



Global impact of (re)forestation: impact on the wooden packaging industry

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70TH FEFPEB CONGRESS

**Wooden pallets
and packaging
in the centre of the
sustainable
economy.**

**DAGRI -
Department of
Agriculture, Food,
Environment and
Forestry**

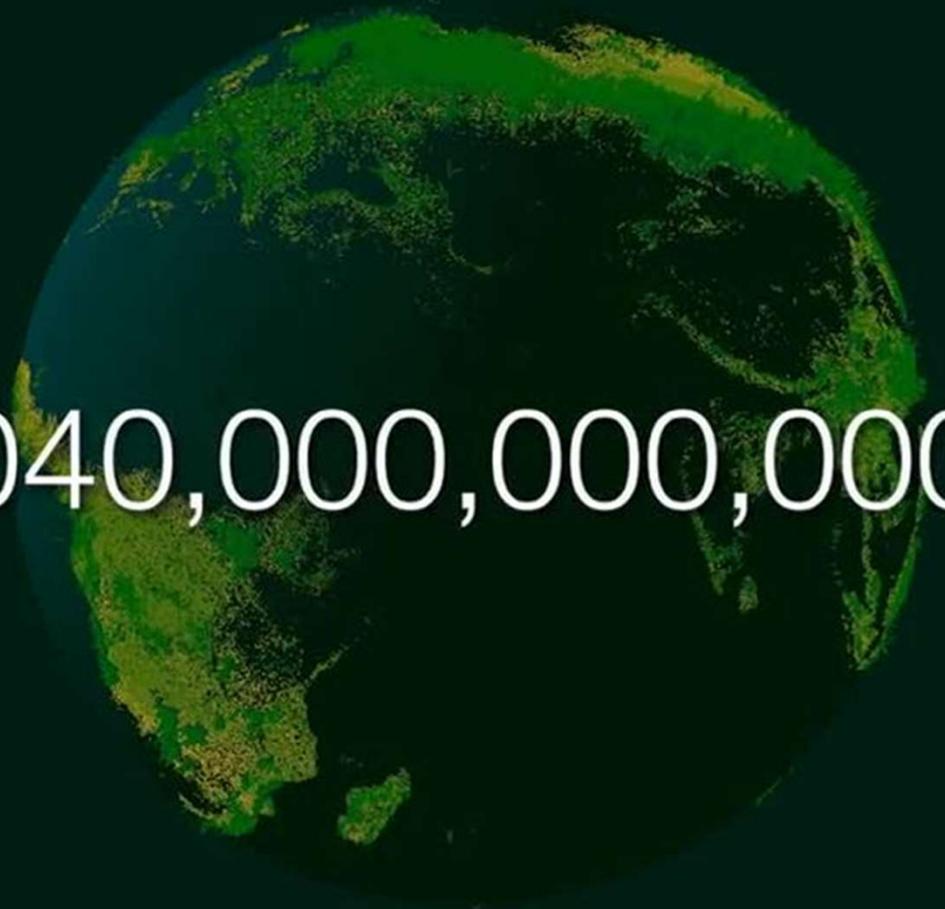
**University of
Florence**

28-30 Settembre 2022
Firenze, Grand Hotel, Baglioni



Reflections on
Wood
Trees
Forest





3,040,000,000,000

How many trees live in the Planet?

Which trees?



Which forest?



Which system?



Which symbols?



Diversity and curiosity



The Afforestation/Reforestation Age

Homo afforestensis?



**ETHIOPIA PLANT OVER
350 MILLION TREES IN
JUST 12 HOURS**

3 Billion Trees Pledge

Under the European Green Deal, the EU biodiversity strategy for 2030 commits to planting at least 3 billion additional trees in the EU by 2030 in full respect of ecological principles.

6,263,248

**trees planted in the EU
as part of the 3 Billion Trees Pledge**

Why?

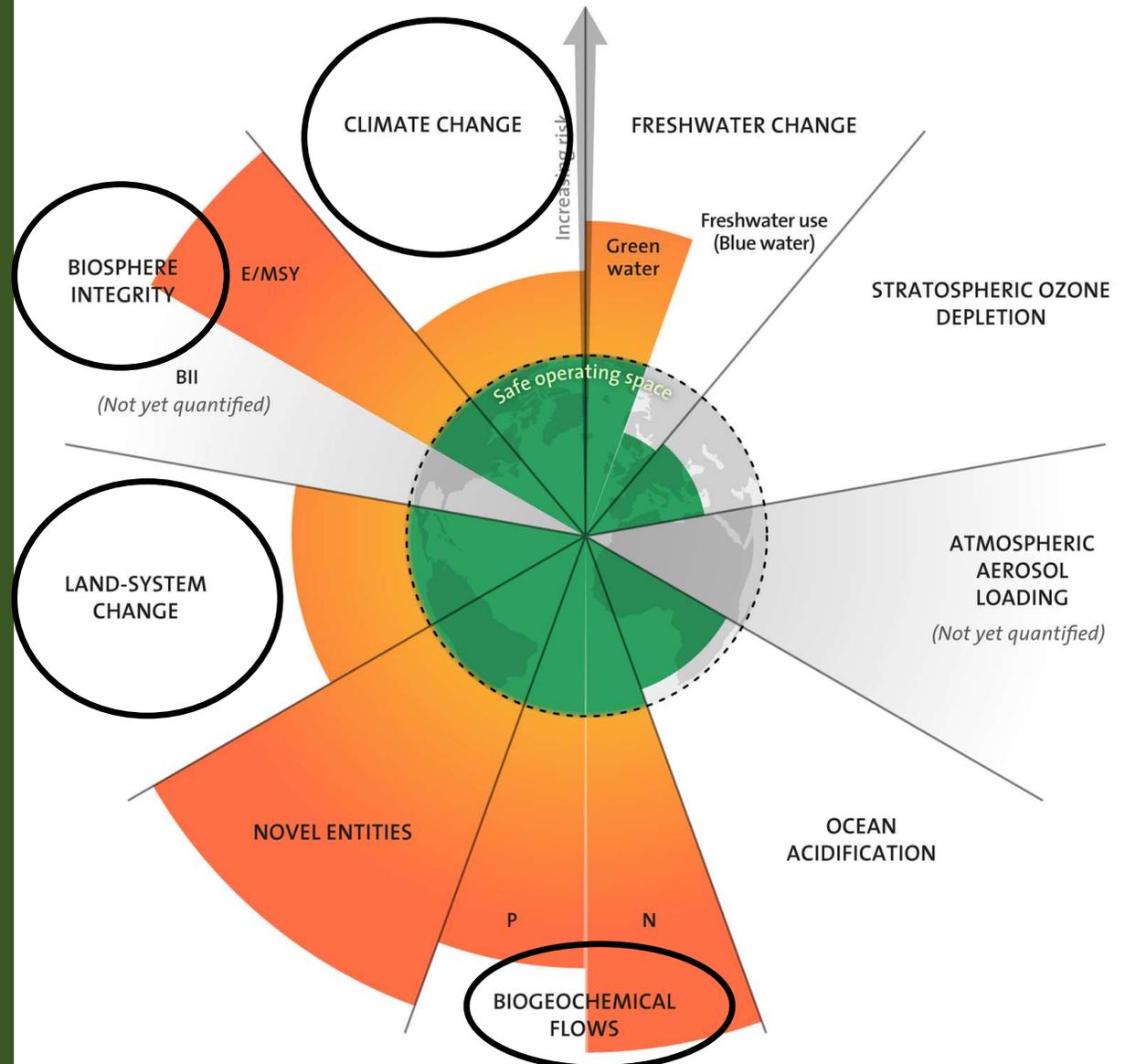
Planting 1 trillion trees by 2030

If all goals are met, 2030 will be a great year for forests around the world. Why? Two important treaties were agreed upon in the last weeks.

