

Challenges for forest management and wood mobilisation in the Netherlands

Focus on Overijssel & Gelderland

Background

The Netherlands has set itself an ambitious target for the bioeconomy which will to a large extent depend on wood. Already now, the Netherlands is a large net importer of wood. Where will all the extra wood for the Netherlands come from in the future? Some of it may come from domestic sources. Within Simwood we study and try to solve wood mobilisation in two important provinces for wood provision: Overijssel and Gelderland. Together, they account for a third (139 500 ha) of the Dutch forests. Both provinces are very rural with small forests scattered in an agricultural landscape.



SIMWOOD region Gelderland and Overijssel: two provinces in the east of the Netherlands

The Netherlands has no national forest policy; rather it is part of an overall nature policy. Furthermore, implementation has been decentralised to the provinces who implement the subsidy programme (SNL). Provincial policy is more focussed on nature than on production goals where the awarded subsidy is higher for nature oriented management than production oriented management.

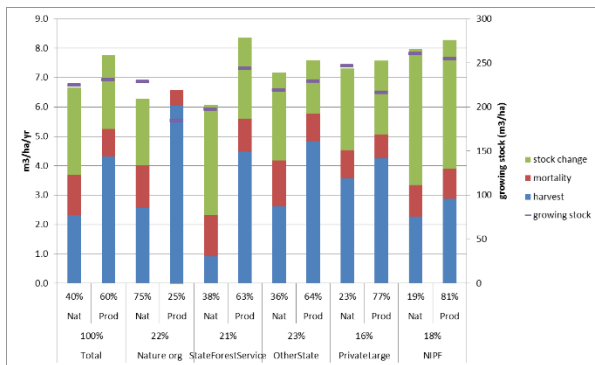
Municipalities sometimes play a role in the market uptake of renewable energy, including bioenergy. At the same time, they own about 10% of the forest area. In a highly urbanised country like the Netherlands, multiple use forests are extremely important.

Present state and management issues with respect to mobilisation

In order to identify mobilisation possibilities, it is important to analyse the current state of forest resources and management trends. The forest area in the Netherlands expanded from 2% in 1750 to 11% currently. A large part of the expansion was due to afforestation of poor soils (heathlands and drifts sands) a century ago. The resulting monoculture Scots pine plantations have slowly developed into more mixed forests due to the invasion of oak, beech and especially birch.

The total amount of stemwood that is harvested from Dutch forests is 1.25 million m³ per year, about half the annual increment. This harvest covers about 10% of the annual consumption. Due to the low felling rate, the average age of the forest is increasing, and the annual increment per ha is decreasing. Forests are very important for recreation and nature protection.

An analysis of the permanent plots of the National Forest Inventory (NFI) revealed interesting differences between owners. The larger nature protection organisations, the State Forest Service and other public owners seem to follow the provincial policy goals as defined in their subsidy system rather well. They all show a clear difference in harvest level between forests designated to nature on the one hand, and production forests on the other hand. For private owners the difference is much smaller. Non-industrial private forest (NIPF) owners harvest on average the least, while larger private owners harvest the most. The low harvesting in NIPF is reflected in the high average growing stock in these forests.



Average harvest, mortality and stock change as measured in 494 permanent plots in Gelderland/Overijssel between NFI5 (2001-2005) and NFI6 (2012-2013), and average growing stock as measured in NFI6, separated per owner type in forests with nature protection designation (Nat) and forests with production designation (Prod). The total height of the bar is equal to the gross increment.

Consequently, there is a considerable potential for additional harvest in the NIPF ownership category. This potential is about 40 000 m³ per year (8% of the current harvest in the region), assuming a similar harvest level as for the larger private owners. In this respect, the main barriers for wood mobilisation are:

- Many small forest areas: 20% of forest area is smaller than 5 ha, 50% is smaller than 50 ha;
- Many different and small-scale forest owners (30% of the area is owned by owners having 5 ha or less);
- Private owners of small forest areas are difficult to reach for policy makers.

In addition, potential exists in the intensification of management in production forests of all owner categories except nature organisations. Regional modelling shows that each of these groups may mobilise an additional 40-50 000 m³ annually. Thus, the harvest level could increase by about 40-50% compared with the current situation.

Barriers here include:

- Too many stakeholders work individually; each (exploitation?) organisation has its own collection structure;
- Trees that have reached the target diameter are often not harvested;

- Lack of incentive or willingness to invest in forest regeneration.

Private owners form a heterogeneous group, and not much is known about their motivations and attitude towards harvesting. This is especially the case for the owners of less than 5 ha of forest. Therefore, two surveys of NIPF owners were conducted. One dealt with Gelderland and Overijssel as a whole, and one focussed on the Twente region. The surveys focussed on characteristics of NIPF owners and their motivations regarding forest management and harvesting.

SIMWOOD's work in the region

Surveys on NIPF owners

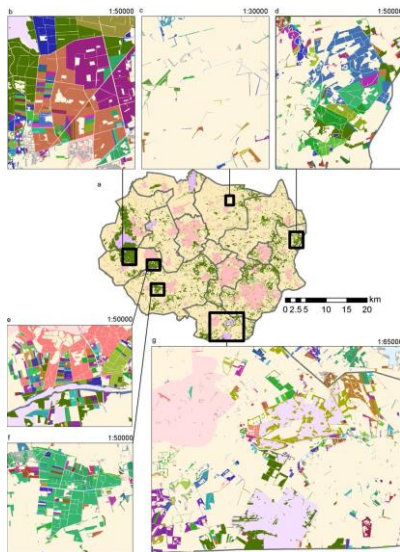
The main conclusions of the first survey were that the most important management objective of the forest owners is to conserve and increase the ecological value of their forest. For most of the owners (73%) harvesting is a means to that end: on average, harvesting accounts for roughly half of their income from forests, and subsidies account for one third of their income from forests.

