of improved Russia-EU / Estonia relationships, it is expected that the import share will not increase in coming periods (Otsmann 20.12.2009).

7.6 Exports (In the case studies of entire countries "exported" means to outside the country, for case studies of regions "exported" means to outside the region)

Opinions on export differ, generally it is believed that export will remain as it now (Otsmann 20.12.2009). Focus Group One, believed in, exports will increase as soon the global economy will improve and the central association UFO will become stronger player on the market (Focus Group One 4.01.2010).

7.7 Forest authorities and interest representation

Currently the forest owners association is financially dependent on the government, which is seen as a risk (See discussion in point 3.1.5). In case the reform of owner's organisation will be successful, the EPFU will become a stronger partner to government by being independent of policy development.

7.8 Other important factor to describe the wood markets relating to the harvest levels /mobilisation and fragmented forest ownership

Forest owners feel that they are subjected to unnecessary administrative and tax burden (like the current bureaucratic rules in grant schemes). They believe this burden should be reduced.. It was noted that the legislators do not deeply understand forestry business, e.g. taxation impact on the business (Focus Group One 4.01.2010, Focus Group Two 7.01.2010).

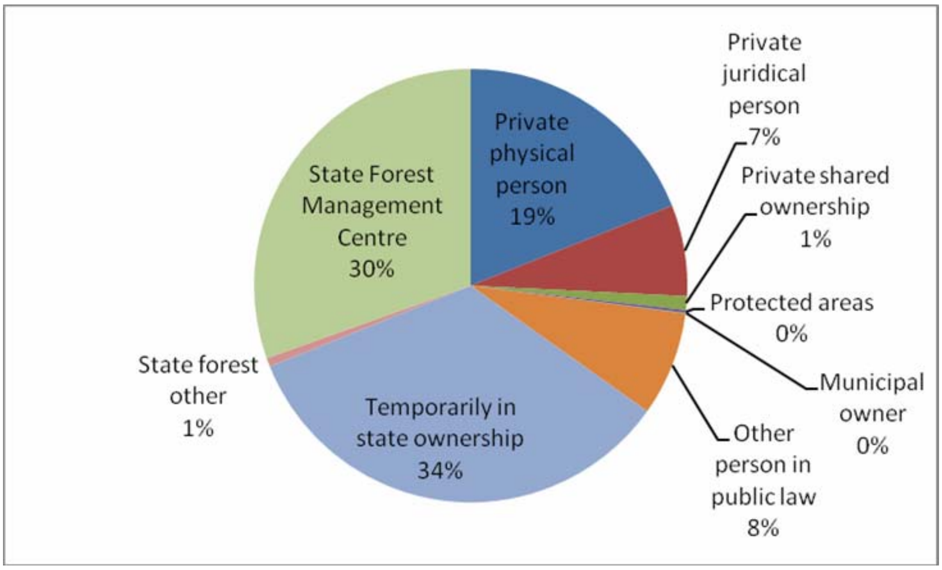
Private forest owners

1 Describe the structure of forest ownership in the area of forest resources:

1.1 Indicate the:

1.1.1 Overall distribution of ownership categories in terms of forest land in hectares

TABLE 17 AREA OF FOREST LAND REGISTERED IN FOREST REGISTER (PÄRT ET AL: 40)



1.1.2 The share of private forest ownership,

The share of private forest ownership is 26% of the forest area (Pärt et al: 40).

1.1.3 The share of fragmented private forest ownership.

The share of private physical persons (fragmented forest ownership) from total private ownership is 70.7% of the area. (Pärt et al: 40).

1.1.4 The development and explain any significant changes over the last 10 years – expected trends

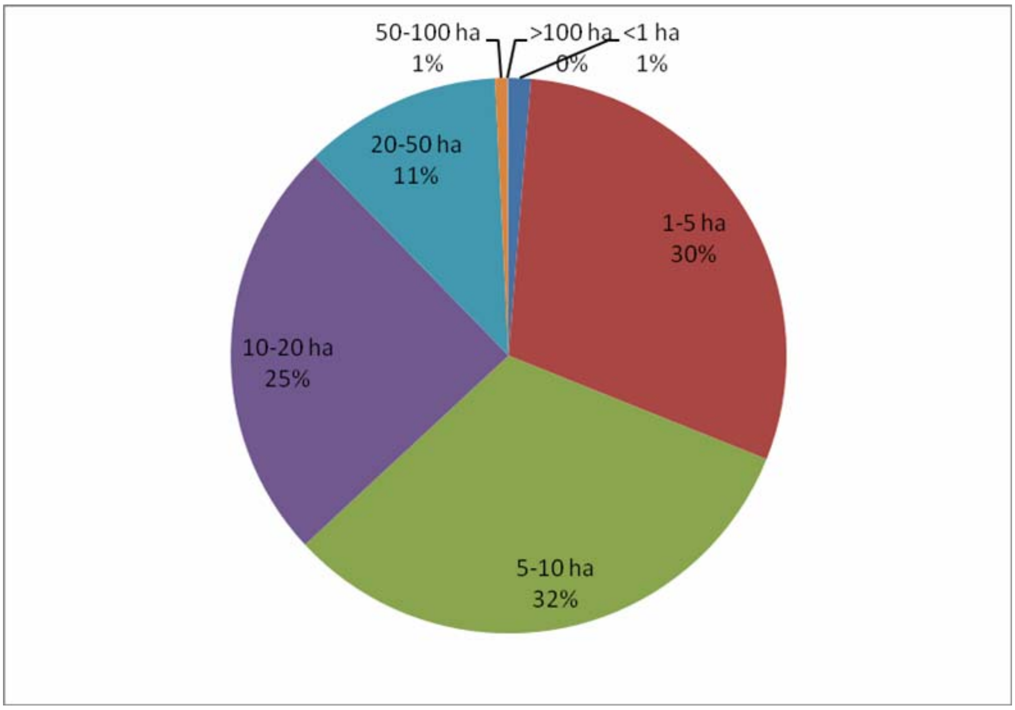
The private forest land has been increasing the last 10 years as result of land reform. By the form on acquiring private forest land- the biggest is restitution with 62%, followed by privileged purchase right 25% (farmers and owners of buildings, who had right to buy the land they used) (Etverk et al: 2008). The private forest land has increased marginally since 2008 and this means actual coming to a close of land reform (Pärt et al: 42)

Also, it is believed, that total number of owners will not increase in the future, but rather decrease, this will cause the average size of land holdings to increase (Varblane 8.01.2010).

1.2 Indicate the:

1.2.1 Distribution of ownership size categories within the group of fragmented private forest owners (number of owner and size forests land by category).

TABLE 18 DISTRIBUTION OF FOREST LAND BY OWNERSHIP SIZE (PÄRT ET AL: 40)



Among the 55,000 private physical persons, the majority of owners have forest land with size of 1-10 hectares.

1.2.2 The development and explain any significant changes over the last 10 years - expected trends.

The ownership sizes and numbers are not expected to increase significantly in the near future.. The Government aims to finalise the land reform by selling the land that has not been subject of restitution. It is expected this will not change substantially the existing distribution of forest land between different ownership categories.

