

# Accounting for volumes of timber felled from the Estonian state forest

*Is the journey of timber felled from the state forest to  
the purchaser transparent and controlled?*

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## Why this issue is important?

- The state is the biggest forest owner in Estonia (40% of all Estonian forests)
- State forest is managed by State Forest Management Centre (SFMC), which is a profit-making state agency
- Revenue from forest management is paid to the state budget from the profit earned by SFMC
- The annual profit of RMK for the year 2010 was ca 27 mil/€. The annual turnover of SFMC has increased from 70 mil/€ in 2006 to 115 mil/€ in 2010.

## Main question of the audit

Is the accounting for volumes of timber felled from the state forest and sold to the purchasers is transparent and controlled?

### Audit criteria:

- Volumes of timber obtained from the felling and taken to the forest storage space is controlled and the data is trustable
- Volumes of the felled timber is correspond to the volume of timber reached to the purchaser. Possible differences are reasonable.

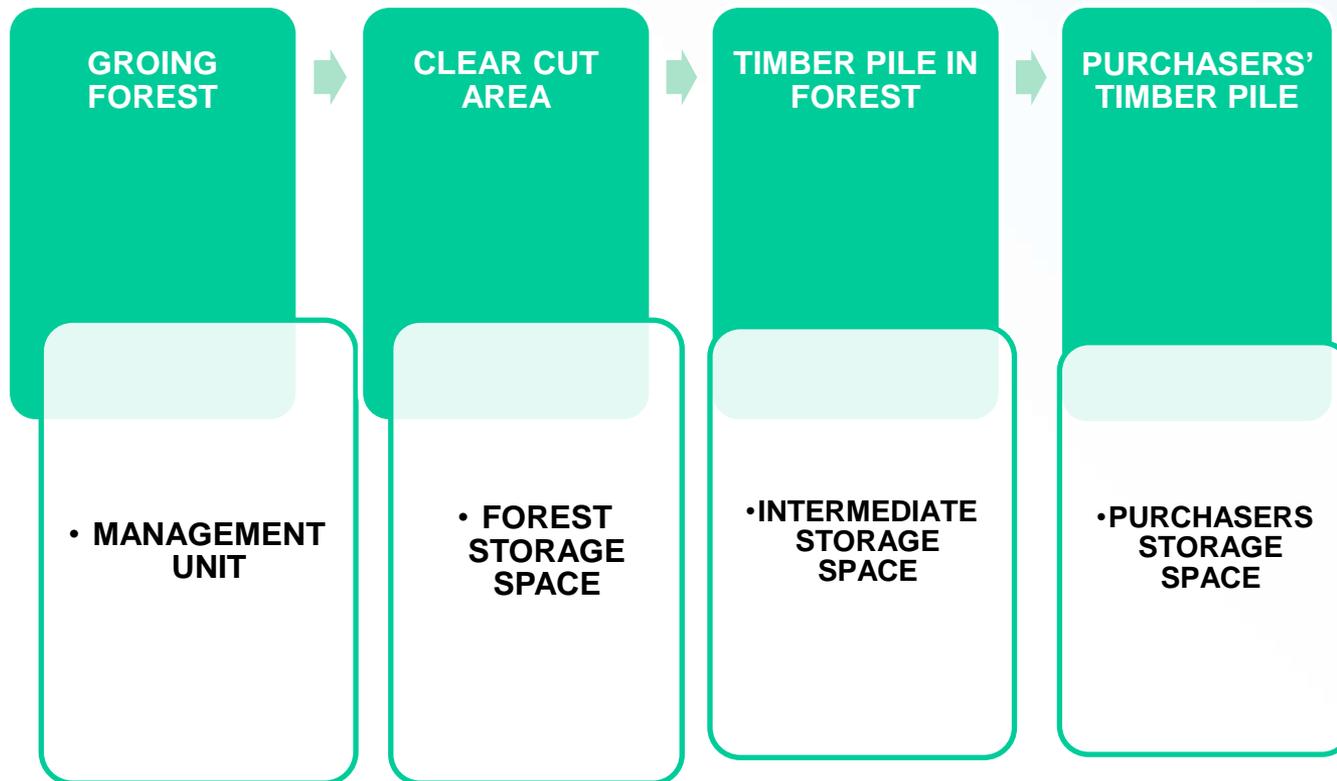
## Audit methodology

The forest management structure in SFMC was changed in 2008, that separated planning, organisation of felling and distribution of timber to the purchasers to the different management units.

