

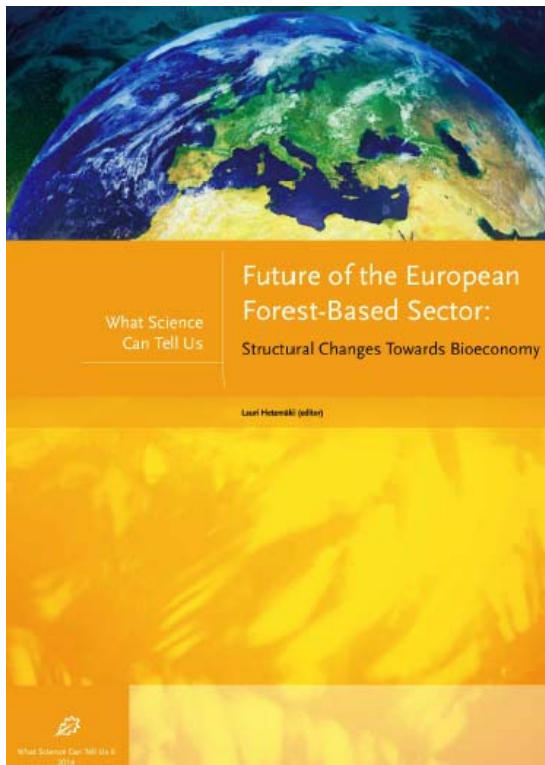


Role of sustainable forest-based bioeconomy in Europe

Lauri Hetemäki
European Forest Institute

ThinkForest, 15 November 2016, Brussels

Presentation based on a synthesis & insights of recent EFI studies



A new role for forests and the forest sector in the EU post-2020 climate targets



Gert-Jan Nabuurs, Philippe Delacote, David Ellison, Marc Hanewinkel, Marcus Lindner, Martin Nesbit, Markku Ollikainen and Annalisa Savaresi



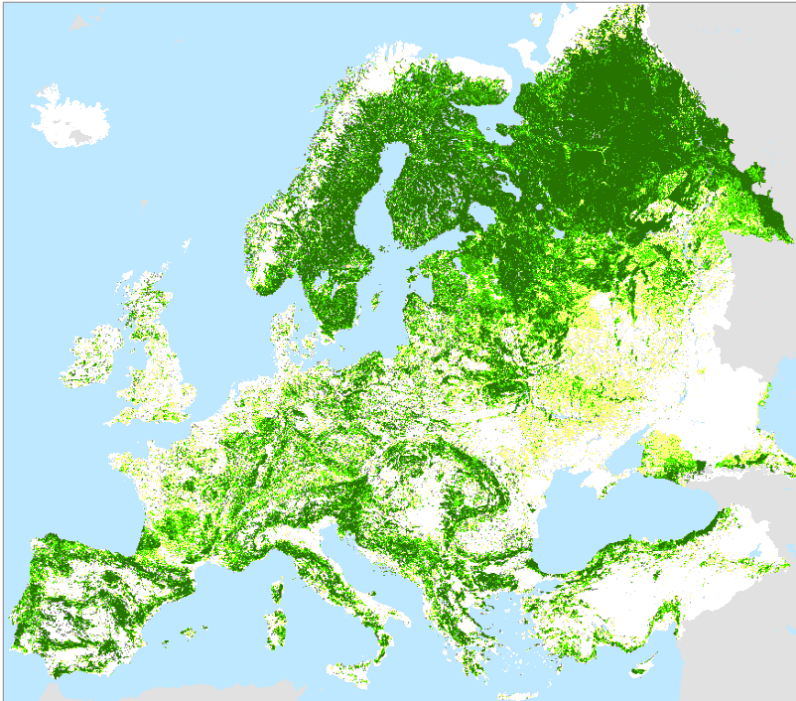
Forest biomass, carbon neutrality and climate change mitigation



Göran Berndes, Bob Abt, Antti Asikainen, Annette Cowie, Virginia Dale, Gustaf Egnell, Marcus Lindner, Luisa Marelli, David Paré, Kim Pingoud and Sonia Yeh



