

Contents

- [Overview](#)
- [Focus on Alentejo \(Portugal\)](#)
- [Focus on Catalonia \(Spain\)](#)
- [Regional news](#)
- [Contact information](#)

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.

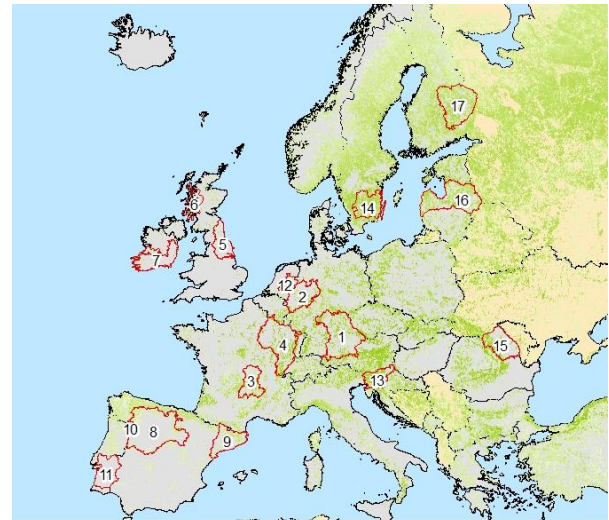
We work in **17 regions across Europe**, selected for their high relevance to Europe's wood mobilisation challenge. In our model regions, we have made a detailed analysis of the present situation, and the barriers and challenges for wood mobilisation which currently exist. Now we are working on identifying 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.

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

- **Alentejo, Portugal**
- **Catalonia, Spain**

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



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 Alentejo

Background

The Alentejo region is located in the south of Portugal with a total area of 3 160 500 ha (34% of the total land area of Portugal).



Map of Portugal with the Alentejo region marked in red

With the exception of some small mountains Alentejo is a flat region predominantly covered with forest and agriculture (45% and 42% cover, respectively). Broadleaved evergreen forest makes up around 72% of the forest area. The main forest tree species in the region are: cork oak (*Quercus suber*-45%); holm oak (*Q. ilex*-27%); eucalypt (*Eucalyptus* spp.-16%), umbrella pine (*Pinus pinea*-6%) and maritime pine (*P. pinaster*-4%).

The northern part of the region is characterised by fragmented ownership, whereas the southern part of the region is characterised by large holdings mainly managed as cork and/or holm oak agroforestry systems. Wood harvesting and extraction take place on a small scale and professional forest management is rare. During the last century, cork oak forests have been directed towards the production of cork. Oak and umbrella pine wood resulting from thinning and pruning have been used as fuelwood by local populations and for charcoal.

Present state and management issues with respect to mobilisation

Although forests are abundant in the region, forest mobilisation has been restricted to eucalypt industrial plantations and maritime pine stands. However, the potential of cork oak for production of high value wood products and the future availability of considerable amounts of thinning material from areas planted during the last two decades led us to investigate: (i) cork oak wood growth and properties; (ii) collaborative forest management between small/medium forest landowners and the forest products industry; and (iii) optimisation of extraction and recovery of wood and biomass (for bioenergy). According to the Portuguese National Strategy for Forests, forests in Alentejo are mainly categorised as 'multifunctional systems' in which non-wood forest products (NWFPs), especially cork and pine nuts, as well as ecosystem services (biodiversity conservation, game, soil and water protection) are important.



Cork oak stand, Alentejo

SIMWOOD's work in Alentejo

Gathering data for an updated characterisation of the forest resources in the Alentejo region was difficult. The data from the Portuguese National Forest Inventory (NFI) is from 2005/2006, and it does not provide the necessary data for all forest types and variables; there is also no data available at the regional level. Therefore, some information is based on the expert opinion of the ISA and ForestFin teams.

Focus Studies

To help address the lack of data, two focus studies were carried out. The first focus study aimed to: (i) quantify the amount of wood available by species; and (ii) understand the level of wood utilisation by the forest-based industry in the region. The quantification was made using commonly used management models. The majority of available wood is from eucalypt plantations; eucalypts occupy 16% of the forest area but account for 76% of the total wood produced per year, most of which is used outside of the region. From the survey of local industry, it was found that 67% of the wood consumed locally comes from outside the region. There is no direct relation between the forest area and the wood availability because most of the forest area is used to produce NWFPs; it is actually legally forbidden to harvest the wood from species like cork and holm oak. Without the legal restriction on felling of these species, new models of forestry could be developed and implemented to allow the production and use of wood by local industry.

