

Focus on Småland

Background

Småland is one of Sweden's larger provinces with an area of 29 400 km². In 2016, the population of Småland was 789 664 (population density 26.9 per km²).



Location of Småland.

The province is divided into three counties: Jönköping, Kalmar and Kronoberg.

The total forest cover is 2 100 000 ha (70% of the total land area) of which 1 986 000 ha is productive forest. Most (80%) of the productive forest is owned by non-industrial private forest owners.

Productive forest area by ownership category

Ownership type	Area (hectares)	%
State	190 000	10
Local government or commune	35 000	2
Industrial private owners	82 000	4
Non-industrial private individual or family owners	1 593 000	80
Other categories relevant to your region	86 000	4
Total	1 986 000	100

The average size of the forest owned by these owners is slightly more than 50 ha.

With regard to the management objectives, conservation is the main objective in 6% of the forest area, while the remaining 94% have multiple objectives, with timber production being the main objective, but other objectives include hunting, recreation and collection of non-wood forest products.

Many of the forest owners are members of Södra (the southern Swedish forest owners association). Over the whole of southern Sweden, Södra has about 50 000 members, and 60% of forest owners in Småland are members of Södra.

On average, the ratio of fellings to increment is quite high. In 2012 the total harvest was 13 550 000 m³, and the annual increment was 18 200 000 m³ (a ratio of 73%).

SIMWOOD's work in the region

The SIMWOOD team consisted of representative from Linnaeus University (LNU) and the Energy Agency for Southeast Sweden (Energikontor Sodost AB; ESS).

During the course of the SIMWOOD project six regional learning labs (RLLs) were organised. The RLLs were attended by a wide variety of stakeholders (politicians, forest owners, bioenergy suppliers, forest machine operators). The scope objectives of the focus study and pilot project for SIMWOOD were discussed and defined during the earlier RLLs, and progress and results were reported in the later RLLs.

The focus study looked at the current and historical use of energy in the county of Kronoberg.

Pilot project: Development of a more efficient and sustainable system for extraction of logging residues from clear-cut areas in Småland for fuel purposes

The aim of the pilot project was to look at how logging residues are currently extracted in the Uppvidinge municipality, and to identify and promote 'best practice' methods in the municipality and beyond. The increased efficiency will make these activities more profitable, and consequently lead to increased extraction of residues.

During the last 200 years, practically all forests in Småland have been utilised for sawnwood, pulpwood and fuelwood. Starting in the mid-1970s, there has been increasing interest in using wood as the fuel in heat plants, and this has resulted in an even greater demand for the already highly exploited stem wood. Some sectors of the forest-based industry relying on supply of low cost, and low quality wood – especially the pulp and board industries – lobbied for a ban on the increased use of stem wood as a fuel. This further increased the interest in the use of other tree parts (tops and branches) usually left in the forest at traditional clear cuttings.

In Sweden today, mostly tops and branches from clear cutting areas are used as fuel for forest-fuelled heat plants, district heating plants and Combined Heat and Power plants (CHP). To some extent, deciduous trees cleared from the edges of agricultural fields are also used. Experiments have been made to utilise trees from pre-commercial thinning (cleaning), and tops and branches from commercial thinnings. Only in exceptional cases does the use of tops and branches from commercial thinnings as fuel yield a net profit for forest owners, and therefore it is currently uncommon that such material is used as a feed for fuel heat plants in Sweden; however, there is considerable potential.

Since gathering of tops and branches from clear cutting areas has yielded a low net profit, many forest owners do not find it worthwhile to extract

this assortment. This attitude may also be due to the view that the loss of nutrients arising from extraction of tops and branches has a negative impact on the growth of the new forest stand, and also that there may be increased damage to the soils and forest roads. Any treatment needed to restore site fertility will reduce the profits from using tops and branches as forest fuel.

Recent estimations at LNU show that only about 50% of the potential forest fuel from clear cutting areas are available to the energy conversion industries. The remaining 50% remains as residues in the forest, partly distributed over the clear cutting area and under the harvester heaps and storage piles, and partly as residues from forwarding and chipping. The reasons for this large amount of unused residues include: inefficient working methods, inappropriate machine systems, and uninterested machine operators.

The pilot project consisted of the following steps:

1. Documentation of the working methods and productivity of teams operating harvesters and forwarders;
2. Measurement of amounts of tops and branches extracted or left in the forest;
3. Interviews with machine operators, forest owners and team leaders about the possibilities to increase efficiency; and
4. Dissemination of 'best practices' to forest owners, forest entrepreneurs, forest contractors and machine operators.



Extraction of tops and branches in Uppvidinge.

The ultimate aim of the SIMWOOD pilot project is to increase the mobilisation of forest fuel from clear cutting areas in Småland in two ways:

1. in quantity from 50% to 75% of forest residues in every clear cutting area by 2020 (three years after the end of the SIMWOOD project); and
2. in the number of forest owners, carrying out extraction of forest fuel from harvesting of clear cutting areas, by 25 percentage units by 2020, compared with 2013.

Video

Besides the final report of the pilot project, including a report from monitored forest residual extraction operations, a video was produced showing various practical working operations for machine operators. The video was produced for a general audience, with some parts produced with machine operators as the main target group. The Swedish version of the video has been viewed more than 4500 times since its release. An English version of the video is also available:



https://youtu.be/KBn4e_5otYA

Bilateral cooperation

The Swedish SIMWOOD partners took part in two bilateral cooperations with other members of the SIMWOOD consortium.

Representatives from ESS, LNU and the municipality of Uppvidinge took part in a three-day study tour to southern Germany in September 2016. The tour included visits to a sawmill, an alpine forest, a gasification plant, a forest owner's association, biofuel handling, a producer of

wooden frames for houses and to politicians from the municipality. The tour was part of a knowledge and experience exchange, within the frame of a Regional Learning Lab, through the German partner Bayerische Landesanstalt für Wald und Forstwirtschaft (LWF).



Study tour in Bavaria

In January 2017, Riga Technical University hosted a workshop. The aim of the workshop was to provide an insight into bioenergy within the Swedish Forestry Model and to open the discussion about the long-term profitability and sustainability of using forest residues within the bioenergy sector in Latvia.



Workshop in Riga

Contacts in the region

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