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Management of State Forests in Estonia with Comparison to Finland

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Abstract

The main goal of the study is to compare the management of Estonian public forests and the factors influencing the management with the Finnish public forests. The concept public forests refers here only to the forests managed by the state forest organisations – *'RMK'* in Estonia and *'Metsähallitus'* in Finland.

When analysing the management of state forests, all the goals set for the organisations have to be considered. In Finland, the goal setting has been more precise and complex than in Estonia, where the mission of *RMK* is formulated as the efficient and sustainable forest management. In both countries the public owner's interests are reflected in the State Budget – financial provision to the Budget is very important driving force of the activity in both organisations.

The indicators discussed in the study are supply of roundwood and financial performance of the forest management.

Keywords: state forestry, roundwood supply, profit target, nature conservation, organisational reform

Introduction

The main aim of the study is to analyse the purposes of management of public forests in Estonia and Finland; the procedure of goal setting, the dynamics of cutting volumes and factors influencing it. In the study, only state forests are considered and forests owned by local public authorities are not included in the analysis.

In Finland, public forests are managed by Forest and Park Service, *Metsähallitus*, which operated as a National Board of Forestry until 1991, also fulfilling the tasks of public administration. Since 1994, Metsähallitus has operated as a state enterprise, having functions only on state-owned lands.

RMK (State Forest Management Centre) was established in 1998 in order to manage state forests in Estonia. *RMK* is the state-owned profit-making organisation which was established in reorganising the previous system of public forest management. Only the management functions of state forests remained the same, but controlling and supervising are carried out by other public institutions. While establishing *RMK*, an example was taken from *Metsähallitus*, hence one can find similar features between these two organisations.

The main difference of public forest ownership compared to private forest ownership is based on the structure of ownership and decision-making. An owner is a person or a company having rights to make decisions concerning forest management and benefits gained from the forest. Hence, all citizens should be considered as the owners of public forests and it is essential

to take into consideration all needs and requests of forest owners. As public forests by this definition have large variety of owners, there are more requests and confrontations between public forest owners compared to private ones. Actual decisions about the management of public forests are political.

Profit maximizing cannot theoretically be the only most important goal in public forestry, because forest owners are both producers and consumers of benefits gained from forests. From the standpoint of society the aim of forest management is the surplus maximizing for producers and consumers (Nautiyal 1988). In decision-making process concerning public forests, the negative or positive external impacts have to be considered. For instance, in both Estonia and Finland, special forest areas have been marked off having special rules of management.

State forestry is relatively less studied in Estonia and Finland. In Finland more surveys have been carried out of private forests. There have been comparatively less studies on forest ownership and decision-making in Estonia than in Finland, but on the other hand, studies dealing with silviculture and biological productivity of forests are quite numerous. Studies on economic behaviour of public forest ownership in Finland are based on empirical data concentrating on factors influencing timber supply (see Tervo 1978, 1986).

Goal setting in state forestry

According to public business theory the goals set for public forest management organisations are divided into socio-political and financial ones (Rees 1984). Still, goal-setting and implementation of goals may not coincide. Public business theory states that public enterprise does not act relying only on established goals, but referring to *main agent theory* it considers also the interests of organisation (Rees 1987, Aharoni 1986, Millward et al. 1983).

Public forests fulfil occasionally also special goals set by society. Examples in the history of the past century in both Estonia and Finland can be found, when after gaining independence forest plots were allocated for private ownership in order to support living of landless people and promote settlement in rural areas. In Estonia, as an example, forest stands were used in 1992 as a warranty of national currency – Estonian *kroon*.

Finnish *Metsähallitus* operated until 1993 as a state business organisation and it was in short-term directed by using Government financing scheme based on gross-budgeting, having no relation between profits and revenues. As a consequence, the operating volume/capacity and quality depended on certain State Budget. Generally, it is reckoned that gross-budgeting is not the suitable operating strategy in forest management (Metsähallintokomitean mietintö 1959, Metsähallituksen kehittämistyöryhmän muistio 1993).

In the course of organisational reform, net budgeting was adopted for *Metsähallitus* since 1993, meaning that only annual net revenues, investments and financing of certain public interests like nature conservation tasks have been considered in the State Budget. Since then, *Metsähallitus* has used sales revenues in covering all operating costs.

While in Finland public officials have since 1993 affected forest management by setting profit requirements, in Estonia the decision-makers are directing bodies of public forest management. Although, it should be mentioned that in Estonia, the representatives of ministries and members of Parliament also belong to the Council of State Forest Management Centre.