The other focus study quantified the annual economic impact of NWFPs and services (hunting and ecotourism) to understand their importance in the region and the possible impact of an intensification of wood mobilisation on those activities. Production of cork and umbrella pine nuts are the most economically important NWFPs, with resin from maritime pine (used in the manufacture of a variety of products, including soap, paint, varnish, shoe polish, lubricants, linoleum and roofing materials) and mushrooms of less importance. Over the last decades, resin production has declined as the value of the resin has also declined. More recently (since 2010), the price (and production) of resin has increased; this trend is expected to continue. Ecotourism is an important source of income, bringing in about €26 million per year to the region. The importance of hunting was difficult to quantify due to the diversity of existing situations, but it is an important source of income in some areas. Most stakeholders associated with provision of these

products and services considered that an increase in the area of intensively planted areas with species like eucalypt and maritime pine would disturb the existing equilibrium and decrease the profitability of the NWFPs and services.

Pilot project: Increasing the availability of eucalypt and maritime pine wood through management and afforestation in the Alentejo region

The demand for wood from eucalypts and maritime pine is expected to continue increasing. However, the high costs for site establishment and other silvicultural operations also discourage private landowners from: investing in new areas; improving forest management approaches (FMAs); and replacing non-productive stands (e.g. eucalypt stands that have been maintained for four or more consecutive rotations and in which yields of wood are declining). Many private landowners lack knowledge of the best management practices. Therefore, the aim of the Alentejo pilot project is to increase availability of wood from eucalypts and maritime pine through afforestation and forest management using a 'sustainable intensification' concept, which requires forest managers to have a high degree of knowledge and skill.



Pruning in an umbrella pine stand

To achieve this, the ISA and ForestFin teams invited stakeholders (forest owner associations; private forest owners; forest industry, non-

governmental organisations; research; public administration; small- and medium-sized enterprises) to participate in a meeting (Regional Learning Lab – RLL1) on 14 October 2014. The first step consisted of identifying the main barriers and opportunities to increase wood availability and mobilisation. Three potential ways to increase wood mobilisation were identified: (i) improve management in existing maritime pine and eucalyptus stands; (ii) increase the forest area; (iii) use of wood from species not traditionally used for wood production (such as cork and holm oaks and umbrella pine). The ISA team are using the management driven stand simulator *StandsSIM.MD* implemented in a user-friendly interface *simfLOR* to run simulations comparing the different levels of wood harvested when efficient and inefficient FMAs are used.

A second stakeholder meeting (RLL2) took place on 12 October 2015. The work plan was presented to stakeholders and the simulator *StandsSIM* was described. *StandsSIM* outputs comprise a cost-benefit analysis of alternative FMAs and a set of sustainability indicators, which will help promote the adoption of new improved management or the plantation of new stands. During the workshop stakeholders were asked to describe the FMAs currently used in Portugal using the *simfLOR* platform so that comparative runs could be made using the tool and be presented at a third stakeholder meeting, on 25 October 2016 (RLL3), to promote the discussion on FMAs.



Second Regional Learning Lab (RLL) with stakeholders

The feedback from the meetings was not sufficiently detailed concerning the definition of currently practiced FMAs. Consequently an extra workshop (RLL4) will be held to understand the reasons behind the lack of feedback from stakeholders, and to propose a simpler FMA description approach. Any change in attitudes towards adoption of more efficient FMAs will be evaluated through a questionnaire that will be distributed at the fourth stakeholder meeting (RLL4). This information will be used to define the alternative scenarios (set of future values for a series of drivers such as: demand for wood and non-wood products; afforestation rates and other land use changes; anticipated fire occurrence; forest policy measures; etc.), which will be used in the *StandsSIM* model to assess the potential wood availability in the Alentejo region under a more efficient forest management.

The results of the SIMWOOD project will be disseminated through agro-related web portals, and articles in national magazines.