European forests: key for Europe's circular bioeconomy



- Covering **37% of EU land**
- Capturing **13% of CO₂ emissions**
- Renewable resources for
 - **25% of EU Bioeconomy**
 - **44% of renewable energy**
- Key for the sustainability of:
biodiversity, water and soil

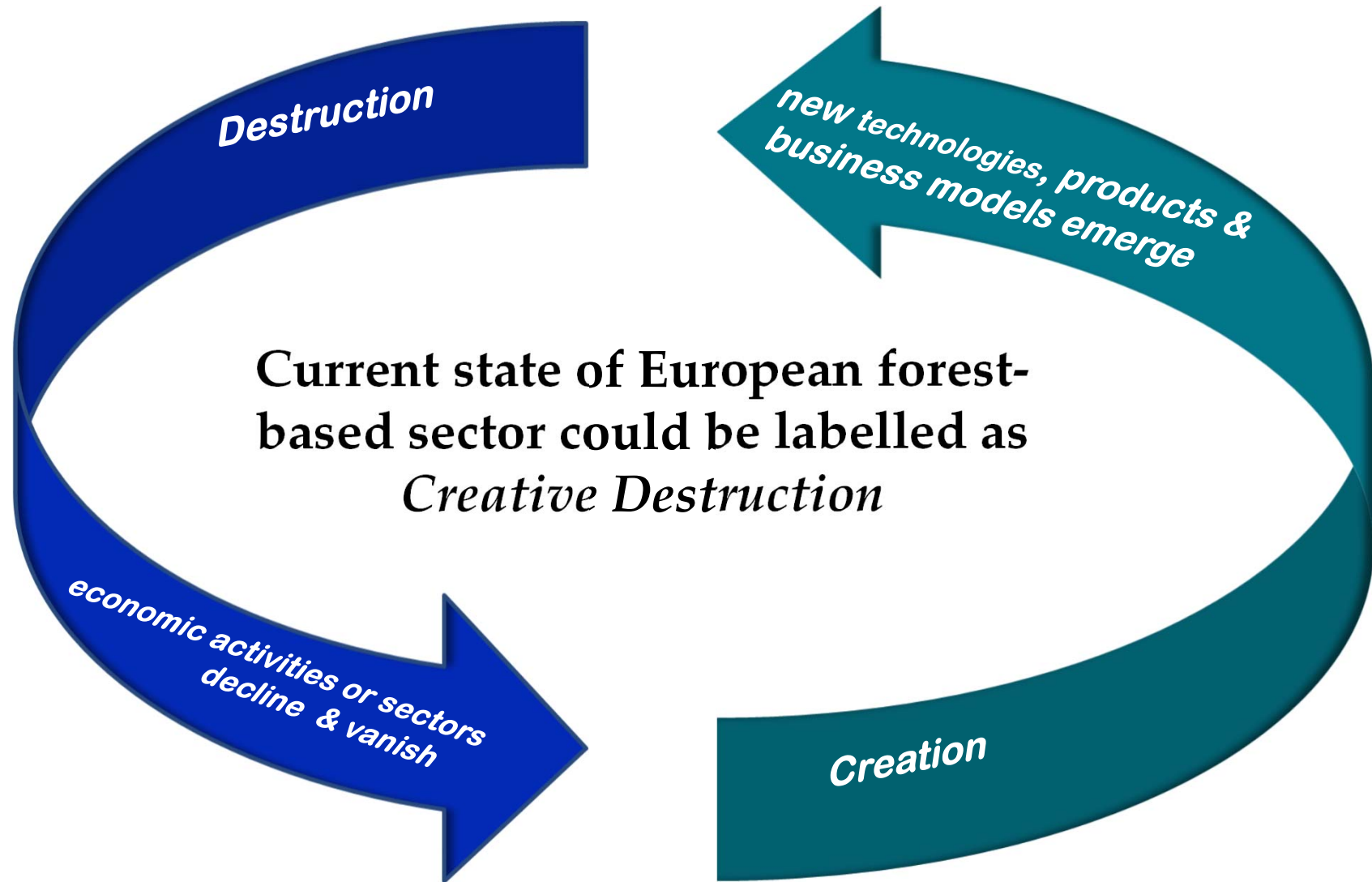
Relevance of *traditional* EU forest products industry*

