

University of West Hungary
Faculty of Forestry

Ph.D. theses

**ORGANIZATIONAL STRUCTURE AND ECONOMIC
CONDITIONS OF PRIVATE FORESTRY IN HUNGARY**

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1. Introduction and objectives

After the communization of private forest properties in the 1950s, private forestry sector revived again in the privatization process starting from the first legislative steps in 1989. The property transformation lasted until 1998, when the new owners have been filed in the land registry. In the meantime the legal framework has also been reformed by a number of new acts.

70% of the private forests is originated from the former agricultural cooperatives, while the rest was privatized from the state forests.

The development of the private forestry sector was controversial. The success stories coexisted with huge areas without legally proper management, and still in 2006 more than 200 thousand hectares are in this state.

The main objective of the dissertation is to give an overview of the private forestry sector in Hungary with a strong emphasis on economic perspectives. The issues covered are ranging from the most recent developments to the long-standing and acute problems overarching the 16 year history of this sector. The theses are employing a structured approach in which the problems are revealed on different levels from forest operations through forest management units to the sector level.

2. Modelling of private forestry

As a theoretical basis of the discussion, the author builds up a model of the private forestry sector by identifying functions to be fulfilled in the management of forest estates.

The forest owner is to make decision on how the forest resources are utilized in the long run. It includes by whom and in what legal and financial construction the forest estate will be utilized e.g. leasing, delegation or individual management.

Forest management consists of three functions, among which the economic forest management is substantial, while the legal responsibility, which is not necessarily connected to economic responsibility, and the application of expertise are supplementing it.

Forest operations are generally carried out by contractors, especially those requiring special skills and equipments like harvesting.

The dissertation describes the relationship between these actors, and classifies the most common forest management models.

Using this theoretical framework many of the technical terms of forestry have been revised and corrected, and some have been proved to be misused. The author makes an attempt to fill the gaps of the professional language with describing the functional types of forest management units, and propose new expressions.

3. Gross margin of forest operations

Profitability is the key issue of the study in the forest operations level. The author gives an overview of the application of standard gross margin in agriculture, and taking it as an example develops new forest gross margin indexes, by modifying traditional methods.

Standard gross margin is already being applied as a measure of economic size of production in agriculture. Using this concept makes possible to compare not only the absolute economic size of a farms, but also the composition of their production.

In order to include forest products into this system, standard gross margins have to be defined for them. It was revealed that the rules of standard gross margin, especially the types of costs considered in the method makes it irrelevant in forestry. The most important problem is the exclusion of services employed, since the majority of forest operations are done by contractors. In this way standard gross margin would have no economic meaning.

To tackle this problem, two pairs of gross margin indexes have been developed. They form pairs because of the two basic ways of handling the time factor: one is counting the annual gross margin with discounting and another one is not taking interest into account at all. The latter one is justified in cases when a 'normal forest' is given, while the former one presents the general case.

The difference between the pairs is that one is dealing with the rotation period as a whole summing up all benefits and costs and counting one single value as annual gross margin for the whole rotation period. The other one divides the rotation period to phases, within which the annual gross margin is calculated. The phases cover cleaning phase, selection thinning phase, commercial thinning phase and final cut phase including reforestation. Apart from the last two ones, phases are regarded self financing, and therefore no gross margin is calculated. This simplification is based on practical experience, which proves that the activities of these phases are carried out only if the value of use of the timber compares to the costs of the activity.

The last two phases provide the main source of gross margin, this is why they are emphasized. In this method benefits and costs are concentrated into shorter time periods, because of which the role of time and interest rate become marginal.

4. Characteristics of forest management units

On the management unit level the core of the research is to describe the main characteristics of the forest management units, and to determine distinctive forest management unit sizes that refer to different types of functionality.

The dissertation analyses the balance sheets of forest associations to define and identify different types of forest management, namely irregular management and balanced management.

Irregular management means the alternation of active and passive forest management. In financial terms active management means income above a certain level, while passive management means income below the same level. According to this, irregular management is applied unless the annual income is expected to exceed a certain level.

The identifying characteristic of balanced management is that the fluctuation of income is expected to stay within a certain range.

The balance sheets of forest associations provide statistical data for the analyses, which was elaborated on regional level. This revealed that the upper limit of irregular management in the Transdanubian region is 300-400 ha, in the Hungarian Plain it is 250-300 ha, and in the Northern Mountains region it is 450-550 ha.

The lower limit of balanced management is between 600-700 ha on national level.

According to the size distribution of forest management forms, 99% of the private persons who manage forest are determined to apply irregular forest management, as they are below the size limit. The same is true for 67% of the forest association, 76% of corporations, and 65% of cooperatives. It covers 81% of the forest area managed by private persons, 27% in case of forest associations, 20% in case of corporations and 14% in case of cooperatives.

Less than 1% of private persons managing forests reach the level of balanced management, and none of the forms exceed 5%. Since these units are of large forest area, they cover 2% of the forests managed by private persons, 23% of forest associations' forest, 34% of corporation forests and 35% of cooperatives' forests.

5. Distribution of harvesting incomes among stake holders

There have always been calculations on the profitability of forests and forestry operations, but none of them is dealing with the income distribution amongst stake holders.

The dissertation presents a method and a set of data sources, which can be used for estimation of harvest income distribution. The key element of the method is the price of standing timber, which by definition is the income of the owner, if it does not include further cost e.g. reforestation.

Based on this concept, the author calculates income distribution with the market information gained from the Economic Monitoring Network of Private Forest in the first step, and provides estimation for average figures.

To test the method and to describe the nature of such transactions, a sensitivity analysis is conducted. According to the data sources, the price volatility of standing timber is very high (maximum price is double of the minimum), consequently the distribution is also very volatile.

The wide range of prices reflects the insufficient functioning of the market, as the differences are not the result of quality, regionality or other factors, but the lack of information flow.

The main result of this research is the average distribution. Due to the sensitive calculation and the versatility of the results, the dissertation gives only a rough estimation, according to which the owner, the forest management and the contractor have equal share from the harvest incomes.

This is a very important methodological result in the first place, and it is also significant in the context of rural development, where the concentration of activities is a key issue in formulating the strategy of forestry's role.

6. Abandoned forests

One of the top priority problems to be solved in the development of the sector is the phenomenon of abandoned forests. The author disputes the general beliefs regarding abandoned forests and its triggering factors, and based on statistical evidences provides new understanding of the problem.

The author analyses the relationship between abandonment and (economic/organizational) viability on theoretical ground, as these concepts are usually used as synonyms, but despite of their inevitable connections their content don't correspond to each other. After defining the terms, he classifies forest estates according to the most important experiences in connection with these phenomena, and explains the dynamic changes among classes.

Statistical analysis is used to support or refuse hypotheses regarding the triggering factors of abandonment.

One of the commonly used reasoning about abandoned forests imputes it to the large number of owners within the forest plots, and it is usually demonstrated by extreme cases caused by the chaotic way of privatization. Despite of this widely accepted theory the analysis proved it wrong, as the proportion of individually owned forest plots is higher in abandoned forests, than in forest under proper management.

Similarly to this, age distribution of forests and owners' residence have also be proven to be less significant than formerly assumed.

The study on abandoned forests verified the existence of those extreme situations which this phenomenon was attributed to (the small size of forest holding, the high number of owners within the forest plots, etc.), but their role could not be proven significant.

7. The author's publications

Articles in periodicals and proceedings:

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