Therefore NAO compared the forest management organization before and after the structural change (2006-2008 and 2009).

- 2 random samples of clear cutting objects from all forest districts (110 clear cuts from the periods 2006-2008 and 2009)
- Analysis of management documentation of all selected objects. The volumes of timber before and after the felling and in different storage spaces was compared.
- Internal control systems of SFMC was analysed

# The journey of timber from forest to the purchaser



## Clear cut area / forest storage space



## Cutting machine - harvester



## Timber in intermediate storage space



## Forwarder



## Audit results

### Overall estimation:

- The new organisation of work has improved the accounting for the volumes of timber felled from the state forest
- The journey of the timber from felling to purchaser is still not fully transparent and controlled, and thus possible losses of timber and the reasons therefore main remain undiscovered.

## Main findings

The relevant volume of timber obtained from clear cuts (m<sup>3</sup> per ha) has increased an average of 17% after the SFMC structural reform.

Possible reasons:

- a part of the timber felled from the state forest was previously not delivered to the purchaser
- the volume of accepted timber by the purchasers was previously smaller than actual according to their data;
- the internal control system of SFMC has improved as a result of structural reform

## **Before the reform the volume of timber obtained from clear cuts was not precisely measured**

The measurement of the growing forest (forest taxation) is not precise enough for controlling the volumes of timber obtained from clear cuts (acceptable variation  $\pm 20\%$ ).

Before the reform the volume of timber from the felling stored in the storage space was specified on the basis of the measurement of the purchaser, because the measurement of timber assortments was most precise

The amount of timber that reached the purchaser was entered in the stock records of SFMC

## **After the reform the controlled harvester is measuring the volume of timber**

After the reform the SFMC is using so called controlled harvester that make possible the measurement of the volume of timber precisely in the course of felling.

Timber obtained from felling is stored in the storage space on the basis of measurement data of controlled harvesters.

NAO analysed the internal control systems and discovered, that use of the fixed harvesters still does not completely eliminate the risk of theft of timber as it is not ensured that all information regarding the felled timber reaches to the SFMC.

SFMC regularly inspects the measurement accuracy of the harvesters but does not make sure that harvester is sending all the data about the timber volumes to SFMC.

## **The journey of timber assortments from the felling area to the purchaser cannot be clearly observed**

- Timber may be delivered to the intermediate storage space from different felling areas, making it very complicated to discern from which felling area a certain amount is from. It makes very complicated to follow the journey of timber assortments from felling area to the purchaser.
- The stock records of SFMC and sale of timber to the purchaser is based on different assortment classifications, which complicates precise comparing and analysing the felled and sold timber

## Main recommendations

To the Ministry of the Environment:

- to ascertain the reasons for previous losses of timber in order to minimize the risk of timber losses in the current organization of work of SFMC

To the State Forest Management Centre:

- improve the internal control systems in regard to analyze the logging data of controlled harvesters
- Compare systematically the data of growing and felled forest
- Develop the e-conveyance document system, which enables better to follow the volumes of timber assortments from storage spaces to the purchaser.

## Major challenges of the audit

- Accounting of the volumes of timber assortments and all the assortment production process is complicated system for the “beginners”.
- We based mostly on paper documents. Auditing the IT systems is challenge.
- Important and challenging issue is the reliability of data (this seems to concern most of the environmental audits)

### *QUESTION*

How to compare the timber volumes in growing forest with volumes of logged timber to be sure, that logged volume of timber is correct? Is it necessary to evaluate precisely the volume of growing forest?

**Thank you!**