Reference

Barreiro S., Rua J., Tomé M. 2016. StandsSIM-MD: a Management Driven forest SIMulator. *Forest Systems* 25(2): eRC07.
<http://dx.doi.org/10.5424/fs/2016252-08916>

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Focus on Catalonia

Background

Catalonia is an autonomous community of Spain located in the northeastern corner of the country. The total land area is 3.1 million ha and the population is 7 million (226/km²). More than 30% of the land area is protected. The total area of forests and other wooded land is more than 1.3 million hectares, of which 0.48 million ha is productive forest (15% of total land area). One million ha of the total forest area and 0.38 million ha (80%) of the productive forest area are privately owned. In general, the forest area is located on the steeper slopes and stonier soils and subject to water stress in summer. Consequently most of the forest area has low productivity (about half of the forest area has an annual productivity of <math><2\text{m}^3/\text{ha}</math>) and is at high risk of fire.



Distribution of forest in Catalonia: dark green—forest; light green—other forest land (mainly shrubs and grassland).

Catalonia has a varied topography with elevations ranging from sea level to more than 3000 m a.s.l. in the Pyrenees. The Mediterranean coast is characterised by mild winters and dry and warm summers, while mountain areas have wetter and cooler summers and harsher winters.

The distribution of tree species follows a climatic gradient: the southern and coastal forest areas are dominated by Mediterranean species like holm oak (*Quercus ilex*), cork oak (*Q. suber*) and Aleppo pine (*Pinus halepensis*); Spanish black pine (*P. nigra* subsp. *salzmannii* var. *salzmannii*) and downy oak (*Q. pubescens*) are present in mid-altitude sub-Mediterranean areas, with beech (*Fagus sylvatica*), Scots pine (*Pinus sylvestris*) and sessile oak (*Q. petraea*) occurring in cooler and wetter areas; at the higher altitudes, mountain pine (*P. uncinata*) and silver fir (*Abies alba*) are dominant.

The main barriers to increased wood mobilisation are:

- fragmented ownership – there are 222 000 non-industrial private forest (NIPF) owners with more than half of these owning less than 1 ha and only about 10 500 owning >25 ha – the average size of private forest holdings is 7 ha;
- lack of organisation of forest owners;
- weak forest products industry;
- lack of investment in road infrastructure;
- lack of investment in machinery;
- high risk of investments due to low forest productivity and high fire risk.

However, there are also opportunities:

- the growing stock in Catalonian forests is accumulating by 2 million m³ per year and so there is a large underutilised potential – perhaps up to 1 million m³ per year;
- new forest machinery could enable the harvesting and extraction of timber on steep slopes;
- collaborative initiatives to jointly manage private forests could improve profitability;
- development of the pellet industry could push prices lead to improved profitability of private forests.

SIMWOOD's work in Catalonia

Before selecting the pilot projects, a compilation and characterisation of the most relevant and recent experiences in wood mobilisation in Catalonia was conducted. With the help of different stakeholders and regional partners (forest ownership center, forest owner associations, forest research institutes, land stewardship network, biomass cluster, local forest SMEs, forest consortium of Catalonia, forestry and biodiversity technicians of Catalonia government departments and Barcelona County Council), we identified 23 interesting initiatives with objectives such as: (i) promoting a model of integrated management of public forests; (ii) creating a network of production, storage and distribution of forest biomass for energy purposes; (iii) supporting the commercialisation and mobilisation of wood products; (iv) promoting forest biomass as a source of renewable thermal locally-produced energy; and (v) improving the design and width of rides, secondary roads and timber yards.

Analysis of the experiences indicated that:

- there has been an increase in wood mobilisation for energy purposes and the price of woodchips and pellets is expected to rise because current demand is growing compared to other uses;
- wood mobilisation has increased over the past two years because of increased wood harvesting from public forests;
- new forest management strategies are increasingly taking into account their compatibility with forest conservation.

The detailed analysis of these 23 initiatives allowed us to better define the two SIMWOOD pilot projects in Catalonia.

