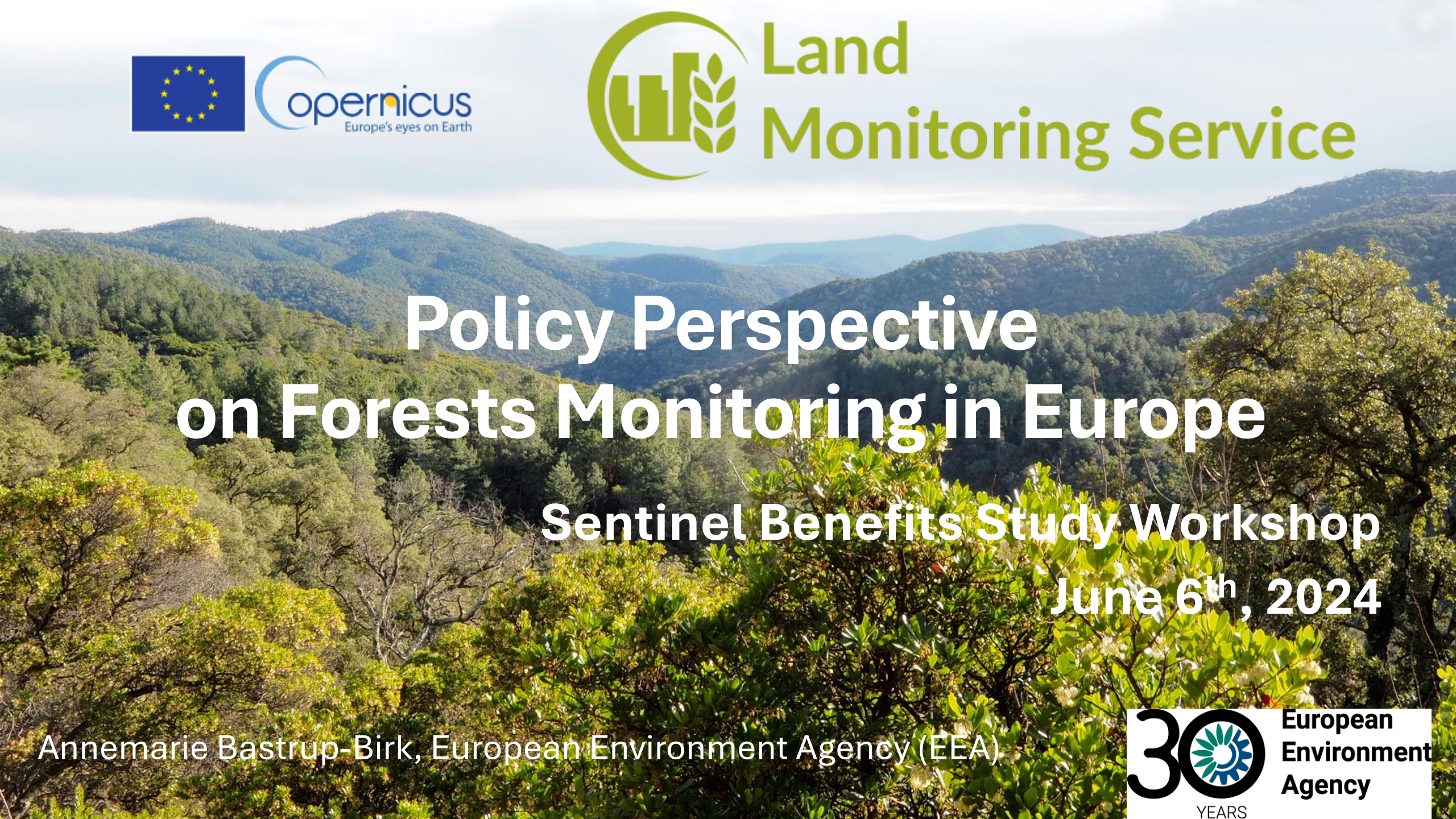


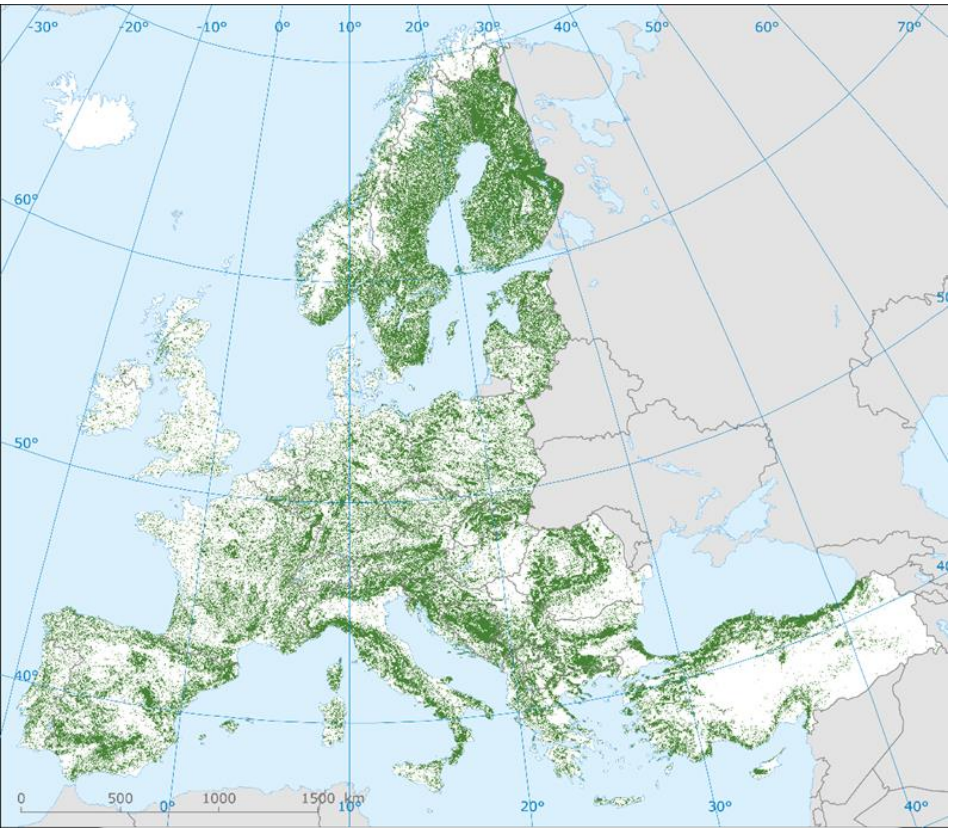
Policy Perspective on Forests Monitoring in Europe