- **Turnover 300 billion euros:** equal to *Daimler + Siemens + Nestlé*
- **Employment 1,5 million:** equal to *Volkswagen + Siemens + Nestlé + Daimler*

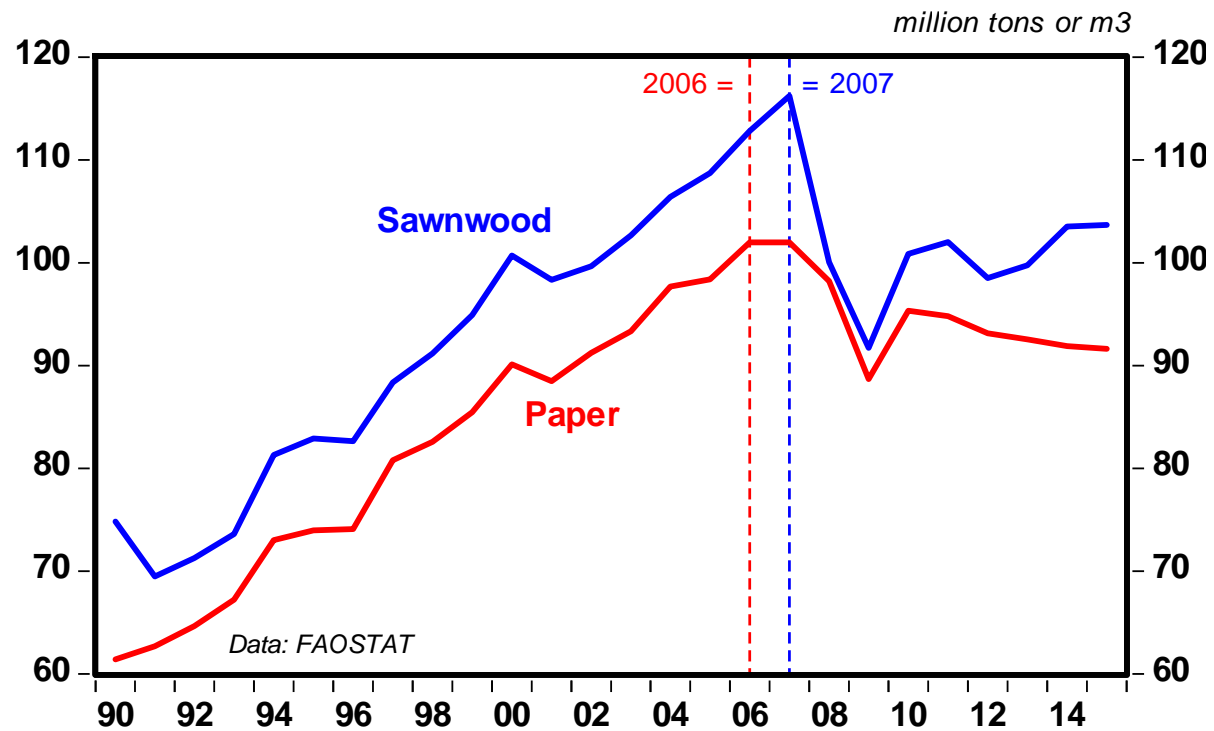
**Includes only wood products + pulp & paper. If value-added sector, related services and forestry included, easily double the turnover and employment.*