In Estonia, during the period the country was incorporated to Soviet Union, the goals were mainly set as quantity means, usually accompanied with financing plans. Nevertheless, costs in forestry exceeded the revenues. The situation in forestry at the end of the 1980's is

expressed referring to F. Nõmmsalu: "…It seems to be the most important to pay attention to the state of forest instead of hectares and cubic metres in financing plans and statistical records. Our main goal is to get the maximum amount of timber from a hectare. The purpose of forest management is to expand forest usage and accelerate silviculture, to use entirely the potential of land as means of production and guarantee the maximum gross productivity of forests." (Nõmmsalu 1989).

The definition of forest policy can be well illustrated with the situation in 1970's and 1980's, when the operating funds and capital investments from public assignments per hectare of forest area increased one and a half times and doubled according to one harvested cubic metre. For example, in 1987 income from stumpage and other incomes were 11.15 roubles per hectare. Costs in forest management, capital investments and also assignments for research and maintaining infrastructure formed 36.16 roubles per hectare, i.e. 3.2 times more than direct revenues from forestry (Nõmmsalu 1989).

Today, the profit targets of *RMK* and *Metsähallitus* are both connected with State Budget, i.e. certain amount of money has to be paid to state budget as a dividend. In case the net income is bigger than the dividend requirement to Budget, it can be used in fulfilling certain goals connected with forestry. However, setting only profit target is considered to be problematic, because then socio-political tasks are not emphasised (Valtion liikelaitoskomitean mietintö 1983).

In Finland, the main goals set for *Metsähallitus* are presented in legislation, which is currently (2004) being reformed. According to *Act on Metsähallitus* (1993), *Metsähallitus* has to manage, use and protect sustainably and productively the property under its administration. For instance, timber production has to be sustainable (but not increasing as was enacted until 1991). In Estonia, annual allowed cutting volume is set by Estonian Government, based on forest inventory and forest management plans.

The regulation of annual cutting volume of *Metsähallitus* has been used in stabilising Finnish timber market (Saastamoinen 1997, Metsähallituksen kehittämistyöryhmän muistio 1993). This objective has not been legislated, but it seems that net income (profit) and employment requirements have been major reasons for this behaviour (Piiparinen 2001). The timber market stabilisation as an state forestry objective has also been discussed in Estonia in recent years, but in reality the annual cutting volume has not been changing with market fluctuations. Principally, it has been tried to maintain cutting volume as stable as possible, and in case of storm damages even reduce it in areas remaining intact by storms.

Traditionally, *Metsähallitus* has been obliged to support rural employment by maintaining certain amount of working places. Today however, this is reflected more due to remote locations of state-owned lands than specific employment requirements. In Estonia, employment maintaining rules are not compulsory for *RMK*. Therefore, the influence of compulsory employment is not analysed in the present study.

The efficient forest management is emphasised in Estonian Forest Policy approved in Estonian parliament *Riigikogu* in 1997. In order to fulfil policy requirements, *RMK* had to reduce remarkably the number of employees. At the beginning of 1990's 4,500 employees were engaged in public forestry sector, but in 2003 the number of workers was reduced to ca. 1,300.

Table 1. Forest management goals in Finland and Estonia.

Goal	Finland	Estonia
Profit target	+	+
Timber production	+	+
Forest conservation	+	+
Employment	+	-

Forest management in state forests

In order to provide forest management time series in comparable way both for Finland and Estonia, following list of time series was adopted (table 2). In this article, only Estonian time series are presented. Respective time-series on Finnish state forests have been presented by Piiparinen (2001) and Leppänen & Piiparinen (2002) and will be employed in further comparative analyses.

Table 2. The availability of time series describing the activity of state forests.

Time series	Finland	Estonia
Net income	+	1998-2003
Share of protected forests	+	+
Timber production	+	+
Employment	+	-
Growing stock	+	+
Value of harvesting and silvicultural equipment	+	-
Prices for timber	+	1996-2003
(Interest rate, state bonds)	+	-

The time frame from 1970 to 2003 can be divided into three parts also according to the organization responsible for the management of state forests. In total, there have been three organizational changes during this period (Figure 1). During the Soviet time, the responsible authority for public forests was Ministry of Forestry and Nature Protection. With the reindependence of Estonia in 1991, state forests were first organised in form of National Forestry Board. Since 1998, the organisational form has been the State Forest Management Centre *RMK*.

