

PROJECT FINAL REPORT

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Contents

1.	Final publishable summary report	4
1.1.	Executive Summary	4
1.2.	Summary Description of project and objectives	5
1.2.1.	Project context	5
1.2.2.	Project objectives	8
1.3.	Description of main S&T results/foregrounds.....	9
1.3.1.	European summary report of regional wood mobilisation challenges.....	9
	Forest ownership factors influencing wood mobilisation	9
	Forest governance factors influencing wood mobilisation	10
	Forest management factors influencing wood mobilisation	11
	Forest function factors influencing wood mobilisation	12
	Forest harvesting factors influencing wood mobilisation	13
	Focus Studies	16
1.3.2.	Do interventions to mobilise wood lead to wood mobilisation.....	18
1.3.3.	Regional Pilot Projects' added-value for wood mobilisation	19
1.3.4.	Modelling effects of mobilisation in Model Regions.....	28
1.3.5.	SIMWOOD Information System.....	31
	Knowledge base	31
	Expert system	31
1.3.6.	European Manual of integrated wood mobilisation solutions	32
	Concepts and definitions used in the handbook.....	32
1.4.	Potential impact and main dissemination activities and exploitation results	35
1.4.1.	Regional Profiles and identification of key factors influencing wood mobilisation	35
1.4.2.	Involvement of key stakeholders in Regional initiatives and activities.....	36
1.4.3.	Evaluation concept for Wood Mobilisation Initiatives.....	37
1.4.4.	Regional Pilot Projects' added value for wood mobilisation.....	37
1.4.5.	Contribution to pan-European up-scaling and EU policy programs.....	38
1.4.6.	The Dissemination Exploitation Strategy and Plan led to successful dissemination activities	39
1.4.7.	Overall impact of SIMWOOD beyond project borders.....	39
1.5.	Address of project public website and relevant contact details	43
1.5.1.	Website	43
1.5.2.	Contact	43
27.02.2018	Final Report	2

List of figures

Figure 1: Step by step Implementation process during the SIMWOOD project	20
Figure 2: SIMWOOD Pilot Project Evaluation Framework	22
Figure 3: Map of the Pilot Projects distributed over 14 European regions.....	23

List of tables

Table 1: Summary of key factors influencing wood mobilisation	15
Table 2: Focus studies conducted in the Regions.....	16
Table 3: Pilot Project title and regional location throughout Europe	24
Table 4: Summary of simulation results in the Model Regions.....	30

1. Final publishable summary report

1.1.Executive Summary

The European wood mobilisation problem has been addressed in many studies, projects and initiatives. However, the ongoing rather narrow initiatives are not likely to fill the gap between the future timber supply and demand. Innovative approaches to overcome the present barriers for wood mobilisation are urgently required. The main barriers impeding a widespread wood mobilisation in forestry are not only of a technical nature, but are also to a large extent of a socio-economic nature and are dependent on the motivation of a multitude of forest owners and other stakeholders.

The overall goal of this project was to promote collaborative wood mobilisation in the context of multifunctional forest management across European forest regions. The project proposed a novel integrated approach by addressing the five domains in wood mobilisation - governance, ownership, management, harvesting and functions - at the same time.

SIMWOOD's common RTD methodology was jointly developed by the partners and followed three phases carried out simultaneously in all Model Regions:

- Regional Profiles of wood mobilisation. After a detailed analysis of the current situation in the Model Regions, the identification of the barriers, opportunities and objectives and possible tailor-made solutions were developed together with stakeholders in "Regional Learning Laboratories". Relevant knowledge gaps were closed by focus studies.
- Regional mobilisation strategies and integrated evaluation. The information gathered was critically evaluated. The emerging strategies were discussed and the proposed solutions were selected to be tested in Pilot Projects (PP).
- Feasibility and demonstration. Twenty-two Pilot Projects were initiated to test the proposed tailor-made solutions for an increased sustainable wood mobilisation. With support of the research partners, the SME partners kick-started the projects in the regions.

In addition to the work in the Model Regions the project also carried out a literature review of past work on wood mobilisation, defined an evaluation methodology to be used in the Pilot Projects and modelled different wood mobilisation strategies for each of the Model Regions.

The main outputs of SIMWOOD comprise

- ➔ The European summary report of regional wood mobilisation challenges (D2.2);
- ➔ The Regional pilot added-value for wood mobilisation, Synthesis report (D4.3);
- ➔ The SIMWOOD Information System targeting regional and European stakeholders (D5.2);
- ➔ The SIMWOOD Policy Brief (D6.3);
- ➔ The European manual of integrated wood mobilisation solutions (D6.4) (Handbook).
- ➔ An important scientific review of the subject of wood mobilisation (to be published soon)
- ➔ Modelling has confirmed that 30 % of the extra potential for wood mobilisation in 11 Model Regions could be obtained with 'easy' or 'medium' effort.

All public results are openly accessible on the project website www.simwood-project.eu and in the SIMWOOD Information System <https://simwood.jrc.ec.europa.eu>.

SIMWOOD was funded by the European Commission's FP7 programme from 11/2013 until 10/2017 under grant agreement no. 613762. It included 18 (19 until 10/2017) institutional organisations (incl. two associated partners) and 11 SME partners from 13 countries.

1.2. Summary Description of project and objectives

1.2.1. Project context

Forests, wood markets and unused resource potentials

Forests cover 159 million hectares or 37% of Europe's land area (Eurostat 2013). They are a major biological resource of Europe and fulfil multiple functions in ecological, economic and social dimensions. Besides preserving diverse landscapes, ecosystems, natural cycles and the biological diversity, they also represent the backbone for production and employment in forestry and numerous industries that all use wood as primary raw material. The collectively termed 'forest-based sector' embraces manifold material (or 'solid'), energetic and chemical uses of wood. It represents a major pillar of the economy that is comparable in size to other large producing sectors. Europe's forest-based industries represent around 4–5 million employees, around 600,000 enterprises and an annual turnover of 550 billion Euros.

The sector's forecasts for the coming decades predict a substantial increase of the demand for wood: 'Solid' uses will grow steadily, while new chemical uses of wood will emerge and start to gain momentum. The highest growth in demand in the medium term is expected to come from the bioenergy segment. Wood energy plays a critical role in Europe's future renewable energy supply and the achievement of climate protection objectives.

These trends are expected to lead to a relative scarcity of wood, stronger competition and dynamic structural shifts in the forest sector, which is dependent on a stable and secure supply of biomass raw material from forests.

Europe's forests hold a considerable unused potential of wood resources. Research is progressing to better understand the available wood potentials both at national and European level. Yet these figures remain mostly theoretical and cannot assess the technically accessible and mobilisable amount of wood under market conditions. It is however broadly acknowledged that forest utilisation can be increased considerably, because current harvesting levels are generally below the margin of sustainable allowable cuts.

Forest owners as key actors in wood mobilisation

Key to unlocking the wood potential is the willingness of a large number of public and private forest owners to engage in an increase in forest harvesting and related uses. The majority of the industrial timber as well as other wood and non-wood products in Europe are sourced from an estimated 16 million private forests owners, the majority of whom are individuals and families. Because their forests are often under-utilised, they represent a significant opportunity for increasing the proportion of wood that is harvested and used.

Forest ownership is changing. Rural owners, together with their capacity for actively managing their own forests, are declining. The new generation of forest owners lives a more modern urban lifestyle.

These new owners are often disengaged from their forests and have objectives other than timber production for their forests.

To ensure that the wood from these forests is to reach the desired market, a larger group of regional actors in the wood supply chain has to be involved. Professional foresters, forest entrepreneurs, wood industries and members of local authorities and communities all have important roles to play in enabling extended forest use. Their collective knowledge of drivers in wood mobilisation and their input into identifying suitable solutions is essential.

Forest governance and the role of regional initiatives

Today's increasing societal concern for the environment has led to criticism of a mainly economic oriented forest use. More than ever the sustainable forest management concept is requested to guarantee and incorporate ecological and social functions, balance the impacts of forest use and extend its 'portfolio' with the provision of other goods and services (i.e. multi-functional forestry).

In response to this societal demand, forest governance needs to align social, economic and official state driven activities to guide and control peoples' interaction with forests. It has become the leading approach in international forestry in this context. Following a cycle of policy making and implementation towards 'good' forest governance and sustainable forest use, forest governance initiatives work towards a balanced compromise between all parties.

Attempts to integrate other stakeholders that are not related to forestry (e.g. environment or recreation interest groups) by participatory approaches are gaining more and more importance. Therefore, beyond the technical improvement of 'classical' forest management, novel wood mobilisation approaches inevitably require a wider inclusion of stakeholders' opinions in forest policy.

Europe's forest regions are generally determined by ecological forest formations, yet they also belong to and represent an important element of socio-cultural regions. Such local initiatives can function as a gatekeeper to a broader range of stakeholders and a multiplier of innovative solutions within a region.

Main barriers and research needs

a) Socio-economic barriers

The changing demography of forest ownership indicates a gradual shift from 'traditional' to 'urbanised' forest owners and presents one of the main challenges to wood mobilisation. 'Urbanised' owners (the numbers of whom are increasing) often lack a direct relation to the natural resource forest and an understanding of the need for active forest management. The changing ownership pattern is also leading to an increased fragmentation of forest holdings; almost two-thirds of European private forest holdings occupy less than 1 hectare of land. Consequently, a decreasing number of forest owners have timber production as their primary goal. Investigating the objectives and motivations that influence the decisions of different forest owner groups is paramount to understanding the implications of these for mobilisation and to identifying effective, targeted policies.

Equally important are the economic environment and viability of forest management in which (private) forest owners operate, often characterised by marginal or unstable income situations. Hence, even

among those owners pursuing timber production objectives, the financial returns (or lack of) from engaging in wood mobilisation can act as a barrier. New practices have to offer economically viable solutions; therefore mainly collaborative forest management approaches offering economies of scale and risk-sharing mechanisms are the focus of the research and policy development.

In the end, achieving greater wood mobilisation in a sustainable fashion requires greater useable knowledge and education transfer towards forest owners and other stakeholders. In the context of rural environments with a decreasing number of skilled operators and forest owners often lacking the needed forestry knowledge, novel ways and means to attain the target group have to be explored.

b) Technical-logistical barriers

Managerial, technological and logistical barriers in forestry are related to the increasing land and ownership fragmentation of forest properties. The small holding size has far-reaching implications for the economically viable management of the forest, because harvestable wood quantities are too small to reach any market. Grouping of neighbouring holdings is an option, but a tedious procedure and often results in a mix of products with comparable marketing problems.

