

European Forest Institute



EUROPEAN FOREST
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From an Ecosystem Services Based Bioeconomy to Green Jobs

Introducing three recent project activities

**Workshop: “Green Forest Jobs: Exploring opportunities and
increasing the capacity of UNECE member States”**

Geneva, 18-09-2018

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Structure & intention of this talk

→ Introduces three recent activities of EFI in relation to forest ecosystem services and green jobs:

- I. (Conducted) Study: Towards a Sustainable European Forest Based Bioeconomy (published December 2017)
- II. (Started) European collaborative research and innovation project "SINCERE" (2018-2021)
- III. (Planned) joint IFSA-EFI-IUFRO project on green jobs/the future of employment in the forest sector (2018-2021)

I. Study: Towards a sustainable European forest based bioeconomy – assessment and the way forward

- Assigned by EFI's MDTF for policy support
- 48 scientists from 26 institutions in 12 countries

Main objectives: review scientific knowledge regarding:

- the **importance of forests** for a European bioeconomy
- economic, social and environmental **sustainability**
- **future developments** that may affect the forest-based bioeconomy



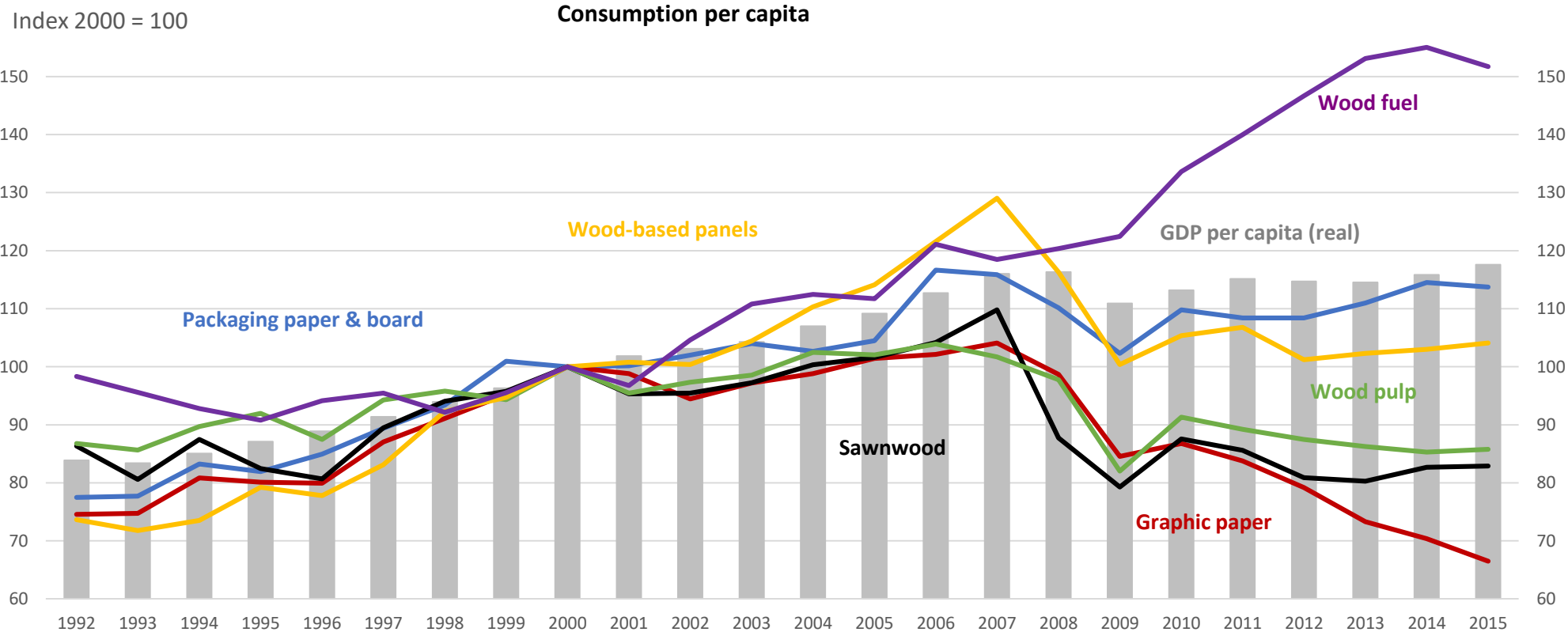
1.2 The transition of the forest-based bioeconomy in Europe