1.3 Indicate the:

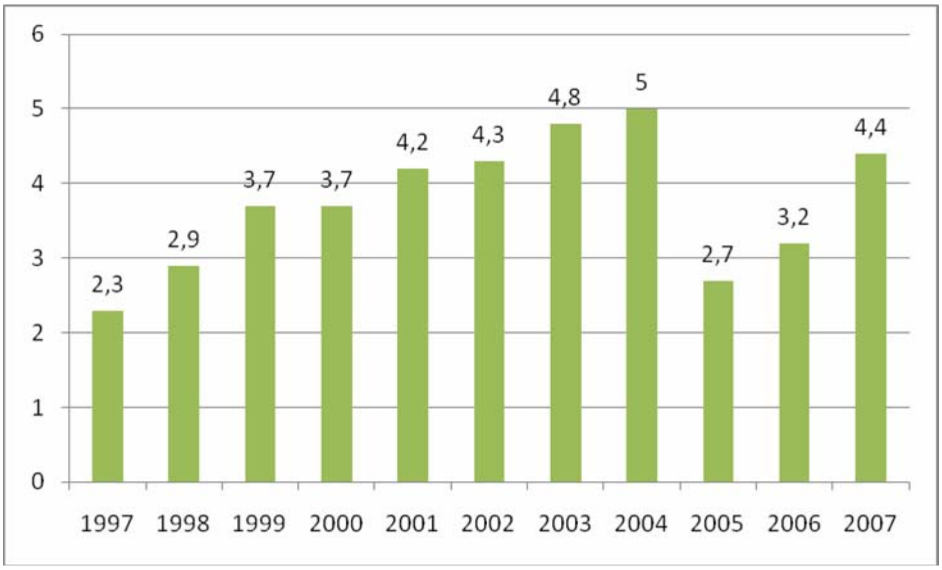
1.3.1 Volume of the annual increment (m3 over bark) in fragmented private forest ownerships.

All private forest annual increment is 7,520,000 m3 o.b. (Adermann: 19.2).

1.3.2 Annual wood fellings (m3 over bark) of fragmented private forest owners for the last 10 years

There is no data showing the felling volume of fragmented private forest owners (private physical persons), but all private owners. Considering that over 70% of private forest owners are fragmented owners, the chart gives an indication of the trend.

TABLE 19 FELLING VOLUME 1997-2007 IN PRIVATE FORESTS IN 1995-2007 IN MIO M3 O.B. (PART ET AL: 58)



Source: ESA

The drop of felling in 2005 is related mainly to regulatory factor and storm in Sweden which led to low wood demand and prices. In 2004 new requirements were introduced to Forest Act. Before the change, forest owners could have voluntary forest management recommendations, but the new law introduced compulsory forest management plan approved by the state as a prerequisite for harvesting. Most owners did not have such plan and the total harvest from private forest was reduced sharply. The compulsory, state approved management plan requirement was abolished in 2009. The storm event in Sweden increased wood supply for Baltic Sea region and made Sweden for a short time period second largest import country for Estonia (first was Russian Federation). In 2004 the round wood import from Sweden was 4,763 m3 o.b., however in 2005 it was already 149,360 m3 o.b. (Pärt et al: 162).

1.3.3 Differences between different ownership size categories within that group of fragmented private forest owners.

No research has been done on the differences of the forest owners categories.

1.3.4 Development and explain any significant changes over the last 10 years expected trends

The regulatory impact has been both directly and indirectly very strong. The compulsory, state approved forest management plans created both practical and mental barriers to harvesting. In mid 2000, the additional bureaucracy put in place reduced the felling and created general understanding that harvesting is complex and a bureaucratic exercise. Although the technical changes were introduced and bureaucracy greatly reduced in 2009 the perception has not changed. – harvesting is still seen as a complex and bureaucratic exercise (Focus Group One 4.01.2010, Focus Group Two 7.01.2010).

1.4 Describe:

1.4.1 Any statutory reasons for significant shares of the annual increment of fragmented private forest owners forestland cannot be mobilised (e.g. nature protection sites, ban forests, etc.).

Although 30% of forest land (most in state forests) is under some type of protection, it does not pose significant impact to wood mobilisation from private forests as the resource available are large and significantly under-harvested.

1.4.2 Development and significant changes over the last 10 years - expected trends

The compulsory state approved forest management plan requirement was in the last decade most significant intervention to wood harvest and mobilisation. It was seen by legislators as unnecessary barrier to private forest management and after political debate in 2007-2008 was finally removed by 2009.

The future development of protected forests is related to NATURA forest areas and forest owners see this as a possible revenue source. Forest owners are currently compensated for non-harvest of the protected site and look opportunities for additional compensation (Varblane 8.01.2010).

2 What is the level of fragmented private forest owners' participation in wood markets?

2.1 Describe (if applicable) the main factors that:

2.1.1 Induce or prevent different ownership size categories of fragmented private forest owners to participate in wood markets.

The forest owners low participation in wood markets is recognised by all experts and by the focus groups. The main reasons given are:

Size of the ownership. An average owner of private forest has 10 ha of forest land, which is provides little incentive for economic activity.

Regulatory environment. The legal requirements that were enforced in 2005-2008 created lots of disinterest to manage forests and impacted the owners' mindset – this perception has not changed.

Volatile wood prices. The rapid changes in wood prices created short term opportunistic behaviour, rather than long run sustainable activity and owners co-operation (co-operation to generate economies of scale)

Dominating ad-hoc sales methods. Similarly to pricing, owners objective is to find best price buyer, which requires research and networking in the buyer's market. This requires time and effort and the pay-off may not be significant.

2.1.2 Briefly explain the major chains of cause and effect.

Size of the ownership. Majority of the owners have received their property in the restitution process, not acquired by means such as an investment.

Regulatory environment. As most people, forest owners, in general, act as law-obedient citizens and follow the legal requirements. In 2005 it was impossible in short period to implement all the legal procedures and often it caused fellings to be postponed. The harvest is still related with a high level of administrative burden.

Volatile wood prices and dominance of ad-hoc sales methods. These factors create market with higher rewards and risks, which does not provide enough transparency and understanding, creates uncertainties and tends to create a negative impact to harvesting decision.

.

2.1.3 Can increasing participation of small private forest owners in the wood market be expected for the future? If yes, what would be the main drivers (general trend, market, mobilization measures etc)?

There is no research done in this area. Currently, the Ministry of Environment is preparing a new Estonian Forestry Development Programme 2011-2020 and has issued Background Information Document, which lists wood mobilisation as issue to be addressed (see page 12, point 2.4). There is a political willingness to increase fragmented forest owners participation on the market, but it remains to be seen what will be the actual steps will be taken and what results it will produce.

3 Characterising fragmented private forest owners

3.1 fragmented private forest owners-typologies based on socio-demographic variables, owners' values, attitudes, objectives, behaviour etc.:

3.1.1 If available (e.g. from studies, survey), describe typologies of fragmented private forest owners that are available for your region AND that seem to provide relevant

information as regards the effectiveness and efficiency of (potential) measures for wood mobilisation targeting fragmented private forest owners (concentrate on things relevant for wood mobilisation from fragmented forest ownerships); (this is a brutal sentence)

In Estonia, neither statistics nor any conducted research has been done to establish typologies of fragmented forest owners. There is no research material on wood mobilisation with focus on fragmented owners.

3.1.2 Explain how and why the typologies / types are relevant for this project (Please clearly indicate references from which typologies are taken).

There are no available or established typologies of fragmented forest owners, which provide relevant information on wood mobilisation.

3.2 Please indicate, if possible:

3.2.1 The volume of wood potential of fragmented private forest owners-types as described in 3.1, in terms of previous differences (of the last 10 years) between harvestable annual increment and actual fellings (m3 o.b.) ("what theoretical potential for mobilization by fragmented private forest owners-type?"). (please keep section 2 Question 1.4 sub-questions v – vii regarding informal markets and data reliability in mind)

In Estonia, such data is not available for analyses.

