



EUROPEAN FOREST
INSTITUTE

Forest Biomass and EU Policies

BIO4ECO - Final Conference, 17. September 2020, Webinar

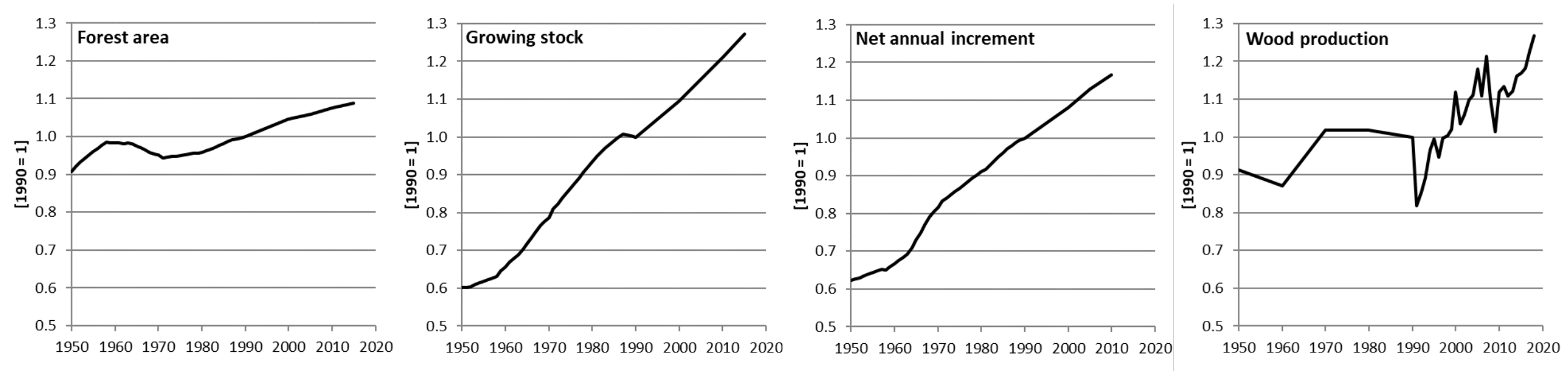
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17.09.2020 | WWW.EFI.INT

Unique Expansion of Forest Resources in Europe

- large expansion of European forest resources during the past 70 years – unique at global level



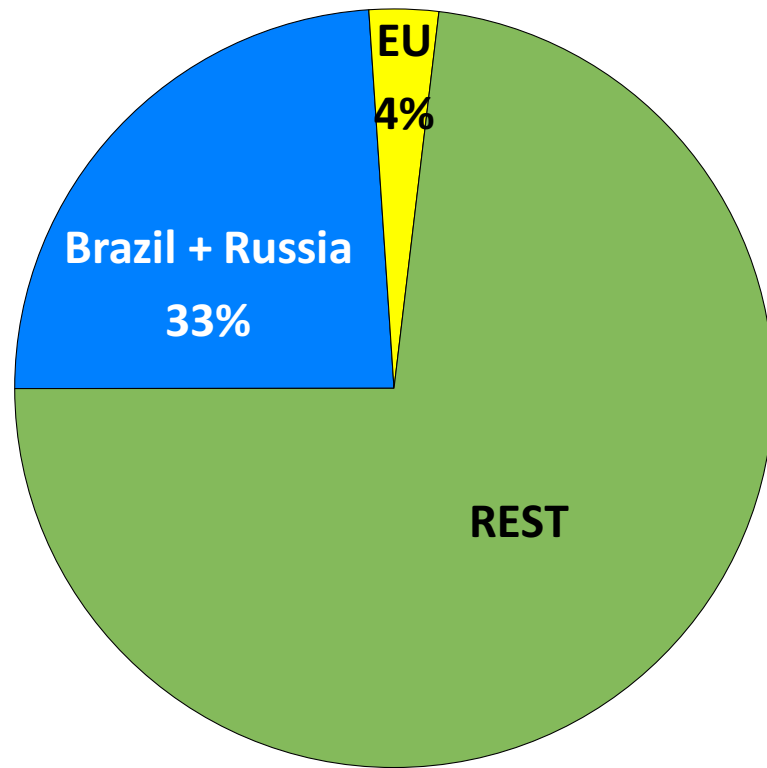
Source: adapted from Verkerk 2015; multiple data sources

- more mixed and structured forests
- higher amount of deadwood
- rising share of natural regeneration

