

## Wood coatings for healthcare facilities

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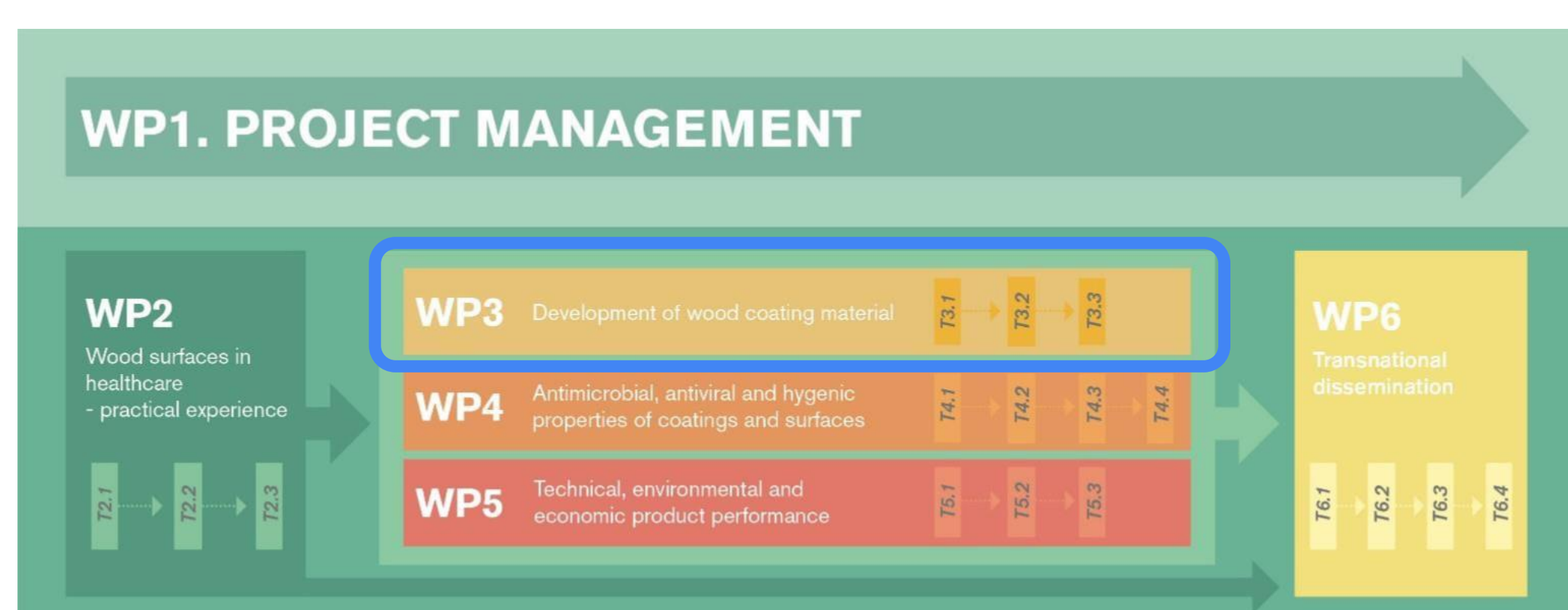
### Introduction

More intensive use of wood as a substitute for non-renewable resources and materials can support society on its way to a climate-neutral economy. A number of studies examining various interior materials have demonstrated that wood has a positive effect on the indoor environment by mitigating humidity fluctuations and promoting people's well-being through pleasant visual and tactile impressions. The present study is a part of the WOODforHEALTH project carried out by an international consortium within the framework of Horizon 2020 under ERA-NET Cofund ForestValue joint call. The study is focused on promoting safe and expanded use of wood products in healthcare facilities by designing wood coating formulations with high antimicrobial performance to meet the hygiene requirements.