Key findings

- Current bioeconomy strategies and their implementation focus on forest biomass (Sec. 2.2: Pülzl, Giurca, Kleinschmit, Arts, Mustalahti, Sergent, Secco, Pettenella, Brukas)
- Non-wood forest products and other forest ecosystem services have substantial and increasing value



The transition of the forest-based bioeconomy (2)



Consumption per capita of forest-biomass-based products and GDP growth in Europe (Data: FAOSTAT, World Bank, here Sec. 3.9: Jonsson, Hurmekoski, Hetemäki, Prestemon)

The transition of the forest-based bioeconomy (3)

- Medical, environmental, and industrial sensors
- Water and air filtration
- Cosmetics
- Organic LEDs
- Flexible electronics
- Photovoltaics
- Recyclable electronics
- Battery membranes

HIGH VALUE

- Textiles
- Biofuels (crude oil, diesel, ethanol, jet fuel)
- Construction elements
- Cement additives or reinforcement fibers
- Automotive body & interior
- Packaging & paper coatings
- Paper & packaging filler
- Plastic packaging
- Intelligent packaging
- Hygiene and absorbent products

HIGH VOLUME

Possible end uses of new wood-based products

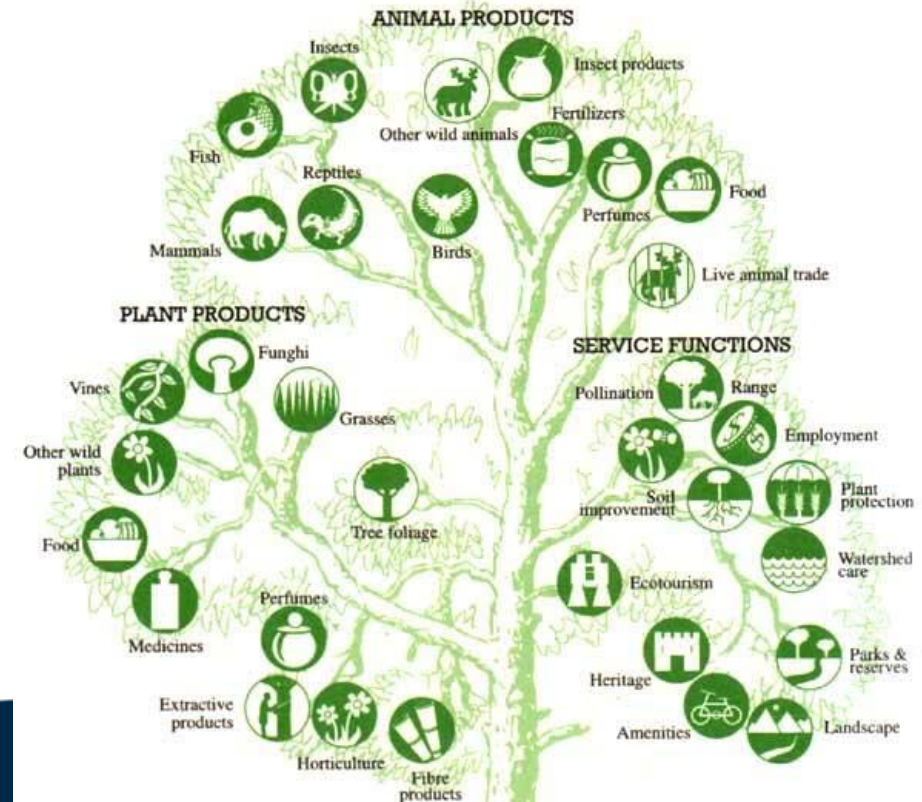
(Cowie et al, 2014; Pöyry, 2016; here Sec. 3.9: Jonsson, Hurmekoski, Hetemäki, Prestemon)

- Insulation
- Aerospace structure & interiors
- Aerogels
- Food & feed additives
- Paints and coatings