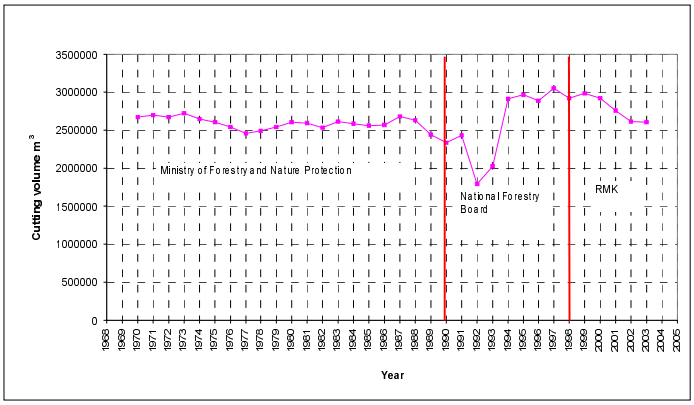

Figure 1. Volume of felling volume in Estonian state forests 1970–2002.

From 1970 to 1990, the harvesting volume was quite stable and even a little bit decreasing, varying between 2,7 million m³ in 1973 and 2,4 million m³ in 1990 (Figure 1). Due to forest policy objectives, also the forest area was increasing continuously. In total, the forest area expansion was 18 per cents during 1970-1990 (Figure 2). The reason is the handover of unpropitious lands of agriculture to forest sector, draining of swamps and afforestation of pit heaps. Increase of forest area increased also the growing stock volume (Figure 2).

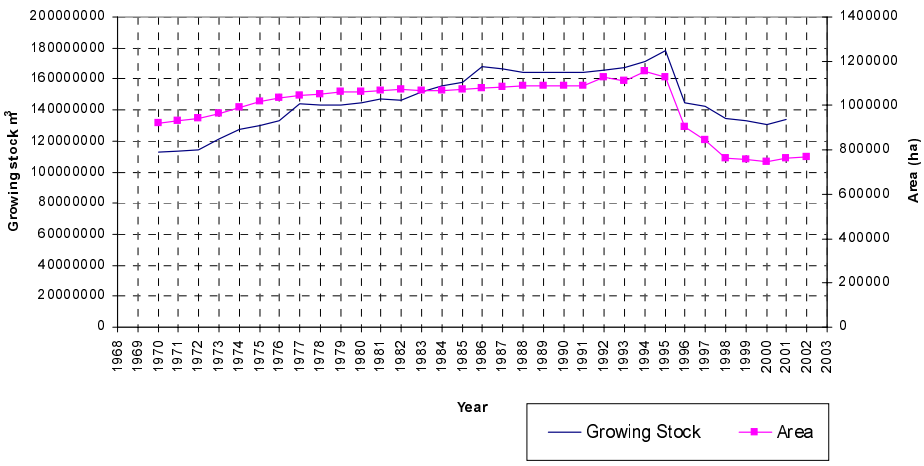

Figure 2. Volume of growing stock and forest area in Estonian state forests 1970 – 2003

From 1991 to 1998 there were many changes in public administration after restoring Estonian independence. During this period forestry was mostly influenced by the inception of private forest ownership and by remarkable development of forest industries.

Characteristic for this period is the considerable decrease of annual harvesting volume in the early of 1990's. For example, in 1992 the annual harvesting volume was 1.8 million m³, while the average annual harvesting volume in previous years 1986–1990 was ca. 2.5 million m³ (Figure 1). The reason for decreased harvesting was the land reform, which was started in 1992. Felling constraints were set because of the large amount of forests under the re-privatisation. The land reform is reverberated also in Figure 2, which shows the area of forests and growing stock being decreased by almost 20% in 1996 (Figure 2).

The fact that a considerable decrease of growing stock and forests area is not caused by excessive cuttings appears also in Figure 3, indicating that in 1996 the harvesting was about 2% of the total growing stock (Figure 3).

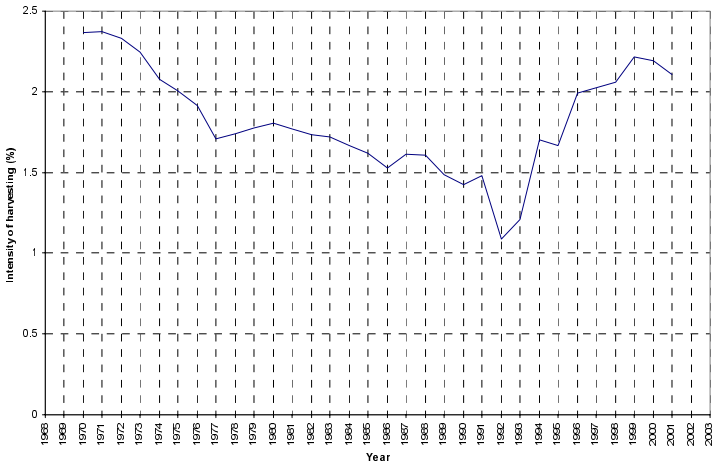

Figure 3. Harvesting percentage of the growing stock in Estonian state forests 1970-2001.