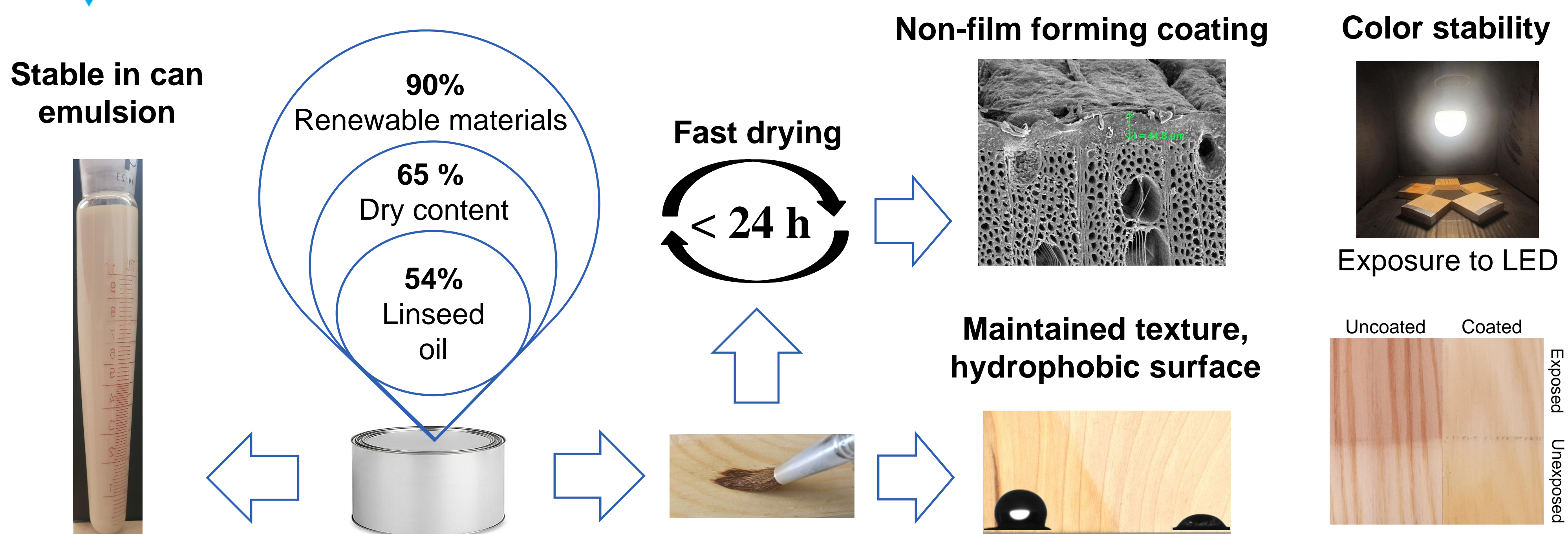


### Research Objective

The aim of the study is to develop non-film-forming wood coatings that are based on linseed oil with targeted additives and meet the safe-by-design principle. The coatings should provide the wood primarily with a high anti-microbial effect, but also give the surface aesthetic stability and protect it from photo-discoloration. The adjustment of the coatings to the requirements of industrial production and industrial application is ensured by close cooperation with an industrial partner “Iecavnieks & Co”.



### Results & Discussion



The base formulation developed is a water-in-oil emulsion based on thermally pre-treated linseed oil, which provides the wood surface with high hydrophobicity while maintaining its natural appearance. The formulation consists of 90% renewable raw materials with a dry content of 65.4%. The viscosity is tailored to the requirements of industrial application for non-film forming (thickness up to 50 µm) coatings. The composition of the drying agents is adjusted to ensure touch-dry surface in up to 24 hours after application of the coating. The functional additives for meeting standards of anti-microbial activity and photo-stability are tested to select the optimal composition.



### Conclusions

The coating base formulation developed in the first phase of the study meets the performance requirements set for the composition that will serve as a basis for supplementation with targeted additives. The additives included in the coating formulations in the next phase of the study are selected based on a preliminary assessment of the antibacterial performance of the potential active agents.



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More information about the WOODforHEALTH project:  
[www.woodforhealth.eu](http://www.woodforhealth.eu)  
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