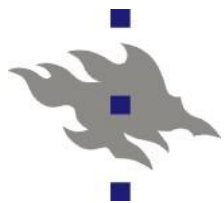


Family forest owners under the spotlight: the Finnish monitoring system

Heimo Karppinen & Harri Hänninen

Forest Beyond the Trees: New possibilities and expectations for products and services from small-scale forestry



IUFRO 3.08 Small Scale Forestry Symposium,
Morgantown, West Virginia, USA, June 7-11, 2009

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Outline of the presentation

- ✓ history & background forest owners studies
- ✓ Forest owner 2010 study
- ✓ associated special studies
- ✓ conclusions



Photo: Metla's archives

Monitoring private forestry: history

- ✓ 1st study on Finnish private forestry in 1930s (Osara 1935)
- ✓ 1st step towards creating a permanent system in 1975 (Järveläinen 1978)
- ✓ study in Southern Finland during 1980-86 incl. inventories of woodlots (Karppinen and Hänninen 1990)
- ✓ 3rd round in 1990 (Ovaskainen and Kuuluvainen 1994)
- ✓ latest survey in 1999 (Karppinen *et al.* 2002)

Karppinen, H. & Hänninen, H. 2006. Monitoring Finnish family forestry. *The Forestry Chronicle* 82(5): 657-661.

Monitoring Finnish family forestry

by Heimo Karppinen¹ and Harri Hänninen²

ABSTRACT

Non-industrial private forestry is important in many European countries as well as in the United States and eastern provinces of Canada. Private forests are especially important in Finland because the forest industries are highly dependent on private timber supply. In this article, we present the Finnish monitoring system for private forestry. Forest owners receive mailed inquiries regarding demographics, holding characteristics, ownership objectives, areas of silvicultural treatments, and timber sales, as well as connections with extension organizations. Studies based on such data have been useful in planning and implementation of national forestry programs and policies.

Key words: non-industrial private forest owners, small-scale forestry, landowner characteristics, ownership objectives, forest management behaviour, timber supply, Finland

RÉSUMÉ

La foresterie sur terrain privé non-industriel est une activité importante dans plusieurs pays européens ainsi qu'aux États-Unis et dans les provinces de l'est du Canada. Les forêts privées occupent une place importante spécialement en Finlande car l'industrie forestière dépend grandement de l'approvisionnement en bois des terrains privés. Nous présentons dans cet article le système finlandais d'évaluation de la foresterie sur terrain privé. Les propriétaires de boisés privés reçoivent des sondages postaux portant sur des données démographiques, les caractéristiques de tenure, les objectifs des propriétaires, les superficies des traitements sylvicoles et les ventes de matière ligneuse, ainsi les contacts avec les services d'aide à la forêt privée. Les études découlant de données semblables ont été utiles au niveau de la planification et l'implantation de programmes nationaux et de politiques en foresterie.

Mots clés : propriétaires de boisés privés non industriels, foresterie à petite échelle, caractéristiques de la tenure, objectifs des propriétaires, comportement d'aménagement forestier, approvisionnement en matière ligneuse, Finlande



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Harri Hänninen

Family forestry at stake

The importance of non-industrial private forestry (NIPF) varies by country. From the perspective of forest policy, the overarching issues are private timber supply and maintenance of biodiversity. Private forestry is of particular importance in many European countries, such as the Scandinavian countries, Germany and Austria, and many recently established democracies in Central and Eastern Europe. In the United States, non-industrial private forestry is concentrated in the eastern part of the country. In Canada, private forestry is particularly important in the east, in the Maritime Provinces.

Social changes in countries with substantial private forest areas are reflected in the characteristics of NIPF owners, their demographic features, objectives, and forest management behaviour. Forest owners are getting older, they live outside of their estates, and they are no longer engaged in agriculture. How do these changes affect the attitudes and behaviour of forest owners?

Various survey systems for monitoring private forestry have been developed in many countries. In the United States, the comprehensive National Woodland Owner Survey is conducted continuously (Butler and Leatherberry 2004). Separate survey studies have also been carried out in Europe (e.g., Lidestav and Nordfjell 1998, Bessières and René 2001, Krada 2004, Wiersum *et al.* 2005) and Canada (Environics 2000, 2001 in Hunt 2002). In this article, the Finnish monitoring system for private forestry is introduced.