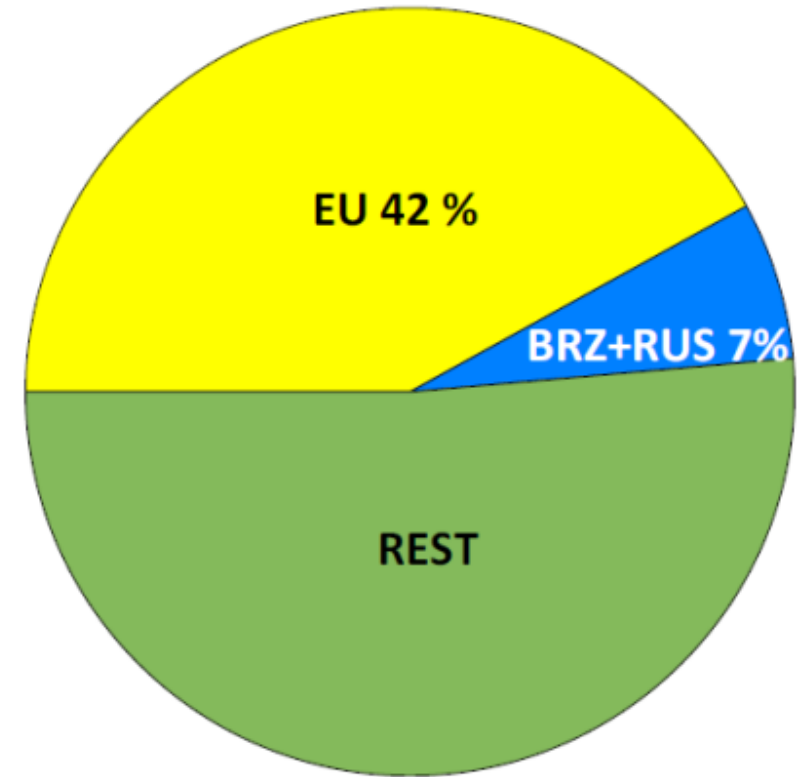


EU - not a huge forested Region, but a huge Forest Products Producer

EU28's share of total world forest area in 2015 was 4%

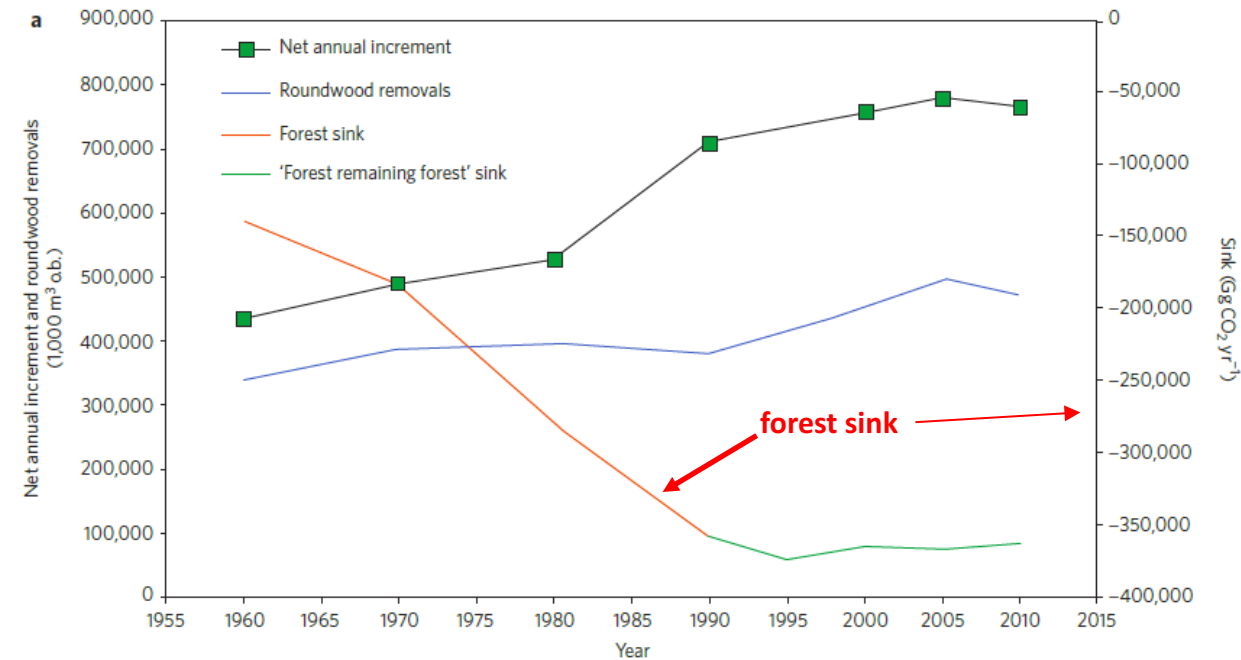


EU28's share of world total value of forest exports in 2015 was 42% = 110 billion USD



