

Estonian forestry

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EAA.1802.1.34.1

- After the ice age first trees were birches and pines.
- First human settlements are found to be 10 900 years old.
- Hunter-gatherers lived in groups of up to about 20 people.





From stone age to modern times

- Farming started to change landscape.
- Fields belonged to farmers, forests belonged to everyone.
- Villages and fields were safe areas. Forest were dangerous.
- Forest protected people during wars.



- The king of Denmark-Erik Menveld prohibits harvesting forest on three islands close to Tallinn in 1297
- Swedish forest act was in force from 1664.
 - Forest could be harvested if it was for a permanent field.
 - Oak and apple trees needed permission to be harvested and you had to plant two similar trees for each harvested tree.
- 1695 city of Narva exported more than 273 000 pices of planks and boards.
- In the end of 18th century there were 5 hydro powered and 2 wind powered sawmills in Narva. The biggest of them could saw 300-400 logs a day.



- Some regions started to run out of forest during 18th century.
- First organized forestry began in the end of 18th century. Regulates what, how much and when can be harvested.
- 1779 first forester (Förster) started to work.
- First forest quarters and planned roads for forest management.





Stromböschung im Rappappter Wald
im Tal der Bekorn's am 16^{ten} August 1890

- ~1850 axe was replaced by saw for cutting trees.
- 1919 land reform.
- 1920 beginning of academical forest education.



Metsaosakonna üliõpilasi välipraktikal Kastre-Peravalla õp-
pemetskonnas 1922. Taamal endine jahiloss Järveljal.



EFA.406.0.153601

University students in field practice. 1922



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EFA.554.0.187206

Soil preparation for planting. 1925



EFA.200.A.54.14

Cutting firewood. 1920-1930



EFA.215.3.8467

Factory for making fire matches. 1933

- 1910 first nature protection area for birds
- 1924 first nature protection area in forest.
- After Second World War lots of farms were left empty and forest was nationalized.
- Soviet occupation was the period of collective farms and collective forestry.
- The beginning of mechanization.





EFA.204.0.57662

Soil preparation. 1963



EFA.204.0.87432

Planting with tractors. 1971



EFA.204.0.139177

Forwarding timber. 1985

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Estonian forestry in 2021

- 50% of Estonia is covered with forests.
- 50% of the forests is private forest.
- Slightly over half of private land is owned by private people and slightly under half by forest companies.
- 7% of people are forest owners.
- Forest management profitability 0-200€/ha/year
- Nordic style forestry.



- Average harvesting cycles:
Grey alder (*alnus incana*)~30 years
Spruce (*Picea Abies*), birch (*Betula*) 50-70 years
Pine (*Pinus Sylvestris*) 80-100 years
- Harvesting volume has been about 10mln cubic meters.
- 14,2% of forest land is under strict protection and 11,4% under limited management zones.





Photo: Estonian Land Board

Future

- Adaptation to climate change
 - planting and growing more mixed forests
 - building more drainage systems and better forest roads



