

WP4 META-ANALYSIS OF FOREST OWNER BEHAVIOUR SURVEYS IN THE ALTERFOR CASE STUDY COUNTRIES

*Vilis Brukas, ALTERFOR Scientific Coordinator, owing to **Sabine Storch**, external expert*

Some excerpts from ALTERFOR Grant Agreement:

“...we will ensure that the actual behaviour of forest owners and managers is incorporated in our analyses.”

“As a central aim of ALTERFOR is to reflect real world conditions, and not unattainable optima, all assessments of FMM implementation will take explicit consideration of forest owner values and behaviour. The ALTERFOR modelling will therefore take into account the forms of forest ownership (state, community, small private landowner, company, etc.) and types of private forest owners (e.g production-oriented owners, environmentalists, householders) realistically diversifying management models in behavioural matrixes).”

From Task3.1: “The DSSs’ forest owner behavioural models are updated and validated. These models form the basis for how current FMMs are simulated in the landscape.”

“WP3 coordinators will prepare a detailed quality standard to be observed by the DSS experts in their work within each case study in cooperation with specialists active in, [...], WP4 (support to management behavioural assumptions) [...].”

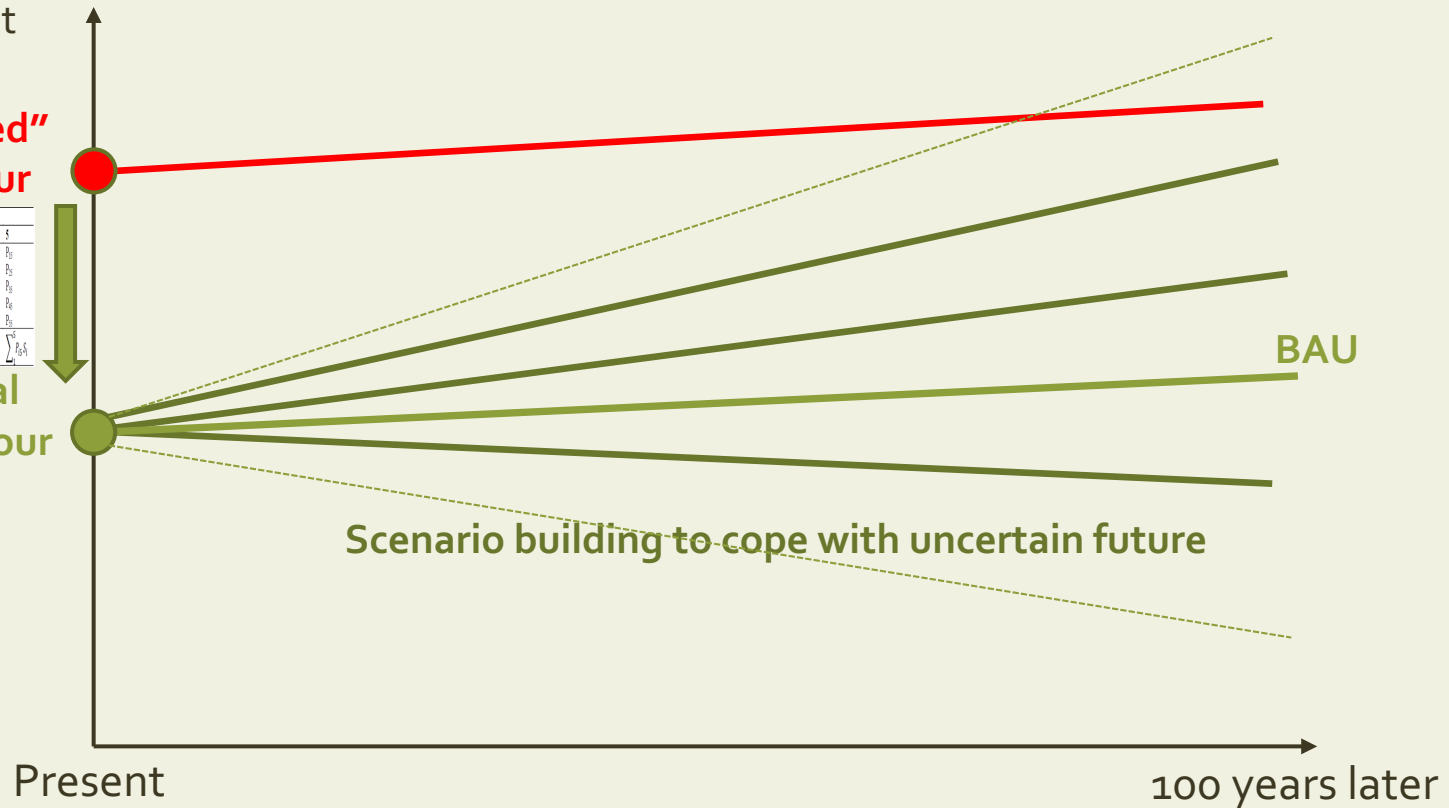
Science & art of describing forest owner behaviour