1. **G20 Summit (Rome):** To mitigate climate change, the G20 leaders formulated the ambitious goal of *planting 1 trillion trees by 2030*.
2. **COP26 (Glasgow):** The countries owning 85% of the planet's forests agreed to *stopping deforestation by 2030*.

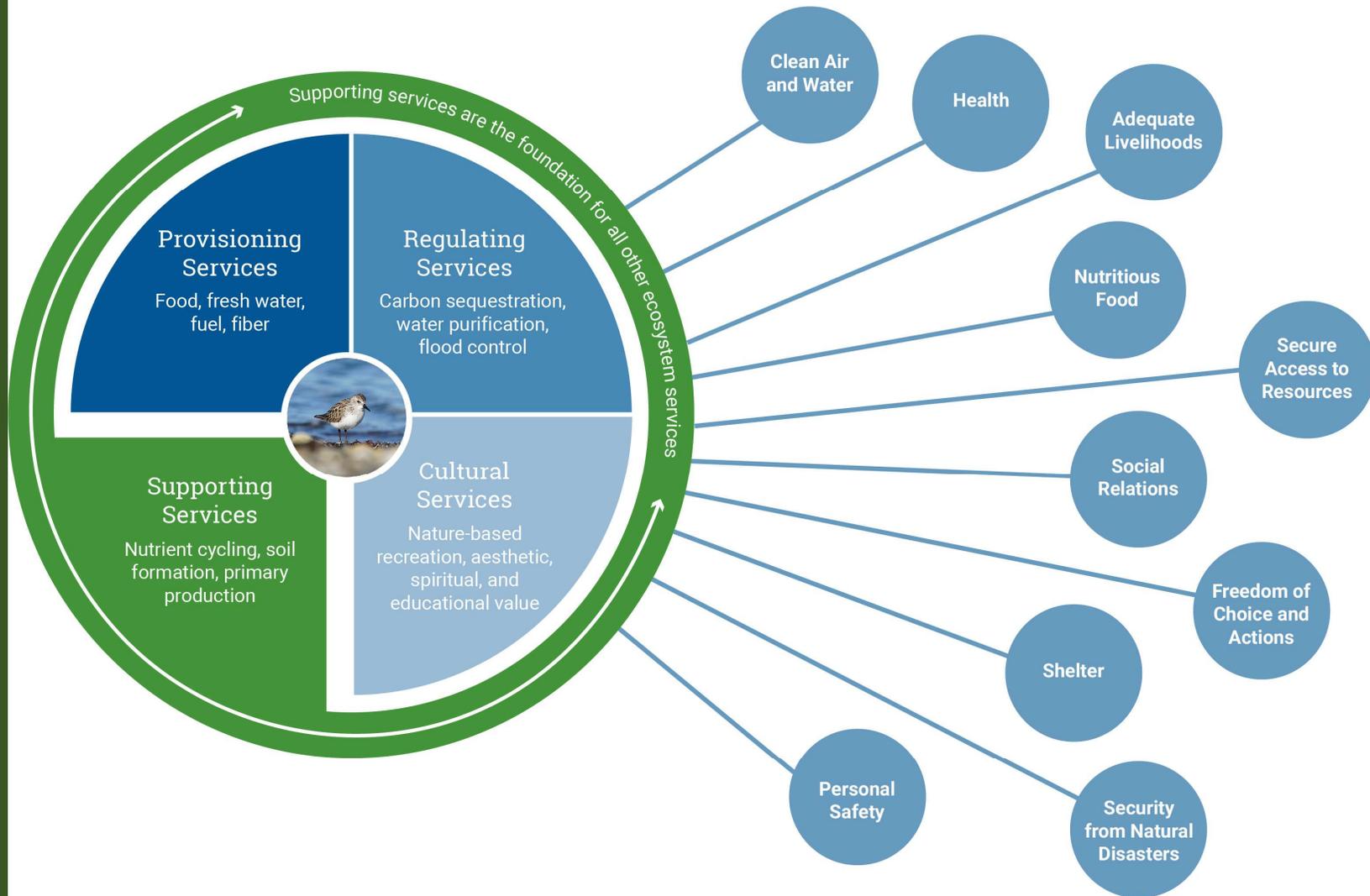


Planetary Boundaries



ECOSYSTEM SERVICES

CONSTITUENTS OF HUMAN WELL-BEING



Ecosystem Services

The Importance of Being Forest



Prime importance



Extremely important



Very important



Important

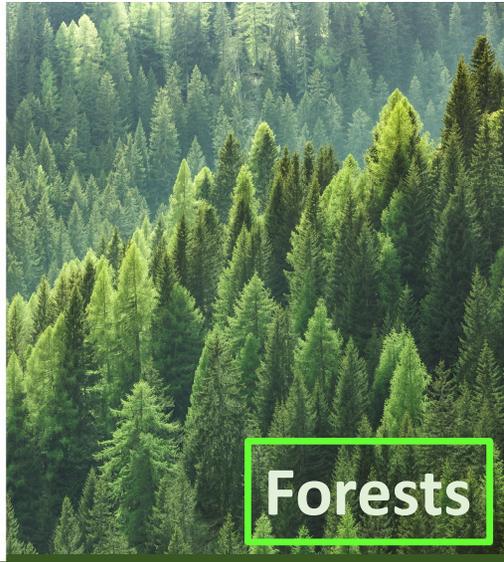
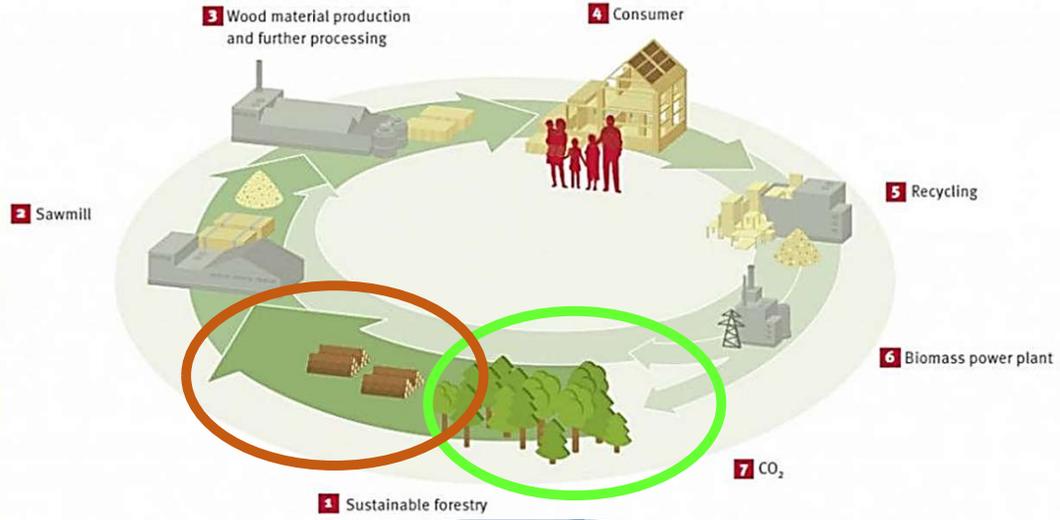
Which are the implications for Wood Packaging industry, if any?