Digitalization



Remote sensing

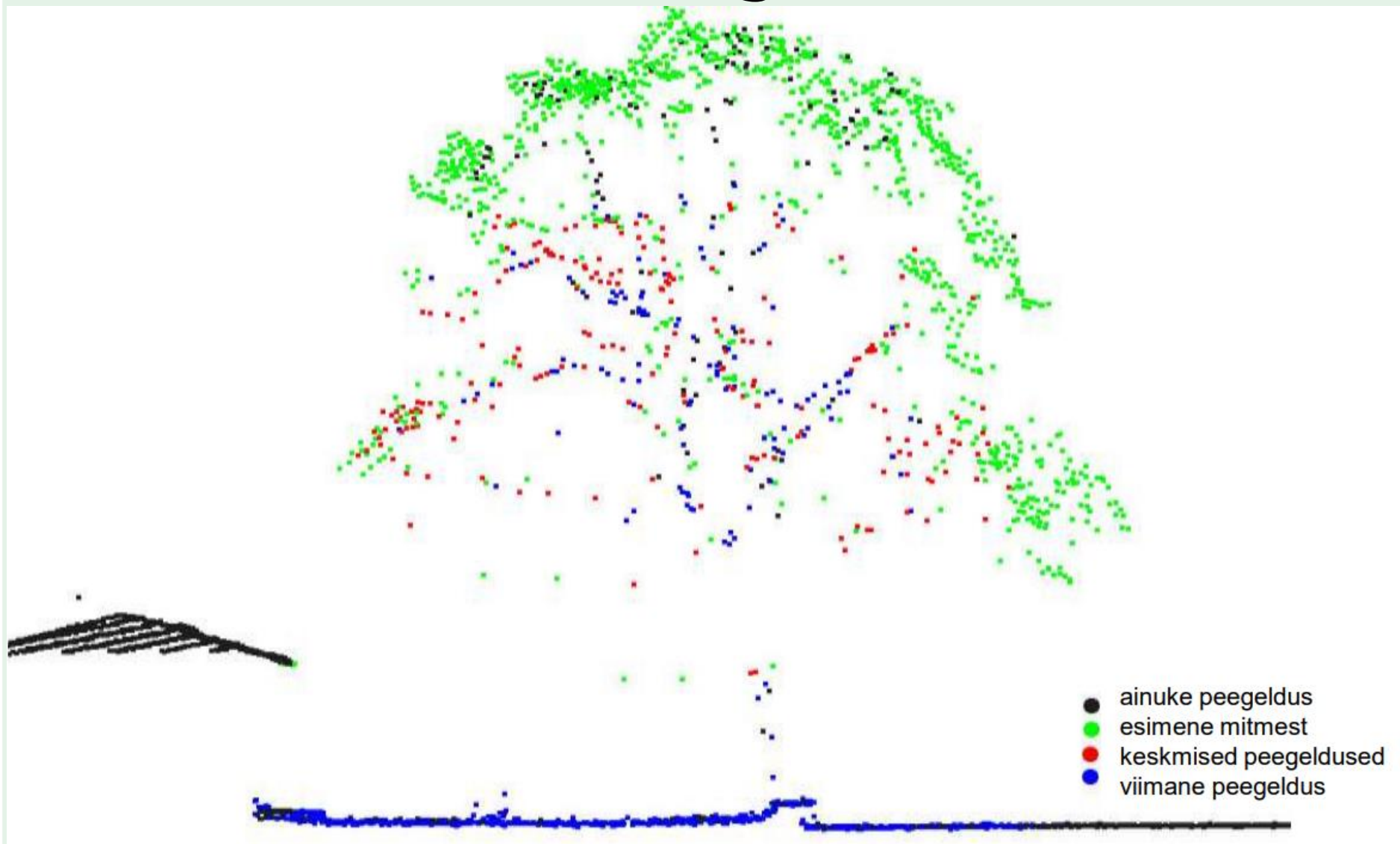


Foto: Estonian Land Board

Highest tree in Estonia is 48,6m spruce
Highest Pinus Sylvestris in the world grows
~20m away from that spruce and is 46,6m

Erametsakeskus – Estonian Private Forest Centre (PFC)

- Government foundation whose objectives are raising competence of private forest owners and promoting environmentally friendly and effective private forestry.
- Administers national and EU subsidies
- Develops private forestry support system
- Other private forestry related developments



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How we activate forest owners to manage their forest

- Forest owners associations (FOA) are go-to places for forest owners.
- 100 000 forest owners.
- 15 000 in associations.
- 60% of private forest land in associations.
- Forest companies are also members of the associations.

Support for advisory service

- Forest owner can get 2h of subsidised advice from certified specialist (forest owners association).
- In 2019 advice was given to 4199 owners and 336 000€ were payed to the advisors for that.
- Method is often advertised for forest owners as a way to ask independent and free advice. It connects the forest owners with FOAs.