Furthermore, access to infrastructure and communication becomes also more complex when a greater number of owners is involved. Therefore, efforts of grouping and collaboration for a mutual benefit need to be undertaken at a larger scale, and related costs must be balanced with additional revenues obtained when wood is sold.

The potentially mobilisable wood resources are often located in forest stands that are more difficult to access and harvest (e.g. remote areas with sparse road network, steep or rocky terrain). Appropriate technical harvesting solutions do exist, but are still too costly to be adopted widely. Underdeveloped harvesting logistics with considerable investment needs represent another obstacle. Technical barriers are often economical barriers and require viable market-oriented solutions as the first priority.

The technical barriers have also a social dimension: The extent of harvesting impacts is dependent on the type of machinery, harvesting system, and applied working methods. The acceptability of a particular harvesting operation by forest owners however relates strongly to the subjective, 'visual' impression that the operation literally leaves on the ground (e.g. supposed soil 'destruction' of wheel tracks, etc.). Reduced impact logging systems have recently made notable progress (e.g. low ground pressure of machinery), yet a widespread uptake is hampered by a lack of understanding and acceptance among forest owners and harvesting entrepreneurs. Therefore, an improved knowledge transfer of environmental friendly methods towards the target groups is essential.

c) Environmental requirements as 'barriers' for wood mobilisation

Forestry impacts ecological functions in ecosystems up to the landscape level. Although sustainable forest management is in principle adopted broadly, thus assuming a low level of impacts, the medium to long-term effects of many forestry processes are still poorly understood in relation to most forest ecosystems. This is particularly relevant considering the importance of maintaining the integrity of ecosystems and landscapes in order to guarantee the provision of ecosystem goods and services upon which the society relies.

Besides its main purpose - a stable wood production - multifunctional forestry has to ensure a variety of other forest functions. A growing societal demand for non-economic ecosystem services and wider nature conservation, and the still unpredictable impacts of the climate change (more frequent occurrence of disastrous weather events are probably only the first tangible effect) only increase the complexity of this challenge further. A core component of novel solutions of adaptive silviculture are therefore a permanent monitoring of the effects of forest management on the multiple forest functions, performed at several temporal and spatial scales within any sustainable wood mobilisation strategy.

1.2.2. Project objectives

SIMWOOD - 'Sustainable Innovative Mobilisation of Wood' - proposes a novel approach to wood mobilisation by addressing the main socio-economic, technical and environmental barriers in an integrated manner. The SIMWOOD overall goal is to promote collaborative wood mobilisation in the context of multifunctional forest management across European forest regions.

The 'SIMWOOD Information System' will develop a novel, cross-regional, pan-European monitoring and policy support information system with modern communication tools for targeted outreach to forest owners and other stakeholders.

The project focuses on the following objectives:

- Understand the current and future motivation of forest ownership in Europe
- Promote forest governance and joint action of stakeholders in the regions
- Develop innovative silvicultural and multifunctional forest management practices adapted to the different regions and forest types in Europe
- Integrate forest ecosystem services minimizing environmental impacts
- Establish improved forest harvesting techniques and technologies adapted to the different regions and forest types.
- Demonstrate effective solutions of collaborative regional initiatives
- Recommend tailor-made solutions for applied instruments and incentives of wood mobilisation to policy makers on EU and national level
- Broad outreach and exploitation of results in the project Model Regions and other regions in Europe

1.3. Description of main S&T results/foregrounds

1.3.1. European summary report of regional wood mobilisation challenges

The 17 SIMWOOD Model Regions were selected to represent a range of forest types and a range of experience in forest governance and wood mobilisation. They were also considered to share the common trait of having a strong potential for further wood mobilisation. A cross-regional synthesis of the information provided in the regional profiles confirmed that a range of forest types is represented in the regions. In some, plantations dominate; in others, natural forests are most common. The sites on which the forests are found also vary; in some regions these are predominately found on steep slopes, in others they are typically found on flat ground. Despite these differences the regions share common factors that influence wood mobilisation. These factors are summarised below by domain.

Forest ownership factors influencing wood mobilisation

(Áine Ní Dhubháin, NIUD-UCD, Ireland)

Forest fragmentation was identified in many of the Model Regions as a factor influencing wood mobilisation (Table 1). In particular, the small sizes of the forest properties and the consequent large number of owners posed a challenge to wood mobilisation in many of the Model Regions (i.e. Grand-Est, Slovenia, Catalonia, Overijssel & Gelderland, Nordeste, Bavaria). In North-Rhine Westphalia the effect that such fragmentation has on diluting the economic role of forests was alluded to and was considered to lead to irregular or no management in some instances. Joint ownership was considered to hinder forest management in Slovenia. The size distribution was also identified as very important in the context of wood mobilisation in Småland. Forest size was also identified as important in Grand-Est as there are sometimes legal threshold levels for the requirement to have a management plan.

The challenges that the growing disconnection of owners to their forests raise for wood mobilisation were also highlighted. In some Model Regions this was referred to as spatial detachment (e.g. in Grand-Est) where owners usually do not live in the region where their forests are located. The spatial detachment makes it more difficult for them to manage their forest and also makes it more difficult to contact them. The emotional detachment of owners was also highlighted in North-Rhine Westphalia where the “new” forest owners’ motivation with regard to harvesting was not known. A general lack of knowledge (even amongst owners themselves) of what forest owners objectives are for their forests was also highlighted. The significant role of owners’ objectives was also identified in Bavaria (willingness of – various types of – forest owners and other actors).

In conjunction with this increasing spatial and emotional detachment is the lack of forestry knowledge and skills among owners. In Grand-Est the belief that private forest owners often do not know how to manage their forest and don’t know who to ask for help was identified as a challenge for wood mobilisation. A similar lack of forestry knowledge among non-industrial private forest owners (NIPF) in South-Eastern Ireland and in Småland was highlighted. In Ireland the NIPF owners are first time forest owners and their forests are also new; in other Model Regions the forests may have been in the family for generations but the owners are “new” and don’t have the traditional knowledge of forest management. Something similar is highlighted in Nordeste where the lack of forestry tradition in the region arising from the relatively recent afforestation with softwoods was identified as a factor influencing mobilisation.

The ownership factors interact to influence mobilisation. The fragmented and small-scale nature of private forests was considered to discourage owners from investing in technical equipment and further reduce the likelihood that owners would work in their forests resulting in a loss of skills in forest practices among owners.

The age of owners was considered to have an important influence on wood mobilisation in South-Eastern Ireland. In the region essentially all private forest owners are “first-time” forest owners who have established their forests in the past 30 years; they were typically aged 50+ years when they established their forest, so will be 70+ years when they are expected to thin their stands for the first time; it was considered that they may not have the energy or the motivation to get their stands harvested.

Forest governance factors influencing wood mobilisation

(Bianca Ambrose-Oji and Anna Lawrence, FCRA, UK)

Several factors related to the governance domain, particularly in terms of advisory systems and effective communication between stakeholders were noted as impacting on wood mobilisation. Those specifically mentioned were, the:

- Lack of, and consequent need for, more owner associations (Catalonia, Slovenia);
- Complexity and number of regulations (North-Rhine Westphalia, Gelderland-Overijssel) and / or incentives impacting on forest management (England);
- Legislation that has a very direct impact on mobilisation by restricting harvest volumes, and harvesting on sites without approved management plans (Nord-East Romania; Latvia);
- Lack of management / management plans, which reflects weak advisory systems (Castile and León) or poor forestry knowledge and clear management objectives among owners (Ireland);
- Need for better communication strategies so that information is better targeted towards forest owners and what they need or want to know about in a format that suits them best: this could be related to reliance on old-fashioned models of forest extension rather than more contemporary knowledge exchange and participatory approaches (Grand-Est, Castile and León, Ireland);
- Need for trust to be built through better communication and relationships so that different cultures and traditions among forest stakeholders are overcome and forest owners and forestry professionals interact more comfortably (Grand-Est);
- Under resourced state forest services, or lack of alternative forest management services (North-Rhine Westphalia);
- Lack of industry organisation leading to issues such as weak supply chains etc (Slovenia);
- Lack of expertise among forestry professionals (Nord-East Romania).

There are two other connected areas of influence that are worth noting, i.e. economic and cultural. Many of the factors considered most important in influencing mobilisation are economic, e.g. markets, costs, uncompetitive processing sector. Solutions to overcoming these barriers, such as policy or market intervention might also be considered under the remit of ‘governance’. Cultural factors are mentioned in many of the regions and are particularly about:

- Lack of a wood harvesting culture amongst owners, or a decline in wood harvesting tradition, so that owners are just not aware of nor imbued with understanding of woodland management and harvesting;
- and, to a lesser degree, a prejudice against felling amongst ‘the public’ which means that there can be local opposition to harvesting operations, which influences owner actions.

However, all the factors listed above vary by region. For example, some regions note that there is a strong tradition of forest management (e.g. Grand-Est). On the issue of legislation, rather than being considered negative, in Eastern Finland legislation is seen as a positive factor: The Act on the Financing of Sustainable Forestry incentives there recognises the needs of different kinds of (smaller) forest owner, and provides a cost-sharing programme for harvesting on sites where the profitability of harvesting would otherwise be poor due to the site conditions and tree size.

In addition, it is important to note that what is considered relevant to wood mobilisation in one region may not be in another region. For example, in some regions the historic assumption has been that support for the forest management planning will lead to harvesting / mobilisation. However, there is little evidence that it has done so. SIMWOOD research shows the need for more explicit questioning of the intended and actual impacts of wood mobilisation projects.

Forest management factors influencing wood mobilisation

(Felipe Bravo, UVA, Spain)

Between the forest management indicators analysed, the main management factors influencing wood mobilisation are the following:

- Composition and structure of forests
- Silvicultural schemes
- Hazard risks

Composition and structure of forests: Unbalanced age classes (with dominance of young and over mature stands) and increasing importance of mixtures are the main factors that appear in the analysis. The age structure shows clearly the importance of first thinning operations in young stands (including biomass commercial thinning) and late thinning and harvest operations in older stands while the increasing proportion of mixed species stands mean that silvicultural regimes must consider mixed stands interventions. Such interventions traditionally have not been included as regular operations in silvicultural regimes and there is a lack of knowledge regarding them.

Silvicultural schemes: Besides the silvicultural interventions described above and as part of the management regime, the implementation of management plans must be considered a relevant factor for wood mobilisation because the adequate regulation of forestry helps ensure the provision of goods (i.e. timber) and services. The quality and detail of management plans should be discussed at regional level within the framework of national and European regulations.