3.3 Characterise fragmented private forest owners in the case study region as regards the following aspects and, whenever possible, try to relate these characterisations to ownership size categories (see 1.2 --> e.g. indicating "what is the share of full-time farm-fragmented private forest owners" by category),

3.3.1 Farm-forest owners vs. non-farm forest ownership (also distinguish full-time vs. part-time farmers) with or without agricultural / forestry socialisation (e.g. grew up on farm).

There is no empirical information on the farm forest owners vs. non-farm forest owners. However, Estonian society is industrialised and majority population now lives in cities. A significant share of forest owners live in a city and have lost their connection to forest land.

- living "next door" to their forests vs. Absentee / non-resident forest owners (far away from their forests)

Please see 3.3.1.

- education in forestry and agriculture - no such educational background

The data on forest owner’s education is not readily available. In 2007, Estonian University of Life Science did a study called On Activities of Private Forest Owners and Owners Association That Need Support. The study indicated that 23% of respondents had forest related higher education. 40% of larger estates owners have forest related education (Erametsakeskus: 11). However, it is important to note, that the sample of study (472 respondents) was based on the owners who belong to local associations and in that sense they do not represent the total fragmented owners segment, in contrary, the authors even claim “that larger owners were included to the sample as small owners are not informed about state support schemes” (Erametsakeskus: 5). In Estonia, only 5% of forest owners belong to owners associations and they would represent the more dedicated group of owners with larger estates than the total fragmented owners.

- owners' capacities available for forest management: knowledge, machinery, man-power (time availability)

Such data is not available in Estonia, neither experts nor focus group participants could not provide an insight to this question. It was believed, that potentially there would be lack of harvesters and operators in case of unusual increase of fellings, however, it is an unsubstantiated opinion (Focus Group One 4.01.2010, Focus Group Two 7.01.2010).

- share of family income derived from forests and derived from agricultural production

Such data is not available for recent years. In 1994, the round wood sales made up to 10% of household income (Etverk: 213), however, this ratio is probably changed considerably in 15 years and Etverk does not specify which category of owner this data is related to.

- membership in forest owner cooperatives and forest owner interest groups

While Estonia has high number of forest owners, approximately 55,000 and only 2,500 or less than 5% are organised into local forest owners association. The organised owners tend to be more active owners, who are interested in networking, information sharing, receiving training, government support schemes. Although there is no study done, it is expected that the organised owners are more active on the wood markets than non-organised owners.

3.3.2 Share of wood sales by "organized" and "un-organized" forest owners (all and - if possible by fragmented private forest owners) by assortments and/or buyer category

There is no empirical data for this measure (forest owners associations do not collect information on their members’ harvests), It is expected to be that the organised owners are more active on the markets as their estates are bigger and tend to be more economically viable in the market.

- sectoral reachability: regular receiver and user of forest sector information (e.g. publications by forest owner organisations, professional journals)

Forest owner’s information consumption has not been researched; however the question was raised in the focus groups. The focus group participants claimed to use and read special forestry supplements in newspapers and follow forestry related TV programmes and websites (Focus Group One 4.01.2010, Focus Group Two 7.01.2010). According to the media survey, the *Wood Newspaper*, a private forest related supplement of Estonian weekly newspaper for farmers Maaleht, has readership of 70,000 or 6,8% of total Estonian audience (Emor). There was a general opinion, that the information quantity and quality has increased over the past few years and the information available is adequate and sufficient (Focus Group One 4.01.2010, Focus Group Two 7.01.2010).

- other socio-demographic characteristics relevant as regards wood mobilization?
Estonian forest owners are ageing group. The average age is 52.7 years; male age is 50.6 and female 56.6 years. 64% of forest land belongs to male and 36% to female owners.

TABLE 20: FOREST LAND BASED ON OWNERS AGE GROUPS (ADERMANN: 68)

Owner age	%
... 20	1.0
21 … 30	5.1
31 … 40	18.8
41 … 50	21.4
51 … 60	20.4
61 … 70	18.7
71 … 80	11.1
81 … 90	2.8
91 ...	0.7

Estonia is a country with negative population growth combined with net migration out of the country, mainly to North and Western Europe, potentially poses a threat of available work force and having “distanced” forest owners. Consistently, the average income in the Estonian countryside is lower than working in Finland, Sweden and the UK . Estonia total population is 1.34 Mio inhabitants and 900,000 are working age population (age 15-62). Analysts predict, that young educated people immigration is serious risk and after 7-8 years, the number of working population will be reduced by estimated 100,000; however if migration ends up being even higher estimated of up to 200,000 are possible (Seaver: 2009).

- expected trends of socio-demographic characteristics relevant as regards wood mobilization?
Based on the focus group interviews and what has been said before, the following are the most relevant socio-demographic aspects:

- Urbanisation and urban lifestyles. There is no reason to expect a major shift from the urban lifestyle to the country lifestyle. This creates a challenge how the forest ownership can be integrated into the life style of the contemporary owner, especially once the estates will be inherited by the next generation.

- Migration for economic reasons - negative population growth. This factor depends on the economic developments on the European markets. With higher demand for workforce, migration would increase, which would include actual forest owners and operators. Estonia does not have well-established immigration system to meet needs of the economy in the future.

- Low level of organisation and networking between owners. The low level of organised forest owners as phenomenon is not been studied and it is unclear the reasons why owners do not want to join support network which would help them to manage their estates. It can be the case, that this still large number of forest owners does not recognise themselves as owners and economic operators. Currently, it is not expected that significantly more forest owners would join the local organisation.

3.3.3 Attitudes towards forests, forest management objectives, forest management behaviour:

- Describe the major attitudes of fragmented private forest ownership towards their forests: e.g. forest as a work place and regular source of income, ownership as family tradition / in heritage, as a form of investment, a reserve for times of need, forest as a habitat / nature / site of nature protection, a site for own recreation, hunting site, etc.

This area is not well researched, so the questions were raised in the focus groups and following attitudes or objectives of owning a forest were found:

- Forest as a source of income. This was dominant in the Focus Group One, which was conducted with owners who live near their estates and supposedly have larger estates (their ownership sizes were not asked). From the level of engagement with forest management, it can be concluded that this has a significant role in their revenues. Focus Group Two, which was conducted with urban owners (Tallinn) revealed that forest ownership is a secondary revenue source, which complements their non-forest professional jobs.

- Forest as a future investment. This was seen as a stable and secure additional income for the future.

- Ownership as such has very high social value. Ownership as status tends to have positive impact to self-esteem and social status, especially in country side. For some owners it has helped them to become local political leaders.

- Family link and tradition. Surprisingly many respondents agreed with the idea that restitution, including forest land, restores the justice of illegal nationalisation in a personal level. This relates for the current owners in a meaningful way to their previous generation (usual the deceased parents and grandparents of the current owners).

- No objective. Potentially large numbers of owners have not thought through the objective of the ownership. The land was received more as largely unexpectedly through restitution, but ownership has not found a role in the owners' life.

- Describe guiding management objectives of fragmented private forest ownership: economic vs. non-economic goals, e.g. to derive maximum income, to reserve growing stock for times in need, to keep to protect nature, to conserve forests for next generation, etc.

Previous research data in the management objectives of fragmented owners is missing. The findings below are based on the focus group discussions.

The dominant idea in both focus groups was that owners expect revenues from the forest, even if this takes time and will happen in the future. They are willing to wait and are not in a hurry. Their strategy could be described as opportunistic, rather than finding a long-term sustainable solution. The Focus Group One was more engaged on a daily basis with the management – they were following the news, prices, neighbours' activities, opportunities.