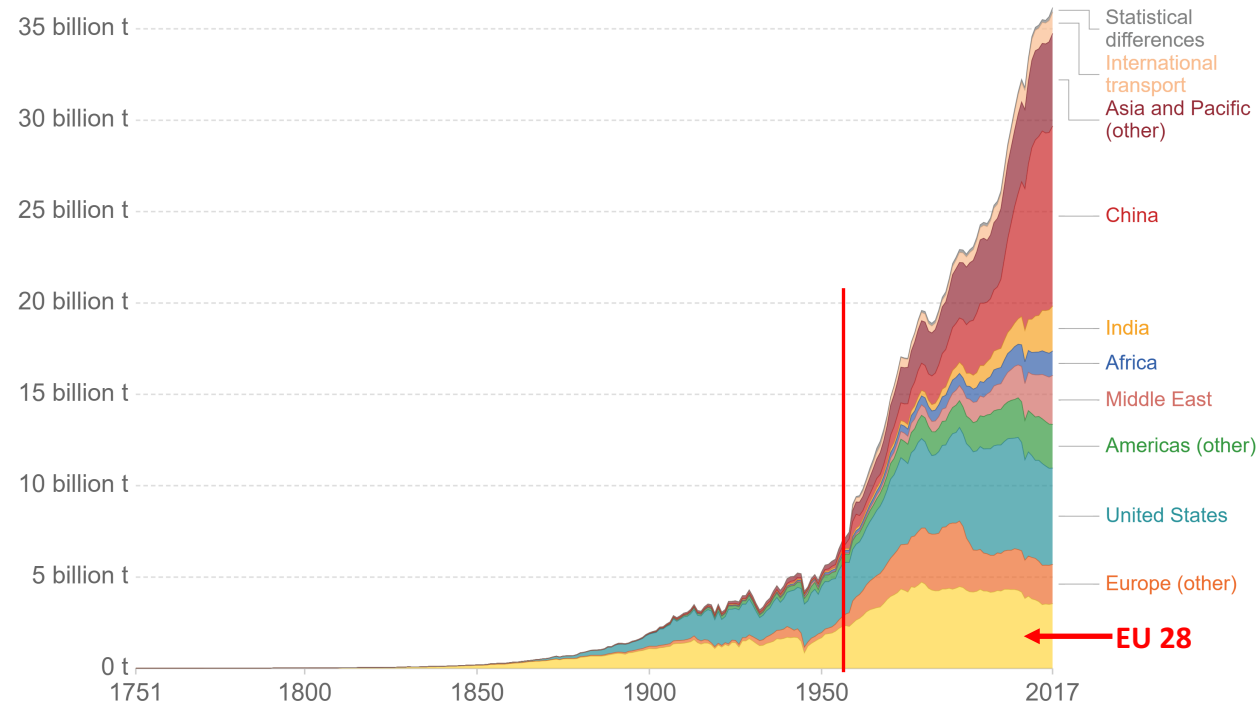
Source: FAOSTAT

Building a Carbon Sink in Europe – who else?







Source: Nabuurs et al. 2013

Annual total CO₂ emissions, by world region



Source: Carbon Dioxide Information Analysis Center (CDIAC); Global Carbon Project (GCP)
 Note: The difference between the global estimate and the sum of national totals is labeled "Statistical differences".
 OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

Mitigating GHG Emissions by Forests and Wood Use!

Option	current offset of total EU emissions (%)		Short-term relative impact of > harvest	Reported/accounted in:
	CO ₂			
Increase in C stock	in existing forests (CO ₂ sink or "removal")		≈ 10% (only 1% accounted under KP in 2008-2012)	<<
	in wood products		≈ 1%	
Substitution effects by wood (approximate figures)	Material		≈ 1-2%	>
	Fossil-fuel energy		≈ 4-5%	

LULUCF

Other GHG sectors

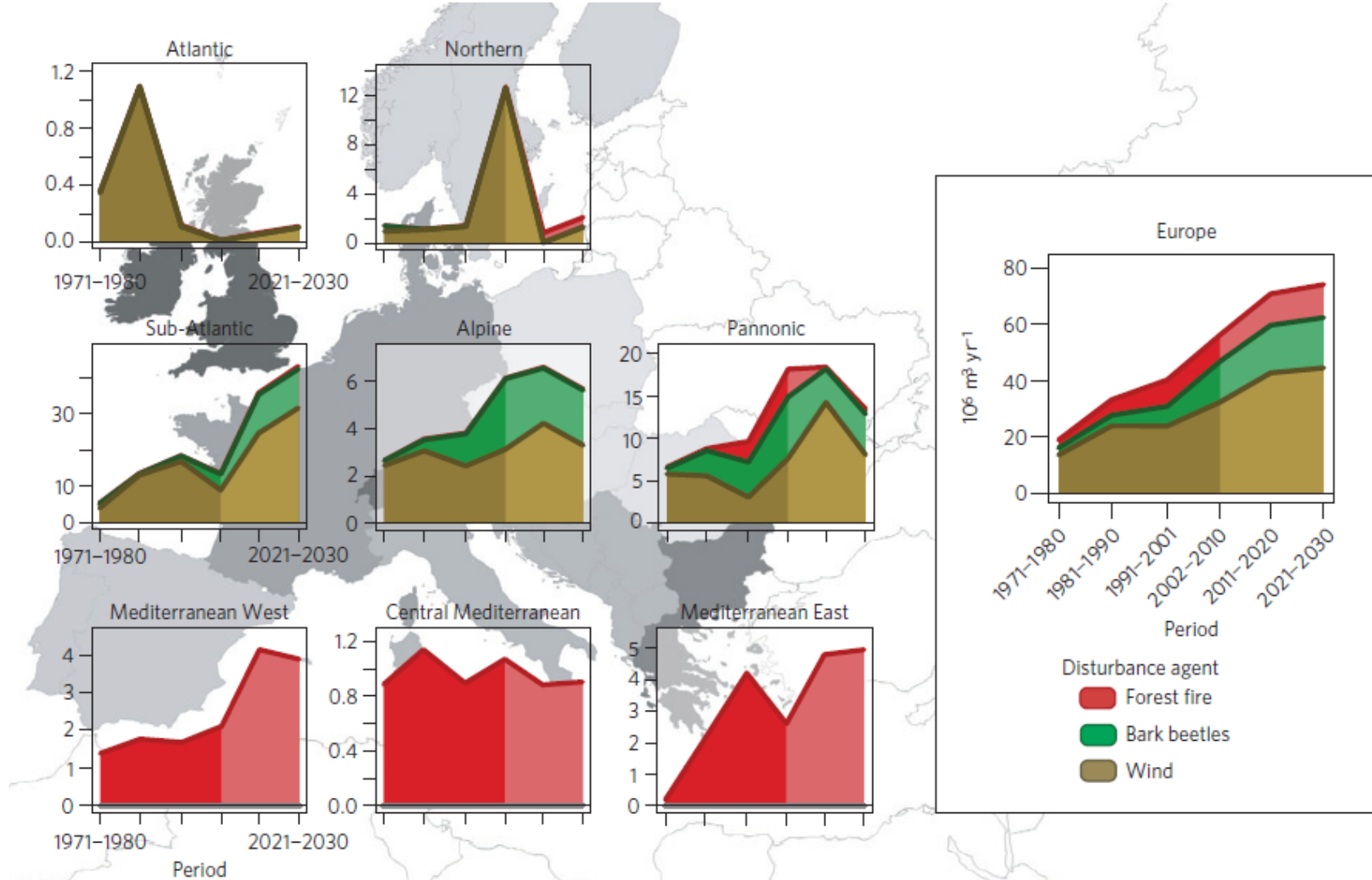
* While the emission saving by material substitution are immediate, when wood replaces fossil fuels the emissions saving highly depends on the context, assumptions and time frame.