Subsidy for reforestation



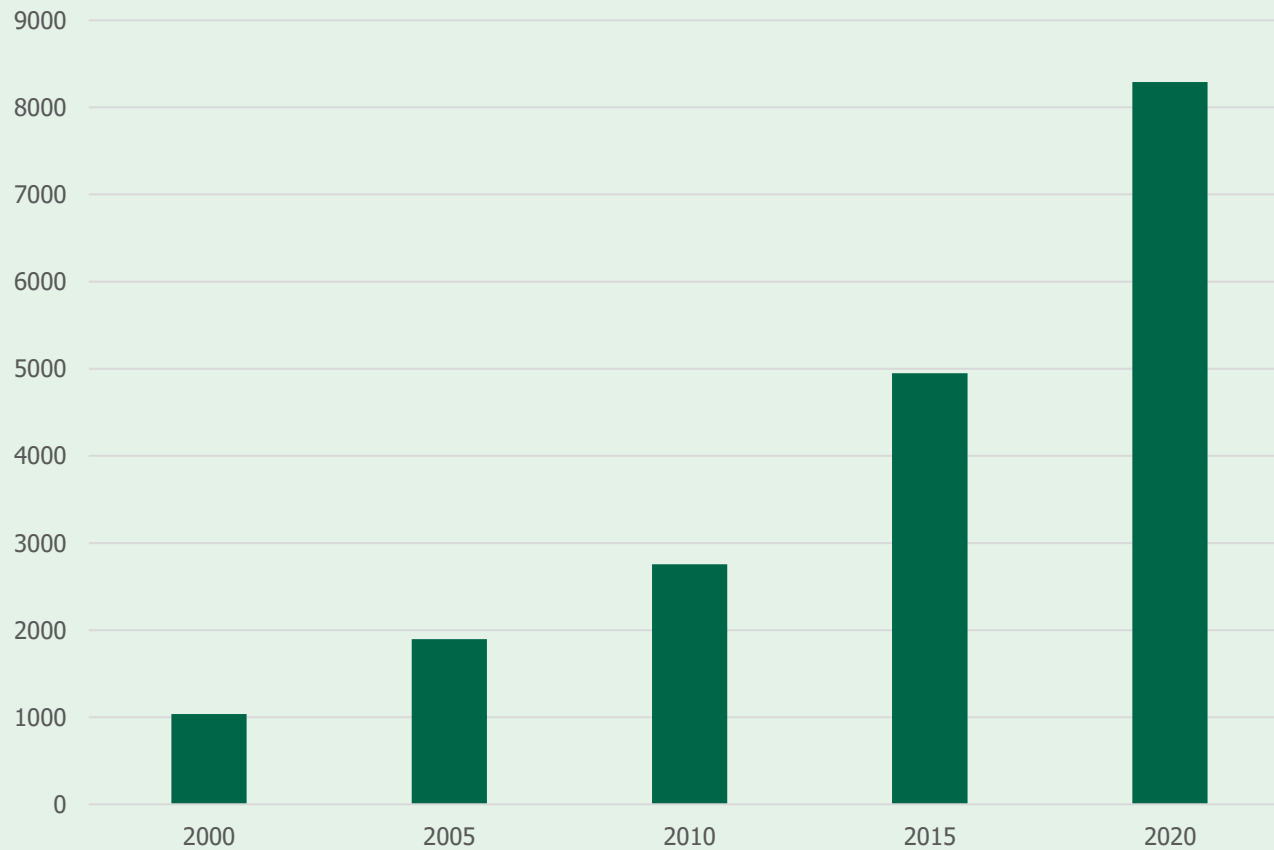
- Soil preparation 96€/ha
- Buying plants and planting 400€/ha
- Young stand treatment for up to 3years old stands 96€/ha

- Subsidy covers about 50% of the cost.

- Owner can get the subsidy for about ~2 hectares per year.