The role of private forests in Finland

The Finnish economy is highly dependent on non-industrial private forests, which cover some 60% of the total forest area and provide around 70% of the roundwood used by export-oriented forest industries (Fig. 1). There are some 444 000 NIPF holdings exceeding 2 ha of forest land (316 000 NIPF holdings > 5 ha). The number of owners is difficult to estimate because forests may be owned by single owners, by families together, or jointly by heirs (undistributed estates). There

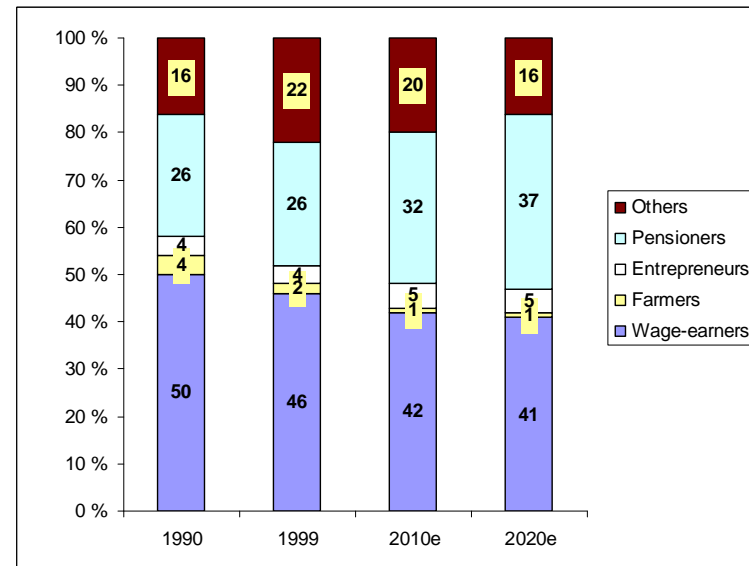
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Structural change of forest ownership in Finland

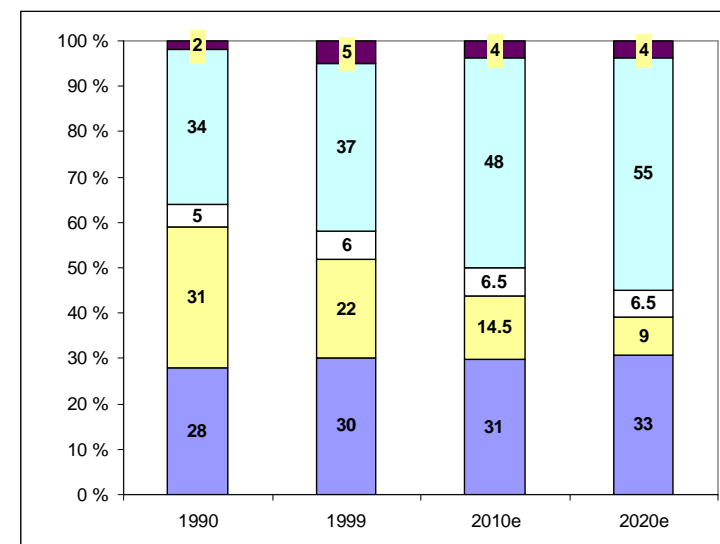
- ✓ from farmers to non-farmers (inheritance mechanism)
- ✓ polarization in the size distribution
- ✓ aging
- ✓ increase in absentee and joint ownership
- ✓ increase in level of education
- ✓ changes in landowner objectives

Karppinen and Ahlberg (2008)