In the beginning of the period starting from 1999, second major reorganisation of public forest management took place. In December 1998 the State Forest Management Centre *(RMK)* was established and started to serve in 1999. Characteristic for this period is a slightly decreasing harvesting volume.

With *RMK*, the net income of forestry as a goal has been considered since 1999. Therefore, providing income for State Budget became an important goal of the state forest organisation. Despite the decrease in felling volume, the net income of *RMK* has increased consistently year by year (Figure 4). The increase of net income is caused by the increase of the timber prices (Figure 5), and increasing efficiency due to decreasing employment in state forestry.

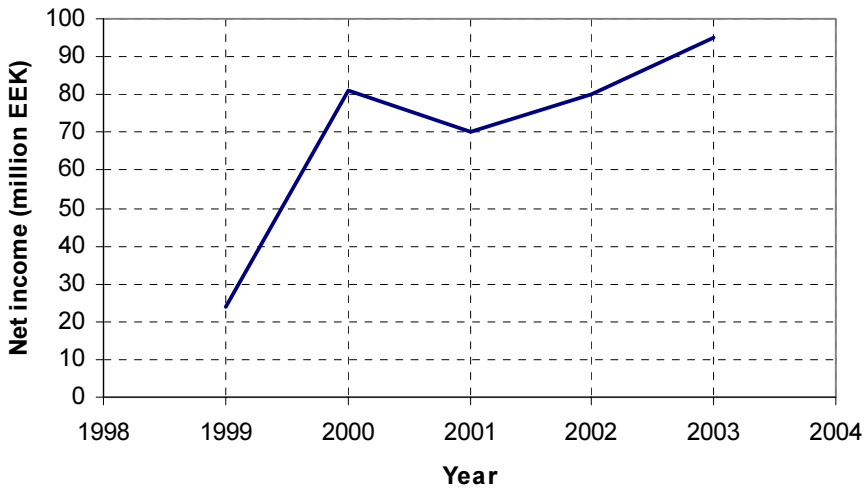

Figure 4. Net income of RMK 1999-2003.

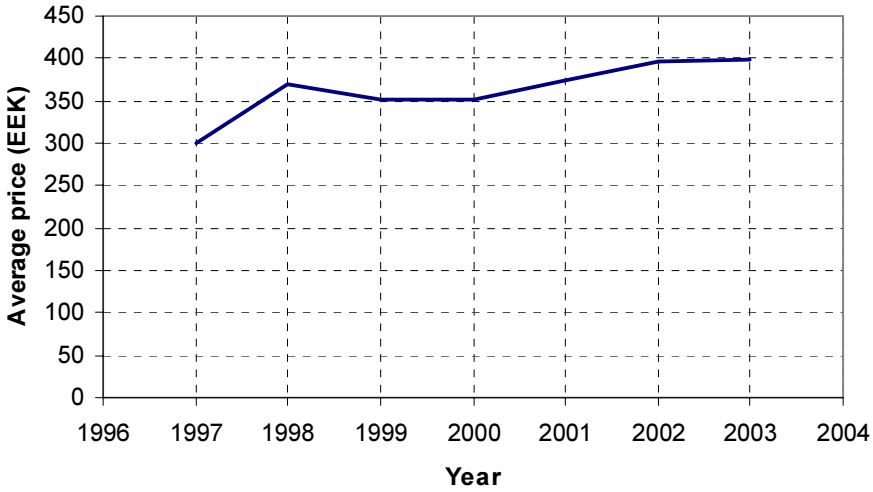

Figure 5. Average delivery price of roundwood of Estonian state forests 1997-2003.

Forming of relevant time-series on forest conservation was difficult for both countries. In Finland, the areas of protected forests are enforced in legislation, but in reality the management restrictions have already been implemented already long before the legislation is enacted. With national parks and nature reserves this advance approval of forthcoming conservation has been in average 4 years. In Estonia, formal statistics on different forest land use categories have been for decades published every 4 years and therefore the implementing of restrictions of forest management may not coincide with the recorded data. The share of strictly protected and protection forests in Estonian public forests is shown in Figure 6.