Let's have tour on concept, terms and realities behind that





Forestry



Forests



Knowledge

Inventory

Regeneration

Sustainability

Ecosystem services

Education

Planning

Silviculture

Land tenure

Society

Economy

Skills

Community

Norms & Laws

Policies

Types

Structure

Genetics

Ecology

Processes

Soils

Biodiversity

Landscape

Connections

Interests

Ownership

Needs

What is a FOREST?

Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use (FAO, 2020).

Forest is determined both by the presence of trees and the absence of other predominant land uses.

Explanatory notes

1. Includes areas with young trees.
2. Includes areas that are temporarily unstocked due to clear-cutting as part of a forest management practice or natural disasters.
3. Includes forest roads, firebreaks, etc.;
4. Includes abandoned shifting cultivation land with a regeneration of trees
5. Includes areas with mangroves in tidal zones.
6. Includes rubber-wood, cork oak and Christmas tree plantations.
7. Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.
8. Includes areas outside the legally designated forest land which meet the definition of “forest”.
9. Excludes tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations, etc.

What is a NATURALLY REGENERATED FOREST?

Forest predominantly composed of trees established through natural regeneration.
(FAO, 2018).

Explanatory notes

1. Includes forests for which it is not possible to distinguish whether planted or naturally regenerated.
2. Includes forests with a mix of naturally regenerated native tree species and planted/seeded trees.
3. Includes coppice.
4. Includes naturally regenerated trees of introduced species.

What is a PLANTED FOREST?

Forest predominantly composed of trees established through planting and/or deliberate seeding.
(FAO, 2018).

Explanatory notes

1. In this context, predominantly means that the planted/seeded trees are expected to constitute more than 50 percent of the growing stock at maturity.
2. Includes coppice from trees that were originally planted or seeded

**A naturally
regenerated
spruce-dominated
forest in the Alps**

*A Forest type very
important for WPI*





**A planted forest of
Pines in low
mountain areas**

*A Forest type very
important for WPI*

What is a PLANTATION FOREST?

Planted Forest that is intensively managed and meet ALL the following criteria at planting and stand maturity: one or two species, even age class, and regular spacing. (FAO, 2018).

Explanatory notes

1. Specifically includes: short rotation plantation for wood, fibre and energy.
2. Specifically excludes: forest planted for protection or ecosystem restoration.
3. Specifically excludes: Forest established through planting or seeding which at stand maturity resembles or will resemble naturally regenerating forest.

Plantation Forest of pines

*A Forest type
very
important for
WPI*



What is a AFFORESTATION?

Sub-category of FOREST EXPANSION

Establishment of forest through planting and/or deliberate seeding on land that, until then, was under a different land use, implies a transformation of land use form non-forest to forest. (FAO, 2018).

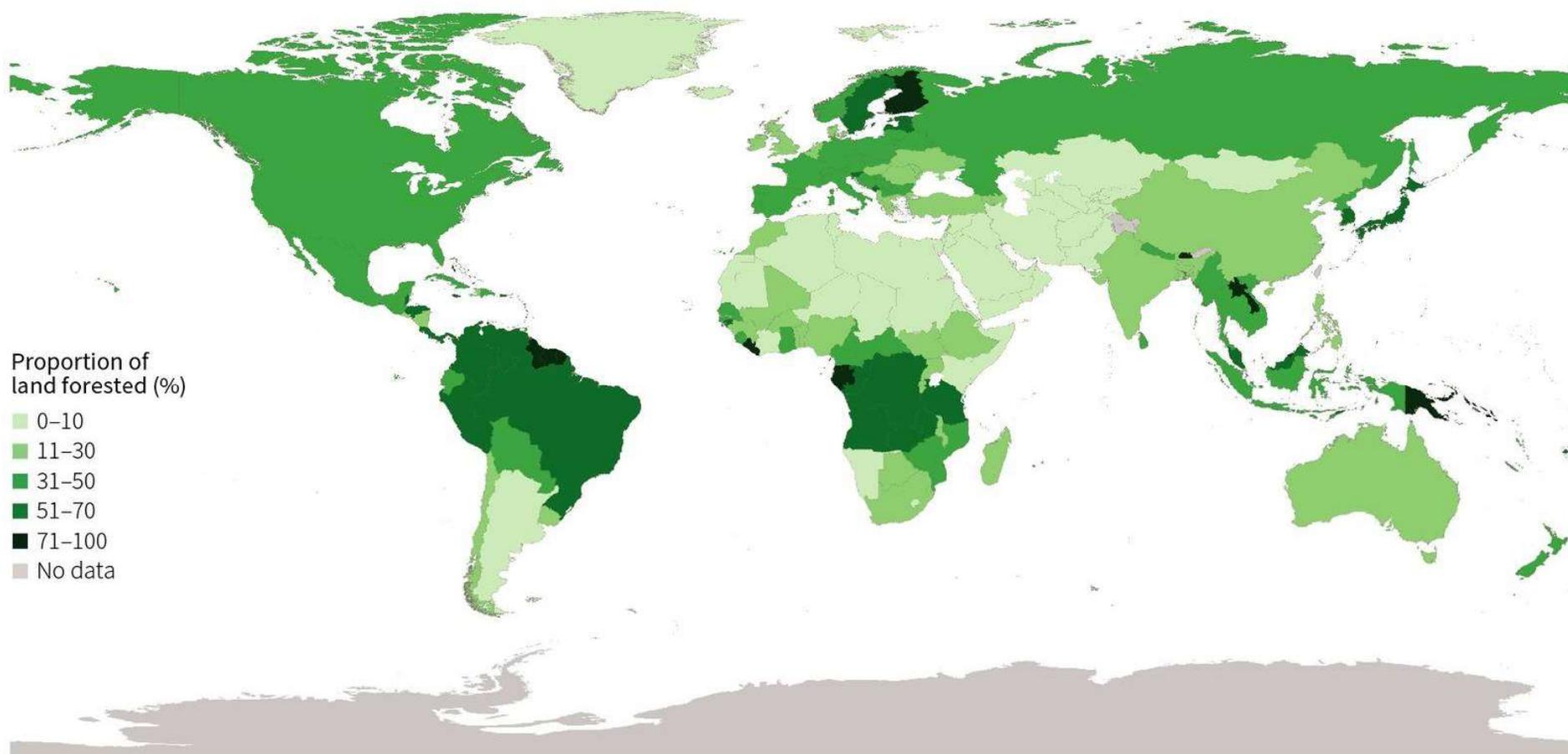
What is a REFORESTATION?

Re-establishment of forest through planting and/or deliberate seeding on land classified as forest. (FAO, 2018).

Explanatory notes

1. Implies no change of land use.
2. Includes planting/seeding of temporarily unstocked forest areas as well as planting/seeding of areas with forest cover.
3. Includes coppice from trees that were originally planted or seeded.
4. Excludes natural regeneration of forest.