Source: G. Grassi, JRC, presentation 20170530, Brussels

- trade-offs between options, each having its limitations, risks and temporal dynamics of emissions
- the most effective forest-based mitigation strategy should **optimize the sum of all options** in a given time frame

New CEPI study presented 19. June 2020: **20% offset in 2018**

Storing Carbon in Forests is not free of Risks

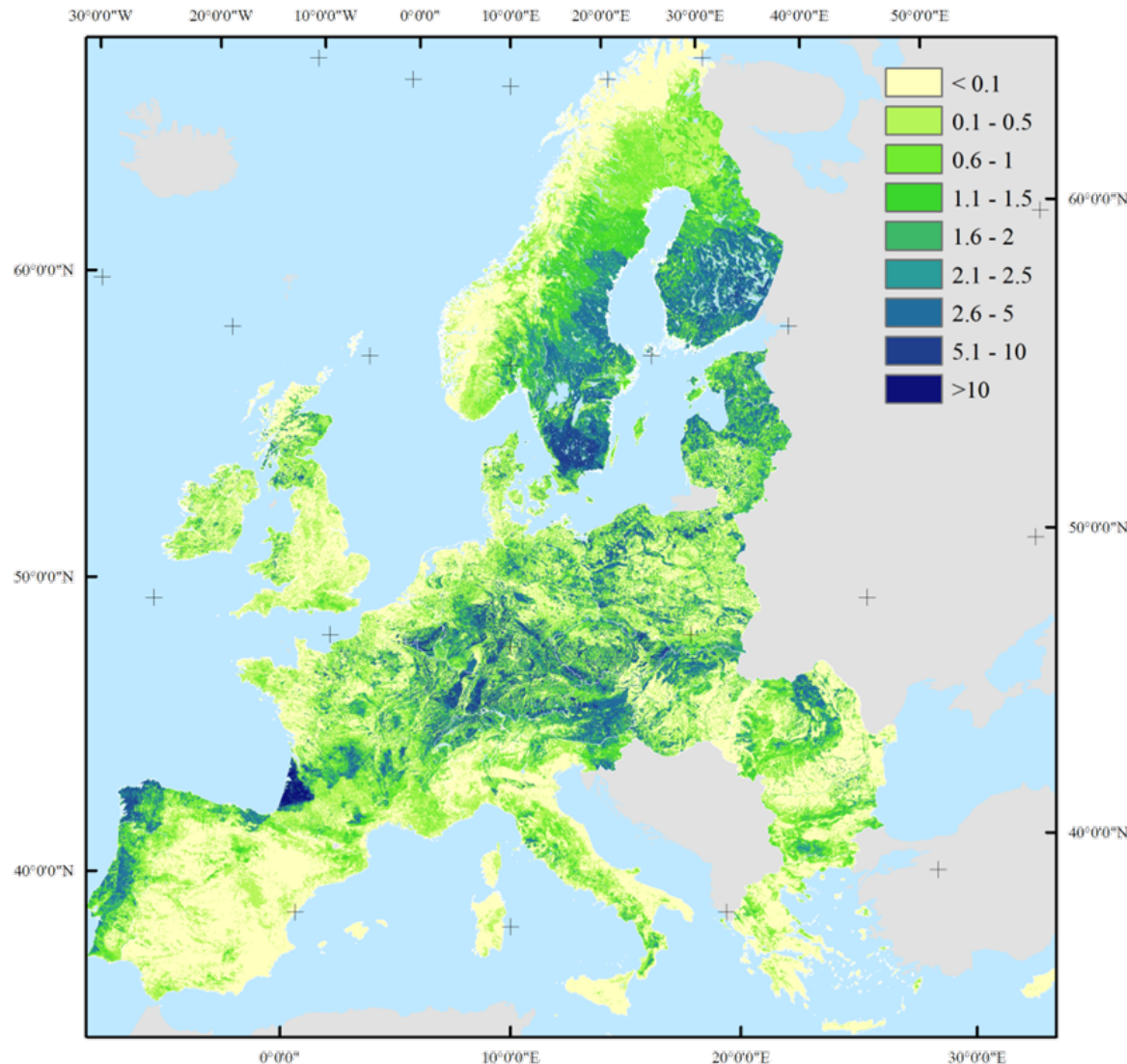


Forest disturbance damage
in Europe 1971–2030



Source: Seidl et al. 2014

EU Forest Biomass - an Opportunity



Roundwood production for the period 2000-2010 (m³ ha⁻¹ land yr⁻¹)