Forest management
→ ES basket

**"Idealised"
behaviour**

FMS	Area %	Forest management programs				
		1	2	3	4	5
1	S_1	P_{11}	P_{12}	P_{13}	P_{14}	P_{15}
2	S_2	P_{21}	P_{22}	P_{23}	P_{24}	P_{25}
3	S_3	P_{31}	P_{32}	P_{33}	P_{34}	P_{35}
4	S_4	P_{41}	P_{42}	P_{43}	P_{44}	P_{45}
5	S_5	P_{51}	P_{52}	P_{53}	P_{54}	P_{55}
Total area S_0	$\sum_{i=1}^5 S_i = 100$	$\sum_{i=1}^5 P_{i1}$	$\sum_{i=1}^5 P_{i2}$	$\sum_{i=1}^5 P_{i3}$	$\sum_{i=1}^5 P_{i4}$	$\sum_{i=1}^5 P_{i5}$

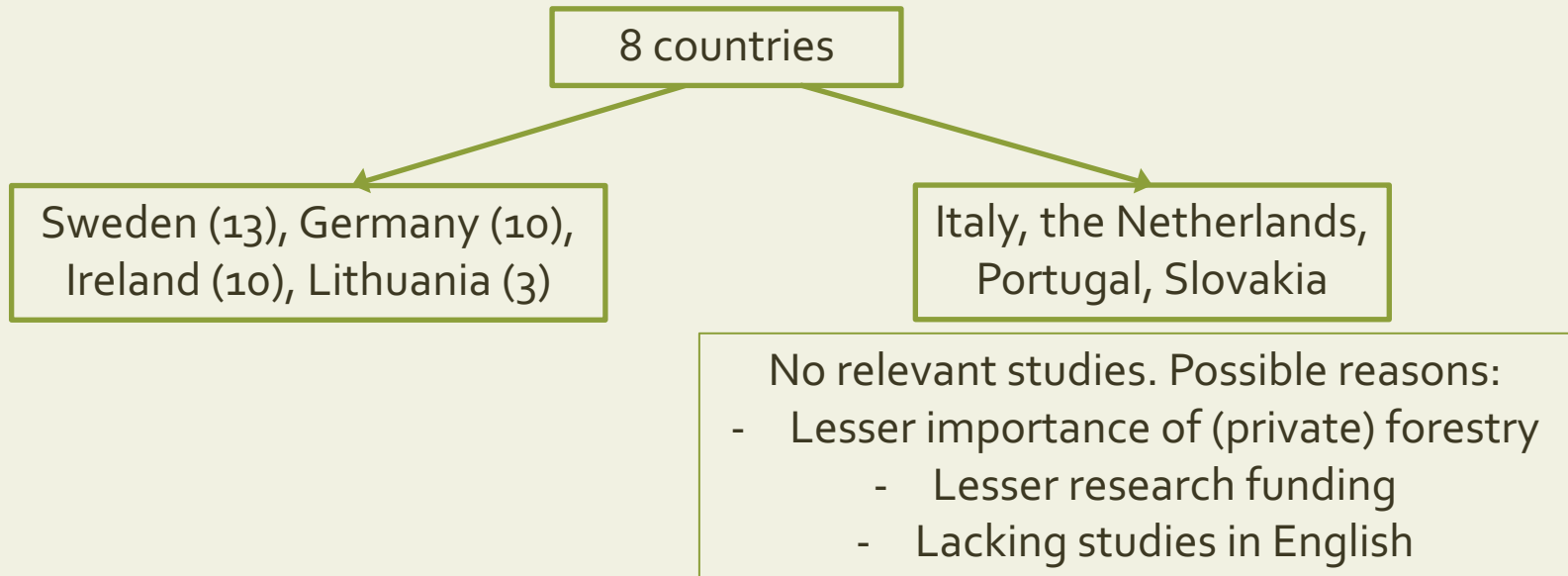
**Actual
behaviour**



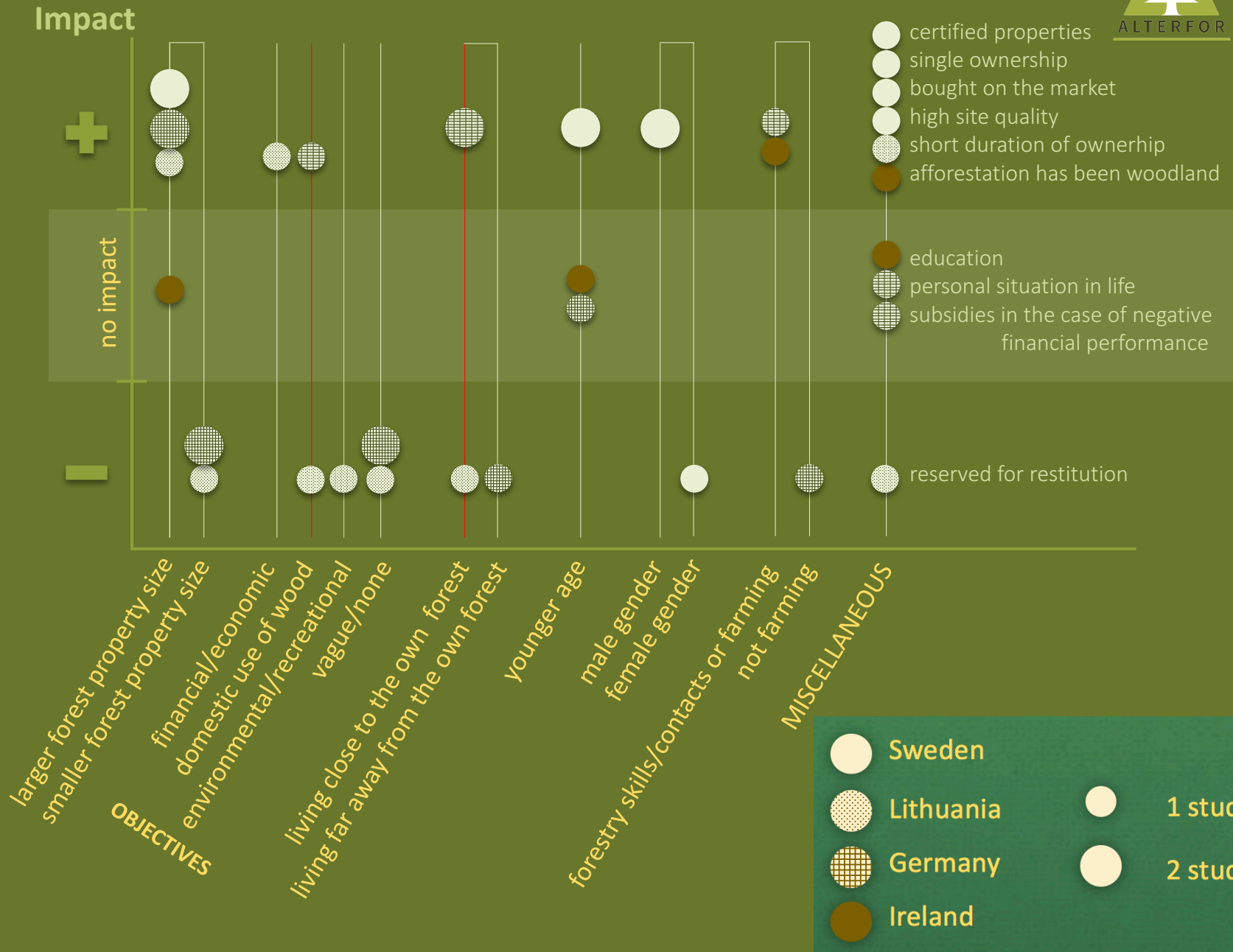
Review study by Sabine Storch

AIM: to compile scientific results about what NIPFOs actually do with their forests