The relevancy of certification for mobilisation remains unclear but should be considered because certification can help to differentiate (by quality of management) the European timber in the global market (and perhaps facilitating the use of European timber in Europe). However, forest certification is expensive, especially for the individual forest owners. Higher levels of management processes and

procedures are associated with certified forests (this fact should be translated to a better management that provides a higher return).

Hazard/risks: Hazards constitute an unwanted but often very effective factor for wood mobilisation due to salvage operations but this should not be the point for a sustainable wood mobilisation. The key point is, that the lack of silviculture and forest management results in over-mature forest stands that may increase the forest sensitivity to natural hazards. The economic crisis has resulted in a reduction in the demand for solid wood, especially the larger size solid wood, while the demand for wood for biomass and for the board industry has increased. Thinning operations in over-mature stands could help to (1) mobilise wood, (2) increase the resilience against hazards and (3) promote the growth of higher dimension wood that can occupy alternative premium market niches (i.e. veneer wood).

Forest function factors influencing wood mobilisation

(João Azevedo, IPB, Portugal)

Generally, forest functions were not considered as constraints to wood mobilisation in the Model Regions, with some exceptions. For example in many Model Regions it was considered that there might be conflicts between mobilisation and water related functions and services since harvesting options might affect hydrological processes, particularly in streamside forests and forests in steep slopes. Reflecting this view, it was noted in the Bavaria profile that water and soil quality can affect the choice of harvesting methods and therefore the mobilisation potential. In Grand-Est it was also noted that water regulation can constrain forest mobilisation when there is a stream in the stand. In Catalonia harvesting levels are affected in forests that have regulation purposes. It was highlighted in Auvergne that areas that are less suited for forest production become more important for regulation functions. From the perspective of Castile Leon, Gelderland Overijssel, and Småland there are no conflicts although Småland considered that forestry can be affected in a negative way. The remaining regions did not comment on this topic, which might indicate that no conflicts are foreseen there.

Tourism (recreation) is another function where potential conflicts were mentioned by Model Regions, particularly for hunting. Bavaria considered that hunting practices can affect forest ecosystems and outcomes strongly as well as the wood mobilisation potential. The Grand-Est region also considered that hunting can be a constraint for mobilisation but that other touristic activities were not constraints. North-Rhine Westphalia considered that tourism and mobilisation are unrelated. Yorkshire & North-East England mentioned that “tourism related constraints on the harvesting of timber are realistically limited to public access within forest blocks, particularly on public rights of way where the forest works manager and contractor need to be aware of health and safety related issues. For example, footpaths may have to be temporarily closed or diverted whilst felling activity is taking place and/or felling could be restricted to certain times of the day/year”.

For the other functions there were usually no comments made by the Model Regions with the exception of occasional indications that there are no conflicts (e.g., Overijssel & Gelderland and NFWP).

It should be noticed, however, that although Model Regions have not mentioned that expressly, conservation status restricts forest activities in some areas. For conservation, two Model Regions indicated that there are no conflicts with mobilisation (Grand-East and Nordeste). South-Eastern Ireland mentioned very specific restrictions associated with hen harrier SPAs. On the other hand,

Alentejo mentioned that the fact that high biodiversity relies on landscape heterogeneity created and maintained by human activities, including forest management, and land use change, supports the maintenance of these activities as a way to achieve conservation objectives. Although in this region some forest areas might have conditioned management in the future, this will have no significance at regional scale. It was noted in Lochaber that increased mobilisation in the future could provide income to improve the management of designated conservation sites.

Forest harvesting factors influencing wood mobilisation

(Philippe Ruch, FCBA, France)

The income that the forest owner derives from harvesting is directly linked to the harvesting costs and the value of the timber (the wood price). Income is of high importance when it comes to wood mobilisation in many of the Model Regions (Auvergne, Grand-Est, Catalonia, Alentejo, South-Eastern Ireland, Nordeste, Overijssel & Gelderland, Slovenia, Småland). In North-Rhine Westphalia income is also identified as important, but an increase in timber prices alone is not seen as a sufficiently, strong mobilisation factor. In Eastern Finland, one of the key issues is the profitability of the wood harvesting companies. For them, it is not possible to grow due to the low profitability of their businesses, mainly due to the limited duration of harvesting in peatlands. A solution could be to build more multi-purpose machines and machines, which are more suitable for harvesting when the soils have low bearing capacity.

The existence of a valuable market is another main factor influencing wood mobilisation. In North-Rhine Westphalia and Castile & León for example, the markets for hardwoods have to be developed to motivate the forest owners to produce hardwood timber. In the section “**Specific needs for forest types**”, the low market for beech timber was mentioned as a constraint (Bavaria, Grand-Est, Auvergne, Catalonia). In Catalonia, there is a lack of profitability in forest harvesting because of the low added value of forest products. The great majority of harvested wood is destined for the pallet, packaging and particle board industry, all of which are low added value products. A structured market (meaning a better interaction among industries and forest operators) is suggested as a means to improve the efficiency of the value chain in several Model Regions (Catalonia, South-Eastern Ireland, Slovenia). In Latvia, a substantial wood mobilisation factor is the present and the future tree species composition and proportion in the forests. Indeed the market demand and prices are not equal for all the tree species.

Logistics is an important issue in wood mobilisation. No access means no wood harvesting (or very high harvesting costs). Only three regions mentioned logistics as a main barrier. In South-Eastern Ireland, where most forests are first generation, they do not have the required access. Road building has actually dropped in the last couple of years in this region (as a result of a reduction in the State-subsidised roading grants) compared to what should have been roaded. In Catalonia, the harvesting costs are high, because of some additional operations –i.e. forest road maintenance, shrub cleaning, pruning, transport limitations, etc. A shortage of forest towing paths and forest roads is a problem in Slovenia. One of the first steps in wood mobilisation is to create a relevant road and trail network. Logistics are the main issue in Nord-East Romania (lack of infrastructure) and also in Latvia (impact on the forestry costs).

Logging systems have to be more efficient in order to reduce the costs and the impacts on the soil (soil erosion, soil compaction), as it was described in the paragraph **Logging enterprises and logging systems**. Expectations are especially high for the logging operations on sloped terrains, on sensitive terrains and for fuelwood in hardwood stands. The lack of modernisation is also a constraint for better wood mobilisation (Catalonia). The mechanization in modern machines is a solution. In South-Eastern Ireland, the availability of harvest haulage machines has become critical in the last couple of years. There are not enough modern machines to carry out the work leading to increased costs and delays in mobilising timber. NIPF owners need to achieve critical mass to prepare clustered contracts and offer industry large lots with harvesting plans, planned harvesting operations and good timber so that the logging companies can invest in machines. In Nord-East Romania, there is also a need to improve logging systems (machinery and professional expertise in timber harvesting). Other factors that are relevant are the lack of accurate information on timber volumes, a system of timber mensuration for sales and a lack of appropriate controls.

Environmental and climate constraints were identified in a number of regions: South-Eastern Ireland, where increased numbers of environmental designations and requirements have delayed and stopped timber mobilisation; Grand-Est, where fear of the impacts of the logging machines has also constrained wood mobilisation; and Småland, where arising from the climate change it is harder to ensure that the logging operations don't damage the soil and the remaining trees. This a real challenge during the rainy periods.

Table 1: Summary of key factors influencing wood mobilisation

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Clustered factors \ Model Regions	Bavaria	North-Rhine	Auvergne	Grand-Est	Yorkshire & North-East	Lochaber	South Eastern	Castile & Leon	Catalonia	Nordeste	Alentejo	Overijssel Gelderland	Slovenia	Småland	Romania	Latvia	Eastern Finland
Forest Ownership																	
Size distribution of forests	x	x	x	x				x	x	x		x	x		x		x
Characteristics of private forest owners	x	x		x		x					x						x
Knowledge and skills of private forest owners	x			x			x		x		x		x	x			x
Forest owner objectives	x	x					x			x							
Forest Governance																	
Actors and their programmes	x								x				x				
Regulations	x	x					x		x			x		x	x	x	
Incentives	x										x						x
Advice/information/trust	x	x	x	x											x		
Forest Management																	
Composition of forests	x				x				x	x	x						
Silvicultural scheme				x							x	x			x		
Hazard risks		x		x					x	x	x		x				
Lack of management							x				x						
Forest Functions																	
Awareness of forest functions	x			x									x			x	
Forest Harvesting																	
Markets		x				x	x	x	x		x		x			x	
Price/Cost		x	x			x	x		x	x	x	x		x		x	
Logging systems					x	x	x		x				x		x		x
Logistics					x	x	x		x		x		x		x		x
Environmental constraints	x			x							x						x
Climate constraints														x			

Focus Studies

A total of 19 focus studies were completed in the regions addressing a range of topics (Table 2). These addressed a number of themes. The first theme related to forest owners objectives and behaviour. The supply of timber is significantly influenced by the objectives and actions of private forest owners. However, information on private forest owners, their objectives and the extent to which they harvest and their social networks was lacking in many Regions and often could be obtained only with expert opinion. A number of Regions therefore chose to undertake focus studies to address this knowledge gap (Table 2). A further theme related to the demand for wood; this was addressed in two focus studies; one on a European level conducted in Overijssel & Gelderland (Study 9); another taken a much more localised approach (Study 10). Focus studies in which tools were developed that addressed a number of issues relating to wood mobilisation were undertaken in a number of Regions (Study 11 through to 17). In some of the Regions information is lacking on wood production and this information gap was addressed in two studies (Table 2).

Table 2: Focus studies conducted in the Regions.

Focus study	Theme	Model region	Topic
1	Forest owners and professionals, their motivations and skills	Nordeste	Forest owners profile; the role of associations of forest owners in providing forestry services
2		Overijssel & Gelderland	Economic aspects of forest harvesting by private owners in Overijssel & Gelderland
3		Lochaber	What motivates land owners and managers to manage their woodland?
4		Auvergne (relevant to a wider area)	Modelling forest owners' willingness to consider active management, including harvesting operation
5		Bavaria	Actors and their role in Bavarian forest initiatives' networks
6		Slovenia	Actors and their role in Slovenian forest owner associations' networks
7		Ireland	Irish private forest owners decision-making in wood mobilisation: the influence of the social network
8		Yorkshire and the North East	Forestry sector skills audit
9	Demand for wood	Overijssel & Gelderland	EU wide market demand for wood
10		Småland	Evaluation of installed forest energy effect and available amount of forest fuel in the region of Småland
11	Development of tools	Grand-Est + others	High environmental quality criteria for deeper trust in Logging

12		Castile and León	Tree selection behaviour in thinning operations
13		Nordeste	Tool to assess suitability of areas for different management objectives and to identify conflicts among uses/objectives
14		Nordeste	Forest logistics evaluations
15		Nordeste	Tools for forest growth/yield modelling
16		Nordeste	Establishment of a regional inventory systems to support forest evaluation and management
17		Nordeste	Trade-offs analysis. Optimizing forest uses, functions, and services
18	Supply of wood and non-wood products	Alentejo	Improving the estimation of harvested wood by species and type of use
19		Alentejo	Improving the information about the non-wood products and services provided by forests

1.3.2. Do interventions to mobilise wood lead to wood mobilisation

(Anna Lawrence, FCRA, UK)

Forests are expected to contribute towards an increase in supply of sustainable renewable materials and energy, which is commonly referred to as 'wood mobilisation'. Much attention has focused on the gap between wood potentially and actually harvested. Policy development aims to reduce this gap, by motivating owners and stakeholders to increase wood harvest, through a range of interventions.