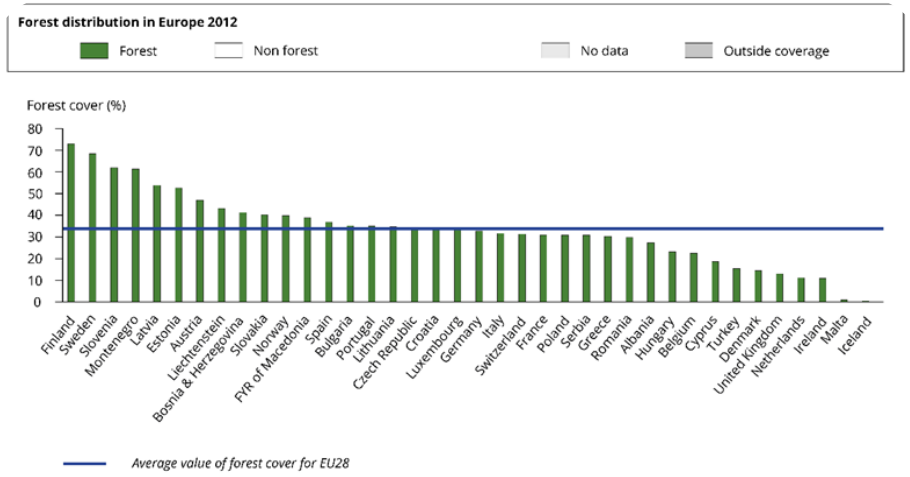
Sentinel Benefits Study Workshop

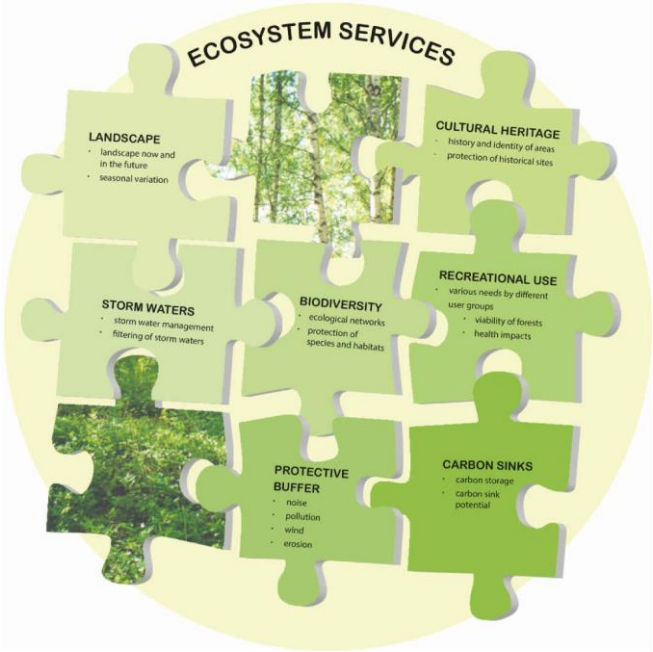
June 6th, 2024

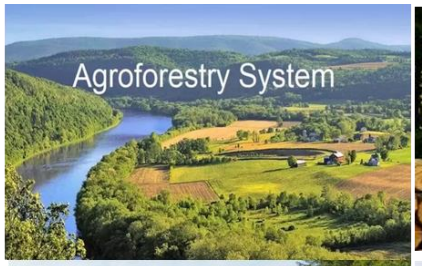
Annemarie Bastrup-Birk, European Environment Agency (EEA)

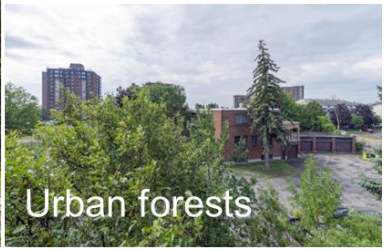
Forests are important in Europe







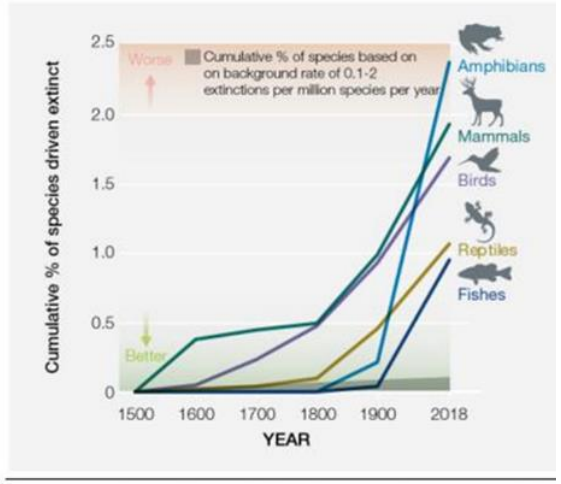