Planting in private forests (hectares)



- In 2019 the subsidy was 1,3mln €.
- It was used on 7689ha.
- In most cases we would have new forest without planting but it would have lower quality.
- We don't need to replant all harvested areas.





Subsidy for forest inventory



ERALDIS 10523785

Maakond	Järva maakond
Vald	Türi vald
Üksus	Järvamaa
Katastritunnus	27101:001:0035

Metsakorraldusettevõte	Riigimetsa Majandamise Keskus
Metsakorraldaja	Andrus Rinaldi
Inventeerimise kuupäev	05.05.2020
Registrikande kuupäev	25.05.2020

Kvartal	KB123
Eraldis	2
Pindala	3.27 ha
Kõrgusindeks	26.6
Boniteediklass	II
Kasvukohatüüp	angervaksa
Kuivendus	ei
Peapuuliik	kask
Arenguklass	valmiv mets
Keskmine vanus	61
Raievanus	65
Keskmine diameeter	18
Tuleohuklass	V

Rinne	Maht		Täius		Rinnaspindala
	tm	tm/ha	%		m ² /ha
Esimene	929	284	92		28
Teine	111	34	22		5
Üksikpuud	0				
Kokku	1040	318			
Surnud mets	0	0			
Lamapuit	0	0			
Juurdekasv	20	6			
Pöösarinde liitus (%)			0		

Rinne	%	Puuliik	Tekke-aasta	Vanus (a)	Jooksev vanus (a)	Kõrgus (m)	Läbimõõt (cm)	Rinnaspindala (m ² /ha)	Tekkeviis	Maht (tm)	Maht (tm/ha)	Puude arv (tk/ha)
esimene	55	kask	1960	60	61	22	18	15.3	S	510	156	599
esimene	26	haab	1960	60	61	25	28	6.7	S	242	74	109
esimene	11	sanglepp	1960	60	61	21	23	3.3	S	101	31	79
esimene	6	kuusk	1960	60	61	18	23	1.8	S	56	17	44
esimene	2	mänd	1960	60	61	18	20	0.6	S	20	6	20
teine	100	kuusk	1964	56	57	11	13	5.2	S	111	34	392

vanus ebaühtlane
koosseis ebaühtlane

27101:001:0101

KESKMAA NAIKUNISTE ERINEVATE KESKUS

ESKUS

- Forest inventory costs about 15-20€/ha.
- Subsidy is 10€/ha.
- In 2020 the subsidy was 150 000€ and for 15 000 hectares.
- 19,7 hectares per owner were subsidised.
- In the past the support has been for 100-500 hectares per owner but that supported the biggest forest owners who did the work anyways.



Subsidy for renovating ditches



- In 2019 120km of ditches were renovated.
- 208 096 € were used for that and it covers ~30-50% of the renovation cost.
- Often some land owners are not interested in maintaining the system.



Subsidy for silvicultural work

- Subsidy from EU CAP.
- Mostly for thinning young stands under 30 years old.
- Forest fire prevention.
- Restoring damaged forest areas.
- Buying repellents for animals and other disease control methods.





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- Subsidy for 2019 was 1,3mln €.
- Thinning was done on 8635ha.
- Subsidy for thinning is 159€/ha.