- Describe the fragmented private forest ownership attitudes towards forest management service organisations, such as forest owner cooperatives, harvesting companies, silvicultural services, interest groups, forest authorities (major incentives/pros and barriers/cons to join in or to delegate forest work).

These questions have not been well covered in the previous research and the questions were raised in the Focus Groups.

- forest owner cooperatives – Focus Group participants were on most occasions members of local associations so it was expected that they have positive attitude towards cooperatives. Local associations are source of know-how, market information, networking and guidance on government support programmes.

- harvesting companies – Focus Group One said that they use operators and service providers and their quality has improved over time. They all seemed to be able to manage the relationship with service providers, would they be harvesting companies or some type of wood buyers. The feedback from Focus Group Two was different, which was very critical to forest operators. All respondents had an experience of fraud or mistreatment in the past and they seem to manage the relationship with the service provider much more poorly than the Focus Group One.

- silvicultural services – Both focus groups had satisfactory experiences and recognised their role in the total value chain.

- interest groups – Both focus groups were critical to the Green NGOs, who were seen as political opponents of the owners. They were described as groups with low knowledge of forestry and creating atmosphere of mistrust towards the forest owners.

- forest authorities – Both focus groups were critical to legislators, who have not managed to create a business environment for smooth wood trading. Specifically the 2004 Forest Act requirement for compulsory forest plan was criticised, however, the changes in the Forest Act of 2009 (abolishment of compulsory forest management plan) received positive feed-back. The owners consider positive government support schemes to the owners and expect them to continue. There was an overall wish that the applications would become less bureaucratic.

- What are the main sources of information as regards forestry matters for the fragmented private forest ownership (professional journals, cooperatives, forest owner interest groups, forest authorities, forest management companies, nature conservation interest groups and authorities, educational organisations, forestry education, science and training centres, ... etc.)

The questions were discussed in the focus groups and the key sources of information would be local association and information days or seminars organised by local associations (the local associations receive information from Private Forest Centre and other authorities). This channel was seen as most professional with up-to-date information and the events and meeting were also seen as venue for networking. For example, Tallinn Forest Owners Association meets on monthly base in the city and they always invite guest speaker to their event.

Forest authorities are important information sources especially in the case of specific issue. Forest management companies (often buyer) were seen as less trustful sources as they are interested party in the debate.

Professional journals, education centres, forest interest groups (excluding Greens) were seen as a source of information of more generic nature and not so related to private ownership. Green NGOs are seen as more political group, whose information should be verified.

An important discussion emerged in the sense of the types of information. Focus Group Two claimed that there is a lack of wood market information: prices, sales methods, trustful partners, etc. It was noted as being the key obstacle to manage the forests (Focus Group One 4.01.2010, Focus Group Two 7.01.2010). This finding however is not surprising, considering the trading practises (ad-hoc sales) and volatile wood prices.

- What about fragmented private forest ownership themselves working in their forest vs. commissioning forest work to third parties (to whom? companies, relatives and neighbours,...)

Outsourcing the forest management tasks is growing trend. Focus Group One claimed that the commissioning third parties are growing as owners want to spend time on more value added activity. Focus Group Two commissioned all works to third parties as they are distant from their estates, with limited know-how and technical capabilities (Focus Group One 4.01.2010, Focus Group Two 7.01.2010).

- What are possible reasons for non-management of private forests?

The non-management phenomenon is not researched as such, but certain conclusions could be drawn.

- Small size of the ownership does not provide enough business incentives to spend resources (time and money), which is further complicated if owner has a full time job.

- Poor know how and awareness, how the forest ownership could be economically viable.
- Considering the average size, pretty equal spread of the forest across the country, some estates probably cannot be managed in profitable way (long distance to a forest road, no information and connections to neighbours, which would facilitate co-operation).
- Volatile market in the sense of demand and price creates instability, which does not motivate owner to participate on the markets; also considering the general low professional know-how to be successful on the wood market.

- Other factors relevant in terms of attitudes, objectives and behaviour?

Forest as an environment carries certain values and in Estonia people tend to attach high emotional feelings towards forest. In one quantitative research of inhabitants in island of Hiiumaa, the respondents of the study were asked to rate following statements on a 5 point scale, with 1 being weak and 5 strong.

Feelings and emotions related to forest (average value in 5-point scale):

- Good income: 4
- Peace and balanced of mind: 4
- Feeling home and secure: 4
- Berries and mushrooms: 5
- Forest is sacred: 4
- Fear and instability: 2
- Work: 2
- True freedom: 3
- Exciting and interesting: 4
- Very beautiful place: 5

The number of respondents was 416 people, while the island has around 10,000 inhabitants. (Uljas: 52)

From wood supply point of view, the weakest link between “work” and forest” indicates that people in general do not see their local forest as a natural resource or important part of the economy. This fits to the general frame of low fellings and indicates that more awareness of sustainable forest management is needed.

In 2005, Ministry of Environment commissioned a communication platform called “Forest Sector Communication Strategy 2006-2008”, which objective was to increase public awareness on balanced and sustainable forestry. It says that people should have access to information that explores the economical, social, ecological and cultural functions of the forest and includes strategy how to increase public awareness (Metsasektori kommunikatsioonistrateegia: 2010).

- Any expected trends regarding relevant factors?

There looks to be shared concerns between forest sector leaders and politicians on low level of harvest, which would be addressed in Estonian Forestry Development Programme 2011-2020.

The program is expected to be approved in due course of 2010. However, the outlook is unclear as government spending has been reduced over the last few years as a result of slow-down of the economy.

4. Why is there a certain level of motivation to actively participate in forestry?

4.1 Starting from the forest owners typologies as reported to 3.1 and the fragmented private forest ownership characteristics reported under 3.3., point out those characteristics that are of central importance as regards wood mobilization:

4.1.1 What are significant factors (cf. 3.1. and 3.3!) that explain why fragmented private forest ownership exploit or not exploit the sustainable harvesting potentials of their forests?

In case of Estonia, the private fragmented forest owners (private physical persons) form very heterogeneous community and the different categories have not been clearly established. The information below is based on the focus groups and expert interviews.

The significant driver for the harvest is an economic income derived from the wood trading, together with availability of wood for personal, family and extended family use. The fellings, statistic show, for last 10 years, has been underused. The main factors for the barriers to harvest are related to the size of the estate, which potentially reduces economical interest towards the forest ownership, administrative burden to manage the estates and volatile wood prices. If the owner lives in a city or away from its estate, the ownership link becomes very weak and the estate tends to remain not managed (Focus Group One 4.01.2010, Focus Group Two 7.01.2010), (Varblane 8.01.2010). At the same time, the economic crises may help wood mobilisation in Estonia as the migration to other countries and cities will slow down, income from other work will decrease and therefore the meaning of the forest ownership will increase.

4.1.2 Please describe and explain (cause and effect) these factors in general

The economic incentive is self explanatory, however, the barriers are explained below:

- Size of estate. The average 10 ha forest ownership, potentially split into different plots, cannot provide regular and substantial income to household. The annual increment would provide wood for own use, which is more relevant to owners who live in farms. The management cost per unit would be relatively high which would reduce the profitability. The local owners organisation attempts to create co-operation between owners in forest management (pooling) has not been very successful because of low level involvement of owners and personal information protection rules (contact data).

- Wood prices. The changing prices create opportunistic behaviours and poorly forecasted market developments. That type of market does not attract more cautious or stability looking sellers.