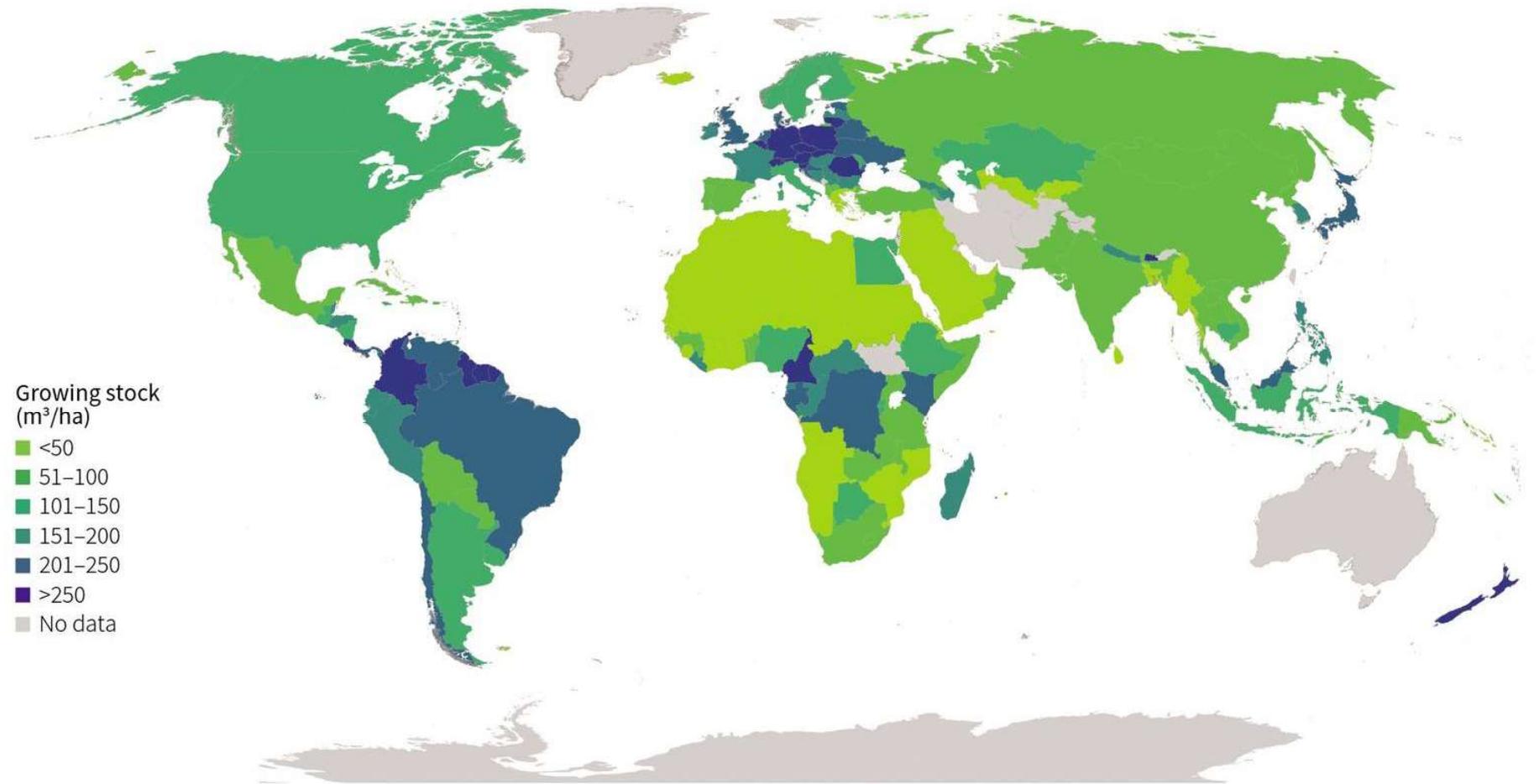
Forest area as a percentage of total land area, 2020



Source: Adapted from United Nations World map, 2020.

FAO. 2020. *Global Forest Resources Assessment 2020*. Rome.

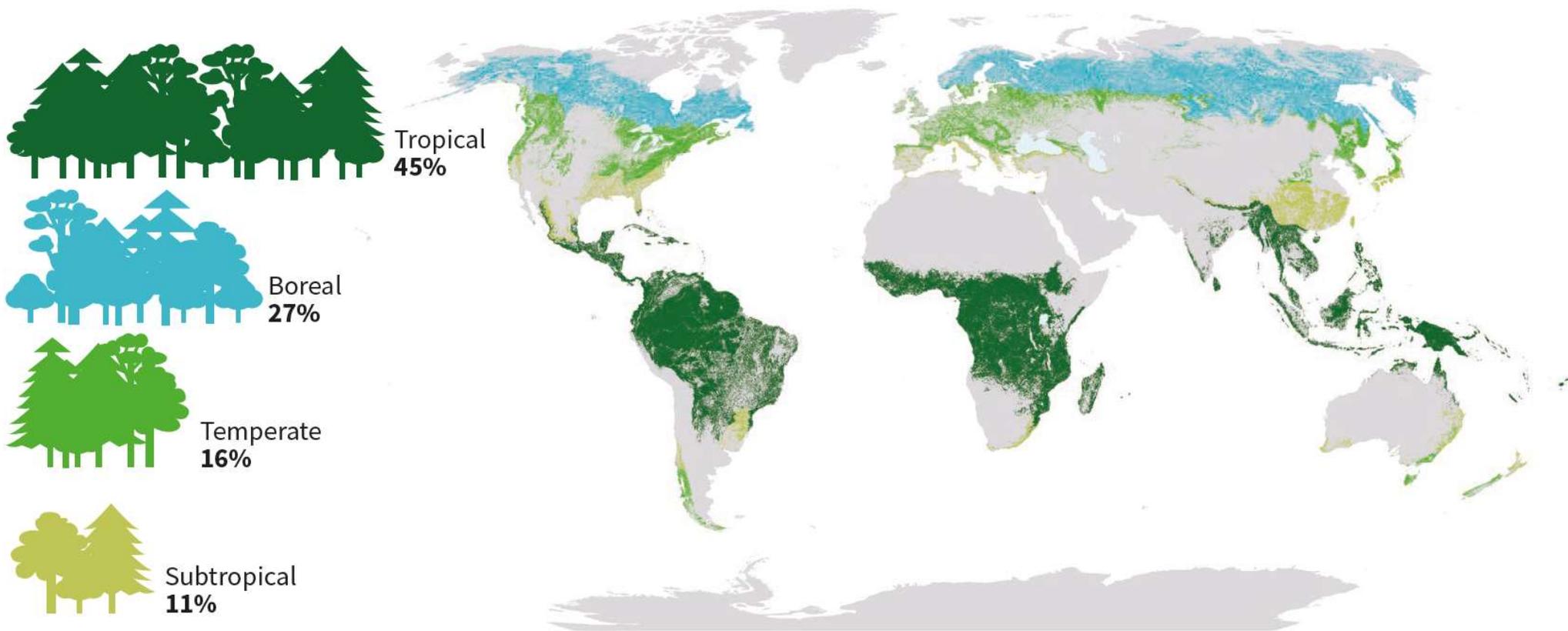
Forest growing stock per unit area, by country, 2020