The study conducted through the SIMWOOD project assessed which approaches were successful, based on a critical review of evidence. It builds a logical approach to categorising the literature into studies which aimed to:

- a) Understand forest owners' perspectives and other constraints
- b) Assess new technologies or policy tools, or
- c) Examine impacts of those interventions.

It showed that scientific papers focus more on identifying the constraints than on proposing or evaluating solutions. Studies of technical solutions, including silvicultural and harvesting methods, rarely consider potential or actual adoption.

Interventions (projects and policy tools such as incentives, advice or new organisational structures) which lead to increased harvesting require behaviour change. Few evaluations were able to report the impact of interventions on the amount of wood harvested in a way that can be attributed unambiguously to the intervention. More evaluations focused on the adoption of intermediary stages such as preparation of management plans, or membership of associations.

Two key lessons are: successful interventions are multi-faceted (often combining incentives and advice, or farming and forestry, or production and markets); and while lessons can be shared effectively between regions, interventions need to be tailored to local social and political conditions, and developed in context.

The paper has been submitted for publication in the peer-reviewed scientific journal, *Forestry: An International Journal of Forest Research*.

1.3.3. Regional Pilot Projects' added-value for wood mobilisation

This chapter describes the common SIMWOOD methodology used to design, operate and evaluate the Pilot Projects. Our approach was motivated by the importance of securing measurable and relevant outcomes from the new public-supported regional initiatives in favour of wood mobilisation.

There have been numerous policies, projects and other interventions that have sought to achieve an increase in the proportion of wood that is mobilised compared with what is available. However, through literature review and European consultation partners understood that there had been little attempt to take stock and identify what measures really work to unlock wood mobilisation, and why. Very few past projects were set up to answer these questions by any evaluation.

Also, few projects ensure there is adequate stakeholder engagement from the start, to make sure emerging plans make sense to stakeholders who can then buy into them and influence outputs from the project.

From this understanding, our common ambition in SIMWOOD was to co-develop an alternative outcome-driven method for Pilot Project development and management, and through its implementation be the first systematic attempt to understand the causes and consequences of wood mobilisation solutions at regional, national and the European level.

The method and process are outlined here so that other leaders of wood mobilisation initiatives (WMI) can follow the approach and adapt elements of the tool-kit they find relevant and useful to their situation.

1.3.3.1. *The Pilot Project Process to overcome bottlenecks*

One of the key determinants in the design of the SIMWOOD approach was the common willingness to overcome defined limitations and encourage project management motivated by the generation of outcomes and impacts. In summary, our approach was a combination of stakeholder engagement (identifying and working with actors, their influence and interests as well as the reconciliation of those interests), reflective practice, social learning and project evaluation, and this was used when supporting the design and delivery of all SIMWOOD 'Pilot Projects'.

Central to this is the idea of developing a 'theory of change': a narrative that is easy to understand and links inputs, outputs, outcomes and impacts, with barriers and solutions. In other words a kind of route map from the identification of project objectives, through to visualising success and what can be done to measure those achievements.

To achieve an understanding of the regional context, SIMWOOD convened Regional Learning Labs (RLL) as active forums for stakeholders to discuss and define targets for each Pilot Project and the mechanisms for changing and creating a significant impact on wood mobilisation. Relevant participatory actions followed and were implemented over a period of time long enough for stakeholders to change their awareness, attitude and (when possible) their actual practice. Regular RLL consultation enabled participatory adjustment, with evaluation being used to assess achievements and boost future amplification, replication and/or transfer when justified.

Because PP leaders came from different backgrounds and had diverse experience with project management approaches, a Pilot Project methodological tool-kit was developed. The latter was

structured as a dynamic and reflective 3-step-process to design Pilot Projects and how they would be evaluated (Figure 1).

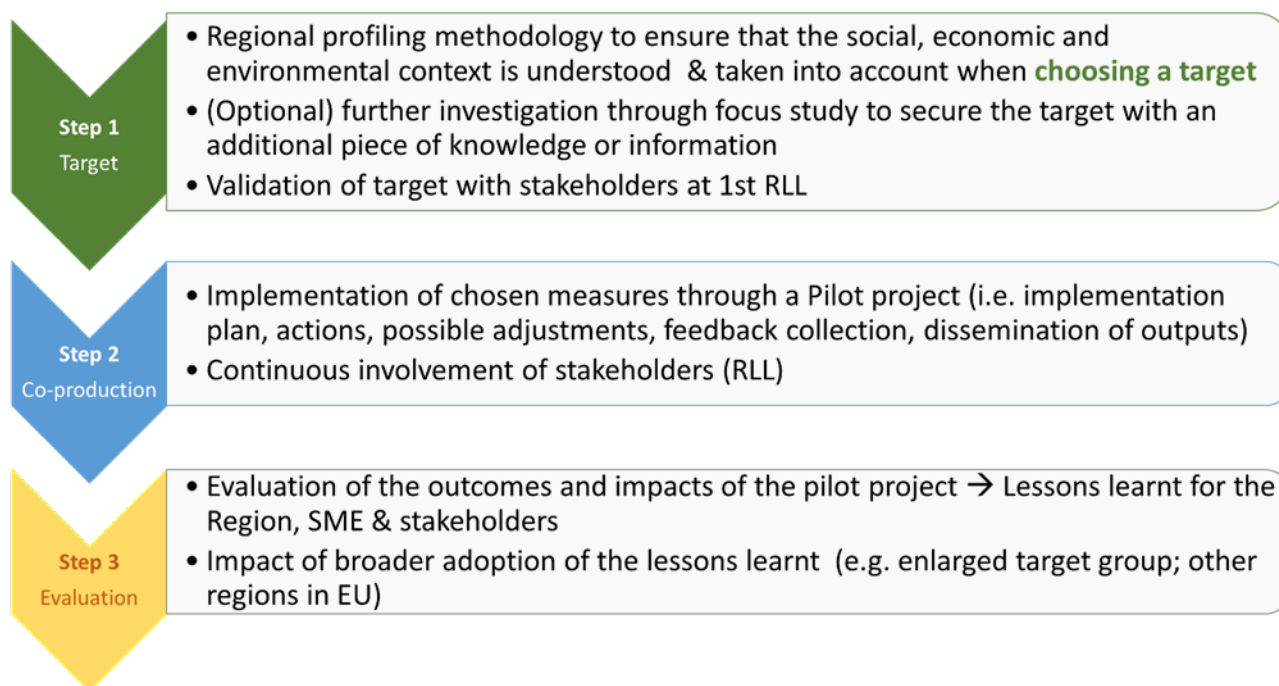


Figure 1: Step by step Implementation process during the SIMWOOD project

1.3.3.1.1. *Step 1: Choosing a target to address identified bottlenecks*

Additional wood mobilisation can only be achieved when solvable bottlenecks are identified and addressed. Consequently, the SIMWOOD approach consisted of identifying a meaningful target to focus innovative efforts on and commit to a reasonable theory of change.

At this first step of the Pilot Project process, the SIMWOOD tool-kit offers four complementary tools to choose the target on a knowledge-basis:

- Regional Profiling,
- Stakeholder social mapping,
- Assessing outcomes and lessons from past experiences,
- Optional Focus Study.

The Regional Profiles documented the most up-to-date state of knowledge about Mobilisation Challenges, organizing them under five thematic domains, i.e. governance, ownership, forest management, forest functions, harvesting. Profiling in this way, revealed the main barriers to wood mobilisation in the regions, and allowed explicit analysis and identification of possible levers of change.

SIMWOOD Pilot Project leaders were also encouraged to complete an analysis of the interests, positions, inter-relationships and potential willingness to change of stakeholders linked with the issues and proposed solutions identified in the Regional Profile. Stakeholder social mapping, using conceptual

diagrams of the multifunctional aspects of local wood mobilisation and which stakeholders are involved, can typically grant such insight. For SIMWOOD Pilot Project leaders, this mapping was often undertaken with the stakeholders in the Regional Learning Lab.

In cases where the bottleneck was not fully understood because of lack of data or knowledge the SIMWOOD experience suggests to conduct a Focus Study to close the gap in understanding and foresee the next steps with a stronger understanding of the barrier to be overcome. It is important not to rush blindfolded into poor project design.

Finally, another way to ensure the relevance of Pilot Project designs was to reflect and build-upon experiences from past projects describing aspects such as aim, involved people, financial aspects, lessons learnt and cost-benefit balance of those past initiatives. A synthesis of this is available in SIMWOOD Deliverable D3.1 “European Model Regions and regional impacts of current and potential future mobilisation - Synthesis report”.

1.3.3.1.2. Step 2: Co-Production - Engaging stakeholders who matter at regional learning labs (RLL)

A process of stakeholder engagement was encouraged to ensure that Pilot Projects were well targeted and relevant to the local conditions. Based on results of the first step (see Figure 1), especially stakeholder analysis and outlined stakeholder engagement plans, the expectation was that Pilot Project coordinators would assemble a group of stakeholders who would meet at regular intervals in the ‘Regional Learning Labs’ (RLLs).

A protocol for the RLLs (SIMWOOD Deliverable D3.1 – European Model Regions and regional impacts of current and potential future mobilisation – synthesis report; Appendix A “Protocol for the Regional Learning Labs) was prepared detailing how stakeholder engagement could contribute to the majority of activities, milestones and deliverables in the project. Also included was outline guidance on the methods and tools that might be used. Bayesian Belief Networks were tested and found useful for those partners wishing to undertake an in-depth analysis of wood mobilisation barriers and solutions in their respective regions.