- Urbanisation. The owner that has a professional career and the issues of forest ownership do not belong to his or her current life patterns. In contrast, owner living in countryside would be more engaged because of limited opportunities for jobs and income, peer influence and social behaviours. (Focus Group One 4.01.2010, Focus Group Two 7.01.2010), (Varblane 8.01.2010),

4.1.3 Please describe expected future developments of these factors

- Size of estate. There is no reason to expect consolidation of owners in near term. Estonian Private Forest Union has plans to initiate project with aim to collect on a voluntary bases data from owners across Estonia (contact, forest ownership characteristics and readiness for wood trading). The aim of the project is to develop a system for pooling the estates and creating wood resource database for trading.

- Wood prices. Wood prices remain volatile as the buyers structure will not change significantly. However, the establishment of central owner's association UFO is a first step to take control or minimise the risks related to prices. The business idea is to sign long term contracts with major buyers, which would provide opportunity for price stability, which would create supply stability to UFO.

- Urbanisation. This trend is expected to continue in coming years and co-operation of urban owner with local forest association (where the estate is located) is needed to close this gap. (Focus Group One 4.01.2010, Focus Group Two 7.01.2010), (Varblane 8.01.2010).

4.2 Also discuss the factors described under 4.1. from the perspective of:

4.2.1 Which incentives could be strengthened and which barriers could be overcome in the short-, medium- or long-term? (NB.: Overall research question: "measures for wood mobilization")

Size of estate

There is very little short term solution to change management for the small estates. The existing legal frame should be reviewed in order to increase wood supply. Both focus groups and expert interviews said that there should be:

- higher level of tax deduction opportunities which would provide incentive for forest management

- new rules for maximum weight of vehicles on the highways, which would allow 60 ton vehicle usage (current maximum is 41 tons), (Focus Group One 4.01.2010, Focus Group Two 7.01.2010), (Varblane 8.01.2010), (Aun: 18.12.2009).

In long term, the forest owners central association UFO should become the key seller for fragmented owners, who look for sustainable income (Varblane 8.01.2010).

Wood prices

Estonia is some kind of buffer market for Swedish and Finnish markets, hence being with more volatile prices. This could be smoothed by increasing consumption of wood for energy production and by increased economic co-operation between owners, which would create opportunities to offer higher volumes of wood, sign long-term contracts and reduce price volatility.

5.1 Please indicate factors and EXPLAIN cause and effect, as applicable: What factors, how do the impact on wood mobilisation / (potential) measures for mobilisation, relevance for all or specific categories of fragmented private forest owners; relevant in general or only under specific circumstances (which, e.g. in certain market conditions) etc.

Please see 4.1 and 2.2.

Wood mobilisation in the region

1. What are measures for wood mobilization from fragmented private forest ownership in the region?

1.2 what are they, explain?

The Government has approved strategy document Estonian Forestry Development Programme 2001-2010, which includes also measures to support private forest management. The Private Forest Centre, foundation owned by the Ministry of Environment and Estonian Agricultural Registers and Information Board, government department under Ministry of Agriculture manages several financial support schemes, the most relevant and presented below:

TABLE 21: STATE SUPPORT SCHEMES FOR PRIVATE FOREST OWNERS

Measure	Impact on fragmented owners
Reforestation	support scheme to finance restocking of existing forest after harvest
Soil scarification	support scheme to finance soil scarification before planting new forest
Small scale project of economic co-operation	support scheme for local owners association to initiate wood trading projects
Tending of young stand	support scheme for owners to improve the quality of forest
Organizing neighbourhood watch in forest	support scheme for owners to increase law obedience in the forests
Cultivation of Planting Stock	indirect impact
Forest melioration	support scheme for owners to reduce forest melioration investment costs
Afforestation of agricultural land	indirect impact
Individual advisory for owner	support scheme for owner to compensate counselling costs
Group advisory to owners	support scheme to organise seminars and information meetings
Training activities to owners	support scheme to organise trainings for owners
Implementation of regional support person	support scheme to establish regional support person, who counsels owners in forest management issues
Forest management plans compilation	support scheme to owner compile Forest Management Plan
Prevention and compensation of forest damages	support scheme to compensate owners damages (storm, fires)

(Pärt et al: 174)

1.3 Who is implementing them? Who is taking the initiative?

See point 1.2.

1.4 which are successful or not? Why?

The effectiveness of the measures is not evaluated, but the government is interested to look for effectiveness. The Private Forest Centre is currently preparing system for support scheme effectiveness evaluation (Aun: 18.12.2009).

1.5 if available please indicate approximate costs of the taken measures and the funding sources?

In 2009 the total support for private forest owners was 3.83 Mio Euro (Aun 18.12.2009).

1.6 are there any estimates of the effectiveness of measures in terms of additionally mobilised wood supply?

See 1.4.

1.7 are measures for wood mobilization expected to be increased or intensified in the future?

The total amount of the support schemes depend on the state budget and political agenda. Over the last few years the government has reduced its spending. Aun believes that the support schemes will not increase significantly because of the general business climate and smaller state budget (Aun: 18.12.2009).

1.8 What are currently the main new instruments which are being discussed and why?

The Estonian forest roads network is poor, specifically in private forests and the Private Forest Centre is reviewing opportunities for forest road building support scheme (Aun: 18.12.2009).

1.9 What are the lessons learned from the past?

Both focus groups were very supportive to the schemes and expect them to continue, however, they could not name which are working well and which not. On focus group one, bureaucracy was criticised as a barrier to apply *(*Focus Group One 4.01.2010).

2. What are barriers for wood mobilisation from fragmented private forest ownership in the region?

2.1 What are they, explain?

It was difficult to identify single barriers for wood mobilisation. The respondents claimed that potentially lack of economic incentive to manage forests (low level of earnings compared to effort needed), administrative burden, missing ownership strategy (what to do with the forest ownership today and tomorrow) and low awareness on opportunities would be fair evaluation.

3. Which of the factors described earlier (in sections 2 and 3) have the strongest impact on wood mobilisation from fragmented private forest ownership in the region?

3.1 What are they, explain?

See 2.1.

3.2 How do they work?

See 2.1

4. What other factors may be important regarding wood mobilisation from fragmented private forest ownership?

Both focus groups said that increased demand and general economic improvement would trigger harvests and growing market as such is one of the key elements to harvest (Focus Group One 4.01.2010, Focus Group Two 7.01.2010).

Discussion

This case study is one of the first attempts in Estonia to map and understand fragmented forest owners economic behaviour and drivers behind this behaviour and it has following findings:

1. The data available is insufficient and has only moderate quality. There are no sales or trading statistics between owners and buyers; wood market estimations are entirely base on felling statistics. Felling statistics are based on National Forest Inventory (NFI), which the smaller the category under analyses, the bigger the margin of error. There has been very little research done on private forest owners, although they were established nearly 20 years ago. Most of the information is received from policy papers, presentations and expert opinions. On a positive note there is a very high level of co-operation of all key leaders in the area of private forest management which helped to complete this study.

2. The felling statistics shows significant under-felling (only 50% of the 12,5 Mio m3 resource available is used) driven by overall low interest by private forest owners to manage their forest, particularly during the last 5-6 years. There has been slow reaction to improve the situation. The state has made efforts to increase private forest management by financing the set-up of the local owners association, national owners association, and introduced various support schemes. Unfortunately, at the same time, the private forest owners have been targets of a political campaign, which was demonstrated by the 2004 Forest Act which introduced unnecessary bureaucratic burden for harvesting until it was abolished only in 2009.