Data: EUROSTAT & FT Europe 500

But major structural changes taking place

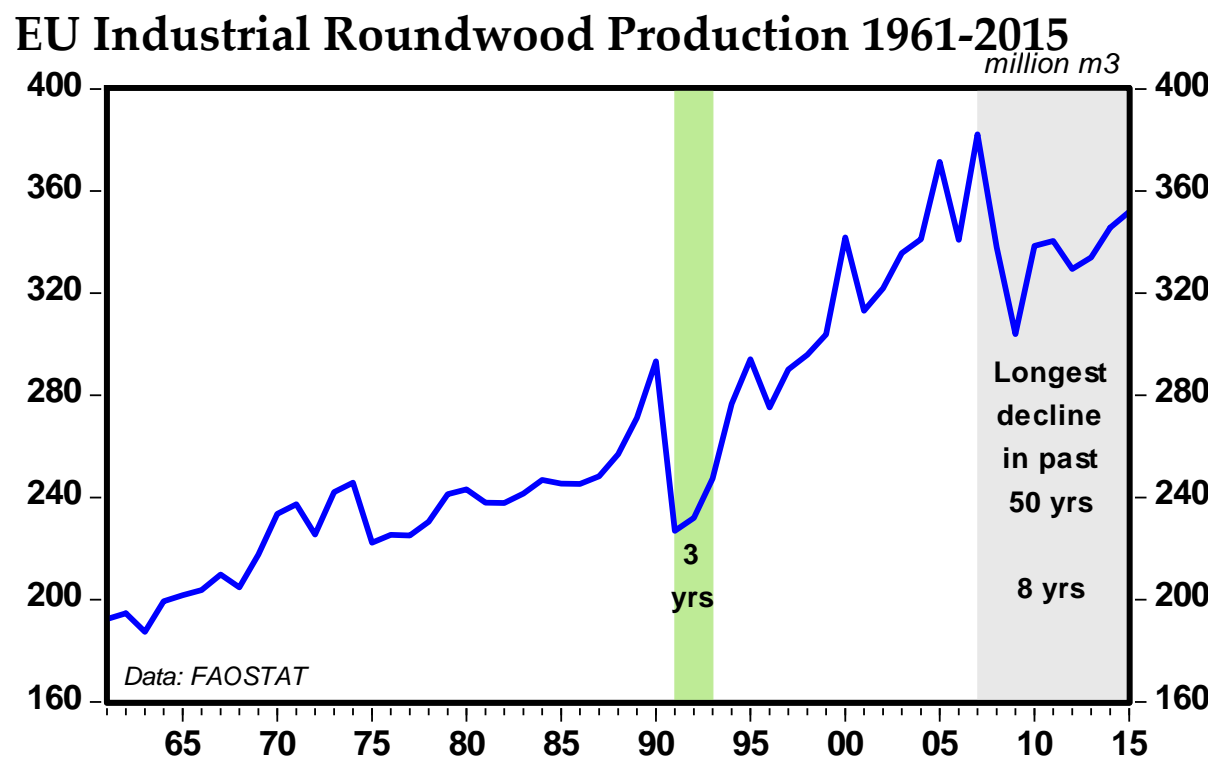


EU Sawnwood and Paper Production 1990-2015: "new normal?"



EU roundwood production declined

*Average production 2008-2015 vs. 2007 was 46 Mm³ lower
> equal to Germany's annual production*

