

Aalto University

MS-E2177 Seminar on Case Studies in Operations Research

Understanding the Decision–Making of Finnish Forest Owners

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1 Background

Forestry is a significant source of income for Finland, accounting for approximately 18 % of Finnish exports in 2022 (Maa- ja metsätalousministeriö, 2025), meaning that forestry was worth approximately 20 billion euros. Privately owned forests account for a large majority of earnings, as 80 % of stumpage earnings stem from non-industrial private forests (Luonnonvarakeskus, 2024).

Currently, 60 % of Finnish forests are privately owned according to the most recent study on Finnish forest owners by Karppinen et al. (2020). There are around 600,000 individual private forest owners, with an average age of 62. The forest ownership structure is constantly changing, and owners are becoming increasingly separated from their land. The study further reveals that only 10 % of forest owners make their living full-time from owned forestry or agriculture. Moreover, roughly a third of owners live permanently on their land. Forest owners differ from each other in their levels of expertise, aims and goals for their land (Karppinen et al., 2020).

To bridge the gap between forest owners and forest management expertise, Tapio acts as a government-owned advisory and consulting firm on forest management-related matters. It specializes in sustainable forest management, forest resources inventory, forest management planning, forest and bioeconomy policies, as well as climate change mitigation and adaptation (Tapio-konserni, 2025). Currently, one channel to advise forest owners is the Best Practices of Sustainable Forest Management. The guide, led by Tapio and provided by the Ministry of Agriculture and Forestry, aims to guide and help individual owners with managing their forests effectively (Tapio, 2023). The Best Practices provide information on management alternatives and their effects and consequences. Following the guide is voluntary and a part of the Finnish state's information campaign.

2 Objectives

This case study aims to comprehensively understand private forest owners in Finland and to systematically model their decision-making within forest management. The objective is for the model to be used to enhance the effectiveness of the Best Practices guidelines.

The model on Finnish forest owners' decision-making aims to consider individual traits and forest traits, and understand their interactions and dependencies. Individual traits are, for instance, life situation, personal goals and values for the owned land. The significant traits of the owned forest are factors such as location and forest type. The interactions and dependencies of the traits will be laid out.

3 Tasks

In short, the goal of our work is to gain a systematic understanding of the decision-making of forest owners and how information campaigns can affect it. To achieve this, we have decided to perform a literature review and develop an explanatory model based on the findings. Our plan is to collect information from a few, mostly separate, areas of research. The final result is a report that presents our discoveries and conclusions.

The three areas of focus are: 1) human decision-making, 2) Finnish forest owners, and 3) information campaigns. By approaching the topic from different angles, we hope to gain new and useful insights. Three team members are assigned to each of the topics and the remaining person reads articles suggested by the others from all three topics. Each person is responsible for finding the most relevant articles related to their topic.

The main deliverables are this project plan, an interim report, and a final report. In addition, we will make presentations about each report. The workload will be evenly divided among the team members and in the final report, each will write about their own area of expertise. The explanatory model will be developed together.

4 Schedule

Figure 1 shows the schedule of the tasks related to this project. The project plan is due on 5 March, followed by the interim report on 2 April, and the final report will be completed by 14 May.

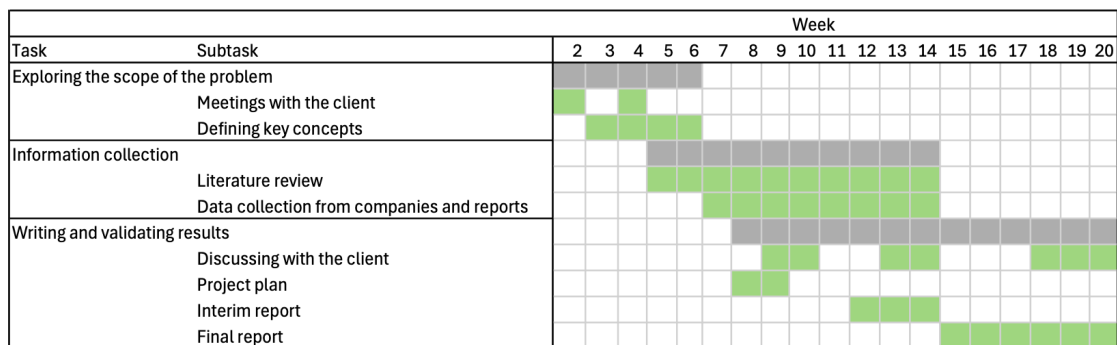


Figure 1: Schedule

5 Resources

Our team consists of four master’s level students: Eetu and Vivi from Systems and Operations Research, and Miina and Venla from Energy Systems and Markets. We come from diverse academic backgrounds, which allows us to approach the project from multiple perspectives.

We have weekly meetings to discuss next steps and share findings from the readings. Meetings with the client (Tapio) are organized as needed to gain feedback or get clarification. The majority of time is spent on individual work, but further in the project we will have more discussion and brainstorming sessions to synthesize the individual findings.

Telegram is used for team communication, and we meet on campus or remotely via Teams. We write our report in Overleaf and document meeting notes and discussions in OneDrive. For sourcing relevant literature, we rely on Google Scholar and references provided by Tapio. Our main contact person at Tapio, Kalle Vanhatalo, has provided us with extensive data and valuable insights to support our work. We maintain ongoing communication with Tapio to exchange ideas and seek clarifications when necessary.

6 Risks

The main objective of the group is to satisfy the client’s need, as described in Section 2 and to meet the course deadlines. The risks associated with the objective are presented in Table 1. Risks that have a negligible probability or impact are not considered. For each risk, the consequences, probability, impact, and mitigations are presented in the table. The probability and impact are estimated with the scale [Low, Medium, High].

Risk	Consequences	Probability	Impact	Mitigations
Topic lacking focus	Extra work for group members and final conclusions not being useful	Medium	Medium	We focus on getting to know the subject and the objective in the beginning and narrow down the topic sufficiently
Results fail to meet the client's expectations	The project is useless for the client, and thus half of the objectives are not met	Medium	Medium	We keep in contact with the client and ask for feedback for our progress
Not finding enough or useful material	The final conclusions are not correct or relevant	Low	Medium	We reserve enough time for finding material and ask for help from the client if we get stuck
Communication challenges with the client	The results do not satisfy the clients needs or deadlines are not met	Low	Medium	We contact the client in time when we want to meet and have regular contact with the client and in worst case the course teacher is contacted
Team member becoming inactive (e.g. due to sickness)	The other team members need to do more work or some deadlines are missed	Low	Low	We have weekly meetings with the group and the work is distributed equally between the rest if there is an incident

Table 1: Risk assessment for this project.

7 References

- H. Karppinen, P. Horne, and H. Hänninen. Suomalainen metsänomistaja 2020. *Luonnonvara- ja biotalouden tutkimus*, (30/2020), 2020.
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