3. The wood trading prospects for Estonia is integrated with the Scandinavian forestry and the subsidiaries of main Swedish and Finnish companies are the main wood buyers. The ad-hoc sales market is not a healthy market as it creates speculative behaviour and is contrary to a productive, sustainable supply market. The role of Estonia looks to be more reserve of supply country, where the industries buy when their regular supply systems cannot provide sufficient volumes of wood. However, this should be investigated further, if this relationship is because Estonian supply market is missing sustainable supply system (apart from State Forest Company) or the buyers are not interested in long-term contracts and prefer ad-hoc buying.

4. Fragmented forest owners engagement on the market is generally low (felling from private forests) and as the group is very diverse, the reasons for ownership are different. The ownership is acquired mainly through restitution, not bought as tool for investment. The 50 years of nationalised ownership and ban of private ownership has created a generation who needs to re-invent their meaning of ownership. Some owners have been successful with this and they benefit from the forest ownership in the sense of additional income, emotional value or social status. However, the majority of fragmented owners tend to ignore realizing the economic potential of ownership or are just not able to manage their forests to realize this potential.

5. The over-all environment of the private ownership and in particularly harvesting is negative and this does not help to increase the mobilisation. This area needs more investigation, if the reason is general distrust of the private owner, campaign of some interest group or low understanding of forestry as such.

Conclusions

In order to improve wood mobilisation in Estonia, following ideas should be explored further:

- Improve data collection of private forest owners and their activities. The interested parties – government, forest owners, forest industries and related businesses need better information for strategic planning and measuring the level of success.
- Ensure stable legal framework that would support sustainable harvesting practices and would create stability for owners. The forest owners and legislators should increase co-operation in order to find solutions, rather than deal with consequences of misunderstanding. The government support schemes effectiveness evaluation should be completed in order to understand better what incentives works best.
- Forest owners should take more active role in the wood trading market, which is currently dominated by industrial buyers. The establishment of central association of United Forest Owners could provide opportunities to those forest owners, who do not want to sell on ad-hoc market, but rather sustainable and stable market. In long term, it could be expected that stability will be more and more valued.
- Forest owners' interest to manage their forest should be increased by enhanced communication, raising awareness on the benefits and opportunities of forest ownership and sustainable forest management. This could also trigger consolidation of the estates.
- The government, owners and industry should invest resources to image building of forestry sector as such, which would reduce the fears on the perception of harvesting that currently dominate in Estonian society. To change the perception of this well-established myth will be a lengthy process and real commitment is needed to achieve it.

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Interviews

Mr Enn Pärt - 11.12.2009, Deputy Director General, Centre of Forest Protection and Silviculture, a government agency under Ministry of Environment

Mr Jaanus Aun -18.12.2009, Tallinn, CEO, Foundation Private Forest Centre

Mrs Anne Toom - 16.12.2009, Tallinn, Deputy General Manager, Estonian Land Board

Mr Ants Varblane - 8.01.2010, Tallinn, Managing Director, Estonian Private Forest Union

Mr Ott Otsmann - 20.12.2009, Tallinn, Managing Director, Estonian Forest Industries Association

E-mail notes

Mr Indrek Tust - 26.04.2010, Tallinn, Head of Forestry Department, Stora Enso Eesti

Focus Group Interviews

Focus Group One - 4.01.2010 Voru. It was conducted in agricultural area in South Estonia where forest owners and operators were participating. They live near their forest estates. The group was promised to keep anonymous.

Focus Group Two 7.01.2010 Tallinn. It was conducted in capital city Tallinn, where owners live away from their estates and their main income is non-forestry related. The group was promised to keep anonymous.

Fact sheet of the case studies results

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		Austria	Sweden	England (UK)	Rhone-Alpes (France)	Hungary	Estonia	Saxony (Germany)	Catalonia (Spain)
1.	**What is the total forest cover in the region?**								
	i) % of the total area?	*47.2 %*	*56.00%*	*8.4%*	*37%*	*19%*	*48,9%*	*28 %*	*63.51%*
	ii) How did it develop during the last 10 years (approx.)? (change % per annum)	*+0.4*	*Varied between 55.5 and 58.1 since 1923*	*+0.6%*	*+2%*	*+0,2%*	*n/a (2005 to 2007 - 2,5%)*	*+0,05%*	*+0.75%*
2.	**What is the wood mobilisation in terms of annual increment?**								
	i) Harvest in percent of the increment?	*60,1%*	*71%*	*39%*	*40%*	*50%*	*57,9%*	*~40%*	*24%*
	ii) How did it develop during the last 10 years (approx.)? (change % per annum)	*-11,3%*		*NA*	*-7%*	*-1,0%*	*NA*	*++ (NA)*	*4.14%*
3.	**Is there legal uncertainty regarding forest ownership? (yes or no)**	*No*	*NO*	*No*	*No*	*No*	*Yes*	*No*	*No*
4.	**What is the structure of the regional wood markets, in terms of ….?**								
4.1	**…buyer/seller ratio? (number of seller per buyer)**	*1:78*	*1:235*	*NA*	*1:1000*	*1:11*	*NA*	*1:450*	*is difficult to tell, some sellers are categorized as forest service companies (all types)*
4.2	**…other structural market factors?**								
	i) Average distance between different types of sellers (e.g. fragmented private forest ownerships) and different types of buyers? (km)	*NA*	*Lorry 79km/ton of roundwood 60-70km/ton of bio-energy assortments*	*NA*	*100-300 km*	*under 100 km*	*NA*	*Small: 10-50 Large: 150-200 km*	*80km*
	ii) Harvesting costs to forest road by ownership category? (excluding stumpage sales) (€/m³ o.b.)	*SSFOS 37.44 €/m³ PFO 21.95 €/m³ AFF 24.40 €/m³*	*Around 9 € for harvesting and 13 € for thinning*	*9.99 EUR/cum*	*20€/m³*	*10-15€/net m3*	*16€/m³*	*€9-13 (st.), €14-17 (pri.)*	*33 €/m³*
	iii) The informal market segments (subsistence, supply to family members, neighbours, etc.) in % of total market? (if no data is available please indicate whether or not it is considered to be a relevant segment or not)	*20%*	*Very small*	*Relevant*	*40-50%*	*10-15%*	*10%*	*25% (all pr.), 50% (frag.)*	*Very small*
	iv) Are informal market segment expected to expand or decrease? (expand, stable or decrease)	*constant*	*Stable*	*Expand*	*Expand*	*Stable*	*Stable*	*Expand*	*Decrease*
	v) Do wood price changes influence the regional supply by private forest owners (yes or no)?	*Yes*	*yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
5.	**Typical wood sales methods in the region?** (e.g. standing, auction, long-term contract, ad-hoc on individual basis, etc.) Please name the most important one or two!	*forest-roadside*	*Delivery timber 33% Standing forest timber 27% Felling by purchaser 26%*	*Negotiation, Ad hoc*	*Individual Ad-hoc*	*Ad-hoc Standing-on stock*	*Ad-hoc*	*Individual ad hoc., long-term*	*33% Auction, 50% individual contract and 17% forest owner associations with technical administration*