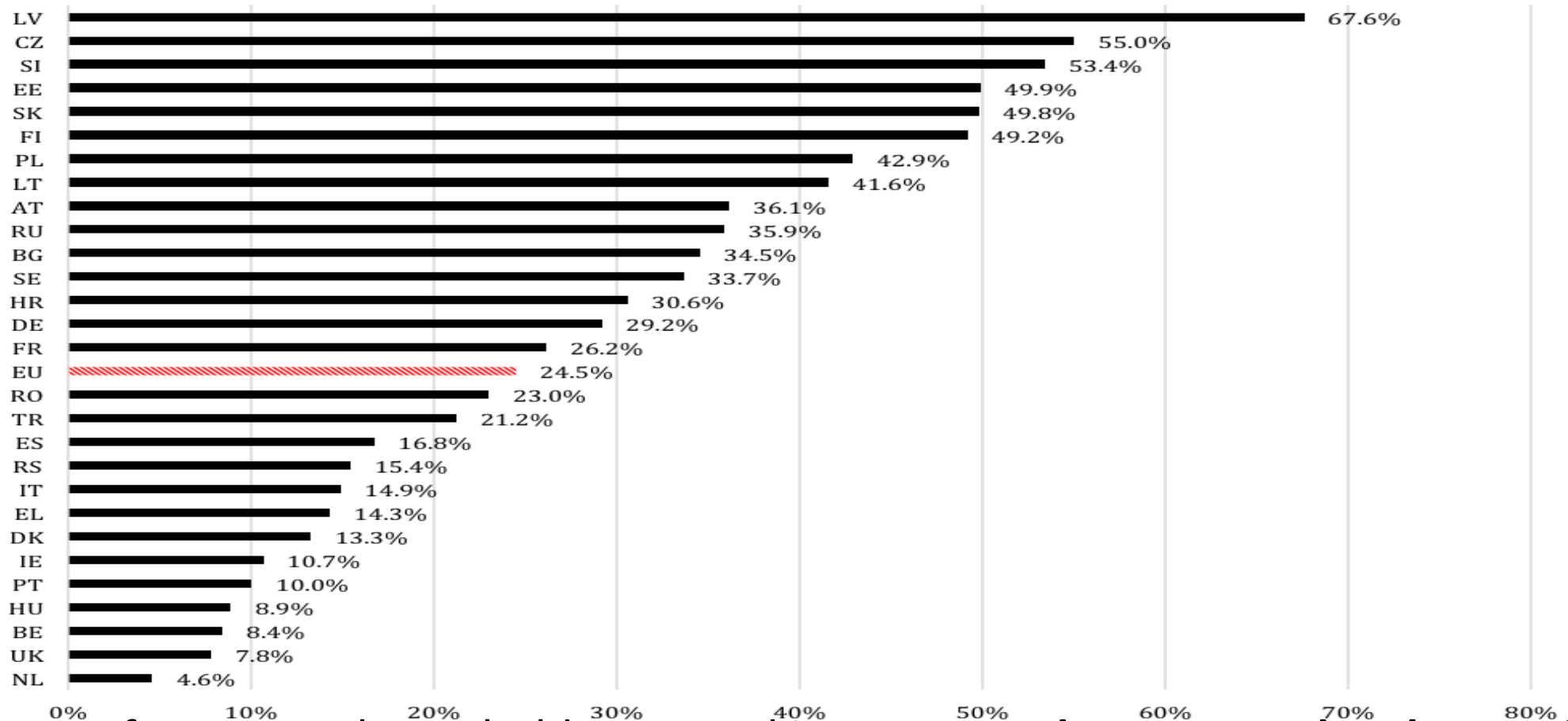
The transition of the forest-based bioeconomy (4)

Non-Wood-Forest-Products

- Estimated value €2.2 billion, representing around 10% of the value of round wood (Forest Europe, 2015)
- New research indicates significantly higher economic importance in Europe



The transition of the forest-based bioeconomy (5)



Percentage of European households engaged in **Non-Wood-Forest-Product** harvesting in 2015

(Vidale et al, 2015; here Sec 3.10: Prokofieva, Lovrić, Pettenella, Weiß, Wolfslehner, Wong).

The transition of the forest-based bioeconomy (6)