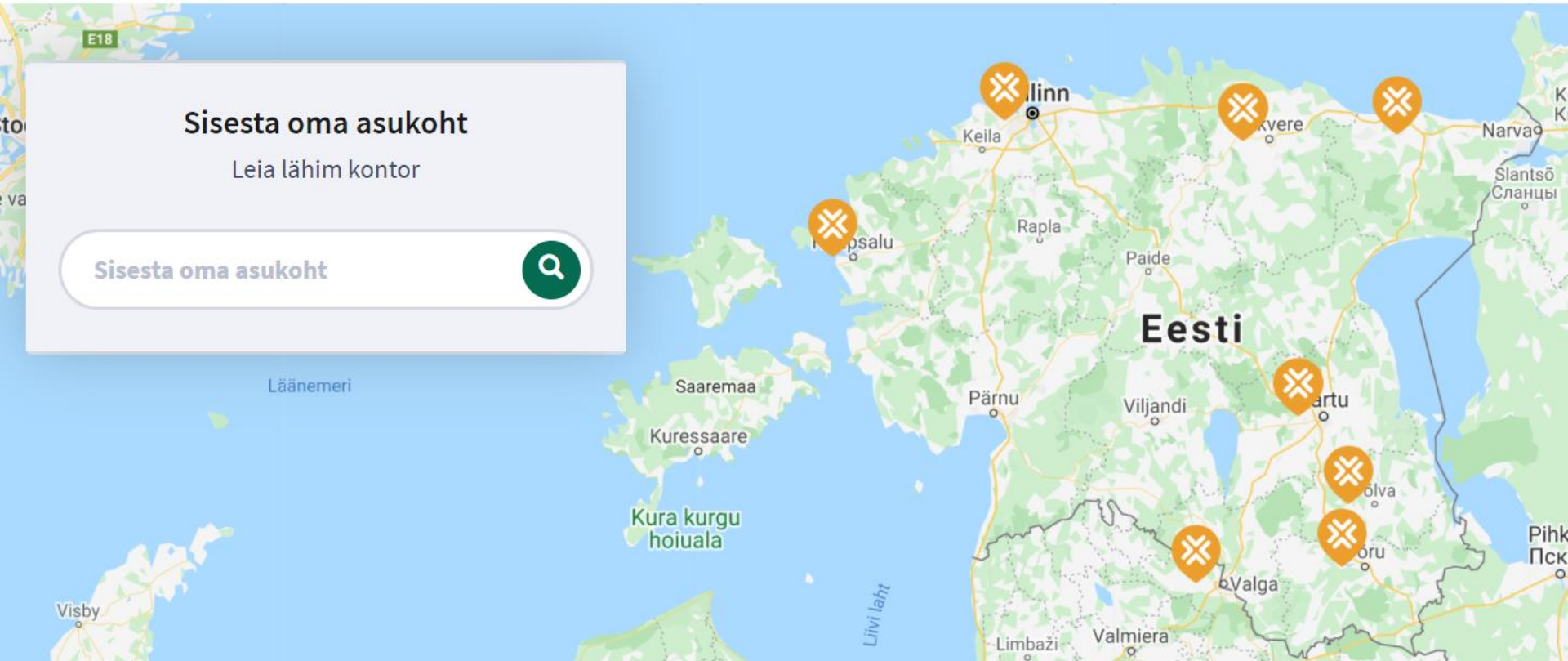
Subsidy for forest owners associations

- ~30 FOAs.
- In 2019 the subsidy was 357 614€ for 19 FOAs.
- FOAs have to meet some criteria to get the subsidy.
- Number of members, ammount of different forest work.