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6. How are the forest owners to be characterised?								
i) % share of "organized" forest owners by number (Forest management organisations e.g. in owners associations, loose groups, cooperatives, co operations – NOT only political organisations!)?	*37%*	*50.00%*	*NA*	*5%*	*78%*	*5%*	*2.8% (cooperatives), 4,6% (own. association)*	*1% (respect all owners)*
ii) % share of "organized" forest owners by forest area (Forest management organisations e.g. in owners associations, loose groups, cooperatives, co operations – NOT only political organisations!)?	*21.9%*	*50.00%*	*NA*	*10%*	*78%*	*7% of total forest area, 20%of private forest*	*17% (cooperatives) 32% (own association)*	*37%*
iii) % share of roundwood sales by "organized" forest owners (Forest management organisations e.g. in owners associations, loose groups, cooperatives, co operations – NOT only political organisations!)?	*18,8*		*Na*	*25%*	*34%*	*NA*	*NA*	*74%*
iv) Most frequent types of organized forest owners associations in the region (loose groups, cooperatives, co-operations or unions)?	*Co-operations*	*Forest owners associations*	*Loose groups*	*Forest associations Cooperatives*	*Business companies*	*Associations (based on ngo law)*	*Cooperatives*	*Forest owners associations*
v) Is there a trend towards increased cooperation between small/fragmented private forest owners (yes or no)?	*Yes*	*unclear*	*Yes (slow)*	*Yes*	*Yes*	*Yes*	*No*	*Increased*
6.2 Are there cross forest owners and wood industry associations in the region? (yes or no)	*Yes*	*no*	*Yes*	*No*	*Yes*	*No*	*No*	*No*
7. What is the role of forest authorities regarding fragmented private forest ownerships participation in the wood markets?								
i) On harvests of fragmented private forest ownerships? (guidance, control or none)	*Control*	*Some controls*	*Guidance/ control*	*Control*	*Control*	*Control, Guidance*	*Guidance (Control)*	*Control*
ii) On timber sales of fragmented private forest ownerships? (guidance, control or none)	*None*	*Only through the measurement law*	*Guidance/ control*	*None*	*None*	*Non*	*Guidance*	*None*
8. Structure of forest ownership in the area in terms of forest resources:								
i) % share of private forest ownership by forest area?	*80.6%*	*50.00%*	*82%*	*72%*	*44%*	*33%*	*45%*	*88%*
ii) % share of fragmented private forest ownership by forest area?	*49.4%*	*50.00%*	*NA*	*40%*	*4%*	*70,7% (from private forest) 23% (from all forest)*	*20% (<10ha)*	*31.22%*
iii) How did the share of fragmented private forest ownership develop during the last 10 years (approx.)? (change % per annum)	*-15% (1999-2007)*	*same*	*NA*	*-1,5%*	*n.a.*	*NA*	*-0.8% abs.(rel. to total area)*	*NA*
iv) Harvest in percent of the increment in fragmented private forest ownerships	*46.2%*	*80.00%*	*NA*	*NA*	*50%*	*59%*	*(est. < 20%)*	*NA*
v) How did the harvest in percent of the increment in fragmented private forest ownerships develop during the last 10 years (approx.)? (change % per annum)	*-12.5% (1999-2007)*	*Approximately the same, higher after Gudrun*	*NA*	*NA*	*n.a.*	*NA*	*NA*	*NA*

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9. **Describe the structure of fragmented forest ownership in the area by number...**(if information is available only for certain sub-regions please indicate by *)								
i) % share of Non-farm forest ownership?	*33% (all private forest owners*	*NA*	*NA*	*75%*	*n.a.*	*60-70%*	*all PFO: 91-92% area, 96% owners*	*perception of increasing*
ii) % share of Non-resident forest owners? (e.g. more than 15km or 30min away)	*6% more than 20km (all private forest owners)*	*26.00%*	*NA*	*35%*	*n.a.*	*NA*	*all PFO: 85% (30min distance)*	*perception of increasing*
iii) % membership in forest owner cooperatives (Forest management organisations e.g. in owners associations, loose groups, cooperatives, co operations – NOT only political organisations!)?	*37%(all private forest owners)*	*50.00%*	*NA*	*3%*	*n.a.*	*NA*	*NA*	*few of the total*
iv) % secondary education in forestry and agriculture?	*13.8% (all private forest owners)*	*Small part*	*NA*	*NA*	*n.a.*	*NA*	*all PFO: 43% (1999)*	*few of the total*
v) % tertiary education in forestry and agriculture?	*4.5% (all private forest owners)*	*NA*	*NA*	*NA*	*n.a.*	*NA*	*all PFO: 8% (1999)*	*very few*
vi) Major attitudes of fragmented private forest ownership towards their forests (e.g. income, family tradition, investment, etc.)?	*Staves1 highest priority (1) sustainability (2) own use (3) tradition (4) free time (5) investment (6) hunting (7) income (8) working place all private forest owners*	*Production, recreation, income, feeling of home etc.*	*Hobby owner, family, tradition, sporting, investment*	*Family tradition*	*Family inheritance*	*NA*	*ALL PFO: Tradition/heritage, Asset, Own require. (1999)*	*The family's patrimony, Aesthetic model, Risk of forest fire, the financial situation of the landowner*
iii) Guiding management objectives (e.g. derive income, reserve growing stock, etc)	*Staves1 highest priority (1) maintaining capital (2) increasing profit (3)selling the forest (4) abandoning forestry private forest owners lass than 10 ha*	*Economy, environment and recreation*	*Biodiversity, timber, sporting, production, amenity*	*Pass on quality forest*	*n.a.*	*NA*	*ALL PFO: own requirements, reserve stock (1999)*	*Economic and sentimental*
iv) Important incentives to join in or delegate forest work?	*NA*	*Time, easier to hire someone*	*NA*	*Forest associations Massif development plan*	*No*	*NA*	*NA*	*Is difficult to delegate the property in the hands of another company, family tradition.*

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10. What are measures for wood mobilisation from fragmented private forest ownership in the region?								
i) Owner associations / Community Forestry (yes or no)	*Yes*	*yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
ii) Forest service companies/Forest management services(yes or no)	*Yes*	*yes*	*Yes*	*No*	*No*	*Yes*	*No*	*Yes*
iii) Communication / Advertisements (yes or no)	*Yes*	*yes*	*Yes*	*No*	*No*	*Yes*	*Yes*	*Yes*
iv) Forest Management Grants / Subsidies (yes or no)	*Yes*	*No*	*Yes*	*Yes*	*No*	*Yes*	*Yes*	*yes (aid to improve)*
v) Advisory services by authorities (yes or no)	*No*	*Yes to some extent*	*Yes*	*Yes*	*No*	*Yes*	*Yes*	*Yes*
vi) Training/ or educational programs by authorities (yes or no)	*Yes*	*No, by forestry associations*	*Yes*	*Yes*	*No*	*Yes*	*Yes*	*Yes*
vii) Legal framework to prevent further fragmentation (yes or no)	*No*	*yes*	*No*	*No*	*No*	*No*	*No*	*No*
viii) Others (yes or no)	*Yes*		*No*	*Yes*	*No*	*No*	*Yes*	*Yes (improving demand)*