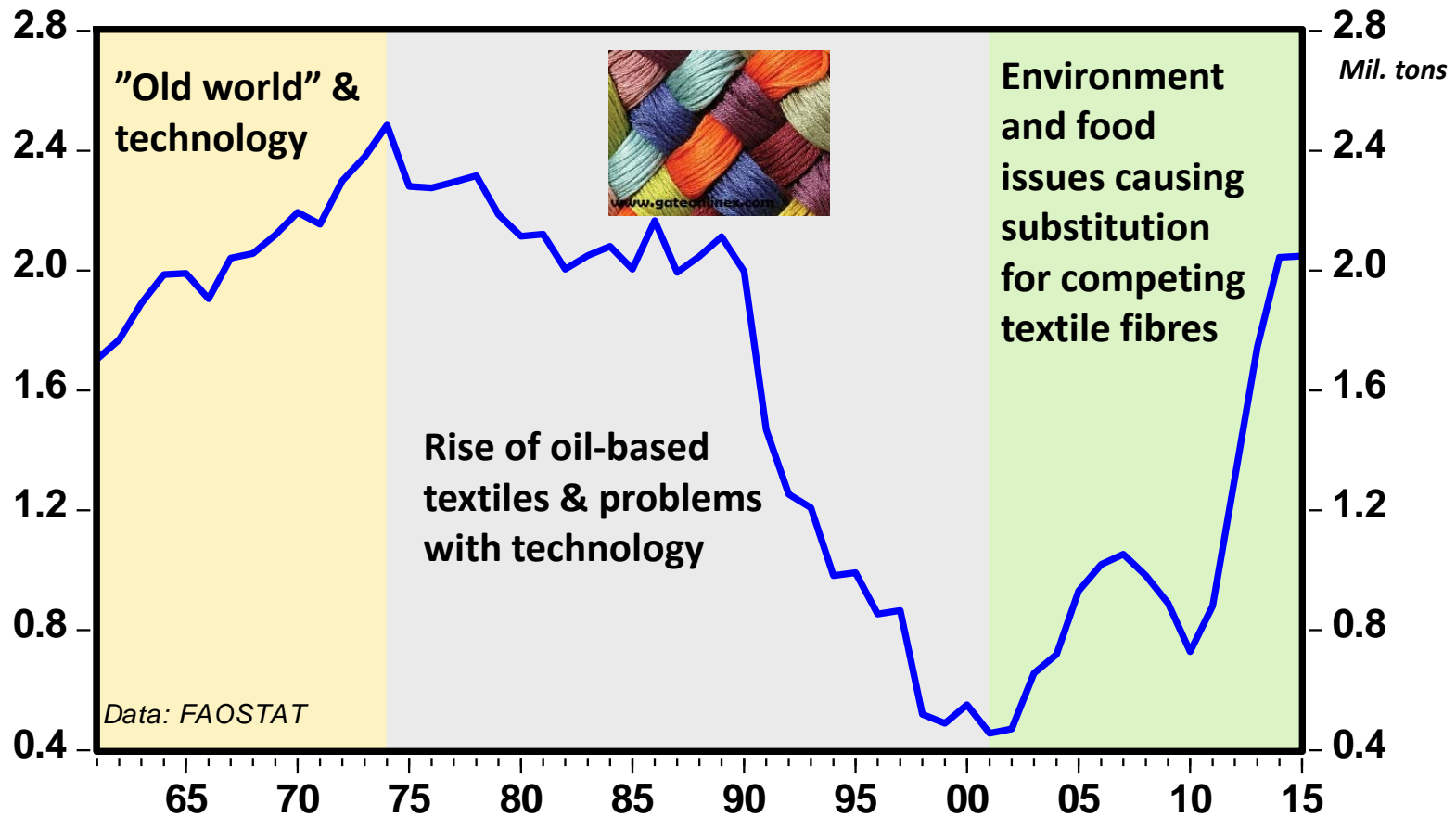


**Destructive drivers have enforced
European forest-based sector to
*renew and be creative***

> Forest bioeconomy outlook: some examples

Global changes are creating demand for wood fibres: Example dissolving pulp for textiles

European production of dissolving pulp (mainly for textiles) 1961-2015



Example wood construction: bioeconomy & CO₂ mitigation for urban areas

Cross Laminated Timber (CLT) for buildings in a high growth path (>10%)

- less primary energy
- more healthy living environment
- less carbon emissions

- For a **1 ton of wood products** replacing Portland cement, estimated average of **2 tons of CO₂ avoided**

