

A Circular Life Cycle Approach to Wood Products: Producer and Consumer Responsibility as a Tool for Sustainability (KRUG–wood)



Basic Information

- **Acronym:** KRUG–wood
- **Project leader:** Assoc. Prof. Ivana Perić
- **Duration:** 48 months
- **Funding:** National Recovery and Resilience Plan 2021–2026 (NPOO), source 581. Funded by the European Union – NextGenerationEU
- **Institutional role (FŠDT):** partner
- **Funding amount (FŠDT):** EUR 101,023.25

About the Project

The **KRUG–wood** project focuses on developing a circular life-cycle model for wood products based on extended producer responsibility (EPR) and active consumer involvement.

Although the wood industry relies on renewable resources, it faces challenges such as short product lifespans, inefficient use, and limited responsibility within the value chain. The project addresses these issues by improving sustainable product management across all life-cycle stages—from design and production to use, reuse, recycling, and disposal.

The research includes analysis of legislation and policies, assessment of EPR implementation, environmental impact analysis using Life Cycle Assessment (LCA), and the study of consumer behavior. Based on the results, a simulation model of the circular system will be developed using AnyLogic, supported by digital tools and 3D scanning. The project contributes to the sustainable transition of the wood sector.

Objectives

The main objective is to develop a model for sustainable wood product management by analyzing interactions between producers, consumers, and institutions.

Specific objectives include:

- analysis of the legislative framework and EPR
- assessment of implementation barriers and capacities
- environmental impact analysis (LCA)
- research on consumer behavior
- development of a simulation model

Project Team

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Activities and Results

The project includes interdisciplinary research, LCA analyses, development of a simulation model, and dissemination through scientific publications, international conferences, and collaboration with industry.

Publications

<https://www.croris.hr/projekti/projekt/17634>

Keywords

wood technology; circular economy; extended producer responsibility (EPR); cascading use of wood; sustainability