Agenda Item 7

The contribution of forests and forest products to a circular bioeconomy

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UNECE Committee on Forests and the Forest Industry
80th session
Geneva, 2-4 November 2022
Presentation contents

- Mandate
- Circular economy studies
- Other circular economy activities
Presentation contents

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- Other circular economy activities
1. “Prepare a series of studies further reviewing the application of circular models in specific forest-based industries, including through identification of case studies and best practice.

2. Take into consideration the whole forest-based value chain and bring attention to the circular nature of wood as a renewable resource and the role of sustainable forest management.

3. Look at existing definitions of a circular economy and present recommendations for adjusting them to the forest sector for consideration of member States during the next Joint Session.

4. Assess member States’ priorities and needs in application of circular models in the forest sector.

5. Provide opportunities for member States to exchange knowledge and best practice on the implementation of circularity principles in the forest sector”*

*(ECE/TIM/2021/2 FO:EFC/2021/2)
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Work on CE studies

- Three studies:
  - 2022 Circularity concepts in the wood construction sector as an example of long-lived products value chain
  - 2023 Universal preconditions of circularity in forest-based industries
  - 2023 Circularity concepts in pulp and paper industry as an example of a group of commodities with short life span

- The content was discussed and reviewed with
  - ECE/FAO ToS on Sustainable Forest Products
  - FAO HQ and the FAO Sustainable Wood for a Sustainable World Taskforce
  - ECE Taskforce on the Circular Economy

- Experts from members States are welcome to contribute
  - Review, providing sources and case studies
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Other CE work

- Building on the work of the ECE “Task Force on measuring the circular economy”, the Joint Section will work on a draft definition of a circular economy for the forest sector, for the consideration of member States at the JWP session in 2023 (First consultation 1.12.2022)

- “Circularity concepts in forest-based industries” - promotion campaign:
  - Social media coverage and launch event were organized in June 2022
  - The study was presented during IUFRO Conference “Forests in a Volatile World – Global Collaboration to Sustain Forests and Their Societal Benefits” in Sept 2022
  - Based on the study, posters with tips for circular consumption of forest-based products were prepared in Oct 2022

- “Catalogue of Wood Waste Classifications in the ECE Region” was promoted during the annual conference of the German Wood Waste Association in Sept 2022
Other CE work

• IDF 2022 focused on “Forests for sustainable lifestyles and a circular economy” in forest fashion and wood-based packaging value chains.

• Joint Section prepared jointly with FAO and ILO sessions on:
  • “Advancing decent work, green jobs and sustainability in the forest sector” for the World Forestry Congress in May 2022
  • “Beyond the numbers: income, employment and decent work in forestry” for COFO in October 2022
Thank you!

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Item 7: ECE/TIM/2022/Inf.3
Draft sectoral study: Circularity concepts in wood construction

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UNECE Committee on Forests and the Forest Industry
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Overview

1. Background for the Study

2. Chapter Highlights
   • CHAPTER 1 Setting a stage for circularity in wood construction
   • CHAPTER 2 The role of wood construction in a circular economy
   • CHAPTER 3 Circularity and Sustainability in Wood Construction Practices
   • CHAPTER 4 Examples of Good Practice

3. Conclusions
Background for the Study

The study aims to provide a comprehensive overview of how circularity concepts and sustainability practices can be applied in wood construction.

The study examines the benefits of wood use in construction as a bio-based material, compared to other construction materials, from the perspective of circularity, sustainability, and climate change mitigation.

The objective of this study is to understand how wood flows in the construction sector and how it contributes to the renewal and sustainability for construction value chains.
CHAPTER 1 Setting a stage for circularity in wood construction

Biological and technical cycle in a circular economy model by the Ellen McArthur Foundation.

CHAPTER 1 Setting a stage for circularity in wood construction
CHAPTER 1 Setting a stage for circularity in wood construction

Figure 4 Life cycle of a solid wood product destined for building construction showing the cross-over from green to blue material flows vis a vis EMF circular economy model.

Source: Oneil, Russel (2020)
CHAPTER 2 The role of wood construction in a circular economy

● History of wood use in construction
  ○ varies widely by region
  ○ wood structures built for thousands of years

● Benefits of wood use in construction for sustainability and circularity
  ○ renewable
  ○ lower greenhouse gas emissions
  ○ carbon storing
  ○ strong; light weight
  ○ natural thermal insulator
  ○ human health and well-being
  ○ recyclable

● Wood compares favorably to other materials
CHAPTER 3 Circularity and Sustainability in Wood Construction Practices

Circularity practices

- Circular design taking into consideration also impact on climate change
  - More coordinated effort is needed with end-of-value-chain actors to regarding reuse and material recovery
- Material sourcing from sustainably managed forests and certified forests
- Mass timber and hybrid construction for multi-storey buildings provide environmental sustainability & a highly performing material
- Modular units and off-site construction contribute to lower environmental impacts of construction sites

Increased collaboration of designers, architects, urban planners, engineers and legislators is needed to achieve greater sustainability and circularity.
CHAPTER 3 Circularity and Sustainability in Wood Construction Practices

Figure 11
Circularity Considerations at the End of Building Life

Source: Bertino et al., 2021
CHAPTER 4 Examples of Good Practice

Case Studies:
- Austria
- Canada
- Czechia
- Poland
- Serbia
- Türkiye
- United Kingdom of Great Britain and Northern Ireland
- Study on wooden building performance in 16 countries
Summary

- When it comes to sustainability and circularity, wood as a natural raw material has a number of advantages over other building materials.
- New types of wood products enable wood in tall buildings and are the result of extensive research over many years.
- Innovative wood products provide less manufacturing waste, low carbon-emission alternatives, and store massive quantities of carbon.
- New technologies speed the construction processes, promote energy efficiency, and protect prefabricated modules from the effects of weather.
- Continued research, advancements in material recovery, and sharing of information is needed.
Conclusions

Impact and benefit areas:

● Better design, innovation, and environmental impact
  ○ Recent innovations support wood use in construction, investments in forest industries, and greater sustainability
● Current and future potential use of wood in construction
  ○ Mass timber, panelized construction, prefabrication

Potential areas of improvement:

● Reuse and recycling of wood
● Wood waste landfilled, composted, or incinerated
● Deconstruction projects and reuse
Key points for guidance and discussion

- The Committee is invited to:
  - provide guidance on the content of the study, in particular the conclusions part
  - approve the finalization of the study and its submission for printing as UN publication by the end of 2022
Thank you!

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