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Overview

In November 2013, 28 organisations from 11 countries (Belgium, Finland, France, Germany, Ireland, Netherlands, Portugal, Slovenia, Spain, Sweden and United Kingdom) began the European collaboration FP7 project **SIMWOOD (Sustainable Innovative Mobilisation of Wood)**.

This four-year project seeks to provide solutions on how to mobilise forest owners, promote collaborative forest management and ensure sustainable forest functions in order to mobilise the present unlocked wood resources in Europe.

We work in **17 regions across Europe**, selected for their high relevance to Europe's wood mobilisation challenge. In our model regions, we have made a detailed analysis of the present situation, and the barriers and challenges for wood mobilisation which currently exist. Now we are working on identifying objectives, developing possible tailor-made solutions, and selecting some to be tested in a series of pilot projects.

In the regions, we have Regional Learning Laboratories (RLLs) as an integral part of the research process. This is linked to existing initiatives in the region, and is collaborative: teaming up with regional stakeholders to obtain fresh findings on the region's specific status quo, chances and proposed solutions.

The final conference – **Solutions for Wood Mobilisation in Europe** – of the project will be held on 12-13 October in Paris. Details of conference at: <http://www.simwood-project.eu/>

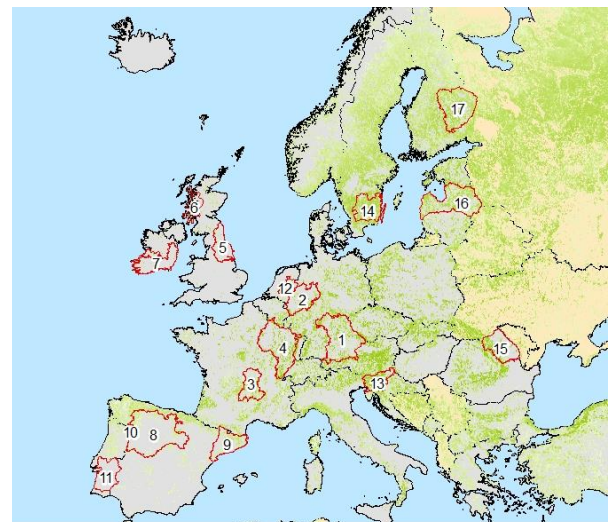
In this issue, we focus on our work in two regions:

- **Lochaber, Scotland (UK)**

- **Småland, Sweden**

We also have a roundup of news from the SIMWOOD regions.

Note that this is the final issue of the newsletter. All issues are available on our website under **Publications**.



1. Bavaria, Germany
2. North Rhine-Westphalia, Germany
3. Auvergne, France
4. Grand-Est, France
5. Yorkshire & North East England, UK
6. **Lochaber, UK**
7. Southern and Eastern Ireland
8. Castile and León, Spain
9. Catalonia, Spain
10. Nordeste Transmontano, Portugal
11. Alentejo, Portugal
12. Overijssel & Gelderland, the Netherlands
13. Slovenia
14. **Småland, Sweden**
15. North-east Romania
16. Latvia
17. Eastern Finland

Focus on Lochaber

Background

Lochaber is an area of great natural diversity, covering over 5180 km² in the West Highlands of Scotland. The area is sparsely populated with a population density of 4.3 inhabitants/km².

Forests and woodland cover 83 877 ha (17%) of the total land area in Lochaber. Even though Scotland has a rich woodland heritage and a very active forestry sector, the commercial forestry in Lochaber focuses on production of timber from Sitka spruce (*Picea sitchensis*) plantations. This leaves a substantial amount of forest that is not currently being managed; almost a quarter of the mapped woodland (19 210 ha - 149 private owners) has never had a grant or a felling licence, and nor do they have long-term management plans in place.



Birch woodland, Glengarry, Lochaber.

Of the total mapped woodland, 30 797 ha (37% of the forest area) in the Lochaber forest district is owned by or leased to the Forestry Commission (the UK government agency responsible for forestry), and 53 080 ha (63%) is in other ownership. Other owners include: The Highland Council, NGOs (the Royal Society for the

Protection of Birds-RSPB, The National Trust for Scotland, The John Muir Trust, The Scottish Wildlife Trust), Communities, Companies, Private Estate owners, Farmers and Crofters¹. Some of the private owners do not live in the area and many of the owners of larger forests contract private companies to manage their forests.

The management objectives for most of the forest area and forest owners are multi-objective, including timber production, amenity, hunting, and conservation. However, the importance placed on each objective varies between owners and forest areas.

The forests are dispersed across the Lochaber district and access to some areas is difficult, if not impossible. Many areas have no road access, and of those that do, the road quality may be inadequate for extraction (there are many single track roads with weight restrictions). In some cases the only access is by boat (e.g. the Knoydart peninsula, and the islands of Rùm, Eigg, Muck and Canna). Much of the forest area is located on steep slopes, requiring a specialist workforce and equipment, increasing the cost of access and extraction.

Another important issue for owners of small forests, is the accessibility of markets. In most cases markets are distant or inaccessible for small woodland owners. The major timber processors based in the region do not purchase small lots.

SIMWOOD's work in the region

Interviews held with a number of stakeholders provide a snapshot of the state of wood mobilisation at the start of the SIMWOOD project.

- Woodland owned by the Highland Council is not managed for production. However, the local community is allowed to remove windblown trees for use as fuelwood.

¹ Crofting is a form of small-scale land tenure particular to the Highlands and Islands of Scotland. The average size of crofts is 5 ha, but can range from ~0.5 ha to ~50 ha.