% of population over 14 years

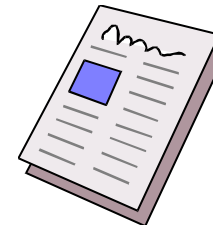


% of forest owners



Examples of previous studies based on monitoring system

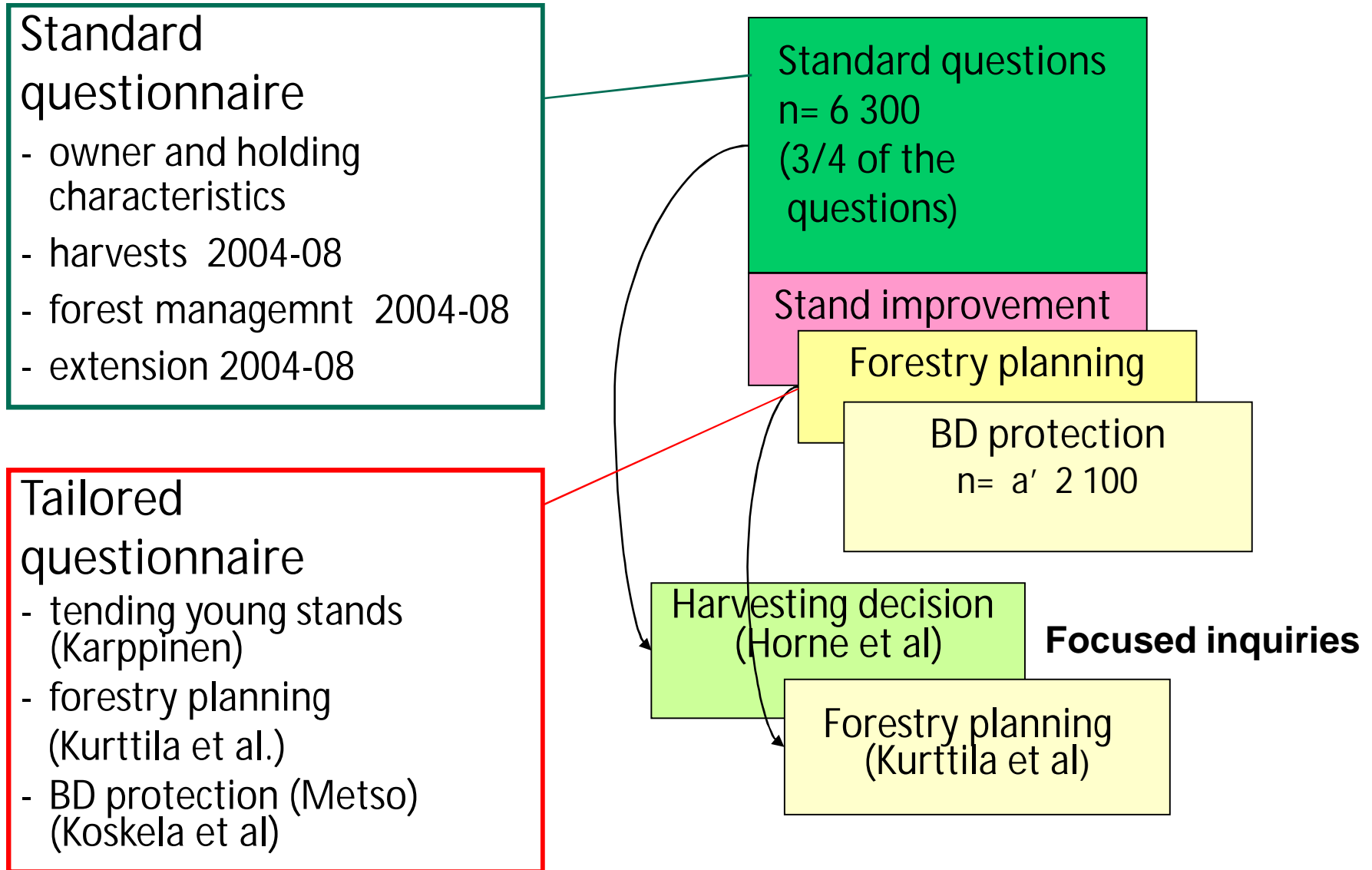
- ✓ Kuuluvainen, J., Karppinen, H. & Ovaskainen, V. 1996. Landowner objectives and nonindustrial private timber supply. *Forest Science* 42(3): 300-309
- ✓ Ovaskainen, V., Hänninen, H., Mikkola, J. & Lehtonen, E. 2006. Cost-Sharing and Private Timber Stand Improvements: A Two-Step Estimation Approach. *Forest Science* 52(1): 44-54
- ✓ Favada, I.M., Karppinen, H., Kuuluvainen, J., Mikkola, J., & Stavness, C. 2009. The effects of timber prices, ownership objectives and owner characteristics on timber supply. Submitted manuscript.



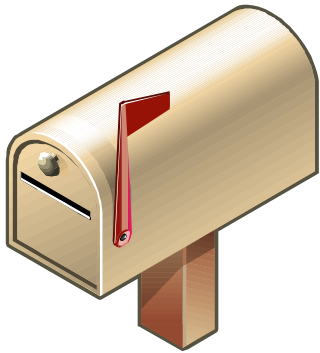
Sample

- ✓ NIPF holdings: family-owned and jointly owned
(undistributed estate owned by heirs or private partnership)
- ✓ forest area > 5 ha
- ✓ ownership by spouses together
- ✓ inside a municipality
- ✓ 1 000 forest holdings/Forestry Center = 13 000 holdings
- ✓ stratified random sampling
 1. holdings ordered by forest area by Forestry Centers
 2. every 24th holding is chosen
- ✓ sampling in estate register of National Board of Taxes