Source: Verkerk et al. 2015

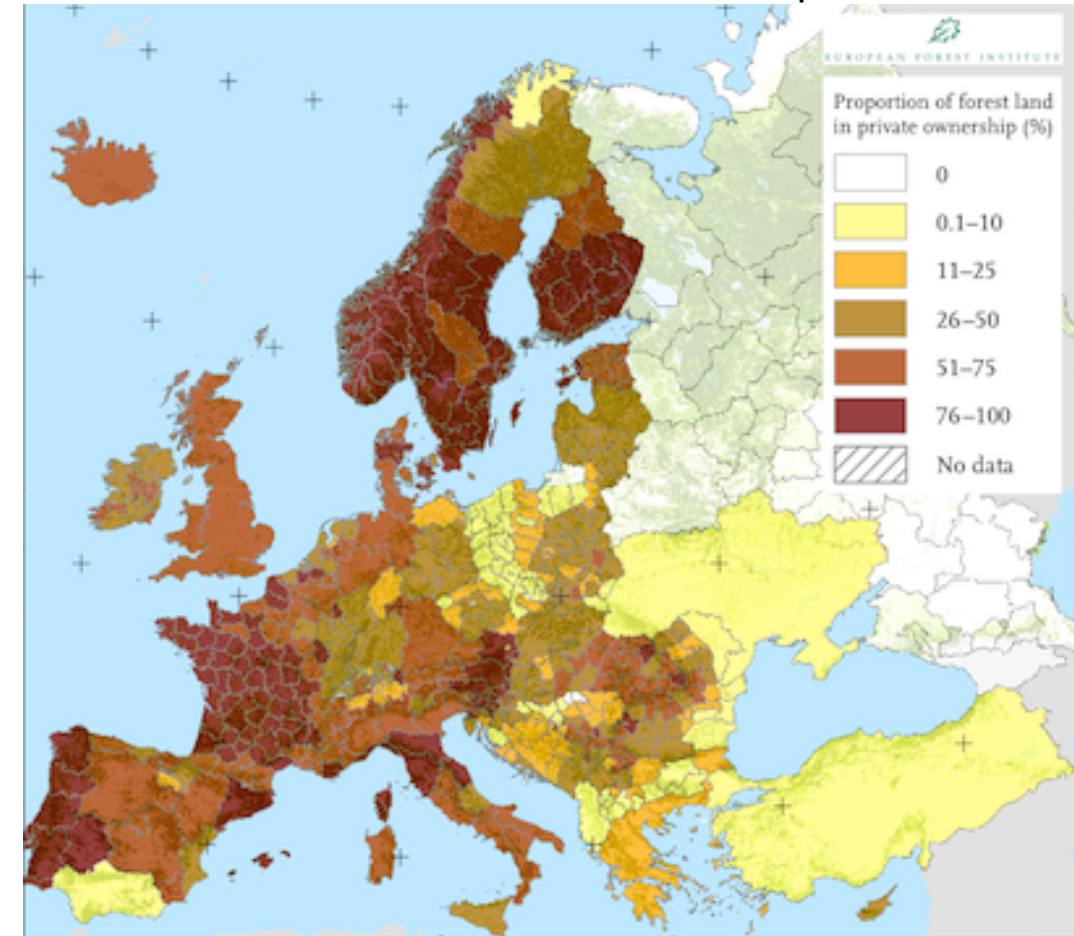
- **growing resource**: more forests than ever since early Medieval times; area and growing stock still increasing, first signs of saturation
- **increased productivity** by expanding state-of-the art forest management practices
- main source of **non-food, non-feed renewable biological material** for the circular bioeconomy
- increasing **investments in innovation** and **regional policies** to transform towards a circular bioeconomy



EU Forest Biomass facing a changing Environment

- more **diverse forest ownership** with different attitudes
- **structural changes** in wood-processing industries and global wood-product markets
- lacking achievements on EU **nature/biodiversity conservation goals**
- **additional and sometimes conflicting societal demands**, e.g. more ambitious nature/biodiversity conservation, climate change mitigation, transition to a more climate friendly and sustainable society
- **growing impact of disturbances**, e.g. forest fires, wind, snow/ice, droughts, pests and diseases