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Structural features Please summarise (using bullet points or keywords) the principal structural factors that have been identified as explanatory to the fragmented forest owner's participation in wood markets in your region? Distinguish owner related factors (e.g. capacities of the owner) and external factors (e.g. regulations)?	Owner related: Traditional and non-traditional forest owners with different social backgrounds Number and share of non-traditional forest owners seem to be growing as a result of the ongoing structural change in the agricultural sector Private small scale forest owners with lacking knowledge in forestry External: Strong impulse for the debate came with the intensified use of wood biomass from the forest for energy production which on the one side offered a new market for the land owners Wood biomass a new competition for the material to the pulp and paper and panel industries Public issues are not strongly debated, such as the possible degradation of the sites through a loss of nutrients, or the positive contribution of forestry and the forest industry to rural development Austria is a mountainous country which often implies high logging costs, and it is a developed country, which implies high salaries for forest workers Fragmented structure of the small forest ownership (<200ha)	Owner related: Economy and market prices Owners goals External: Regulations of wood measurement Feeling of security and stability of the market actors	Owner related: **Barrier**: lack of owners forestry knowledge/capacity **Barrier**: not the owners' principle or significant income revenue **Barrier:** lack of local woodland owner networks **Engagement**: woodland projects and cooperatives External: **Barrier:** regulatory system perceived as overly bureaucratic and time consuming **Grants:** EWGS (management planning), RDPE (capital grants), RHI (demand driver)	Owner related: Education of forest owners Action for grouping External: Guidance and coordination work	Owner related: Own use, Limited wood volume External: High VAT, strict regulations	Owner related: Small size (average 10 ha) of ownership does not have economic efficiency. Small size is result of the restitution of farm-related Forests to new owners, who by large are not farm-related. Missing systems to increase fragmented owners c-operation (local association main focus is training, information), wood trading systems established very recently. Wood market dominated by major pulp and saw mills in Finland, Sweden: for them Estonia is a market with secondary importance (used when their local market cannot match the demand). Owners are not managing the supply, but rather following the buyers (inc sales methods) External: Taxation rules: private physical persons cannot deduct forest management costs from sales income before paying income tax. This reduces wood trading profitability. Truck weight limit of 41 tons: modern, fully loaded truck weight is ca 60 tons. Poor forest road network Ageing community, mostly living in cities, poorly linked to their estates	Owner related: Average PFO property size of 3.2 ha; high degree of fragmentation Lacking information concerning forest management and wood marketing, Boundaries of estates are sometimes unknown, Other than economic owner's objectives External: Small areas result in small amounts of wood (problem for marketing, negligible income-effect) No publication of (open access to) owners' addresses for other owners/industry etc. Problems of infrastructure (existence and condition of roads; shape of properties) Low degree of organisation/cooperation between forest owners (partly influenced by historical developments)	Owner related: Many forest owners have agricultural tradition; Accessibility; low-value wood External: Prices, markets, regulations, fire risk,

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Forest owners Please summarise (using bullet points or keywords) the most relevant fragmented forest owner's management-related attitudes, objectives and behavioural intentions influencing participation in forest product markets in your region?	Own wood use (subsistence) of the Austrian small scale forest owners is very high and the level is similar among all sizes of small scale forest ownership (<200ha) Trend in forest management goes away from the bread tree spruce to mixed wood because – discussion about climate change Private small scale forest owners often are not educated or trained for forest management A large part of private small scale forest owners do not have economic-oriented goals for their forest property Forest care is an important goal in the small forest owners milieu	Knowledge-level Economy Will to have a well managed forest	Biodiversity Hobby owner Tradition Self-sufficiency for timber Amenity (e.g. sporting) Landscape	To assure family inheritance, symbolic good to pass on to the next generation To save money for time in need To preserve nature To have social relation through their forest No objective, disappointment	No cooperation attitude	Forest as a source of income. Mainly additional income to daily jobs Forest as a future investment, additional income to pension Ownership as a driver for social value. Family link and tradition. The ownership received in the process of restitution relates the current owners in a meaningful way to their grandparent, who lost forcefully the ownership Potentially large numbers of owners have not thought through the objective of the ownership. The land was received more as largely unexpectedly through restitution, but ownership has not found a role in the owners' life.	"New" forest owners – though only small in number and area - are rather economically interested (i.e. in wood marketing); Others have mainly multiple objectives: fire wood use, "having" an asset , "live" tradition, spending leisure time, enjoy nature (small forest land as an "allotment")	Most of the Catalan forest owners are aging old, and therefore there is less motivation for performing forest operations and management Owners of new acquisition consider the forest owned as: second residence, investment on patrimony and leisure
Actual behaviour Please summarise (using bullet points or keywords) the most prevalent and actual fragmented forest owner's management behaviour in your region?	Small scale forest ownerships (<200 ha) in Austria show a strong positive supply reactions towards wood price signals In case of more traditional small scale forest owners and based on the supply behaviour from the past the wood reserves aren't predominantly located in the fragmented private forest ownership because the annual felling rate per ha in this group is higher than in the other ones	Harvest according to price given and market Use of advisory services	Lack of management due to poor knowledge Lack of management due to economic returns	To cover cost To maintain reserve of biodiversity To pass on to next generation To get an income	Urban owners are not interested in the ownership Countryside owners want to use the forest for own.	Minority of owners are actively managing their ownerships, majority are passive owners The dominant sales method is ad hoc sales, with pragmatic aim hit to the highest price; long-term contracts are rare The use of contractors is increasing, logs are sold as assortment, pulpwood as cutting right Wood has important role as raw material for the owner and his family (own use for energy, construction) Owners receive and expect to receive financial support from state for the forest management	Management in most cases: for fire wood use (own requirements, neighbours and friends); in case wood/timber should be sold to the market to derive some income: stumpage sales (forest operators, industry) or assortment sales with the help of the state forestry enterprise	Low yields Little interest in the property,

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Which sorts of policy measures (to facilitate participation in forest product market) would the fragmented forest owners in your region be more responsive towards?	Forest management plan "light" There is a lack of financing of further actions that would require more personnel that approaches and supports the forest owners	Knowledge increases in different ways Public opinion important	Reduction in bureaucracy Quicker response period to felling licence applications Drivers to increase and (and therefore price for timber), e.g. RHI & the Wood Fuel Strategy for England	Extension of massif development plans which are a local program to implement grouped actions with CRPF guidance and coordination Forest association is a model to develop to increase wood mobilisation on the long term	Less admin National incentives maintained Open land market Enhanced Taxation on SMEs Lower VAT on forest products Investments into energy SMEs	Improve data collection on fragmented forest owners (create system, rather than project) Provide incentives for fragmented forest owners wood trade (no taxation on income received from sales, no other burdens like road restrictions), Support and develop forest owners economic co-operation/consolidation, Support for investments to reduce logging costs/route to the market (support road construction investments) Support for silvicultural investments (pre-commercial thinning, young stand treatment) Support for programs that increase forest owners and stakeholders awareness on forestry as well as on wood mobilisation	**Information/Training and advice (by state forest rangers)** - concerning management, harvesting operations, prices and marketing; - should be existent for a long time period for trust building **Subsidies** - indirect: see above (advice, information, training) and via direct infrastructural help (road building) - direct: infrastructure	Mobilisation of the demand / technological innovation Promote associated management Knowledge increases.
What other factors may be important to describe the fragmented forest owners in your case study region?	Chamber of Agriculture advices the private small scale forest owners and initiated together with forest owner cooperatives a network of "wood mobilisers" (Waldhelfer), which has successfully pushed the harvest activities in Austrian small scale forests. The "wood mobilisers" are a part of forest services for wood supply provided by the chamber for fragmented private forest ownership Austrian forest authorities in Austria primarily have a supervising or control and not a guidance function regarding harvests of fragmented private forest ownership	Most of the forest owners are not dependant on their land for income, but still wants to manage their forest well	Heterogeneous profile Multiple objectives	Wood mobilisation is dependent on many factors on the surface area of ownership but also species, fertility of soils, local economy, accessibility are very various in the region and may impact strongly on the wood mobilisation.			Low degree of organisation Fragmentation is expected to continue due to heritage and further partition Willingness to sell the property is presently decreasing (wood energy becomes more important) Road construction is often difficult to organise because of the number and shapes of small forest properties	Many owners depend on resources from outside the property. Little forest tradition, much knowledge and culture have been lost due to the abandonment of the rural areas and the traditional activities