Implementation of the mail inquiry



Forest owner 2010



Sample and response

- *original sample*
- *excluded*
- *final sample*

- *returned questionnaires*
 - *no more owner*
 - *too "lumpy"*
- *data input*
 - *intrenet responses 345 (5,5 % respondents)*

13 000
 160
 12 840

6 632
 108
 209
 6 315
 49,2 %

No more owner	125
Address unknown	28
Deceased	7

BD protection	2 082
Forestry plan.	2 099
Tending young st.	2 103

Other data 1

National Board of Taxes

- ✓ type of ownership, residence
- ✓ forest acreage, arable area, ha
- ✓ ownerships elsewhere (other municipalities), ha
- ✓ forest owners' taxable income and wealth 2007
- ✓ proportional profit tax, (yield tax) v.
area based site productivity tax, (lump-sum tax) 2005



Other data 2

Tapio (and Forestry Centres) – available in September 2009

- forest resources
- declaration of forest use 2004-08 → harvests (ha)
- declaration of planting 2004-08 → reforestation



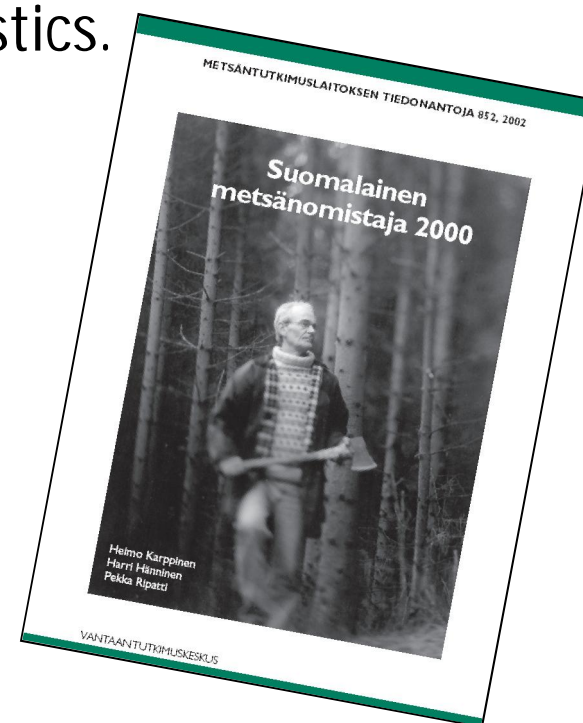
Reporting

Hänninen, H., Karppinen, H. & Leppänen, J. 2010. Finnish forest owner 2010. Working Papers of the Finnish Forest Research Institute (electronic and paper copies)

Hänninen, H. 2010. Regional forest owner statistics. Working Papers of the Finnish Forest Research Institute (electronic and paper copies)

Descriptive reports of the specific topics.

Articles in scientific journals concerning e.g. timber supply and forest owners' need for extension and labor services