In SIMWOOD Pilot Projects, the core activity in the RLL process became the RLL meetings: typically one or two meetings per year throughout the course of the Pilot Project.

Central to the SIMWOOD approach is the idea that social learning can enable knowledge co-production in the Pilot Project, hence facilitating persuasion and subsequent change of practice of the people who matter for wood mobilisation.

1.3.3.1.3. *Step 3: Evaluation - Learning and reflecting using an adaptable evaluation framework for project leaders*

An evaluation framework was designed to support Pilot Project leaders. Its primary function was to facilitate the generation of feedback from a range of diverse stakeholders and the provision of answers to three key questions:

- What changed as a result of the project (and for whom)?
- Why (i.e. what caused these changes)?
- What lessons have we learned (i.e. looking back, what should have we done differently, and what should we do differently in the future)?

The SIMWOOD evaluation framework focuses on ‘outcomes’ (e.g. the ‘mobilisation of people’ that is necessary before the ‘mobilisation of wood’) and ‘impacts’ (possible given the timescale of the project). Evaluation of inputs and outputs alone is not considered enough to understand whether an intervention has been successful. It is still important to describe and quantify outputs to provide additional feedback (such as the barriers lifted by the project, and the number of participants). Estimates of the level of inputs to a project is also necessary to make claims about its overall cost effectiveness, or the cost/benefit of specific components, e.g. a demonstration event.

The main methods suggested by the framework in order to elicit feedback about outcomes and impacts with the stakeholders engaged in the Pilot Projects were:

- Semi-structured interviews (i.e. one-to-one meetings with stakeholders),
- Participatory workshops, and
- Questionnaire surveys.

Many Pilot Project leaders perceived the framework as both useful and helpful and it can be applied to any intervention seeking to mobilise wood, i.e. projects, programs or ‘solutions’ comprising any combination of measures.

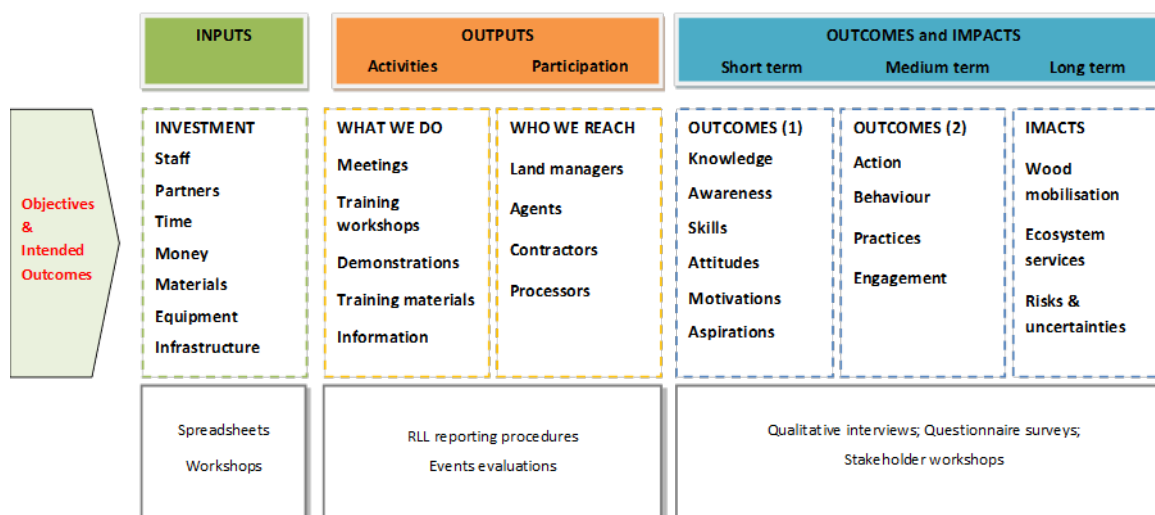


Figure 2: SIMWOOD Pilot Project Evaluation Framework

1.3.3.2. *Implemented Pilot Projects*

22 Pilot Projects were implemented in the Model Regions. Those 22 individual initiatives are characterised through different entry points, e.g. region, size, expected changes in the target group. This should make it easier for developers of wood mobilisation initiative(s) to find Pilot Projects close to their own situations or ambitions, and to find out more about the achievements and the factors, which influenced success in those contexts. The list and geographical distribution of the Pilot Projects are displayed in Table 1 and Figure 3.

Full reports of the Pilot Project results and evaluation are available on the SIMWOOD Information System. Each report is a stand-alone public document that any reader can use to learn: why and with whom the Pilot Project was initiated in the first place (target group and theory of change); what happened (success and pitfalls during the implementation); and what was learnt from the evaluation. Hence, a synthesis of the work done in the lifetime of the Pilot Project is accessible to the largest audience.



Figure 3: Map of the Pilot Projects distributed over 14 European regions

Two of the listed Pilot Projects actually emerged as positive side effect of the cooperation within the SIMWOOD consortium (Lower Saxony and Grand Est).

For Latvia, the documentation of the national profile, in cooperation with LWF, lead the local contact RTU to imagine a local multi-stakeholders dialog process. The Regional Learning Lab (RLL) was launched to address the local needs, and RTU undertook a social network analysis on both policy and initiative levels, with the support of LWF.

Table 3: Pilot Project title and regional location throughout Europe

No.	Country	Model Region	Title of Pilot Project
1.1	Germany	Bavaria	Activation of forest owners to establish a sustainable forest management and to adapt the forest stands to the future climate, in North-East of Bavaria (Bibersberg & Thiemitztal)
1.2	Germany	Bavaria	Activation of forest owners to engage them in sustainable forest management with special emphasis on alpine forest-functions, in South-West of Bavaria (Gruenten)
2	Germany	North-Rhine Westphalia	Forestland consolidation of community forests in North Rhine-Westphalia. Lessons learnt from the attempts to readjust property as a solution for land fragmentation and inactive small-scale private forest owners in Germany
3	France	Auvergne	Increasing professional know-how in steep-terrain conditions: collaborative pathways for forest companies to broaden their wood mobilisation horizon in these specific areas
4.1	France	Grand Est	Adapting silviculture schemes and harvesting systems to reactivate forest management and enable wood mobilisation on poor limestone soils in “Champagne Crayeuse”
4.2	France	Grand Est	Capacity building for a better and more efficient service offering in special forest conditions: sensitive soils in Grand Est
4.3	France	Grand Est	Promoting private owners’ interest in forest management through contact with professional forester
5	UK	Yorkshire and Northeast England	Bringing unmanaged privately owned woodlands into productive and sustainable management by adopting a marketing brand
6	UK	Scotland/ Lochaber	Living Working Woods: stakeholder engagement to mobilise social, environmental and economic assets of undermanaged/underutilized woodlands in a region with no prior forest culture/dynamic
7.1	Ireland	South East Region	Mobilising additional wood fuel from conifer first thinning
7.2	Ireland	South East Region	Developing a new collaborative producer group and supply chains towards the mobilisation of timber
8.1	Spain	Castile and Leon	Raising awareness on the influence of thinning intensity on tree growth and mushroom production in mixed forest in Castile and Leon: a 1 st step towards the acceptance of the multi-functional assets of wood mobilisation
8.2	Spain	Castile and Leon	Raising awareness on the contrasted consequences of different early-thinning practices in natural regenerated stands: knowledge-based silviculture to secure the production of wood raw material

No.	Country	Model Region	Title of Pilot Project
9.1	Spain	Catalonia	Establishing a protocol for collaborative, mutually agreed management in particularly sensitive forests to reconcile high natural value with wood mobilisation under the umbrella of multi-functional forest management
9.2	Spain	Catalonia	Common governance to mobilise the primary forest biomass and promote the local consumption of wood chip while decreasing the risk of fire.
10	Portugal	Nordeste Transmontano	A multiscale integrative approach to raise awareness and encourage participative sustainable wood mobilisation
11	Portugal	Alentejo	Collective scenario planning to raise awareness on the feasibility to increase maritime pine and eucalyptus wood through management and afforestation at Alentejo Region
12.1	Netherlands	Overijssel/ Gelderland	Improving wood harvesting logistics by a dedicated GIS-based biomass module
12.2	Netherlands	Overijssel/ Gelderland	Bundling efforts in a collective to facilitate wood mobilisation in Food valley region
13	Slovenia	Slovenia	Training the facilitators: towards the improvement of forest owners associations capacities and the extension program outcomes
14	Sweden	Småland	Development of a more efficient and sustainable system for extraction of logging residuals from clear cutting areas in Småland for fuel purposes
15	Germany	Lower Saxony	Engaging new forest owners into active small scale forestry through the focus-days
			TOTAL 22

1.3.3.3. *Pilot Projects' achievements*

Although the implementation phase of the initiated Pilot Projects has been relatively short with 2-3 years, the evidence gathered during the evaluation exercise documents the following achievements in all projects:

- All Pilot Projects achieved change of awareness within their target group
- Business development within the SME took place
- Replication and legacy projects are already a reality

The reasons for the successful implementation and overcoming of the challenges can be found in the gained collective and reflective experience on how to effectively run a wood mobilisation Initiative and to secure meaningful outcomes:

- Engaged SME are good champions
- Private ownership is served better through cooperation
- Social learning creates long lasting benefits
- The SIMWOOD process worked and was sometimes a game changer
- Cross-fertilization created value for their Pilot Project beneficiaries
- Pilot Project leaders acknowledged the Evaluation framework as valuable for the efficient management of their wood mobilisation initiative
- Lessons learnt on attempts to overcome challenges

1.3.3.4. *Recommendations and conclusions for aspiring wood mobilisation facilitators*

SIMWOOD Deliverable D4.3 “Regional Pilot Projects’ added value for wood mobilisation – synthesis report” offered insights and illustrations on both how the Wood Mobilisation Initiatives (WMI) were managed and the lessons we learnt through our achievements and our attempts to overcome challenges. After four years of collaboration, we consider that the lessons we learnt while developing and implementing our project, and the changes and achievements evidenced by the stakeholders we worked with, would be useful to a larger community of wood mobilisation facilitators throughout Europe, specifically:

- Leaders of local wood mobilisation initiatives (past, current and future)
- Regional authorities (or other relevant authorities) who support WMI and participate in their governance

We provide here a synthesis of generic learning points that come from the Pilot projects, and provide recommendations to the different stakeholders involved in wood mobilisation initiatives (WMI).