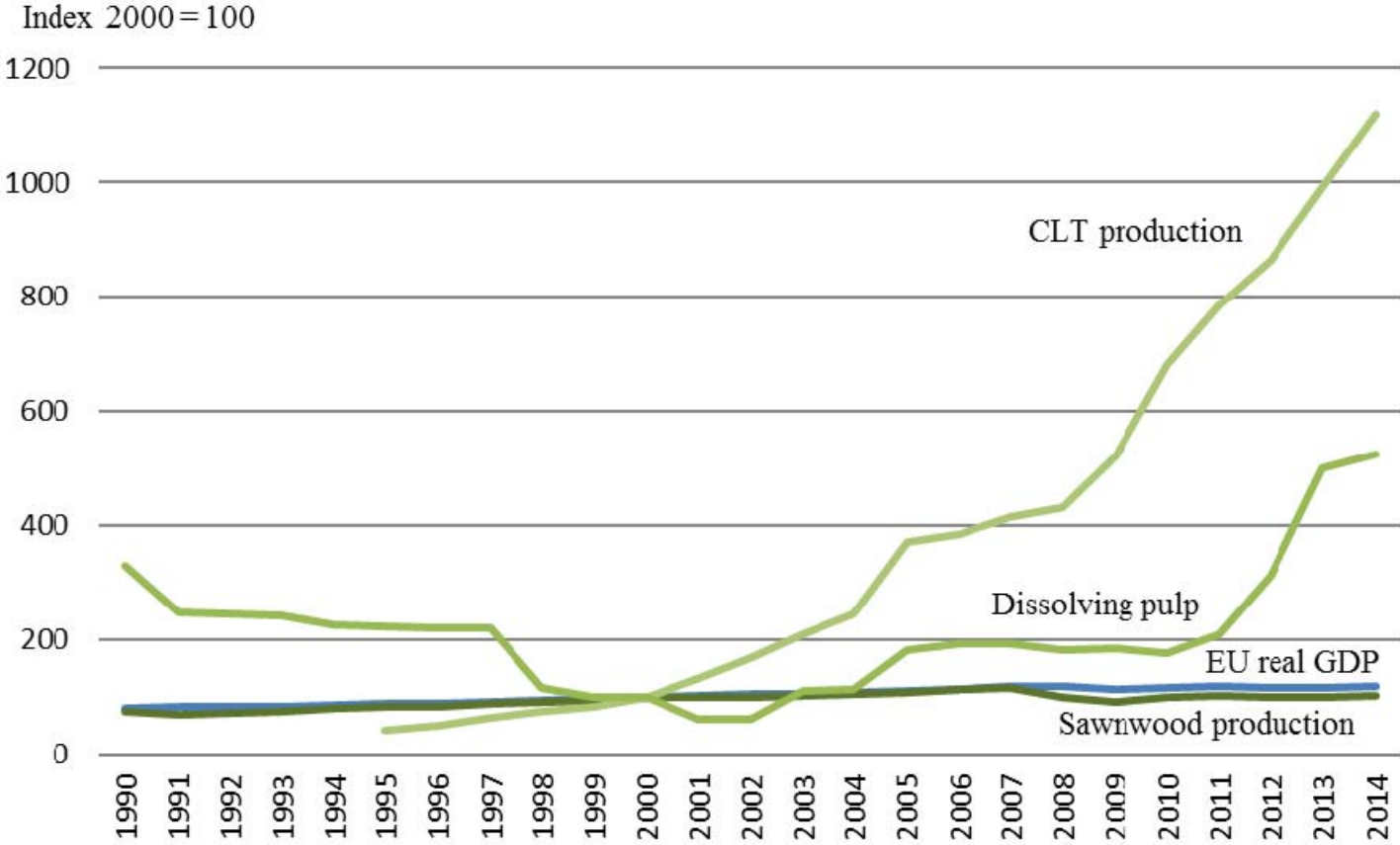


Image: Keskustakirjasto arkkitehtuurikilpailu



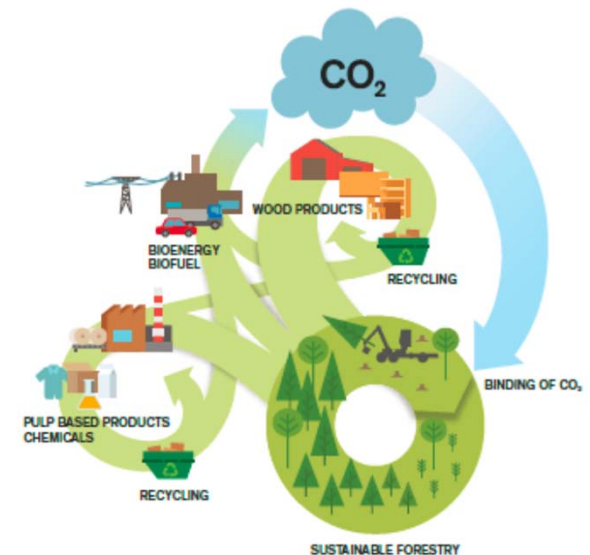
Photo: © Blumer-Lehmann AG

High growth in EU despite economic downturn



Example forest bioenergy: part of bioeconomy

- Bioenergy largest renewable energy source in EU: 44% of renewable energy production in 2014
- Forest bioenergy integral part of forest management, forestry, forest-based products & energy-industry system > *do not see it as separate entity*
- Bioenergy contributes significantly to energy supply in most scenarios that meet ambitious climate targets
- **“Forest bioenergy likely to make economic and environmental sense if accompanied with measures of best practices in forest management for climate change mitigation”** (Berndes et al. 2016*)