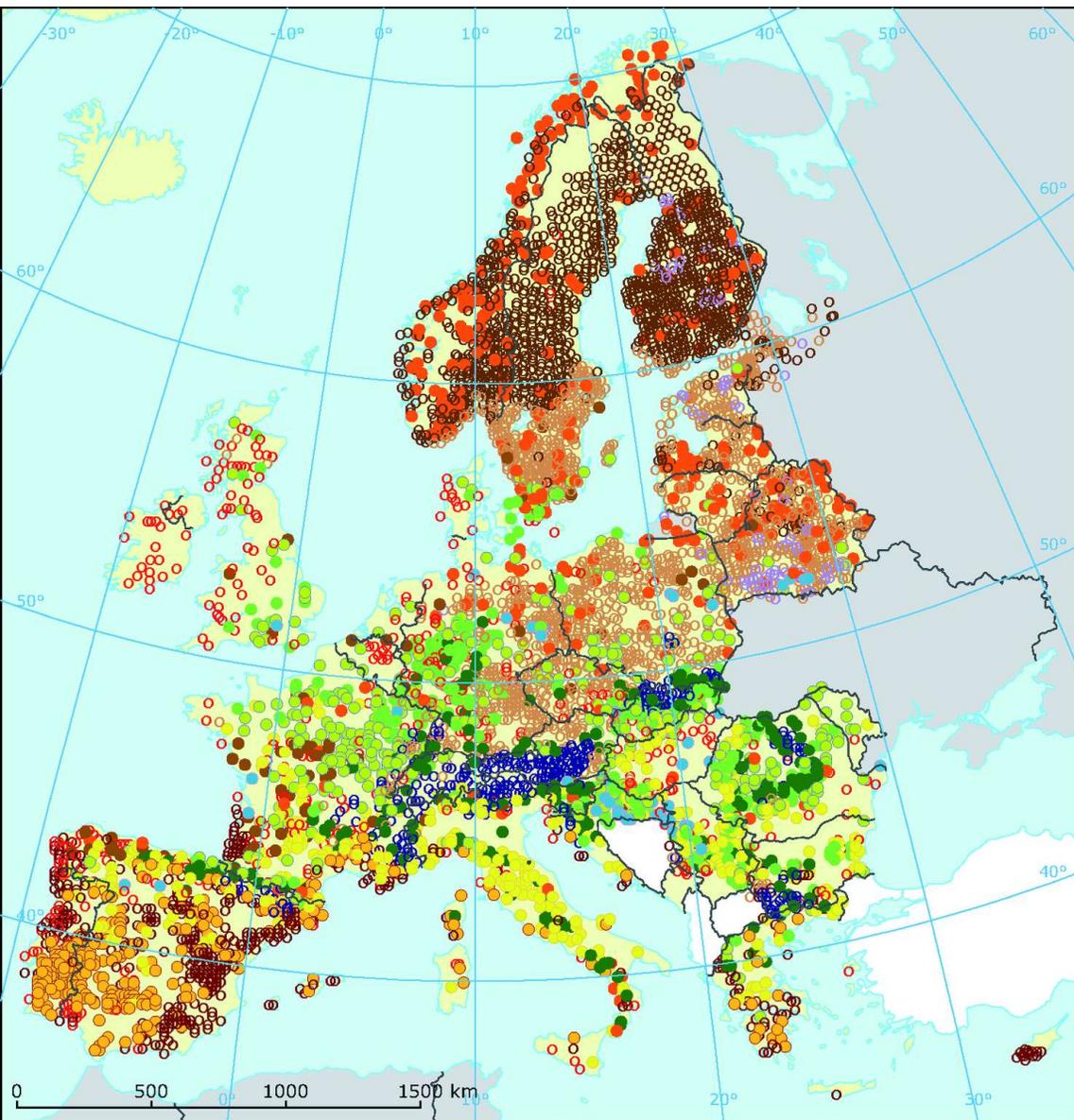
Source: Adapted from United Nations World map, 2020

FAO. 2020. *Global Forest Resources Assessment 2020*. Rome.

Proportion and distribution of global forest area by climatic domain, 2020



Source: Adapted from United Nations World map, 2020.