In the more detailed survey (Twente region), all private owners and small public owners (municipalities) (3029 in total) that owned more than 0.5 ha were approached. In addition, an analysis was done of the ownership information held in the cadastre. Most owners are between 50- and 70-years-old, and 80% live less than 5 km from their forest.

Many owners (32%) would be willing to take part in a collective for wood harvesting. The importance of training and knowledge dissemination was clear because many owners indicated a lack of knowledge regarding forestry, the sector as a whole, harvesting and available subsidies.

Based on this detailed survey, a Plan of Approach was developed by Alterra and BTG in which the following actions were proposed to increase wood mobilisation by NIPF owners:

- Knowledge dissemination to NIPF owners;
- Encouraging cooperation among NIPF owners, by: (1) providing initial subsidies for a number of new collectives, and (2) appointing a “wood mobilisation coordinator” to help foster collective action;
- Increasing the financial returns for forest management and wood mobilisation.



Map showing the level of fragmentation in the Twente region. Because of the large number of owners, the same colour is used to represent more than one owner. Source: Clercx et al. 2016.

This Plan of Approach was also used to provide input for the national Action Plan for Forestry and Wood (see below) by the government and forestry organisation to substantially increase the wood supply from Dutch forests.

Pilot projects

SIMWOOD work in the region is mainly concentrated in two areas:

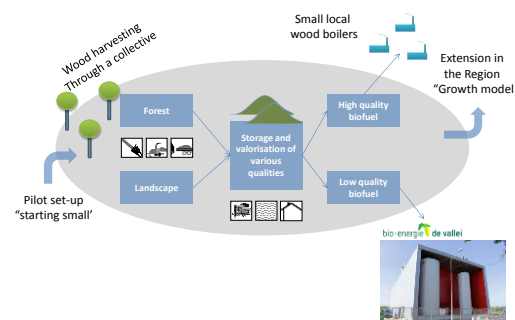
- an area in Gelderland (called the Food Valley Region), where a pilot project has been conducted in which a collective was formed to combine harvesting of forestry and landscape elements.
- The Twente region (in the south of Overijssel), where a pilot project is being conducted in which the opportunities for a biomass module (a

decision support system) for handling the logistics of top- and branch wood.

Pilot project: Food Valley

One of the pilot projects carried out in the region involves the bundling of harvesting and logistics activities, which is expected to increase efficiency and therefore lower costs, which increases the economic viability of forest and landscape management.

In this pilot project a collective was formed, and maintenance and harvesting activities were carried out jointly. The project involved owners of both forests and landscape elements. Another part of the project was the inclusion of bioenergy producers as customers for the forest residues.



Conceptual illustration of the Food Valley project

The Food Valley project is now continuing, although the SIMWOOD part has ended. The project will now be evaluated according to the SIMWOOD methodology.

Pilot project: Biomass Module

This pilot project is aimed at the Twente region. The central project concept is that cooperation is encouraged through bundling of activities, and logistical costs (for chipping, storage and transport of wood) can be lowered. One way to facilitate the bundling of these activities is through the development and use of a dedicated GIS-based biomass module.

This biomass module is now being designed, and is to be tested together with *Natuurmonumenten*, one of the three large forestry and nature organisations in the Netherlands. It is

expected that once these organisations are convinced that bundling of activities can be beneficial, others (private owners) will follow.

It is expected that in the second half of this year the biomass module will be tested (on paper) using actual harvesting data of *Natuurmonumenten* and some private owners. The results will be presented at the next Regional Learning Lab (in early 2017).



Regional Learning Lab, Biomass Module pilot project, October 2015.

National Action Plan for Forest and Wood

In 2015, several nature organisations, societal organisations, the timber industry, bioenergy sector and the Ministry of Economic Affairs have jointly initiated an “Action Plan for Forest and Wood”. The background is that we will be needing more and more biomass in the future, and wood is a major part of that. To substantially increase the supply of wood from Dutch forests a number of actions have been defined, of which the most prominent are:

- Increase of the forest area in the Netherlands by 100 000 ha in the next 30 years;
- Increase the harvest of wood from the forest;
- Secure the sustainability of (domestic and foreign) wood;
- Develop applications of wood in the Netherlands (wooden buildings, cascading use);
- Foster Investment, update regulations, improve communication.



In the Netherlands recreation is of utmost importance with >100 million visits per year. This can go very well hand in hand with increased wood mobilisation.

This Action Plan is now being published, and measures to maximise the impact of the plan are being considered. Especially the first action – increase the forest area in the Netherlands by 100 000 ha – is very ambitious. So far it is clear that there is a lot of support for this measure within the various organisations represented in the Action Plan, and there are convincing arguments to be made for this policy proposal.

It is expected that also during the SIMWOOD General Assembly in the Netherlands in November 2016 this policy proposal will be mentioned during the two keynote speeches by Mr Roel Feringa (Ministry of Economic Affairs) and Mr Sylvo Thijsen (Staatsbosbeheer).

Reference

Clerkx A, Hengeveld G, Schelhaas M, Helmink A. 2016. Boseigendom in Twente en Salland. Alterra Rapport 2731. Alterra Wageningen UR, Wageningen. doi:10.18174/386120

Contacts in the region

The SIMWOOD local team includes staff from Alterra and BTG (Biomass Technology Group).

To get involved in SIMWOOD’s activities, please contact:

Patrick Reumerman reumerman@btgworld.com

+ 31 (0)53 486 1186

Sandra Clerkx sandra.clerkx@wur.nl

+31 317 485925