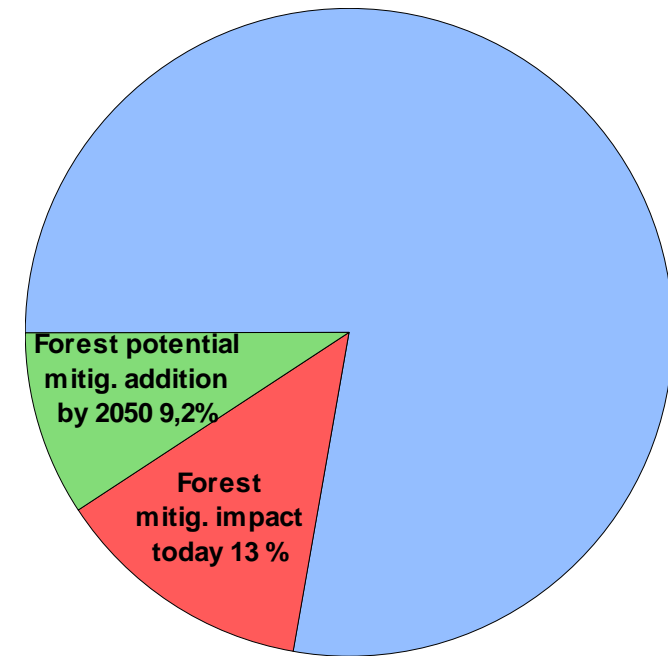


*Berndes et al. 2016. Forest biomass, carbon neutrality and climate change mitigation. *From Science to Policy 3*, European Forest Institute, 2016

EU forests & bioeconomy could do much more for climate mitigation

Climate Smart Forestry (Nabuurs et al. 2016*)

- Uses *sink, substitution* and *storage*
- Incentives & tailoring policies in regions – *one size does not fit all*
- Finding synergies between climate and other benefits (*e.g., bioeconomy, biodiversity*)
- Strive to conciliate mitigation with adaptation



Estimated equivalent of 22% of total EU CO₂ emissions could be potentially mitigated by forest & forest sector by 2050