European forest types

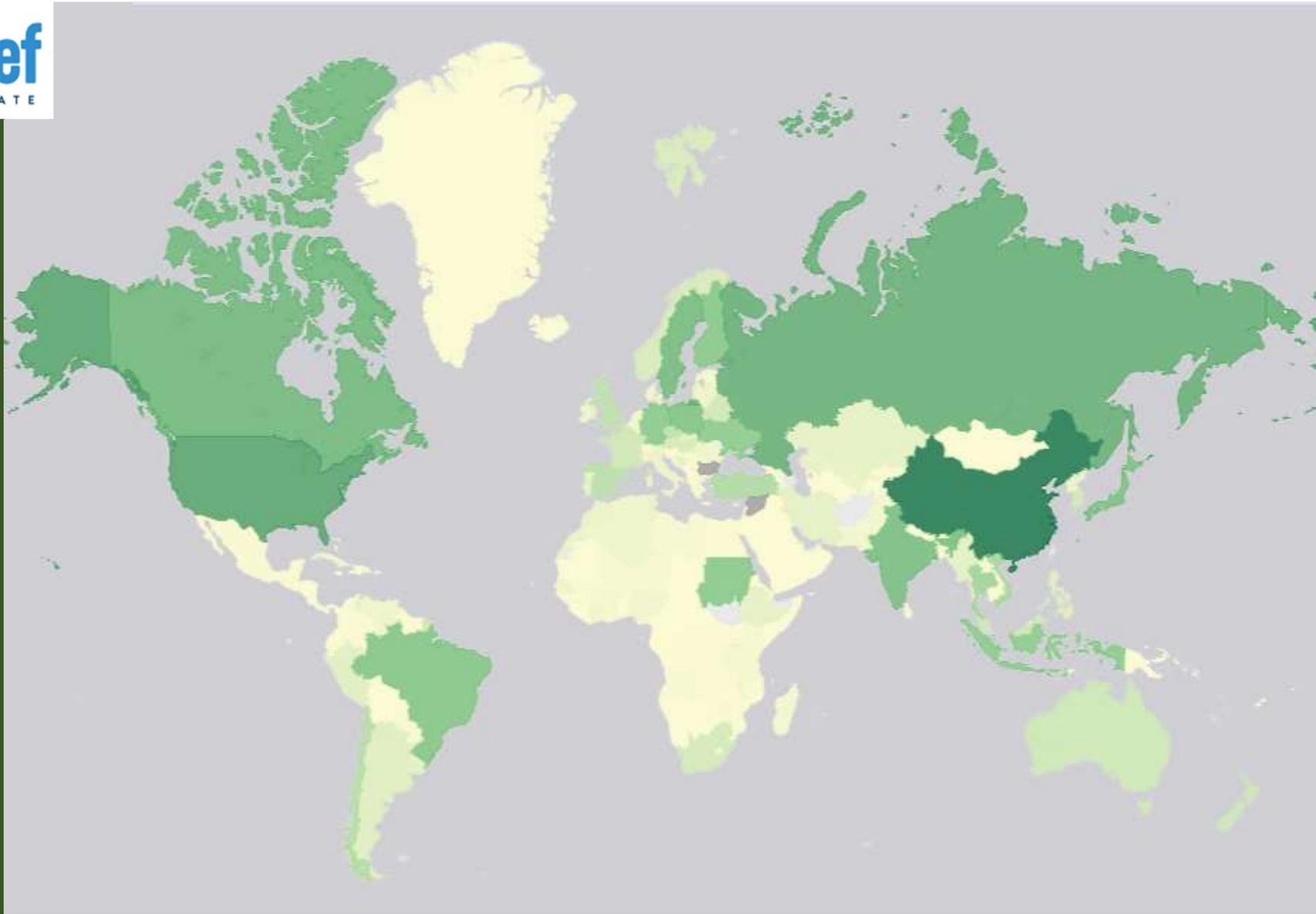
14 categories

- 1. Boreal forest
 - 2. Hemiboreal forest, nemoral coniferous and mixed broadleaved-coniferous forest
 - 3. Alpine coniferous forest
 - 4. Acidophyllous oak and oak-birch forest
 - 5. Mesophytic deciduous forest
 - 6. Beech forest
 - 7. Mountainous beech forest
 - 8. Thermophilous deciduous forest
 - 9. Broadleaved evergreen forest
 - 10. Coniferous forest of the Mediterranean, Anatolian and Macaronesian regions
 - 11. Mire and swamp forests
 - 12. Floodplain forest
 - 13. Non-riverine alder, birch or aspen forest
 - 14. Plantations and self-sown exotic forest
- No data
- Outside data coverage

Forest types in Europe

**Global
Planted
Forest**

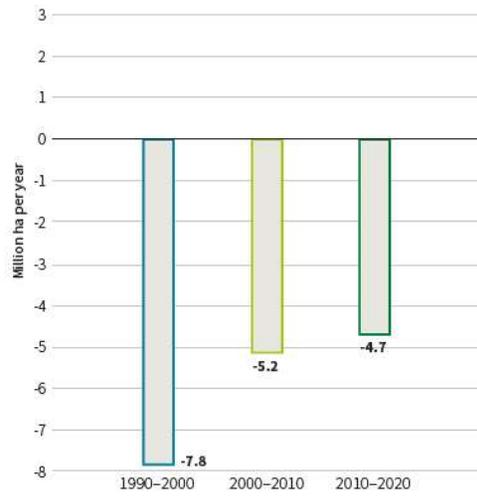
1990-2015



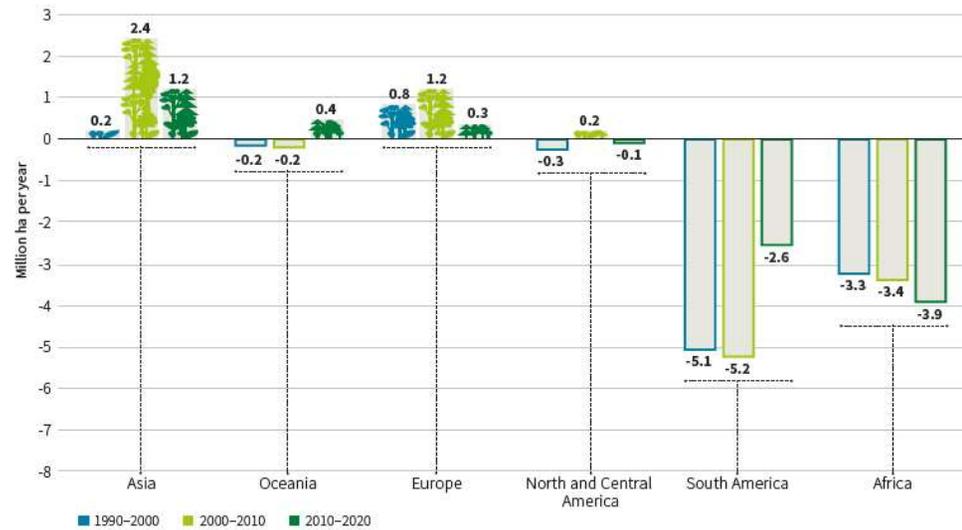


Deforestation

Global annual forest area net change, by decade, 1990–2020

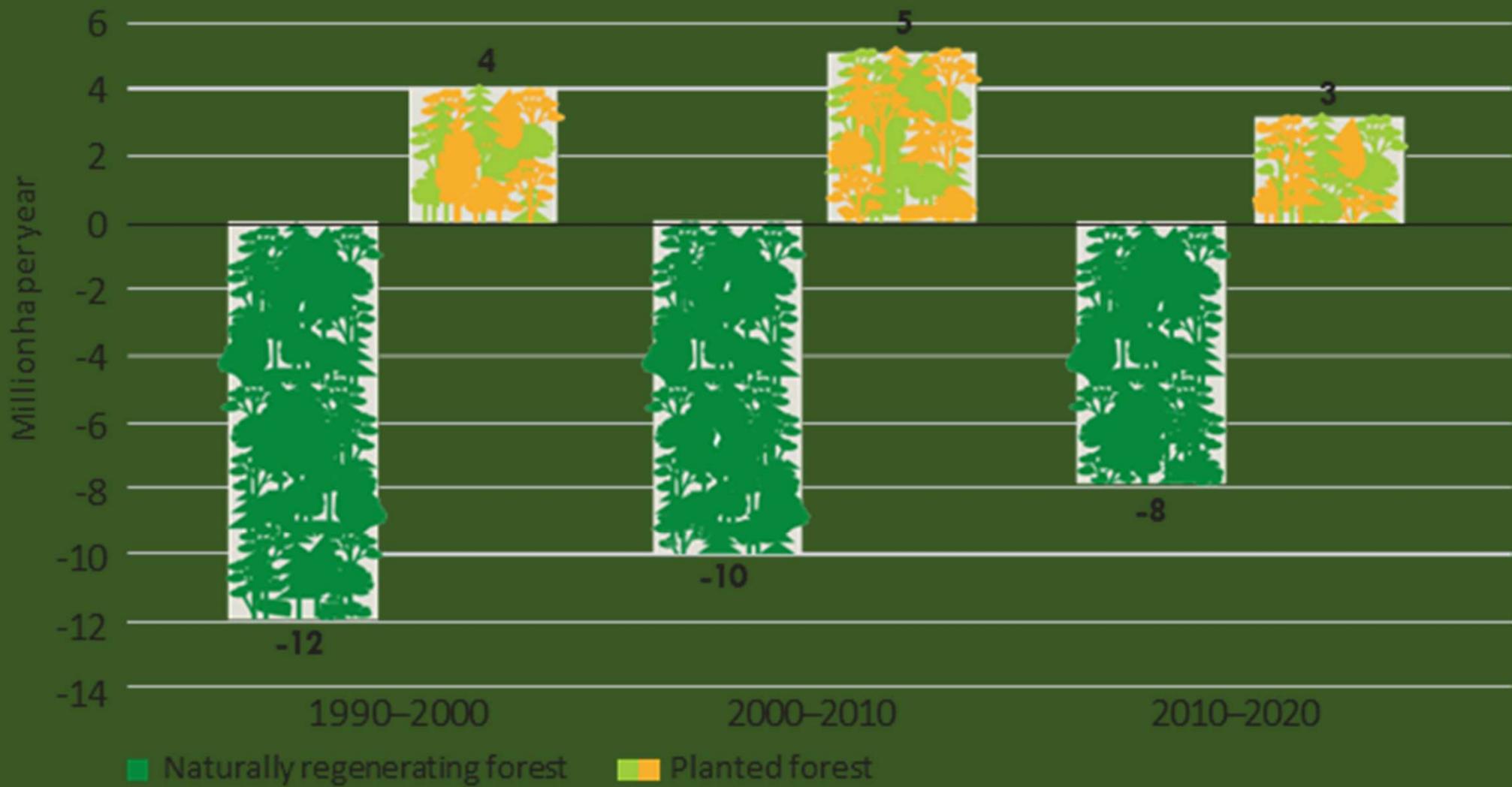


Annual forest area net change, by decade and region, 1990–2020



Naturally regenerating versus planted forests, 2020 (% of global forest area)





Multiple perspectives

How is Forest Change Reported?