1.3.3.4.1. Recommendation to peer leaders of Wood Mobilisation Initiatives

For those individuals and organisations involved in identifying, developing and managing WMI we recommend they be mindful of the 5 following aspects:

1. Context: be clear about the local/regional/national/European context of the need for increased wood mobilization. Understand the local and regional context and the opportunities that may be present. Undertake a thorough analysis of the influence of contextual factors on the potential for wood mobilization.
2. Objectives: define clear, realistic objectives for your project, which are allied to a solvable problem or barrier to mobilization. Be clear about what the material products are, who the target stakeholders and end users/consumers are, and what the value chain for those products is. Ensure the objectives and subsequent project design conforms with the principals of sustainable forest management. Remember that multipurpose projects may have better success.
3. Engagement: develop strong links with local stakeholders who have influence in the local wood economy, or who form part of the target group. Work with existing organisations that already have trusted relationships with target groups. Engage with organisations and individuals from the start. Ensure they take part in problem diagnosis, verify that the issues being tackled are actually solvable, contribute to assessing the feasibility of project design, and help implement and disseminate the results of the project.
4. Innovation: be flexible, and look for new, practical solutions to barriers throughout the forestry-wood chain that you encounter along the way. Initial problem diagnosis and design may need to change as better understanding or initial testing of the idea reveals better ways of doing things. See flexibility and the ability to adapt as strength, not as a weakness.
5. Evaluation: consider how you will evaluate the progress, outcomes and impacts of your project. Begin evaluation early as an integral part of your work. Reflect on whether you are on track, what you have learnt, what you could improve, how designs and plans could be more effective. Ensure regular feedback from stakeholders and target groups is included as part of the evaluation process. Allocate and protect time for evaluation because it is worth the effort.

1.3.3.4.2. Recommendations to supporting authorities

For those authorities charged with supporting and encouraging we recommend they be mindful of the following:

- A. Context: the supporting organisations responsible for wood mobilization in a region should be clear about the local/regional/national/European context of the need for increased wood mobilisation. Identify areas in which working to improve local and regional contexts could facilitate the success of WMI, e.g. publicity campaigns to increase awareness and public demand for local and regional wood products. Consider how linking together different WMI along the wood value chain might impact the local/regional success of WMI. Consider enabling synergy of action across scales.

- B. Objectives: ensure these are clearly defined at a project and organizational level. Help to support and provide information that can shape objectives. Support the development of objectives that conform to the norms of sustainable forest management.
- C. Engagement: help project leaders to identify and engage with stakeholders associated with the product value chain or the organisational initiatives being proposed. Take part in discussions verifying bottlenecks and whether they are solvable. Help implement and disseminate the results of the project through publicity campaigns, the promotion and uptake of new tools and techniques or upscaling and rolling out initiatives in other areas. Ensure resources for wide engagement are adequate.
- D. Innovation: allow the WMI programme of work to be flexible, and for the WMI leader(s) to look for new, practical solutions to barriers throughout the forestry-wood chain that may be encountered along the way. Trust the WMI leaders: innovation and flexibility often mean allowing iterative and evolving processes. Patience and on-going communication are advised.
- E. Evaluation: Set strong requirements for the WMI to evaluate its outcomes and impacts. Ensure evaluation is integrated as an on-going project process, not a bolt-on end of project exercise. Ensure that there are regular opportunities to seek feedback and to reflect on whether the partners are on track. Allocate and protect time to a thorough evaluation of the initiative you are supporting. Use the results to assess the efficiency of WMI, the multiple benefits created, and reflections on how to improve future WMI.

1.3.4. Modelling effects of mobilisation in Model Regions

(Mart-Jan Schelhaas and Gert-Jan Nabuurs, DLO, Netherlands)

The purpose of the study was to model the potential wood resource/biomass mobilisation and assess the impact of proposed measures on additional and economically mobilisable wood biomass in the Model Regions.

To achieve this the project used the EFISCEN Space model was applied (<http://efiscen.efi.int>) using the best available data from the Model Regions and by making assumptions on what factors could describe easy/medium/difficult ease of mobilization.

The Model Regions differed considerably in forest area, forest history, species distribution and management practices. Increment ranges from 1.7 m³ ha⁻¹ yr⁻¹ in Nordeste to 14.6 in Bavaria. The harvest/increment ratio ranges from 25% in Catalonia to around 100% in Småland, Bavaria and North Rhine-Westphalia. The high ratios in Småland and North Rhine-Westphalia are probably influenced by storm damage in the period between the NFIs. The harvest in most regions is concentrated on one or two species, usually conifers.

As can be seen in Table 4 the total annual harvest in all 11 regions with simulations together is 53.6 million m³, with a theoretical additional potential of 17.2 million m³ (if 100% of increment would be harvested). Only 4% of this amount is labelled as easily available, while 26% is estimated to require medium effort. The remainder is difficult (19%) or impossible (51%) to harvest.

The results indicate that only a small proportion of the extra increment of forest in the SIMWOOD Model Regions would be easy to mobilise. Just over 50% of the extra increment has been judged to be

‘medium’ or ‘hard’ to mobilize. These figures link with other parts of the project; many of the Pilot Projects focus of the extra mobilization that has been classified as easy/medium, whereas the literature review has proposed multi-faceted solutions tailored to local social and political conditions, which are probably best used to mobilise wood classified as medium/hard in this report.

A large proportion of the extra increment available (51%) has been judged to be ‘not available’ for mobilization and this probably reflects real social, economic and environmental constraints to the management of broadleaved forests.

These figures are constrained by a number of data limitations and assumptions of methodology. The main ones include: (1) not all Model Regions could supply two NFIs; (2) it was difficult to accurately map constraints in the Model Regions; (3) the categories ‘easy’, ‘medium’ and ‘hard’ to mobilize varied between Model Regions and were not strictly objective.

The work on modelling wood mobilisation potential will be published in 2018 or 2019. The work has shown how difficult it is to quantify this important element of the European bioeconomy and will hopefully lead to the provision of better quality and more consistent data on this subject being available in Europe. The Modelling has confirmed that 30 % of the extra potential for wood mobilisation (17.2 Mio. m³) in the Model Regions could be obtained with ‘easy’ or ‘medium’ effort (chapter 1.3.4).

Scaled up to European level, out of ca. 200 million m³ that seem to be available, only ca. 60 million m³/year are likely to be mobilised with little or medium effort.

Table 4: Summary of simulation results in the Model Regions

Model Region	Data in study ¹			Forest area (1000 ha)	Increment (m ³ /ha/a)	Mobilisation options ²					
	Rep.	Sing.	Oth.			Current harvest (1000 m ³)	Theoretical additional harvest (1000m ³)	Ease of mobilisation ²			
								Easy	Medium	Hard	Not available
Bavaria				2330	14.6	25942	5863	0%	34%	25%	40%
Westphalia				801	12.4	9612	576	0%	15%	85%	0%
Haute, Loire, Auvergne				198	9	844	844	42%	34%	0%	24%
Vosges, Grand Est				298	8.6	1422	1422	0%	33%	0%	77%
Yorkshire				230	11.3	610	2357	4%	20%	38%	39%
Lochaber				70	8.6	228	284	4%	21%	75%	
SE Ireland				324	14.3	2521	3081	9%	16%	8%	67%
Catalonia				1300	2.7	910	2300	0%	33%	0%	66%
Nordeste				150	1.7	25	61	30%	26%	44%	
Overijssel				140	7.4	488	382	16%	16%	12%	56%
Småland				1986	7.1	11000	0	0	0	0	0
Total				7827		53602	17170	4%	26%	19%	51%

1 Rep=data available from repeated measure of inventory plots; Sing=data only available from single measure of inventory plot; Oth.=used other data.

2 See Appendix B for more detail on modelling methods used to produce figures; grading of 'easy', 'medium' and 'hard' for ease of mobilisation was done using locally appropriate criteria constrained by the available data.

1.3.5. SIMWOOD Information System

<https://simwood.jrc.ec.europa.eu/>

Commissioner Hogan made clear in his speech on the Bioeconomy Policy Day on November 16 2017 that foresters and farmers hold the key to the success of the implementation of the bioeconomy because they have actually put into practice what works. We hope the SIMWOOD Information System successfully reflects the most innovative ideas in forestry today. Rarely are such concrete and pragmatic examples of tested approaches actually made available to the public in a single place. This website is a window to rural Europe. The faces and names of people who have personally dedicated their efforts to work towards mobilising a renewable natural resource that is so important to the Bioeconomy Strategy are made available to policy-makers and researchers through this web interface generated by the SIMWOOD project.

The SIMWOOD Information System is a web interface hosted by the European Commission Joint Research Centre, containing the qualitative and quantitative information that emerges from the SIMWOOD project. The SIMWOOD Information System includes a search engine, map tools and newsfeeds. The expert knowledge within the project, the models available in the different regions, as well as best practices that could be exchanged between regions or extrapolated to the EU context should be accessible in the system. The targeted group are ultimately forest owners, either directly or through the persons from whom they will seek counsel. Furthermore, the tool is intended to be a support to regional stakeholders and policy making on multiple levels and scales. These stakeholders are therefore also targeted users of the website. Finally, it is expected that researchers will benefit from it as well.

Knowledge base

The SIMWOOD Information System knowledge base, as described in the project proposal and description of work, integrates information and findings of the pilot projects and Model Regions. Although at this time, the bulk of the projects are SIMWOOD Pilot Projects, non-SIMWOOD projects are also proposed. The knowledge base is a dynamic one because it is expandable in time as users upload new projects. When browsing the knowledge base for pilot projects, users are given the option to download the full final report for the SIMWOOD pilot projects, or can click on a link that offers more information on non-SIMWOOD projects.

The data and information collected on Model Regions in WP2 early on in the project is integrated in SIMWOOD Information System within a dedicated map viewer for Model Regions. This viewer is a split pane, in which the right side contains a map viewer and the left side contains facts and figures about the Model Regions. These facts and figures were harmonized to allow comparability between the regions based on completeness of data availability. The main map view currently incorporates pins that will point the user to geolocated websites. The choice to geolocate the websites was based on the concept that users should be able to find useful resources close to home.

Expert system

Users can access the knowledge base through a search tool, a matrix of barriers and measures and a map viewer. Regardless of how the user will access the data and information, the same database is at the basis of the search. The database associates pre-defined keywords to the SIMWOOD Pilot Projects

as well as other projects. Furthermore, simulation results of a modelling exercise that took place during the SIMWOOD project are reported within the region-specific sections of the webpages.

Users are given the option to upload new projects using the upload form that is embedded in the website. The new projects may be associated to mandatory fields: Country (If the project is cross-border, many countries can be selected); Project title; Summary; Barrier; Contact; Email; and non-mandatory keywords that describe the circumstance in which the project has been, will or is currently taking place.