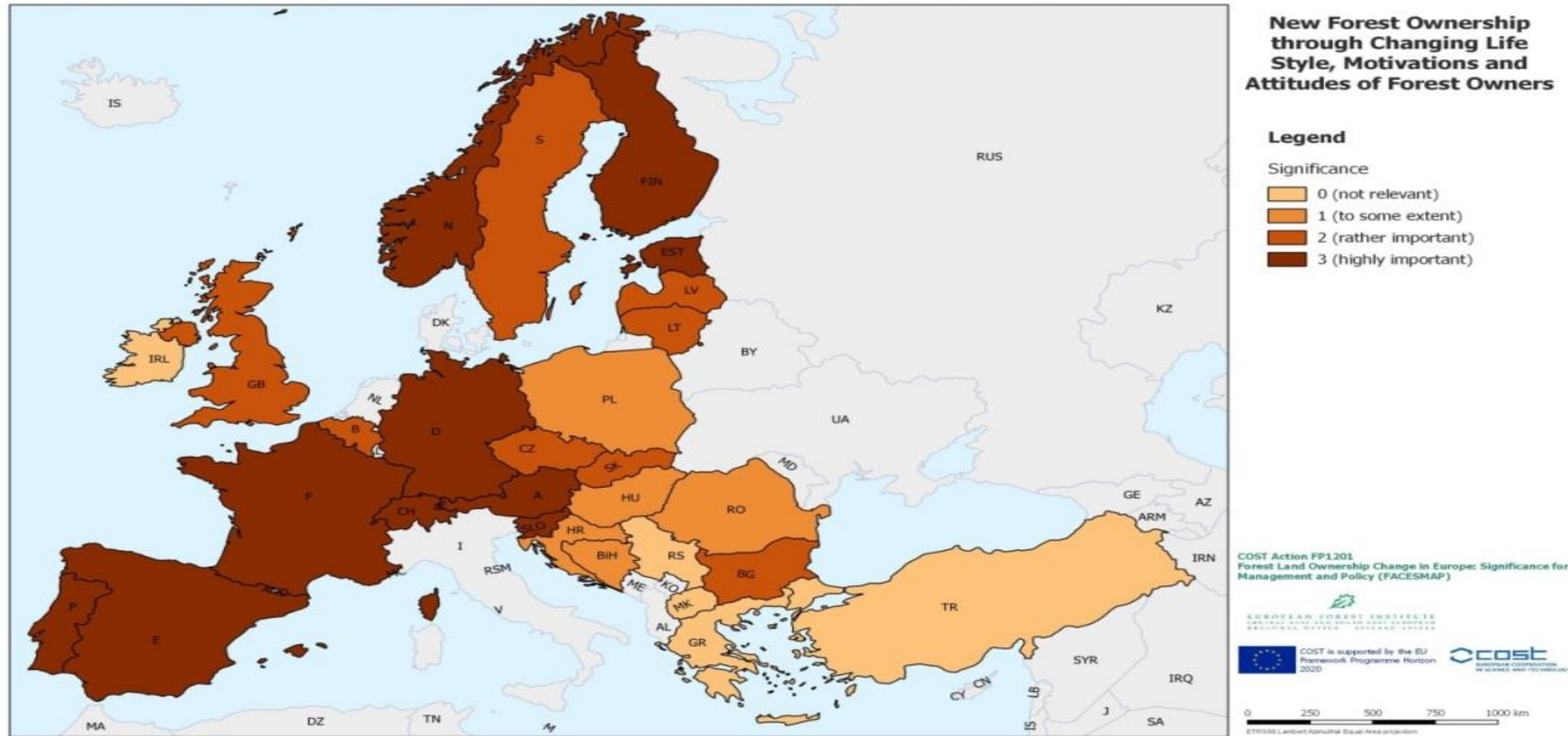
Cultural ecosystem services (Sec 3.5: Tyrväinen, Plieninger, Sanesi)

- Nature based tourism, recreation & health
- Education
- Spiritual values



The transition of the forest-based bioeconomy (7)