HERE ARE SOME EXAMPLES

BEFORE	CHANGE	AFTER	HOW IS "CHANGE" MEASURED?	
			FRA	GFW
 <p>NATURAL FOREST</p>	 <p>CLEARED FOR FARMLAND</p>	 <p>FARMLAND</p>	DEFORESTATION	TREE COVER LOSS
 <p>NATURAL FOREST</p>	 <p>CLEARED FOR PLANTATION</p>	 <p>TREE PLANTATION</p>	NO CHANGE	TREE COVER LOSS
 <p>TREE PLANTATION</p>	 <p>HARVESTED AND REPLANTED</p>	 <p>TREE PLANTATION</p>	NO CHANGE	TREE COVER LOSS
 <p>NATURAL FOREST</p>	 <p>CLEARED BY NATURAL FIRE</p>	 <p>REGROWING NATURAL FOREST</p>	NO CHANGE	TREE COVER LOSS

bit.ly/GFWvsFRA

Which type of Silviculture

From productive silviculture to close-to-nature-silviculture to

Closer to nature silviculture

Multiple interests

Multiple Stakeholders

Mainstreaming interests

Monoculture, «miracle» fast growing trees plantations

Pros&Cons

- Invasive exotic
- Vulnerable to wind breaks
- Water and Nutrients consumer
- Type of Management