Private Forest Ownership



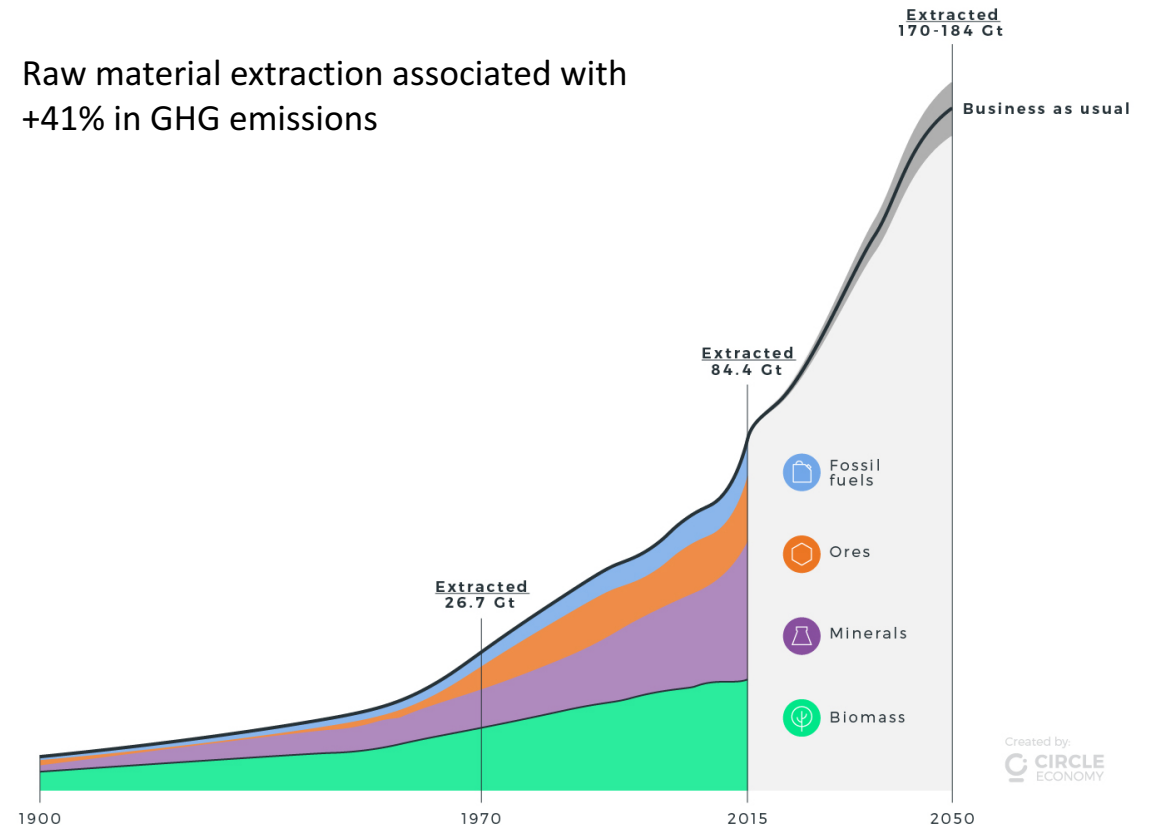
Source: Pulla et al. 2013

The Future – full of Uncertainties and Contradictions

- **increasing global demand for materials** due to a growing and increasingly rich global population
- role of **material and energy substitution** in climate change mitigation
- **dynamics of global markets** for wood and wood-based products in the transition to a circular bioeconomy
- **impacts of climate change**
 - productivity changes
 - increase in disturbances, which may outweigh productivity gains
 - feedbacks from forests to climate not limited to carbon
 - balancing mitigation and adaptation
- future development of **nitrogen** deposition
- **paradigm shift** on the role of forests in EU policies
- **social license to operate** in forestry and wood-processing industries

Future Global Raw Material Demand

Raw material extraction associated with
+41% in GHG emissions



Source: Hatfield-Dodds et al. 2017

EU Forest Policy Environment in 2020

a complex puzzle of sectoral policies

CAP/RD Policy

State Aid Rules

EIP AGRI

Post-2020 CAP/RD, State Aid, EIP AGRI

Agricultural Research and Innovation

Forest Strategy and MAP

Post-2020 Forest Strategy

Birds Directive

Habitat Directive

Guidance Natura 2000 and forests

Biodiversity Strategy to 2020

Green Infrastructure

No Net Loss

Mapping of Ecosystem Services (MAES)

Biodiversity Strategy to 2030

Nature Action Plan

7th Environment Action Programme

8th Environment Action Programme

Public Procurement Directive

Industrial Strategy

CEN sustainability criteria bio-based products

Horizon 2020

Horizon Europe

Bioeconomy Strategy

Water Framework Directive

Invasive Alien Species Regulation

FLEGT Action Plan

Timber Regulation

Protect and Restore the World's Forests

Nature Restoration Plan

3 billion Tree Planting Roadmap

LIFE+ Programme

Circular Economy Action Plan II

Roadmap to a Resource Efficient Europe

Plastics Strategy

Single Use Plastic Directive

Packaging Directive II

Blueprint Forest-based Industries

Guidance Cascading Use of Biomass

Sustainable Finance Action Plan

Sustainable Finance Regulations (Taxonomy)

2030 Climate and Energy Framework

Renewable Energy Directive II (sustainability criteria for biomass)

RED II review

ILUC Regulation

Energy Union Governance Regulation

Plant Health Regulation

Plant Protection Products Regulation

Forest Reproductive Material Directive

Forest Reproductive Material Regulations

European Green Deal – Other Actions

Renovation Wave Initiative

Built Environment Strategy

Sustainable Products Policy Initiative

Lead Markets climate neutral/circular Products

Carbon Removals Certification

European Urban Initiative

Long-term Vision for Rural Areas

2050-Vision

Effort Sharing Regulation

LULUCF Regulation

LULUCF review

New Strategy on Adaptation to Climate Change

Climate Law

Climate Change Framework Convention (incl. Protocols)

Biodiversity Convention (incl. Protocols)

Combat Desertification Convention

Aarhus Convention (access to information and justice on environment matters)

Paris Agreement

UN Agenda 2030/SDGs

Bonn Challenge

UN Forum on Forests

WTO Agreements

Convention on Long-range Transboundary Air Pollution/ICP Forest

FOREST EUROPE (incl. Resolutions)