Pilot Project: Singular Forest

In Catalonia, CREAM carried out the 'Singular Forest Inventory' which was aimed at identifying the forests with the highest conservation values in the region. These forests, which represent a small

percentage of the total forest area, are not currently protected by any specific legal entity even though large parts of them are included within protected areas (including Natura 2000). Many of these 'Singular Forests', both public and private, have a forest management plan which allows for timber harvesting. Property rights are becoming a controversial issue in these forests, with questions being raised about whether timber harvesting puts the conservation value of these forests at risk. The aim of the pilot project is to establish a protocol for collaborative, mutually-agreed management of these sensitive forests that reconciles high conservation values with increased wood mobilisation.

In order to elaborate the basis of this protocol, three case studies representing forests with expected wood harvesting and included in 'Singular Forest Inventory' were chosen: an oak forest (Maçanet de la Selva), a chestnut forest with beech trees (in the Montseny Natural Park) and a silver fir forest (in the Cadi-Moixeró Natural Park).



Reconciling high conservation values with wood mobilisation.

Throughout 2015, several field visits and Regional Learning Labs (RLLs) related to these three forests were organised with representative groups of stakeholders with different points of view. The objective was to characterise accurately the different viewpoints and interests that may potentially become a source of conflict when trying to mobilise wood in these forests.

In 2016 different RLLs and workshops were conducted:

- In-depth study of some issues that were jointly identified (with the same profile of stakeholders as in the previous meetings) as significant in order to clarify the future of the pilot project. These issues were related to:
 - the multiple values underlying each forest;
 - legal security for owners and conservationists;
 - implications of leaving the forest to develop on its own;
 - clos(er)-to-nature forest management.
- Discussions about the compatibility of wood mobilisation and maintenance of high conservation values and contrasting the main arguments on a scientific basis.

During the first RLL, stakeholders involved in timber production identified the nature protection policies (more than 30% of the land area in Catalonia is protected) as one of the main barriers to increased wood mobilisation.

Currently, we are writing the protocol and evaluating whether the process could be a useful approach to avoiding conflicts and enabling more timber to be sustainably mobilised in protected areas.

Pilot Project - Forest of Vallès

The objective of this pilot project was to reinforce the buying and selling chains for woodchips via the promotion of local consumption of primary forest biomass for heat production for the local community. "Forest del Vallès" pilot project takes place in the county of Vallès Occidental (a region including 19 municipalities in the Barcelona Metropolitan Area). The forests (almost 19 000 ha) are dominated by Aleppo pine and are mostly private.

This undermanaged area has relatively low productivity (half of the forest area in Catalonia has an annual productivity of $2\text{m}^3/\text{ha}$) and is

vulnerable to climate change and wildfires. In this context, this pilot project aimed to reactivate forest management and wood mobilisation by preferentially acting in those areas where the fire risk is higher and involving most of the stakeholders of the entire wood chain of Vallès Occidental. The pilot project aimed to reinforce the links between forest owners (most of them living very far from forests), wood dealers, forestry services companies, woodchip manufacturers, equipment installers and energy providers.



Stakeholder workshop – Forest of Vallès

The pilot project was aligned with the *Strategy to Promote the Use for Energy of Forests and Agricultural Biomass (February 2014)* and the *General Forest Policy Plan (2014–2024)* developed by the Government of Catalonia. However, for an optimal implementation it also considered the recently approved *Action Plan for Improving Air Quality (2015-2020)*, which affects special areas for the protection of the atmospheric environment in several municipalities of the county of Vallès Occidental.

In order to implement this pilot project, CREAM and the Consell Comarcal del Vallès Occidental (CCVOC, the county governing body) signed an agreement which expires in 2017. Within the frame of this agreement, a number of RLLs, seminars and field trips were organised with a wide range of stakeholders during 2015 and 2016. During the events, barriers to increased wood mobilisation were discussed and analysed. Field trips were also organised to introduce municipal

technical staff to timber harvesting and forest fire prevention techniques.

Currently, the construction of a logistics center for the production and supply of local forest woodchips is coming to an end. Once finished, the center will supply woodchips to two large boilers promoted by the CCVOC. The annual consumption of woodchips is expected to be around 3000 tons. This will provide a sustained market for woodchips and provide a boost to the local wood sector.

This pilot project could provide a good example for other Mediterranean areas on how to integrate wood mobilisation, forest management practices and prevention of fire.