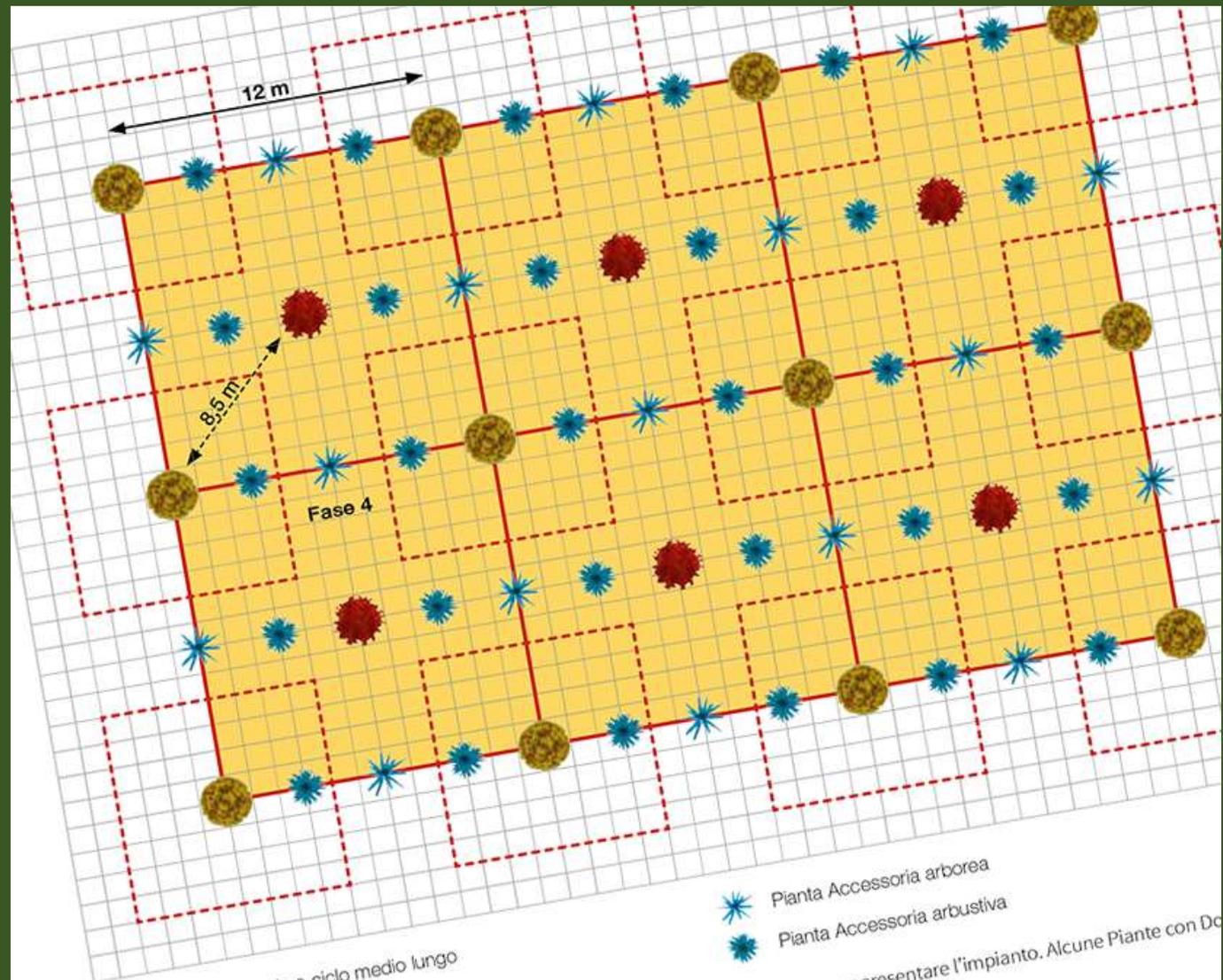


NordMax21®,
7 years old,
Germany

Polycyclic Potentially Permanent Plantation forest

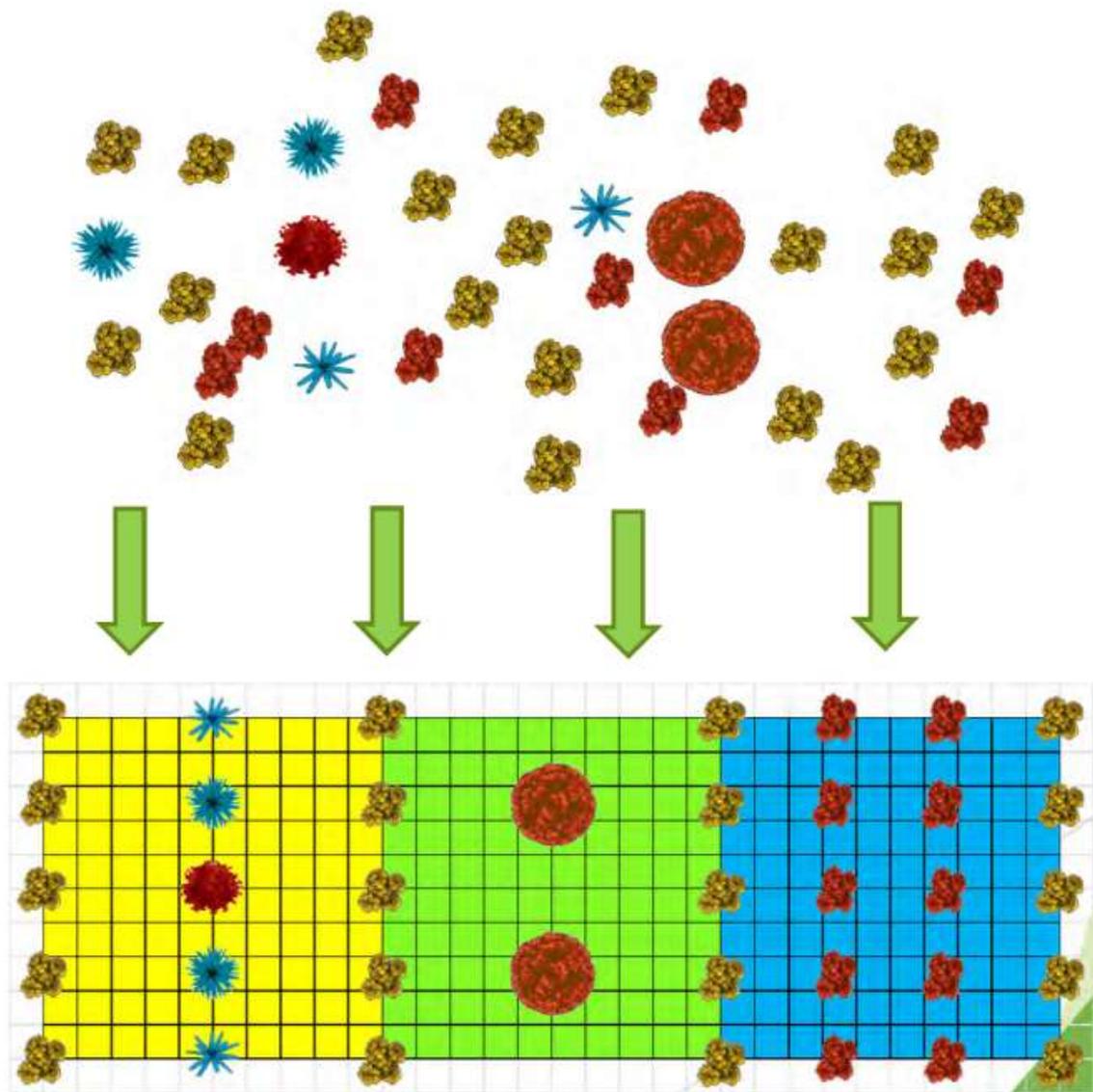
Pros&Cons

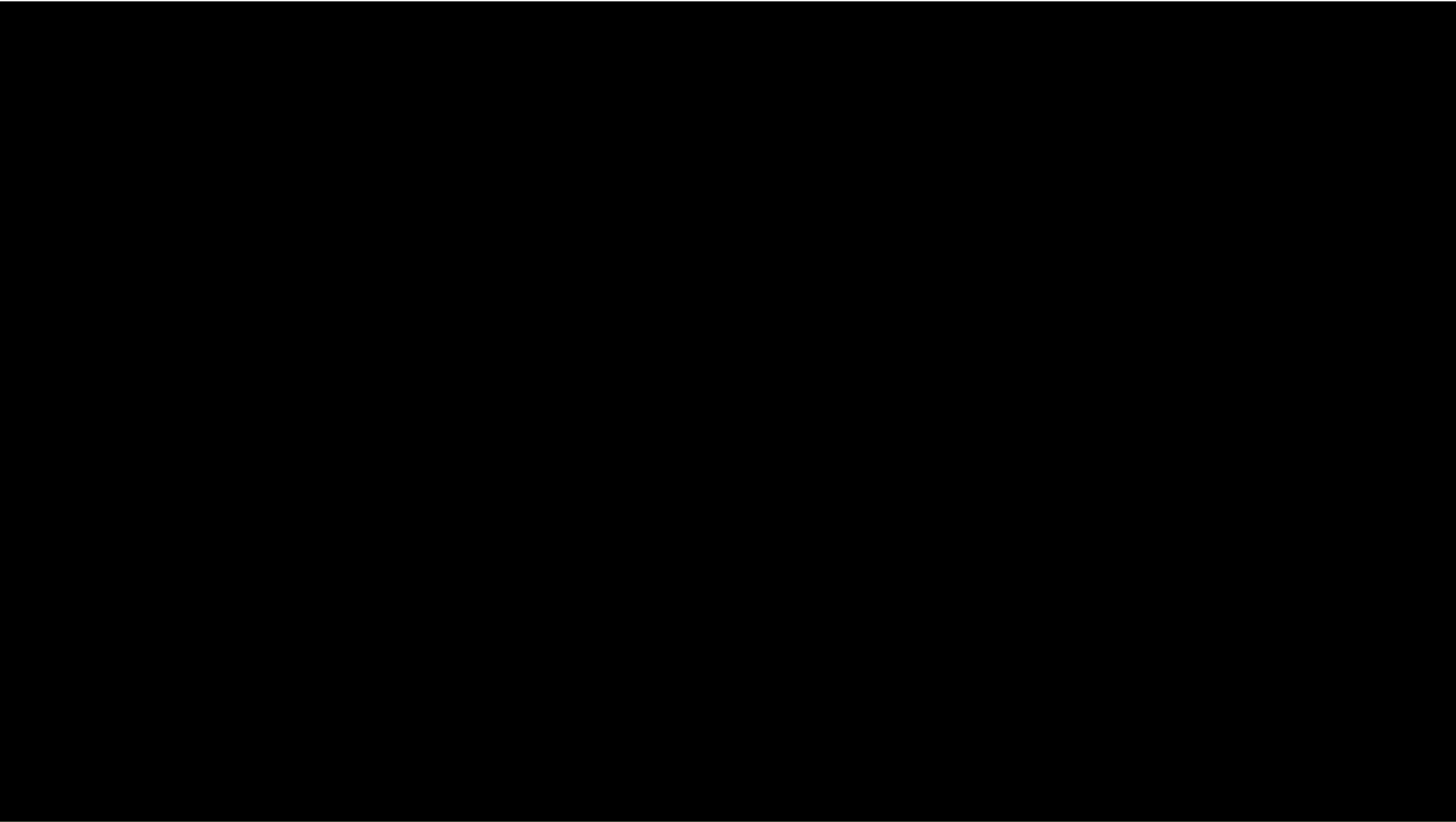
- Native & Exotic
- Diversified structure
+resistance; +resilience
- Optimisin W&N
- SFM applicable
- Biodiversity
- Multiple ES



Mixed, unevenaged,
naturally
regenerated Forest

Policyclic
Potentially
Permanent
Plantation Forest (3P)





Innovation

**Contracts: Forest Contracts
referred to all productive
chain**

**Testing (research) innovative
plantation design including
promising native species (e.g.
alder, ash, birch, etc.)**

**Governance Models
Concertation, negotiation,
community engagement, job
placement**

**Use the Strategy Age!!!
Push to include the WPI sector
and chain in the Multi-level
Forest Strategies**

Sustainability requirements

- Growing awareness
- Provide certification schemes on the SFM of Planted&Plantation forest
- Support research initiatives «from seed to pallet»
- Foster silviculture styles specifically applied to planted forest
- Contract of forest for re-introducing silviculture interventions (thinning and tendings) in planted forest or in Nat reg forest
- Precision forestry
- Introduce a multistakeholder governance of the chain «from forest to market»



70TH FEFPEB CONGRESS

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Thanks!

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