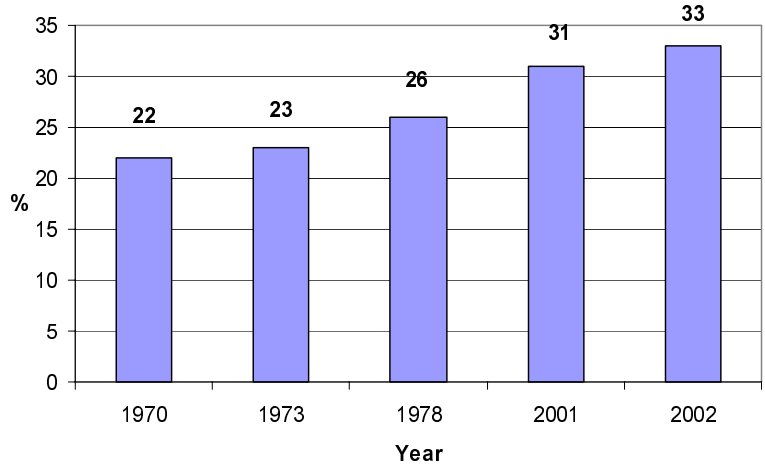

Figure 6. Share of strictly protected and protection forests in Estonian public forests 1970-2002.

Time series describing timber production in Finland are compiled separately for logs and pulpwood. In Estonia, time series are compiled considering regeneration and intermediate felling. The volume of regeneration and intermediate felling is presented in Figure 7 (see also Figure 1).

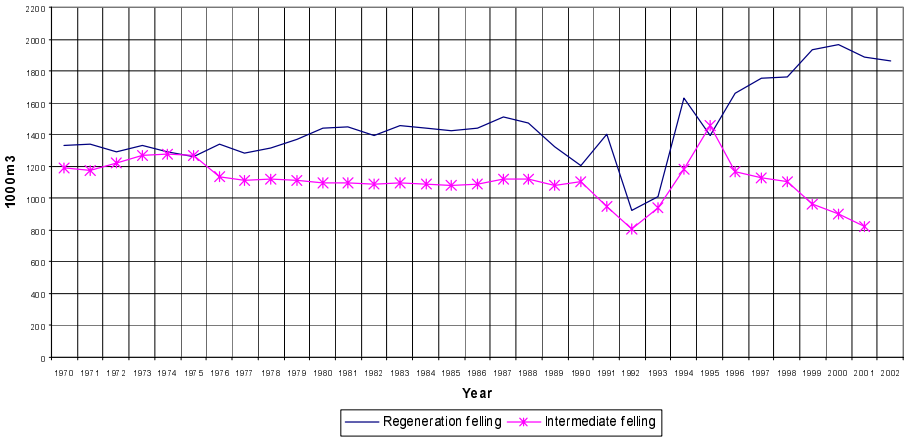

Figure 7. Volume of regeneration and intermediate fellings in Estonian state forests 1970-2002.

The increase of share and volume of intermediate felling has been remarkable in 1974-1975 and in 1995. It constitutes in 1974-1975 almost 50 percents of the total harvesting volume and in 1995 even more.

The reasons of increased felling volume from thinning in 1974-1975 are more political than silvicultural. One characteristic of the Soviet planning system was its extraordinarily high degree of centralisation. For example, orders regarding regeneration felling were issued directly from Moscow, based on the reasoning that the output was part of the Union-wide harvesting plan (Kallas, A. 2002).

The reason of big share of intermediate felling in 1995 is the faltering at re-privatisation and as a consequence, also at the respective regeneration felling constraints in the forests under the land reform.

Conclusions and further research aims

In the Finnish state forest management the goal setting has been more precise and complex than in Estonia, where the mission of *RMK* is formulated as the efficient and sustainable forest management. However, in both countries the public owner's interests are reflected in the State Budget. Financial provision to the Budget is very important driving force of the activity in both organisations.

State forests have to fulfil special tasks set by society. Examples of those in both countries are nature conservation tasks and in earlier also the promotion of permanent settlement of landless people in rural areas in both countries. However, many special tasks of state forests are unexpected as experienced only a decade ago, when state forests were employed as guarantees for money reform in Estonia after restoration of the independence.

Next step in our analysis is to test for comparative econometric models for Estonian and Finnish state forest functioning in order to study impacts of different factors on the roundwood supply, financial performance and other targets of state forest management.

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