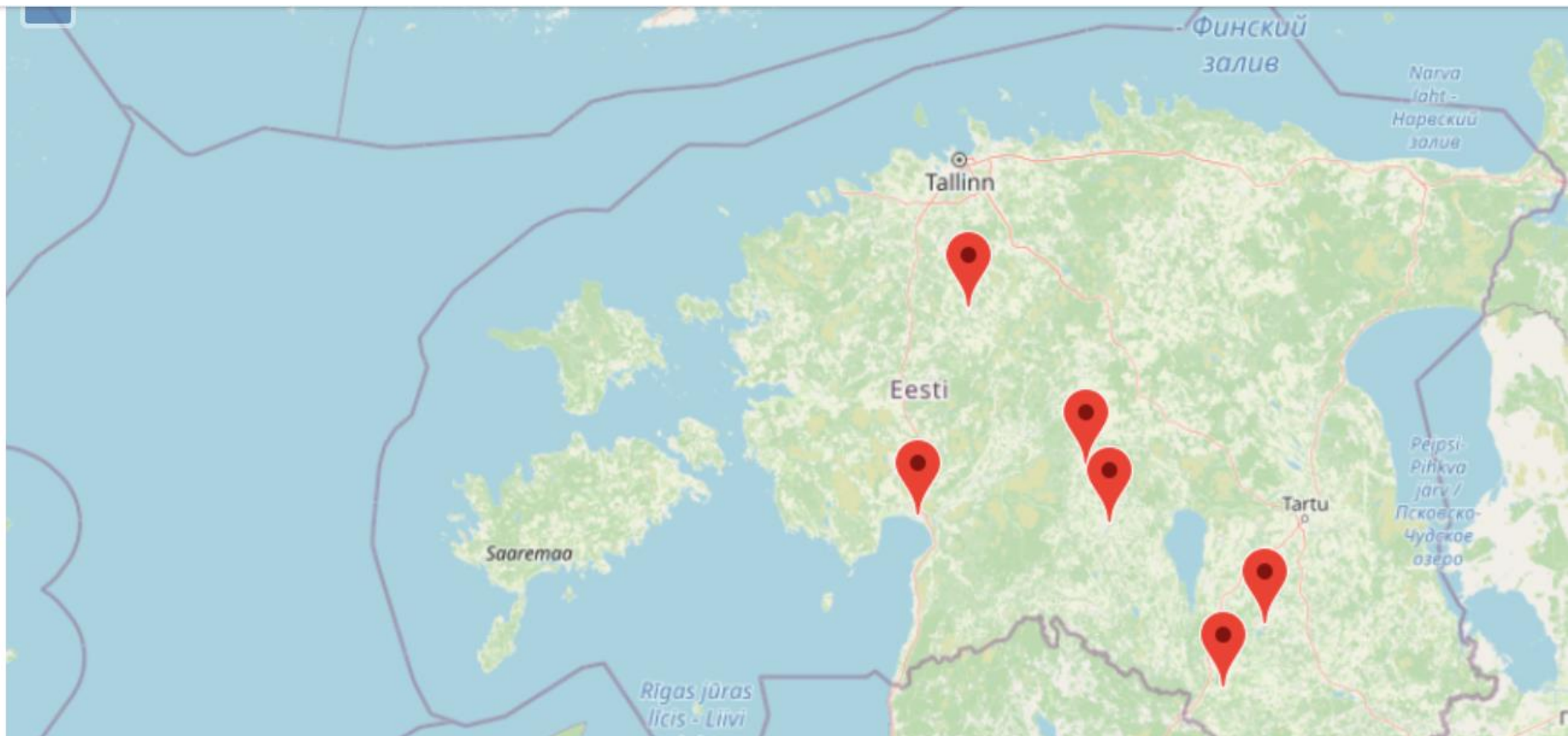


- Soil preparation, planting, sowing , pre-commercial thinning was done on 10 995 hectares by the subsidised FOAs in 2019.
- Work was done on 2,3% of the FOAs members land in 2019.
- Training days for members and schoolchildren are also subsidised.
- 432 902 m³ of timber was sold in 2019.





Different associations have taken the same visual identity and are buying seedlings and selling timber together.



One association has branches in different counties.

Subsidy for forest heritage

- For maintaining sites related to forestry.
- Subsidy is not too popular, we are currently improving it.



Natura 2000 compensation

Compensation to private owners for nature protection.

Will be discussed in a separate presentation.



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Summary of subsidies

- Subsidies are for all private owners but highest effect is for small owners.
- Subsidies are aimed for economically less viable silvicultural work.



Discounts on income tax

- Tax free income from harvesting forest.
5 000 €/year
20 000 €/4 years
- Profits from harvesting can be used for silviculture costs before paying the income tax.
- As companies have no income tax, this equals the taxes for private individuals.



Ecosystem services

- Estonian fuel retailer Alexela supports planting.
- 2 cents per liter.
- 25 cents per plant.
- Started in 2020 and 213 000 plants have been subsidised.



Thank you!

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