Ultimately, it is our wish that the SIMWOOD Information System be a bottom-up contributor to the Bioeconomy Knowledge Centre, showcasing the efforts made not only in the research domain but also by small-medium enterprise and forest owners, to mobilise resources to contribute to the EU Bioeconomy in a sustainable way.

1.3.6. European Manual of integrated wood mobilisation solutions

The handbook aims to raise awareness of the challenges and opportunities of wood mobilisation from managed forests by increasing the sustainable harvesting of wood. Based on the survey of described initiatives and pilot projects in several European countries, the main barriers impeding wood mobilisation are presented along with a set of corresponding measures and interventions that are considered capable of lifting these barriers. It provides a thorough overview of the topic from a European perspective and is aimed at practitioners and policy makers in the forest-based sector. It is also useful as an introduction for readers interested in wood and biomass who have a different background, for example in biochemistry, new materials or renewable energies.

Concepts and definitions used in the handbook

The handbook outlines a wide range of measures that can influence wood mobilisation for the benefit of forest owners, practitioners and policy makers in the forest-based sector. It gives a broad overview of measures that have the potential to be applied on a wider scale to improve wood mobilisation in Europe. The handbook is thus also useful as an introduction for readers interested in wood and biomass that have a different background, for example, in biochemistry, new materials or renewable energies.

The main target groups for the wood mobilisation measures described in the handbook are forest landowners, public and private forest managers and forestry entrepreneurs, i.e., the people who are actively managing the land and harvesting the forest. Second, also decision makers defining the legal framework of these activities are also addressed. These groups are the intended users of the solutions and who will apply them for their own purposes in their region. But of course also other actors engaged in the supply chains from forests are addressed, such as forest-based industries, traders, network organisations, public agencies, consultants, advisors and trainers.

The handbook represents a novel attempt to understand the causes and consequences of wood mobilisation solutions at European level in a systematic manner. The SIMWOOD project carried out a broad survey of existing solutions in 17 European Model Regions, which are representative of the EU forest sector as a whole. The survey was complemented with relevant literature and expert knowledge, also considering various previous studies, expert groups and other publications on the topic. A

common framework was developed to assess and organise the large variety of initiatives and projects for wood mobilisation in Europe.

The concept is built on the following components:

- Barriers are conditions that inhibit the development and uptake of effective solutions for wood mobilisation. They are foremost determined by a specific set of forest resources, markets and governance conditions in a region, often related to structural disadvantages or a lack of usable knowledge by the actors.
- Measures are targeted actions to implement a specific solution, which can be understood as a set of knowledge, techniques and/or a governance approach that improves the conditions for wood mobilisation.

These typically comprise public programmes, regional initiatives, specific knowledge exchange activities, R&D projects and dedicated solutions at the enterprise level.

A long list of specific barriers and measure types was identified during the survey of the SIMWOOD Model Regions. To structure this complexity, the barriers and measures are organised into five thematic groups:

1. **Forest resource / enterprise:** This group comprises structural and managerial barriers at the level of the forest stands and forest enterprises. They describe disadvantages associated with the actual forest resource or management situation, and are often perceived as the main 'problems' by the landowners and forestry professionals, which impede wood mobilisation.
2. **Regulatory and legal framework:** This group relates to laws and regulations according to national or regional legislation, which define how forest management is practised in the regions, and can pose barriers to wood mobilisation. The measures within this group include new legal frameworks, which facilitate mobilisation actions.
3. **Financial and material inputs:** This group refers to barriers at the regional level, which result in high transaction costs for active forest use. The measures are mostly financial incentives implemented by government or public actors, which can positively influence the financial viability of forest use and leverage potentials for mobilisation.
4. **Organisation and cooperation:** This group relates to managerial and governance barriers of forest enterprises that impede active management and cooperation. The proposed measures typically encourage the formation of groups of forest owners, supported by forestry professionals, which enhances competitiveness through joint actions and cooperation.
5. **Knowledge and attitudes:** This group includes all barriers related to a lack of knowledge about or opposing attitudes towards available solutions held by local landowners and practitioners. The types of measures comprise a diverse range of supportive knowledge exchange and innovation activities.

The **types of measures** are defined in response to certain barriers, e.g. building a new forest road is the appropriate action required to improve access to a forest area for harvesting. However, the relationship between measures and barriers is complex:

- One barrier can be addressed by different measures, e.g. a fragmented ownership structure can be improved through the creation of a forest owners' association, or a cooperative, or through a land consolidation procedure (these measures differ in the extent to which they transform private ownership).
- Vice versa, one measure can address several barriers, e.g. the foundation of a forest owners' association does not only address fragmented landownership, but it is also a suitable means to overcome insufficient skills and knowledge of owners (by offering advice to its members) or insufficient cooperation in the supply chain (by becoming a sizeable partner for wood industries).
- Measures can integrate other measures, and can address barriers within other thematic groups: especially if a measure has a broader scope, e.g. setting up a regional initiative, a cluster organization or an R&I project, it usually builds on several other more specific actions, e.g. training and outreach activities or dissemination tools, and thus responds to several barriers belonging to various groups.

The handbook is made of four main chapters and one annex presenting all the SIMWOOD process

- Chapter 1 provides an overview of the issue of wood mobilisation, definitions, drivers and context
- Chapter 2 provides a brief overview of the different types of barriers;
- Chapter 3 describes the different groups and classes of measures, which are illustrated through selected practice examples from various countries in Europe;
- Chapter 4 summarises the main lessons learnt in the SIMWOOD project and point out recommendations for policy development and further research in Europe.
- The Annex gives an overview of the main SIMWOOD products including methodology, theory of change, list of pilot projects and a description of the SIMWOOD Information System

This reference book is available as hard copy and online.

1.4. Potential impact and main dissemination activities and exploitation results

The SIMWOOD project fostered a systems-wide approach emphasising integrated concepts for diverse production systems in forestry. The project notably pointed to the **stronger integration of production-oriented forest management and harvesting systems** and an **ecosystem-based understanding of long-term sustainability** (i.e. ensuring integrity of all ecological, economic and social functions of forests) and at the same time to a considerable larger market entrance of participating members of the target groups (i.e. private forest owners, industries along the wood supply chain).

The SIMWOOD project attained this overall stronger integration of the three core components with the following steps:

1. a better understanding of the interaction between the whole eco- and socio-system's components in the various different contexts of European regions and forest types and their role in the current mobilisation of wood resources (WP2),
2. the development of novel, integrated and regionally adapted solutions to a stronger mobilisation of forest owners and wood resources and a thorough evaluation in view of their wider impact in the near future from a European forest-based sector perspective (WP3),
3. the active involvement of SMEs and further stakeholders in decision-making processes on the regions' future strategies and policies (via the RLL) and the targeted promotion and market-related development of the innovative solutions hand in hand with regional pioneer SMEs (WP4),
4. the coordinated broad dissemination and exploitation of the enhanced knowledge by means of modern ICT (SIMWOOD Information System) led to an impressive outreach to and considerable uptake of novel practices by members of the target groups (WP5 and WP6).

Each of the research partners and some of the SME partners have been already involved in relevant national and international research projects. The available gained experience and knowledge contributed to a target-oriented implementation and to the significant impact of the SIMWOOD project on enhanced integrated wood mobilisation in Europe.

1.4.1. Regional Profiles and identification of key factors influencing wood mobilisation

Output:

Profiles of the regions (regional profiles) provided an overview of the current situation in all Model Regions with respect to wood mobilisation. In these profiles the key wood mobilisation factors (i.e. barriers to and opportunities for greater wood mobilisation) in the regions were identified according to the five socio-technical-environmental domains that underpinned all the work undertaken in SIMWOOD. Relevant knowledge gaps were closed by focus studies where needed (pls. see the public deliverable D2.2 "European summary report of regional wood mobilisation challenges").

Impact:

These profiles therefore provided a thorough snapshot in time of the situation pertaining to wood mobilisation and can be used by other researchers in the future to gauge how wood mobilisation is evolving in the regions.

Output:

An analysis of **the key factors influencing wood mobilisation** showed that:

- a) Some factors were common to many regions (e.g. fragmentation);
- b) Different socio-economic and technical factors were influencing wood mobilisation in different regions.

Impact:

Hence, the analysis identified that a “one size fits all” approach is not appropriate. The impact of these findings was to justify the approach taken in the remainder of the SIMWOOD project, i.e. to develop tailor-made solutions for the regions.

1.4.2. Involvement of key stakeholders in Regional initiatives and activities

Output:

To ensure a strong anchoring of the case studies within the regions, Regional Learning Laboratories (RLL) were established as an integral component of the research process. Linked to existing initiatives in the region, this iterative forum led towards a first step of collaborative learning.

Guided by the project experts the participants obtained fresh findings on the regions specific status quo, opportunities and proposed solutions. The initiated forest governance dialogue enabled a common strategy for wood mobilisation combined with recommendations for effective institutional, financial (suitable forms of incentives) and knowledge mechanisms. The information gathered was critically evaluated. The emerging strategies were discussed and the proposed solutions were selected to be tested in Pilot Projects (PP).

Impact:

The project implementation and the exchange between SIMWOOD partners clearly showed that forest owner associations or producer groups are important and have to become more proactive in coordination of members’ forestry activities, i.e. to plan, manage, harvest and market more efficiently, to overcome the lack of coordination of forest and market operations for small, fragmented forests in Europe. To be effective and sustainable these self-help organisations should have a larger number of members.

Targeting regional initiatives, participatory processes and governance within and beyond the forest-based sector will have a positive impact on wood mobilisation and the role and awareness of forestry in European regions.

When key stakeholders in particular SMEs get and remain engaged in activities, the possible utilisation of business opportunities based on wood mobilisation will always remain a topic for key stakeholders.

The stakeholder involvement integration and the collaborative learning in the Regional learning Lab will lead to a better understanding. By this, an integration of ecosystem functions and services into standard forest management will be ensured and lead to sound solutions for solving conflicts among ecosystem services and overcoming bottlenecks limiting wood extraction.

The utilisation of forest resources will be based on a common societal agreement. The increased awareness of the importance of forests for a balanced environment will lead to the conversion of devastated and less productive forest to more productive forests.

1.4.3. Evaluation concept for Wood Mobilisation Initiatives

Output:

The developed “SIMWOOD Pilot Project Evaluation Framework” to evaluate the success of pilot projects, which follows the input - output - outcomes - impacts principle, has been presented and discussed. Partners learnt how to use the framework to measure the success of their Pilot Project according to agreed indicators.