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News from other SIMWOOD Regions

Ireland: FEL hosts events showing integrated harvesting to forest owners and professionals

Veon, formerly Forest Enterprises Limited, held a SIMWOOD event on a 'first-thin' forest in the midlands of Ireland on 18 November 2016.

The forest was planted in 1998 with Sitka spruce/Japanese larch, Norway spruce and oak/Scots pine. It is a highly productive forest with a broad range of issues of interest to forest owners – typical of many forests in the region. These included thinning of highly productive Sitka spruce and Japanese larch where larch is poorly formed, thinning of Scots pine in an oak plot, and thinning of highly productive Norway spruce. The event also looked at road and bridge construction. Demonstrations were given of harvesting, forwarding and chipping by the forestry contractor – Worrell Harvesting.

A total of 45 forest owners attended the event. Almost half of the forest owners had been to harvesting events in the past. However, 80% said they had not yet thinned their plantation, the main reason being that they had not yet constructed a road into their plantation. As a result of attending the event, 90% said that they would be encouraged to thin, citing increased revenue and knowledge as the main reasons.

In the months since this event, several forest owners have decided to thin using integrated harvesting and our foresters are working with them to complete their projects.



On the 24 February 2017, Veon and the Society of Irish Foresters (the professional organisation of foresters in Ireland) will co-host an event focusing on technical/silvicultural issues with the aim of educating foresters so that they can be confident enough to employ this system in forests that they manage.

Latvia/Sweden: Workshop on The role of the forest residues mobilization within the bioenergy sector: sustainability evaluation from Latvian and Swedish perspectives

Thirty-six people attended a workshop held on 24 January 2017 in Riga. The aim of the workshop was to provide an insight about 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.

Forthcoming Events

International Summer School on Forest Planning and Management: Training in New Tools and Techniques, Waterford, 19-23 June 2017

Demonstrations and training in the use of the latest tools and techniques for assisting modern forestry professionals.

<http://www.efiatlantic.efi.int/portal/events/?bid=2566>

SIMWOOD at the Spanish National Forest Congress, Palencia, 26–30 June 2017

The Sustainable Forest Management Research Institute from the University of Valladolid (iuFOR) will present six communications based on work within the SIMWOOD project at the Spanish National Forest Congress in Palencia, 26–30 June.

Three of the presentations deal with technologies: (1) TreeCollect –a mobile app for forest inventories; (2) Smartelo –an app for data management on forest stands; and (3) SIMANFOR –a simulator for forest models.

The other three papers are focussed on field experiences: (4) silviculture alternatives for carbon sequestration in Spanish black pine (*Pinus nigra* subsp. *salzmannii* var. *salzmannii*); (5) a thinning test in a mixed Scots pine (*Pinus sylvestris*)/ Pyrenean oak (*Quercus pyrenaica*) forest; and (6) the relationship between social status and thinning intention of forest owners.

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SIMWOOD Final Conference, Paris, 12-13 October 2017

Save The Date
Solutions for Wood Mobilisation in Europe
Final conference of the
SIMWOOD Project
Paris
12–13 October 2017

- Lessons learned from more than 20 pilot projects
- Experiences shared by SMEs
- Demonstration of tools and products to support wood mobilisation
- Panel discussion

www.simwood-project.eu

SIMWOOD
Sustainable Innovative
Mobilisation of Wood

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Recent Publications and Articles

Pérez, F., Nunes, L., Azevedo, J.C. 2016. A software tool for accurate assessment of costs and CO2 emissions in wood transport using OpenStreetMap@. Math. & Comp. For. & Nat. Res. Sci. 8(1):35–53.

<http://mcfns.com/index.php/Journal/index>

Barreiro S., Rua J., Tomé M. 2016. StandsSIM-MD: a Management Driven forest SIMulator. Forest Systems 25(2): eRC07.

<http://dx.doi.org/10.5424/fs/2016252-08916>

Who to contact for more information

If you would like to learn more about the SIMWOOD project activities in your region, please contact the local coordinator:

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The next issue (#8 May 2017) of the SIMWOOD newsletter will contain articles on the SIMWOOD model regions of Lochaber (UK) and Småland (Sweden). Other contributions are welcomed and should be sent to Tim Green tim.green@efi.int