Special studies

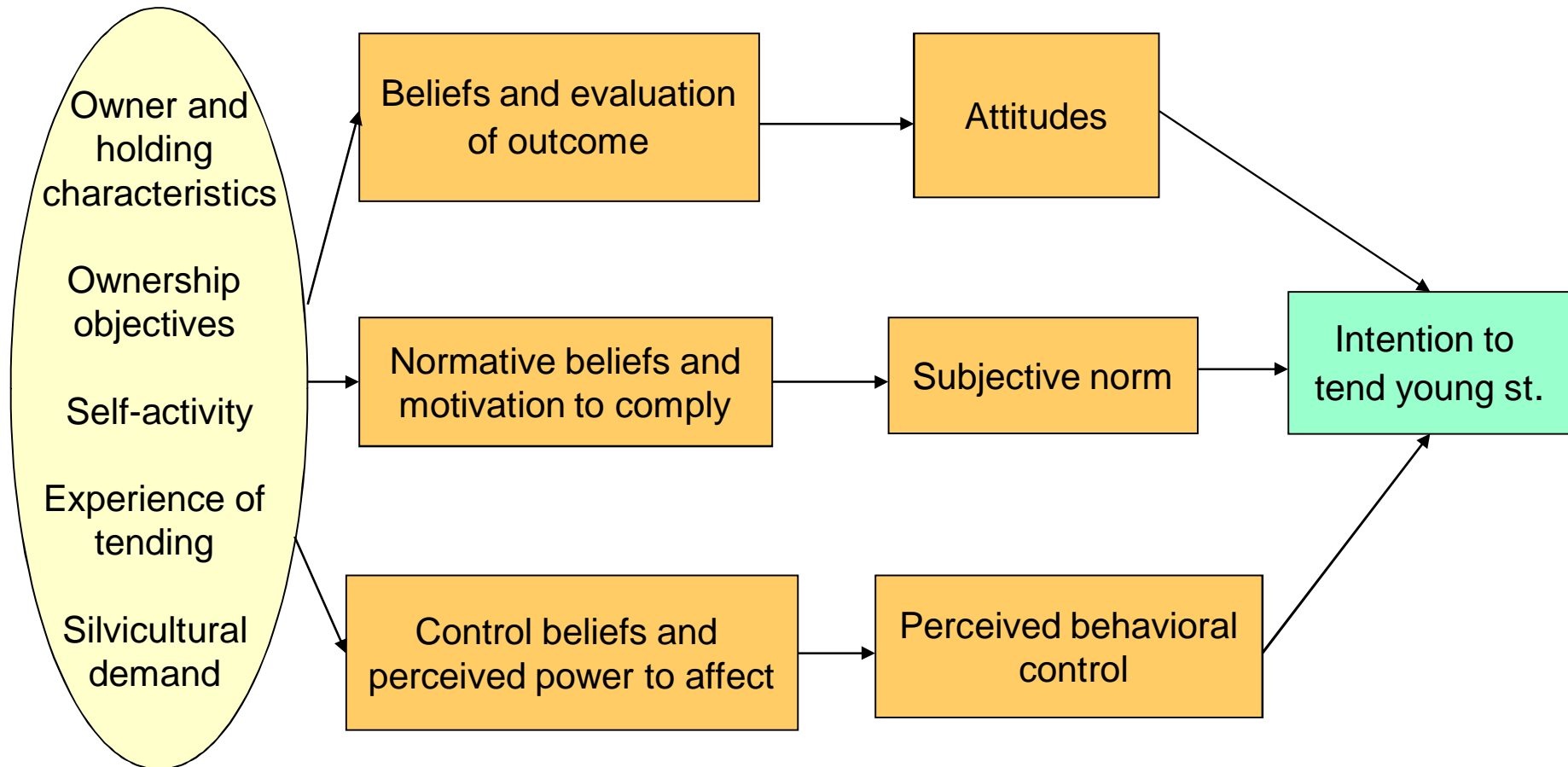
Biodiversity protection (METSO)

- ✓ knowledge and acceptance of METSO means
- ✓ contacting and informing forest owners

Forestry planning

- ✓ interaction and utilization: monitoring development (now and 10 years ago)
- ✓ new features and their price

Forest owners' attitudes and intentions toward tending of young stands



Theory of planned behavior (TPB)

$$B \sim BI \sim w_1 A + w_2 SN + w_3 PBC \sim w_1 \sum_{i=1}^k b_i e_i + w_2 \sum_{i=1}^m n b_i m c_i + w_3 \sum_{i=1}^n c b_i p_i$$

B = behavior

BI = behavioral intention

A = (global) attitude toward the specific behavior

SN = subjective norm

PBC = perceived behavioral control

w_j = weighting factor, $j = 1, 2, 3$.

k = number of beliefs

m = number of normative beliefs

n = number of control beliefs

$\sum_{i=1}^k b_i e_i$ = sum of belief - evaluation products

$\sum_{i=1}^m n b_i m c_i$ = sum of normative belief - motivation -
to - comply products

$\sum_{i=1}^n c b_i p_i$ = sum of control belief perceived - power -
to - affect products

Forest owners' beliefs on tending of young stands

- ✓ clearly fastens forest growth
- ✓ economically profitable
- ✓ improves scenery
- ✓ improves access
- ✓ laborious
- ✓ not natural
- ✓ healthy exercise
- ✓ family hobby
- ✓ increases risk of moose damages
- ✓ provides with energy wood



Photo: Metla's archives

Forest owners' control beliefs on tending of young stands

- ✓ no time
- ✓ outside workers expensive
- ✓ own physical restrictions
- ✓ outside workers hard to get
- ✓ state subsidies too small
- ✓ brush saw too expensive



Photo: Erkki Oksanen

Conclusions

- ✓ Forest owner 2010 study underway, but looks good so far
- ✓ structure seems functional: standard and tailored parts of the questionnaire
- ✓ complete data set can be used for many purposes: appr. 10 researchers will use, obviously cost-effective
- ✓ outsourcing of technical phases necessary