

Innovation, Knowledge exchange | EIP-AGRI

Circular bioeconomy - valorisation of forest by-products

The development of high-value products derived from forest by-products is diverse yet underdeveloped, with emerging products, variable feedstocks and fragmented stakeholder involvement. This calls for tailored solutions across Europe in order to realise the potential of Europe's forest-based circular bioeconomy.

The EU CAP Network workshop 'Circular bioeconomy - valorisation of forest by-products' explored innovations that support the development of value chains for high-value products derived from forest waste and residues. The aim was to support robust value chains that facilitate a fair distribution of benefits to rural communities and foster a more effective circular bioeconomy in forestry.

Participants emphasised that numerous challenges must be addressed along the value chain, such as raw material shortages and fragmented forest ownership, technical limitations such as poor product performance and logistics, weak coordination among stakeholders, low consumer uptake, and cultural resistance to change.

Several practical solutions were proposed, including support for grassroots innovation and business, the creation of digital platforms for project coordination and knowledge flow, and education campaigns to shift consumer behaviour.

Across all discussions, five key messages came to the fore:

- > empowering bottom-up engagement
- > the necessity of context-specific strategies
- > coordinating long-term planning strategies
- > integrating digital and green transitions
- > engaging youth through education for a resilient circular bioeconomy

A vision for 2035

The participants outlined a common vision for 2035 consisting of thriving rural communities that are supported by inclusive and circular forest bioeconomy systems. To achieve this, key transformations must be accomplished:

- > **by 2030** - establish the foundations for a sustainable circular bioeconomy by developing localised value chains, improving cross-border research integration, enhancing resource security, and fostering social and ecological innovation
- > **by 2028** - ensure enabling conditions through aligned and long-term commitments (e.g. policy, tax), stronger education and training, stakeholder engagement, and improved collaboration within the bioeconomy value chain
- > **by 2026** - take immediate action by creating stable conditions for forest producers, raising awareness of bioeconomy opportunities, involving local communities in policy design, and improving support to innovation, diversification and entrepreneurship

"Bioactive compounds (antioxidant, antibacterial and antiviral) from logging residues have a multitude of uses in fields such as functional foods, nutritional supplements, cosmetics and functional coatings."

Petri Kilpeläinen

Participant at the EU CAP Network workshop 'Circular bioeconomy - valorisation of forest by-products'

Circular bioeconomy - valorisation of forest by-products

Research needs

- > improved **advisory systems for forest by-product valorisation** in support of the circular bioeconomy
- > improving the **visibility and coordination of circular bioeconomy projects in forestry**
- > enhancing the **technical performance and durability of bio-based products for industrial uptake**
- > applicable and measurable **mechanisms to integrate ecosystem services into forest-based circular bioeconomy models** and ensuring fair rewards for forest ecosystem services
- > identifying successful **community-driven innovations**, assessing their replicability, and developing support frameworks
- > co-developing **youth-centric outreach programmes, curricula, and communication strategies** to promote bioeconomy career paths and green entrepreneurship

More information about the workshop

- > [Event webpage](#)
- > [Final report](#)
- > [Flash report](#)

EIP-AGRI projects

Explore the [EIP-AGRI project database](#) to discover initiatives working on circular bioeconomy in forestry:

- > [14 Operational Groups](#)
- > [18 Horizon multi-actor projects](#)
- > [7 thematic networks](#)
- > [37 practice abstracts](#)

Inspirational ideas

- > [Bridging local solutions and market potential in the forestry bioeconomy](#) - Latvia
- > [Sustainable biorefineries based on agricultural residues](#) - EU and China
- > [Financial compensation for foresters to keep their soil healthy](#) - Sweden
- > [From waste to resource: strengthening the circular economy in rural areas](#) - Finland
- > [Go nuts! The sustainable use of by-products from forestry](#) - Poland

Publications & videos

- > [Final report EU CAP Network cross-visit 'Use of agricultural and forestry residues for creating alternative sources of income for farmers and foresters'](#)
- > Thematic newsletter on valorisation of forest by-products / residues - [English](#) - [French](#) - [German](#)
- > [Brochure Operational Groups: Innovation in practice - EIP-AGRI Innovation awards 2024](#)

Feedback and questions:

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Funded by
the European Union