Impact:

So far mobilisation measures have not been evaluated in a comparable way and the use of the Evaluation Framework will facilitate an assessment of whether applied measures in Pilot Projects can be transferred cross-regionally. It is expected that this framework will be adopted on European scale when wood mobilisation initiatives are planned.

1.4.4. Regional Pilot Projects’ added value for wood mobilisation

Twenty-two Pilot Projects were initiated to test the proposed tailor-made solutions for an increased sustainable wood mobilisation in the regions. These comprise:

- conceptual solutions for networks, associations and collaborative management models,
- new practices for collaborative multifunctional forest management,
- adapted harvesting systems and logistics for advanced innovative and balanced use of forest residues

With support of the research partners, the SME partners kick-started the projects in the regions.

Output:

The Regional pilot added-value for wood mobilisation, Synthesis report (D4.3).

Impact:

Pilot projects have set the preconditions for improved mobilisation of wood to be taken up by the stakeholders, owners, industry and the market. In particular, the uptake of the 3-Step methodology

(target – engaging stakeholders – Evaluation) in future wood mobilisation initiatives (WMI) will make sure that the activities will be target oriented.

The pan-European network of pilot projects will be used as prime references for ‘good practice’ in wood mobilisation.

1.4.5. Contribution to pan-European up-scaling and EU policy programs

The described common research concept of SIMWOOD was carried out in 11 European countries. It integrated a decentralised, participative, bottom-up research approach with a consistent, objective, cross-regional analysis and evaluation and by this generating a real EU-added value. Developed solutions have been tested and validated in 22 Pilot Projects implemented in the 14 Model Regions.

Outputs:

- The Modelling has confirmed that 30 % of the extra potential for wood mobilisation in the Model Regions could be obtained with ‘easy’ or ‘medium’ effort (chapter 1.3.4).
- The produced “European manual of integrated wood mobilisation solutions” (chapter 1.3.6).

Impact:

Based on this information available wood resources in the regions can be identified and utilised with the tested and described measures documented in the Handbook “European manual of integrated wood mobilisation solutions” and the Information System.

Output:

The SIMWOOD Information System targeting regional and European stakeholders (chapter 1.3.5).

Impact:

The European SIMWOOD Information System (“Mobiliser”) clusters and translates knowledge and successful solutions from the regions into simplified, applicable solutions for local stakeholders and will foster sustainable forest use and efficiency from a strong European perspective.

The Information System will be maintained beyond the SIMWOOD project and will be continuously expanded by new wood mobilisation project.

Impact:

SIMWOOD will contribute to HORIZON 2020 by the proposed regional strategies and actions for innovative wood mobilisation and the identification for future research priorities.

SIMWOOD will contribute towards an improvement of present and future EU- and national programs and incentive systems for a sustainable wood mobilisation in Europe (region specific).

1.4.6. The Dissemination Exploitation Strategy and Plan led to successful dissemination activities

SIMWOOD's results have been disseminated broadly through numerous presentations and speeches at regional, national and international conferences and events and in various publications, e.g. reports, journal articles, web articles, newsfeeds, brochures, flyers.

The project's activities, outputs and results have been communicated to all stakeholders. The knowledge transfer has been facilitated within the project regions and beyond and the take up and use of the "European manual of integrated wood mobilisation solutions (SIMWOOD Handbook)" and the SIMWOOD Information System (<https://simwood.jrc.ec.europa.eu>) has been encouraged and promoted.

All publications and items are accessible at the project website www.simwood-project.eu.

The impact of the project can be addressed by demonstrating

- The quality of the material produced to address the main issue of wood mobilisation and relevance for the stakeholders.
- The quantity of material and actions produced by the consortium to reach final users.
- The diversity and the relevance of stakeholders reached.

1.4.7. Overall impact of SIMWOOD beyond project borders

Regional Profiles and identification of key factors influencing wood mobilisation

The regional profiles provided a thorough snapshot in time of the situation pertaining to wood mobilisation (barriers and opportunities according to the five socio-technical-environmental domains) and can be used by researchers and stakeholders in the future to assess how wood mobilisation is evolving in the regions. Hence, the analysis identified that a "one size fits all" approach is not appropriate. The impact of these findings was to justify the approach taken in the remainder of the SIMWOOD project, i.e. to develop tailor-made solutions for the regions.

Involvement of key stakeholders in regional initiatives and activities

The project implementation and the exchange between SIMWOOD partners clearly showed that forest owner associations or producer groups are important and have to become more proactive in coordination of members' forestry activities, i.e. to plan, manage, harvest and market more efficiently, so in the end to overcome the lack of coordination of forest and market operations for small, fragmented forests in Europe. To be effective and sustainable, these self-help organisations should progress towards a larger number of members.

Targeting regional initiatives, participatory processes and governance within and beyond the forest-based sector will have a positive impact on wood mobilisation and the role and awareness of forestry in European regions.

When key stakeholders - in particular SMEs - get and remain engaged in activities, the possible utilisation of business opportunities based on wood mobilisation will always remain a topic of public awareness.

The stakeholder integration and the collaborative learning in regional initiatives will lead to a better understanding and a common societal agreement on the utilisation of forest resources. An integration of ecosystem functions and services into standard forest management will be ensured and lead to sound solutions for solving conflicts among ecosystem services and overcoming bottlenecks limiting wood extraction. The increased awareness of the importance of forests for a balanced environment will lead to the conversion of devastated and less productive forest to more productive forests.

Evaluation concept for Wood Mobilisation Initiatives

The literature review on the evaluation of wood mobilisation projects is to be published. The fact that this study shows that a lot of money has been spent on wood mobilisation projects, but that the results hardly ever are evaluated, should induce many impacts beyond the project life of SIMWOOD.

So far mobilisation measures have not been evaluated in a comparable way and the use of the Evaluation Framework will facilitate an assessment of whether applied measures in Pilot Projects can be transferred cross-regionally. It is expected that this framework will be adopted on European scale when wood mobilisation initiatives are planned and will therefore have considerable impacts beyond the end of the project.

Modelling of potential wood mobilisation

The work on modelling wood mobilisation potential (to be published in 2018 or 2019) has shown how difficult it is to quantify this important element of the European bioeconomy and will hopefully lead to the provision of better quality and more consistent data on this subject being available in Europe.

The Modelling has confirmed that 30 % of the extra potential for wood mobilisation (17.2 Mio. m³) in the Model Regions could be obtained with 'easy' or 'medium' effort (chapter 1.3.4). Scaled up to European level, out of ~200 million m³ that seem to be available, only ~60 million m³/y can be mobilised with little or medium effort.

Based on this information available wood resources in the regions can be identified and utilised with the tested and described measures documented in the Handbook "European manual of integrated wood mobilisation solutions" and the SIMWOOD Information System.

Regional Pilot Projects' added value for wood mobilisation

After four years of collaboration, partners of the SIMWOOD project share in this Synthesis report (D4.3) their experience at designing, steering, and evaluating wood mobilisation initiatives (WMI). The consortium considers that the lessons learnt while developing and implementing the project, and the changes and achievements evidenced by the stakeholders the partners worked with, will be useful to a larger community of wood mobilisation facilitators throughout Europe.

D4.3 was prepared as a guide with two specific target audiences in mind:

- Leaders of local wood mobilisation initiatives (past, current and future)

- Regional authorities (or other relevant authorities) who support WMI and participate in their governance

The guide offers insights and illustrations on both how the WMI were managed, and the lessons learnt through the achievements and attempts to overcome challenges. SIMWOOD presents insights into how specific challenges can be addressed at the regional level.

Starting point was the common SIMWOOD approach, together with the methodological tool-kit that was successfully used and tested. A Theory of Change approach underpinned and guided the development of the Pilot Projects and their evaluations. The SIMWOOD tool-kit and approach is now ready for use by any new project leader ready to launch similar initiatives.

Lessons learnt from the SIMWOOD Pilot Projects are presented and illustrated by testimonials from their regional leaders, most of which were small and medium sized enterprises (SME).

Finally, recommendations are summarized for our audience, with emphasis on the following 5 tips for success essential to managing wood mobilisation initiatives:

1. Context: be clear about the local/regional/national/European context of the need for increased wood mobilisation.
2. Objectives: define a clear, realistic objective for your project and ensure it conforms to the norms of sustainable forest management.
3. Engagement: develop strong links with local stakeholders from the start, who will help define bottlenecks, ensure they are solvable, and help implement and disseminate the results of the project.
4. Innovation: be flexible, and look for new, practical solutions to barriers throughout the forestry-wood chain that you encounter along the way.
5. Evaluation: consider how you will evaluate the outcomes and impacts of your project; reflect on whether you are on track; regularly seek feedback; allocate time to this because it is worth the effort.

SIMWOOD Information System

The SIMWOOD Information System was designed in a generic way to be able to host both SIMWOOD Pilot Projects and other types of projects related to wood mobilisation. A significant effort was made to use search terms that were general enough to be applied outside of the SIMWOOD project walls, and tested our approach with stakeholders to use the web interface and include non-SIMWOOD projects, which worked out successfully. The library will be now expanded as new projects arise.

The permanent Commission URL in which the SIMWOOD Information System sits is the JRC's commitment to maintain the SIMWOOD pages for years to come. The upcoming revision of the Bioeconomy Strategy and Action Plan, for which the JRC is responsible for the monitoring efforts, which implies putting indicators in place, offers a window of opportunity to upscale the SIMWOOD pages to a significant tool for the policy officers through this website in collaboration with the Bioeconomy Knowledge Centre.

Handbook for wood mobilisation in Europe

The “Handbook for wood mobilisation in Europe” (chapter 1.3.6) aims to raise awareness of the challenges and opportunities of wood mobilisation from managed forests by increasing the sustainable harvesting of wood. Based on the survey of described initiatives and pilot projects in several European countries, the main barriers impeding wood mobilisation are presented along with a set of corresponding measures and interventions that are considered capable of lifting these barriers.

It provides a thorough overview of the topic from a European perspective and is aimed at practitioners and policy makers in the forest-based sector. It is also useful as an introduction for readers interested in wood and biomass who have a different background, for example in biochemistry, new materials or renewable energies.

It is expected that the handbook can have a significant impact on future wood mobilisation initiatives in Europe.

1.5. Address of project public website and relevant contact details

1.5.1. Website

The SIMWOOD project website has been initiated in early 2014. www.simwood-project.eu presents the basic ideas behind SIMWOOD, informs about the actual status and latest news of the project and provides information about the research team and plenty of Downloadables.



Figure 6: SIMWOOD homepage

Long term consultation will be available at <http://simwood.efi.int>.

1.5.2. Contact

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