METHOD: (1) Select studies (since 19959 in ALTERFOR countries that explicitly treat forest owner behaviour; (2) map how do different factors (personal characteristics of the NIPFO, forest property characteristics, and framework factors) shape forest management activities



Degree of silvicultural activity



Selected conclusions by Sabine



- To have comparable results, activities should be related to space and time (ha and years): How often do NIPFOs do xy per ha and year (or per 10 years or so)?
- Variables that often show contrary results like gender should be omitted. They are probably not directly linked to activities in the forest
- Correlate age with the lifecycle of ownership (Lönnstedt 1997), as both had significant effects
- Consider the actual forest policies and current economic environment. It could improve the comparability between different studies
- Long-term studies based on demographic, socio-economic and geographic profiles of NIPFOs should complement the punctual studies on mainly personal or property-related variables

In their long-term study between 1990-2010 Haugen et al. (2016) found that while there is a trend towards increased distance between the NIPF owners and their holdings, increased female ownership, less economic dependence on forest revenues, all factors that reduce the economic motives for ownership, gross felling did increase at the same time.

- **the benefit of this literature review for application in forest modelling is rather low, due to the fuzzy picture of results**

What can we do about the behavioural matrixes in Alterfor?



Each country will have to deal with the matrixes in they own way, taking into account:

- Current state of knowledge, incl. experiences from Integral
- Country specifics, such as ownership structure
- Level of ambition in simulating the forest management activities
- Thinkable scientific publications

What can we do about the behavioural matrixes? Swedish example (slide 1)



1. Point of departure: Forest owner classification by Eggers et al. (2014)

	Forest management strategy	Proportions of owners employing the strategy	Description (as given to the survey participants who were asked to choose the one that depicts their approach best)
intensive strategies	Intensive	8.4%	"I harvest a lot of wood by thinning, and I clear-cut as soon as the forest age permits."
	Productivity	27.7%	"I manage the forest for increased productivity and future harvest opportunities. Examples of my management practices are planting with soil scarification, pre-commercial thinning, ditching and fertilization."
extensive strategies	Save	30.7%	"I harvest carefully and my management practices aim to increase harvest opportunities in the medium term."
	Conservation	8.8%	"I harvest only on a small scale, so that the amount of old forest remains constant or increases. My management practices are oriented towards nature protection, for example to increase the proportion of broadleaved forest."
	Passive	24.4%	"I thin and clear-cut only on a small scale. I let the forest grow old, but I do not expect the harvest to increase in the future."

What can we do about the behavioural matrixes? Swedish example (slide 2)



2. Swedish Local Case Coordinator, Isak Lodin, interviewed forestry consultants in Southern Sweden (12 respondents from the Swedish Forest Agency, Forest Owner Association Södra, and forest industry), asking about:

- Forest owner types
- Variation of activities within currently dominant FMMs
- Other FMMs
- Trends and future

Example question: filling in the table, accompanied with qualitative comments

Owner type	Regene- ration	Regene- ration (site- adapted)	PCTs (yes/no, good/bad)	1st thinning (activity, timing)	2nd thinning (activity, timing)	Final felling (activity, timing)
Passive						
Conservation						
Intensive						
Production						
Save						

(++) Totally in line with recommendations / high activity level

(+) Good but with some deficiencies / good activity

(-) Inadequate / Low activity

(--) Very inadequate / totally passive

What can we do about the behavioural matrixes? Swedish example (slide 3)



3. Based on the analyses of interview materials in combination with the available forestry statistics, a combined description of typical forest management activities by owner type.

Example of **final fellings**:

Owner type	Description of activity
Passive	Very low activity
Conservation	Low activity. Felling 30-40 years after the minimum allowable cutting age. Something longer relative rotation age for Scots pine.
Intensive	High activity. Felling 10 years after the minimum allowable cutting age. Something longer relative rotation age for Scots pine.
Production	Good activity. Felling 15-30 years after the minimum allowable cutting age. Something longer relative rotation age for Scots pine.
Save	Low activity. Felling 30-40 years after the minimum allowable cutting age. Something longer relative rotation age for Scots pine.

4. Activity description tables serve as inputs to empirically-based behavioral matrixes, currently under elaboration.

5. Scientific papers in the pipeline, based on interview materials:

- Ideal versus real forest management in Sweden (focus on deviations from the “ideal”)
- Effects of ownership cycle (change of owners, etc.) on the flow of ecosystem services