Alpine Convention

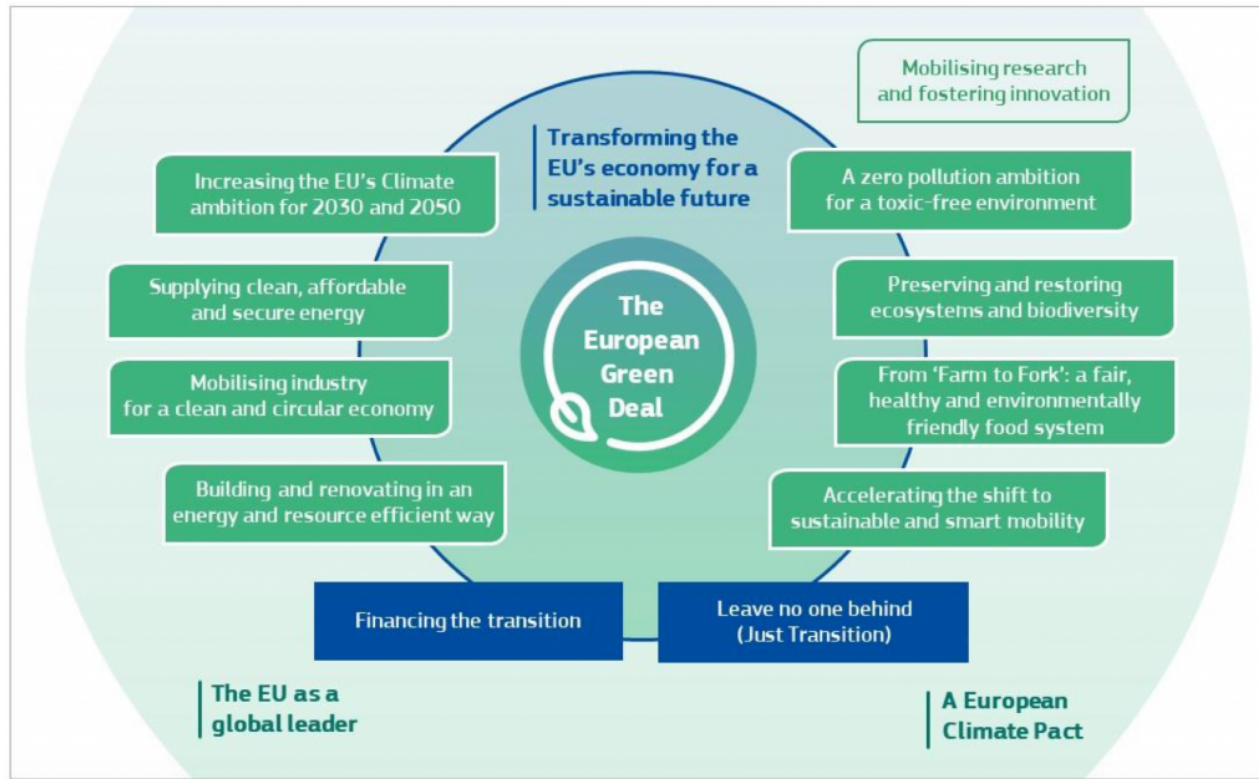
Carpathian Convention

Bern Convention (wildlife and natural habitats)

in preparation

The new EU Governance Framework

- new European Commission, Parliament and Committee of the Regions
- new political guidelines for the European Commission 2019-2024 - a unique aspiration of living in a **natural and healthy continent**, reflecting the importance of tackling **climate change and biodiversity challenges**
- impact of COVID 19 and recovery needs



President Von der Leyen on the European Green Deal:

...it is about **cutting emissions**, **creating jobs and boosting innovation**.
.....We care also about **biodiversity and forests**, **green cities** and for example the circular economy.

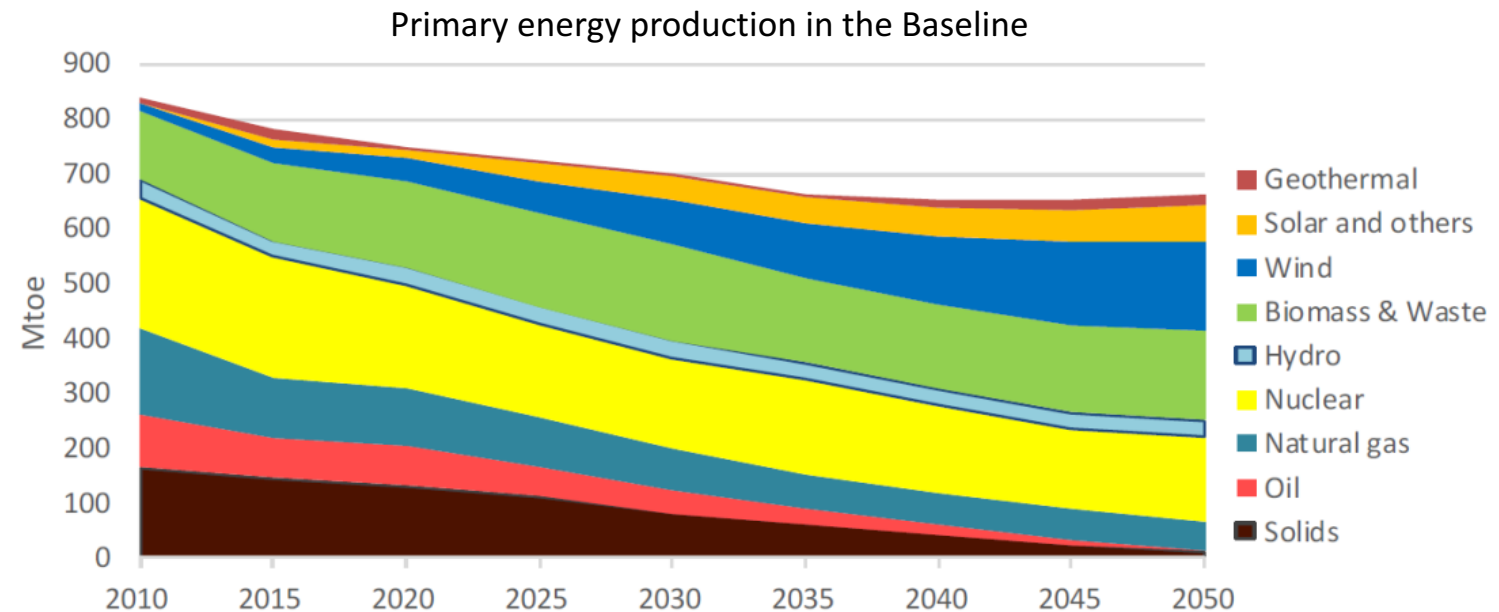
Forest Biomass for Industries and the Energy Union

New Industrial Strategy for Europe

- ... secure supply of **clean and affordable energy and raw materials**
- ... reducing its **carbon and material footprint**

EU Energy Union

- ... **renewable energy** sources are a crucial element
- ... **decarbonising** the energy system
- ... energy supply needs to be **secure and affordable**



Source: European Commission 2018

Sustainably sourced forest biomass will ...