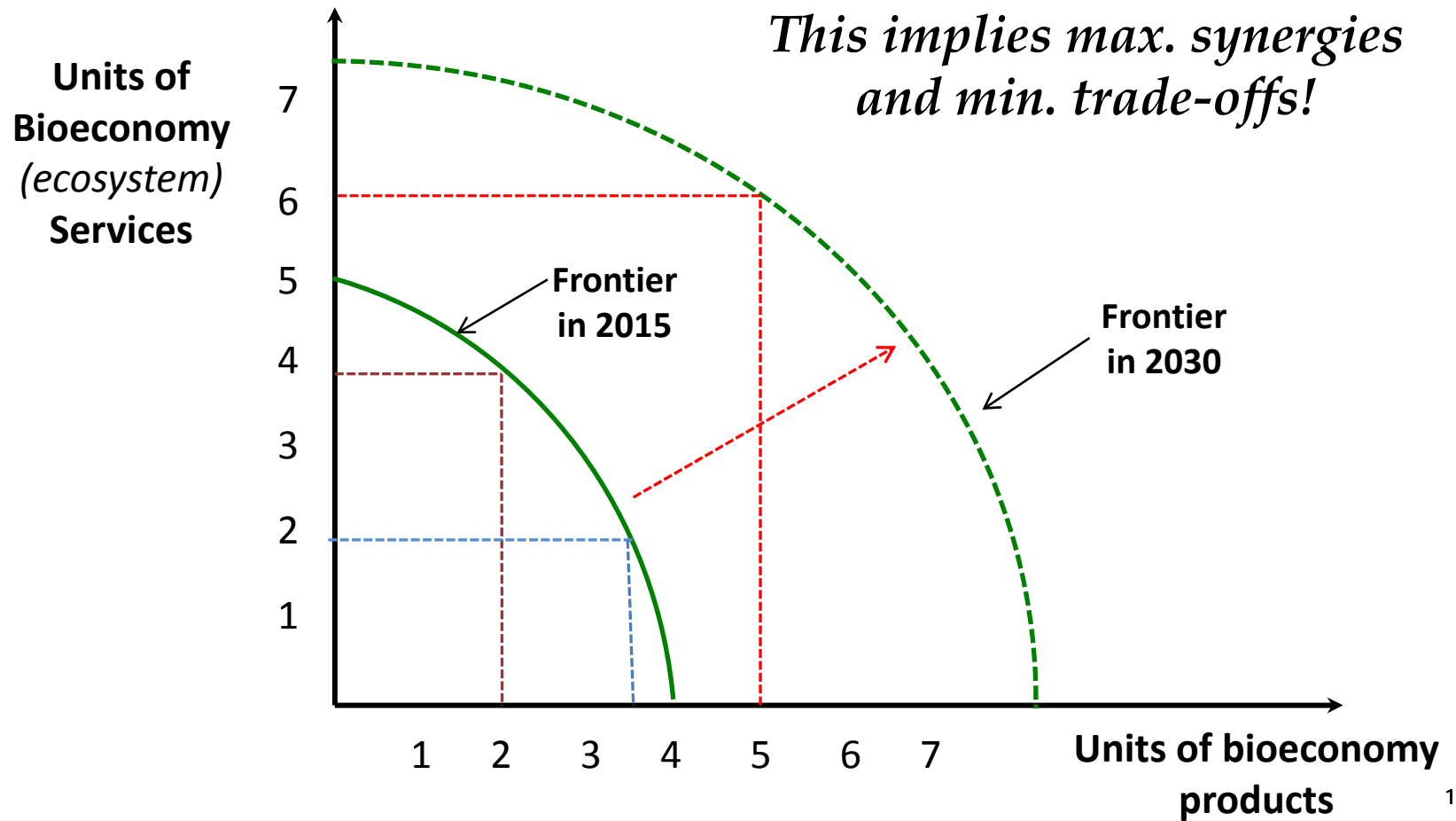
*Nabuurs et al. 2015. A new role for forests and the forest sector in the EU post-2020 climate targets. From Science to Policy 2. European Forest Institute.

Summary

European forest-based sector is currently not using its full potential for:

1. Sustainable growth and jobs
 2. Tackling environmental challenges
 3. Engaging the society
- > That is, for bioeconomy**

Need to push production possibility frontier outwards in a sustainable way



Need for a coherent well-coordinated long-term predictable policy framework



- Address existing regulatory and **market failures** (*e.g., CO₂ price*)
- Reinforce **cross-sectoral policy coordination** (*no silos approach*)
- **Maximize synergies**, minimize trade-offs (*bioeconomy, climate, biodiversity*)
- **Investments** to transform bioeconomy into economic reality
- **Sustainability** and **resource-efficiency** are a must
- **R&D** and evidence-informed policy

Thank you!

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Koli, Finland. Photo: Eeva Oinonen