Trends in Forest Ownership Change in Europe



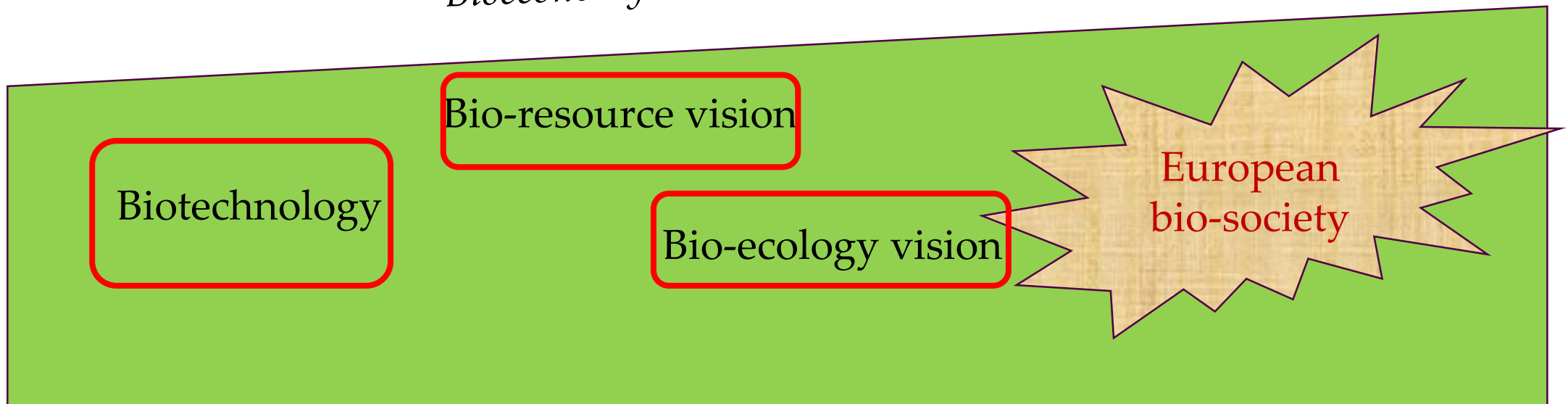
Significance of **changed lifestyle, motivations and attitudes of forest owners** in Europe (data source: FACESMAP Country Reports; published in: FACESMAP Policy Paper, Weiss et al, 2017, Here Sec. 3.8: Weiss, Lawrence, Nichiforel).

The transition of the forest-based bioeconomy – towards a forest based “biosociety”?

Conclusions

- Economic activities (and jobs) relating to forests are diverse and diversifying
- This diversification is key to connect forest management to urbanizing societies

Bioeconomy evolution (cf. Bugge et al., 2016)



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Innovating for Forest Ecosystem Services

**“Spurring INnovations for Forest ECosystem
SERvices in Europe”
2018-2021**

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773702.

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OBJECTIVES AND APPROACH

SINCERE...

- reviews and analyses innovations relating to forest ecosystem services
- runs a “Learning Architecture” for such innovations
- develops, implements and analyses innovation action case studies
- synthesises knowledge across innovation actions & enable upscaling of findings into transferable innovative mechanisms
- works in a participatory way towards a coordinated European policy framework for forest ecosystem services provision



INNOVATION ACTION CASE STUDIES

**Innovation in
Action**



INNOVATION ACTION CASE STUDIES

Name, Country (partners)
Auction for forest carbon and biodiversity, Belgium (OC-ANB KULeuven, Uni Copehagen)
Governance for suburban forests, Croatia (Nature Park Medvednica, EFI)
Reverse auction for biodiversity, Denmark (Danish Forest Association, Uni Copenhagen)
Landscape and Recreation Value Trade, Finland (Finnish Forest Center, Luke)
Spiritual Forest Services Switzerland and Europe (Pan Bern AG, EFI; Uni Göttingen/Kassel)
Forest-habitat biodiversity payment scheme, Italy (ETIFOR; Uni Padova)
Wild forest products & recreation, Italy (Bordo VT, Uni Padova)
Paying for watershed services to cities, Peru (CIFOR)
Providing multiple FES by forest renters, Russia (Russian Academy of Science)
New policy for FES, Basque Country, Spain (Diputacion Foral de Bizkaia, EFI)
PES for wild forest products, water protection & recreation, Catalonia/Spain (Centre de Proprietat Forestal supported by Forest Science and Technology Centre of Catalonia)

Coordinator



NATUURINVEST



U N I K A S S E L
V E R S I T Ä T



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III (Planned) research and networking project on the future of employment/green jobs in the forest sector

- Joint project of IFSA, IUFOR and EFI; conducted at EFI Bonn
- Main rationale: work with the future leaders & employees (forest students) to explore changes in forest related employment globally "bottom up"
- Submitted for funding to German BMEL, foreseen duration 1.11.2018-31.10.2021, contribution by IUFRO
- Four main steps of the research part:
 1. Review of available work
 2. Workshop with experts to define the most interesting questions
 3. Representative quantitative survey with global forest student network (bottom up approach)
 4. Qualitative interviews with selected employers



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!Many thanks!

Download the bioeconomy study:

https://www.efi.int/sites/default/files/files/publication-bank/2018/efi_wsctu8_2017.pdf

Visit SINCERE's webpage:

<https://sincereforests.eu/>

Visit EFI Bonn's Blog:

<https://resilience-blog.com/>