- continue to be an important contributor to energy security, independence and mitigation of energy poverty
- be needed for energy generation and material production in the future development of EU industries

Forest-based Value Chains for Rural Development

General objectives of the EU Common Agricultural Policy

- foster a smart, resilient and diversified agricultural sector ensuring food security
 - bolster environmental care and climate action and to contribute to the environmental- and climate-related objectives of the Union
 - **strengthen the socio-economic fabric of rural areas**
-
- forest-based value chains are **important contributors** to the economic development, employment, innovation, identity and dynamism of rural regions
 - strengthen the contributions of land-based production systems to the **bioeconomy** (growing biomass needs for food and non-food applications, demands from other sectors/policies on ecosystem services)
 - **support prosperous territorial development** adapted to ongoing changes in the rural and urban landscapes; increasing their resilience (natural, socio-economic)
 - European Green Deal requests **national CAP Strategic Plans** to incentivise forest managers to preserve, grow and manage forests sustainably

We can not solve the Grand Societal Challenges without the help also from biological Resources



European Green Deal

Renovation Wave Initiative
Circular Economy Action Plan –
Sustainable Products Initiative

- priority number one: **phasing-out fossils**
- in the long-run, you can do this in **the energy sector** without biomass, but need it still in the coming decade or two (energy security, mitigating energy poverty)
- in the **material sector**, you can not phase-out fossils and other climate-unfriendly materials without biomass
- need to cut down consumption, increase resource efficiency and **boost sustainable circular bioeconomy** - we have no realistic alternative options



The European Green Deal hardly sees the forest-based Bioeconomy

- a **rather narrow perspective** on forests: carbon sink and biodiversity
- very few statements on the **multiple benefits** forests provide to society
- **market aspects** and the impact on **regional economic development** are hardly mentioned. **Employment implications** of the transition to carbon neutrality by 2050 are weakly addressed.
- EU forest-based sector **can do much more** for reaching the climate, biodiversity, economic and social objectives than the European Green Deal proposal now indicates
- **post-COVID19 recovery** enhances the above point → **circular bioeconomy** is essential to combine carbon neutrality + employment + income needs + biodiversity conservation

Narrow, few options



Wide, many options



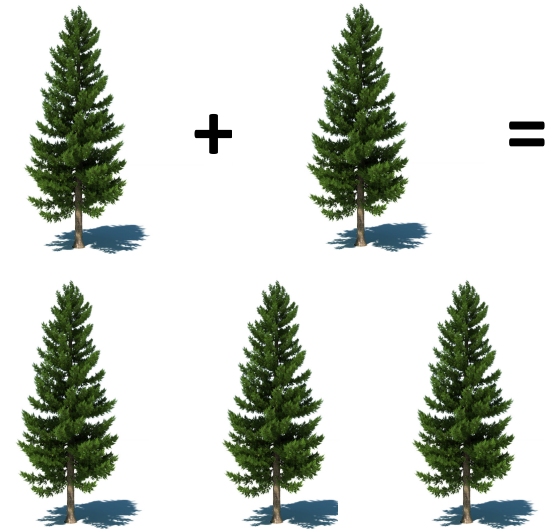
Biodiversity, Climate Change Mitigation and Adaptation in Forests are married

- keeping forest sinks, controlling disturbance risks and adapting forests to changing climate **requires forest management** (e.g. transform monoculture to mixed species forests)
- mitigating biodiversity loss in the EU forests needs more **diverse measures** than the EGD seems to suggests (e.g. forest management)
- **One-size-fits-all** policy is not optimal. To what extent does the central requirement for reforestation and afforestation make sense in different Member States (e.g. in Spain, Finland,)?
- forest owners and wood-processing industries **need incentives & income** to finance adaptation, resilience, forest management and innovation → bioeconomy needed



Green Deal should maximize Synergies

- demands for forest use can have trade-offs, but also **synergies**
- biodiversity is prerequisite for sustainable and resilient bioeconomy, **but** sustainable bioeconomy is also needed to protect biodiversity as it generates income for forest owners and forest industry that allows investment in biodiversity and natural capital
- management measures can simultaneously benefit biodiversity and bioeconomy, e.g., planting mixed forests and addressing disturbances
- seek **economic efficiency** and **synergies** with other policies



Communication, Awareness Raising and Trust Building are needed in ongoing EU Policy Processes

- EU Forest Strategy post-2020
- Review of the Renewable Energy Directive (sustainability criteria for forest biomass)
- Review of the LULUCF Regulation (forest reference levels)
- Taxonomy Delegated Act (definition of sustainable forest management)
- Legal framework to halt and reverse EU-driven global deforestation (domestic producers affected)
- CAP Strategic Plans (role of forest-based value chains)
- Implementation of the EU Biodiversity Strategy for 2030
- Nature Restoration Plan
- Roadmap for planting 3 billion trees
- Guidelines on biodiversity-friendly afforestation, reforestation and closer-to-nature-forestry practices
- EU Urban Greening Platform (urban trees and forests)
- Forest Information System for Europe FISE



Photo: Sanit Fuangnakhon / Shutterstock

**Thank you
for your attention!**