

P1.1

Roadmap towards an increased use of wood and cork in public buildings of South-West Europe, **EXECUTIVE SUMMARY**

PROJECT CONTEXT

<i>Project acronym</i>	IMIP
<i>Project title</i>	Innovative Eco-Construction System Based on Interlocking Modular Insulation Wood & Cork-Based Panels
<i>Project code</i>	SOE3/P3/E0963
<i>Coordinator</i>	Universitat Politècnica de València (UPV), ITACA
<i>Duration</i>	1 May 2020 – 30 April 2023 (36 months)
<i>Working Package (WP)</i>	WP.1 Integral design of the sustainable construction system value chain
<i>Product</i>	PI.1 Roadmap towards an increased use of wood and cork in public buildings of South-West Europe, EXECUTIVE SUMMARY
<i>Summary</i>	<p>The roadmap is designed to support the public sector in order to improve energy efficiency policies in public buildings and homes in south-western Europe (SUDOE space).</p> <p>The roadmap includes the characterization of the wood and cork sectors of south-western Europe from biomass availability to current uses. The functional and technical requirements of the products are established. It serves as a guide to good practices in technical evaluation and raw material quality.</p>
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Objective

The forest-based economy can play a relevant role to improve energy efficiency in public buildings and homes in South-West Europe (France, Spain and Portugal) while supporting regional development in rural areas. The public sector may take the lead and develop new policies focused to improve energy efficiency in public buildings using local bioproducts, but it must understand the current situation of forests and bioproducts value chain. Based on the characteristics of the wood and cork sectors of South-West Europe, and on the functional and technical requirements of wood and cork-based selected products, this roadmap defines a set of policies and strategies aimed to guide policymakers towards an increased use of wood and cork in public buildings of South-West Europe.

Introduction

As defined in the European Green Deal, the EU is committed to a growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050. The building sector has an important role to achieve this objective because it is responsible for half of all extracted materials, half of the total energy consumption, one third of water consumption and one third of waste generation. Its environmental impact occurs mainly in the use phase (80%), but significant impacts are also caused during the construction phase (20%). Therefore, the building sector and the circular economy play a relevant role in this strategy.

Construction materials commonly consumed in the South-West Europe, like concrete or steel, are responsible for a large share of energy consumption and CO₂ emissions in the manufacture of building products. Instead, wood and cork as construction material contributes on reducing global warming by storing atmospheric carbon, by replacing alternative construction materials, and by a potential cascade use.

Forest facts in the South-West European region

Forest area. Forests occupy 34.4% of the area, below the 39.9% of the area occupied by forests in the European Union.

Forest species. The most common tree genus is pine (*Pinus*), being Aleppo pine, Maritime pine and Scots pine the most common pine species. Oaks (*Quercus*) also play a relevant role, Sessile and European oaks in France, and Evergreen and Cork oaks in the Iberian Peninsula.

Growing stock. Total growing stock is 4,258 million m³ over bark. Wood growth occurs mainly in France (67%), but also in Spain (28%) because its country size, and because higher average growing rates in France.

Age-class structure. Forests are mainly uneven aged (80%).

Carbon stock. Forests contribute to reduce total greenhouse gas emissions by 11.82%, more than the European Union average of 9.90%. Instead, harvested wood products have a lower contribution to mitigate climate change (0.44%) than the European Union average (1.21%).

Forest harvesting intensity. The harvesting intensity is below 25% indicating a high potential for sustainably intensification of timber production.

Employment. In 2010, almost 400 thousand full time equivalent persons were employed in the forestry sector contributing to reduce unemployment in rural areas. About half of them worked in the manufacture of wood and a 30% in the paper industry

Wood and cork industries

The total roundwood production reached 82.8 million m³ in 2019, 18% of the European Union production. Most of it was produced in France (60%). Wood as renewable energy source had a decreasing tendency.

The wood-based industries are composed by almost 85 thousand enterprises with a value added at factory cost estimated at 26.3 billion € for 2018. Most of them are small and medium enterprises with an average of 5.4 employees per enterprise.

Cork production leaders worldwide are Portugal and Spain with 49.5% and 30.5% of the total cork production. The cork sector in Portugal was represented by 642 industries in 2017 and employed more than 8,000 workers. Most of these companies are dedicated to manufacture cork stoppers.

Few industries produce engineered wood products in the South-West European region despite their increased production in Europe. Engineered wood products are an opportunity in the South-West European region to increase the use of local timber in the construction sector where traditionally construction wood was produced from central and north European forests.

Sustainable construction

Sustainable forest management aims to maintain forest ecological, economic and social functions at local, national, and global levels. Forest management and production may be certified and produced products labelled to inform consumers about the sustainability of the products.

The sustainability performance of buildings along their life cycle may be measured through a set of indicators and common metrics. Each indicator links the individual building's impact with sustainability priorities at the European level allowing users to focus on a manageable number of essential concepts and indicators that contribute to achieving EU and national environmental policy goals.

Raw materials employed in sustainable building construction must be selected according to environmental, technical, economic and social criteria. Locally produced wood and cork are construction materials that accomplish with the three pillars of sustainability because the amount of embodied carbon is much lower than its competitors, generate less construction waste, generates local revenues, secures the future of local wood-working industries, contributes to fix rural population, or contributes to improve perceived indoor air quality. Also, technical and normative requirements such as CE Marking, using graded wood for structural purposes or engineered products fulfilling their reference standards shall be considered necessary to obtain the proper features in these products.

Strategies to improve energy efficiency policies in public buildings

Considering the three pillars of sustainability and based on literature and the results of this roadmap, we identified a list of policy instruments and strategies to improve

energy efficiency policies in the public buildings and homes of the South-West Europe.

- Policy instruments**
- Product energy performance standards
 - Product labels
 - Standard and labelling programs
 - Building codes
 - Building certificates and labels
 - Green procurement rules and practices
 - Public leadership programs
 - Voluntary agreements
 - Awareness raising and information programs

- Strategies**
- Supporting local bioresources
 - Enhancing certified local value chains
 - Long-term renovation strategies
 - Education and training
 - Financial and administrative aid
 - Foster research

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