- the RSPB manages its land specifically for conservation and amenity and carries out no harvesting. Rhododendron clearance and bracken cutting takes place, and they have indicated their interest in managing (thinning) the Atlantic oak woodlands to improve the natural regeneration of oak.
- The Morven Community Woodland manage a small area (6 ha) for conservation, amenity and fuelwood production.
- The Knoydart Forest Trust manages 800 ha forest owned by the Trust and another 250 ha for other private owners. Of the 800 ha, only 400 ha are productive forest (the other 400 ha are largely inaccessible). Under the management plan, 6000 tonnes of timber are harvested, and some additional wood (thinnings, windblow, poor quality) is extracted for fuelwood.
- For some estate owners, the main (and sometimes only) objective is to manage the land for deer stalking.

Pilot project: Living Working Woods – The mobilisation of social, environmental and economic assets of undermanaged and underutilised woodlands

It is in this context that a pilot project was implemented to establish collaborative working to increase the effectiveness of owners and managers of small woodland areas. The methods for achieving this included:

- scoping of the pilot project through a focus study;
- desk-based review of existing technical and economic studies of wood mobilisation;
- a desk-based market survey of available markets for products (with focus on fuelwood) that may be mobilised from small woodlands across Lochaber; and
- a series of demonstration events involving a variety of stakeholders.



Demonstration event, Glengarry, Lochaber.

The pilot project demonstrated, in principle, the economic viability of managing small woodlands in Lochaber. Feedback at the events indicated that there is a willingness amongst stakeholders to look at novel approaches, and an acceptance that collaborative working could be an effective way to enable this. Over the course of the pilot project – through the interviews, workshops and other events – a change in attitude towards management was observed. The participants actively engaged in the process to establish what could be done to support them bringing their woodlands into management and delivering more products to markets.

Commercial forestry in Lochaber is managed by the larger forestry companies who often cannot tackle smaller parcels cost-effectively; they do not have appropriate equipment and it takes too long to market small lots. However, there are an increasing number of contractors offering alternatives to the traditional large-scale harvesting and extraction methods. Working with these contractors and woodland owners and managers, and on the principle of economy of scale, the SIMWOOD pilot project examined different models of collaborative working to assess which models have the ‘best fit’ in Lochaber, ensuring that mobilisation is sustainable, economically viable and is practical given available resources (including availability of labour, experience and equipment). This also involved discussion with other regions engaged in SIMWOOD to assess how they resolve similar

issues with respect to small, remote, fragmented areas of undermanaged woodland.

Based on outcomes of discussions within the pilot project, it is proposed that a 'shared forester' approach will be taken to improve economy of scale for harvesting, extraction and marketing, working with appropriate partners to deliver the objectives of the range of woodland owners.

Another outcome of the work within SIMWOOD has been the development of a follow-on project. The project has been designed by the Small Woods team to reflect the input of the consultation carried out through the Pilot Project. In particular, it will look to establish a collaborative working approach to establish a range of pathways to the improved and sustainable utilisation of the currently undermanaged small woodlands across Lochaber and the rest of the UK.

Contacts in the region

The SIMWOOD local team includes

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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

The SIMWOOD local team includes

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Regional News

Castile and Leon Region

The pilot project 2 in Castile and León region focusses on the contrast of different early-thinning practices in natural regenerated young mixed forest in Urbión Model Forest.

During their final Regional Learning Lab meeting, they collected the perceptions of the most relevant stakeholders, including the regional forest service, local forest managers and Project collaborators, about the outcomes of the pilot project.



Photos by Jorge Olivar / Agresta

iuFOR's latest publications

Last June another four publications on SIMWOOD project were presented by researchers of the Sustainable Forest Management Research Institute at the Spanish National Forest Congress.

Two studies analyzed mushroom productivity under different stand conditions rather in pure and mixed stands; including a simulation with SIMANFOR tool ^{(1) (2)}

In addition, there was an analysis of three forest initiatives in Castile and León and an interesting article about new tools to manage Palencia Model Forest. ^{(3) (4)}

Publications mentioned:

(1) De La Parra Peral, B., Oria De Rueda, J.A., Ordóñez, A.C., Bravo, F., Olaizola, J., Herrero De Aza, C.

Simulación de la productividad de setas bajo distintos escenarios selvícolas y climáticos en la plataforma SIMANFOR

(2) De La Parra Peral, B., Cuesta, J., Olaizola, J., Oria De Rueda, J.A., Pando, V., Bravo, F., Herrero De Aza, C.

Influencia de la intensidad de claras en la producción de setas comestibles comercializables en masas puras y mixtas.

(3) Aurenhammer, P., Olivar, J., Sabín, P.

Análisis de tres iniciativas forestales en Castilla y León mediante el método analítico centrado en los actores: Papel de los actores implicados, preferencias e implementación

(4) Herrero, C., Martínez, A., Barcenilla, C., Cuesta, J., Parra, B., Bravo, F.

Nuevas herramientas para la gestión en el Bosque Modelo de Palencia.

Forest Inventory-based Projection Systems for Wood and Biomass Availability

S. Barreiro, M.J. Schelhaas, R.E. McRoberts, G.

Kändler, 2017. Forest Inventory-based Projection Systems for Wood and Biomass Availability.

Managing Forest Ecosystems, vol 29. Springer, Cham ISBN: 978-3-319-56199-8

<http://dx.doi.org/10.1007/978-3-319-56201-8>

Who to contact for more information

If you would like to become involved in our Regional Learning Labs, please contact the coordinator for your region. You can find them on the SIMWOOD website: www.simwood-project.eu/contacts.html

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