Multifunctionality

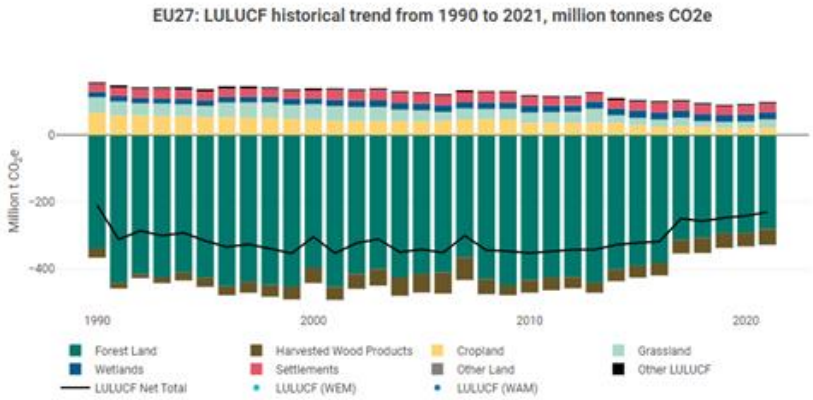
Increased pressures and demands

▪ **Extinctions since 1500 for vertebrate groups**



▪ ***Note:*** Rates for reptiles and fishes have not been assessed for species.

▪ ***Source:*** IPBES, 2019.



Sources | More info

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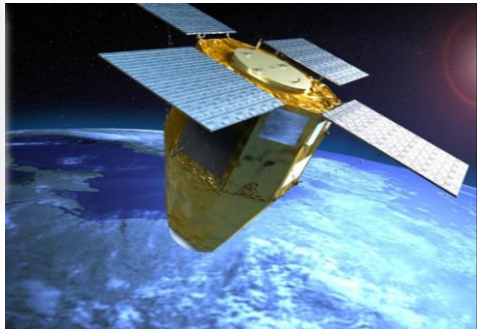
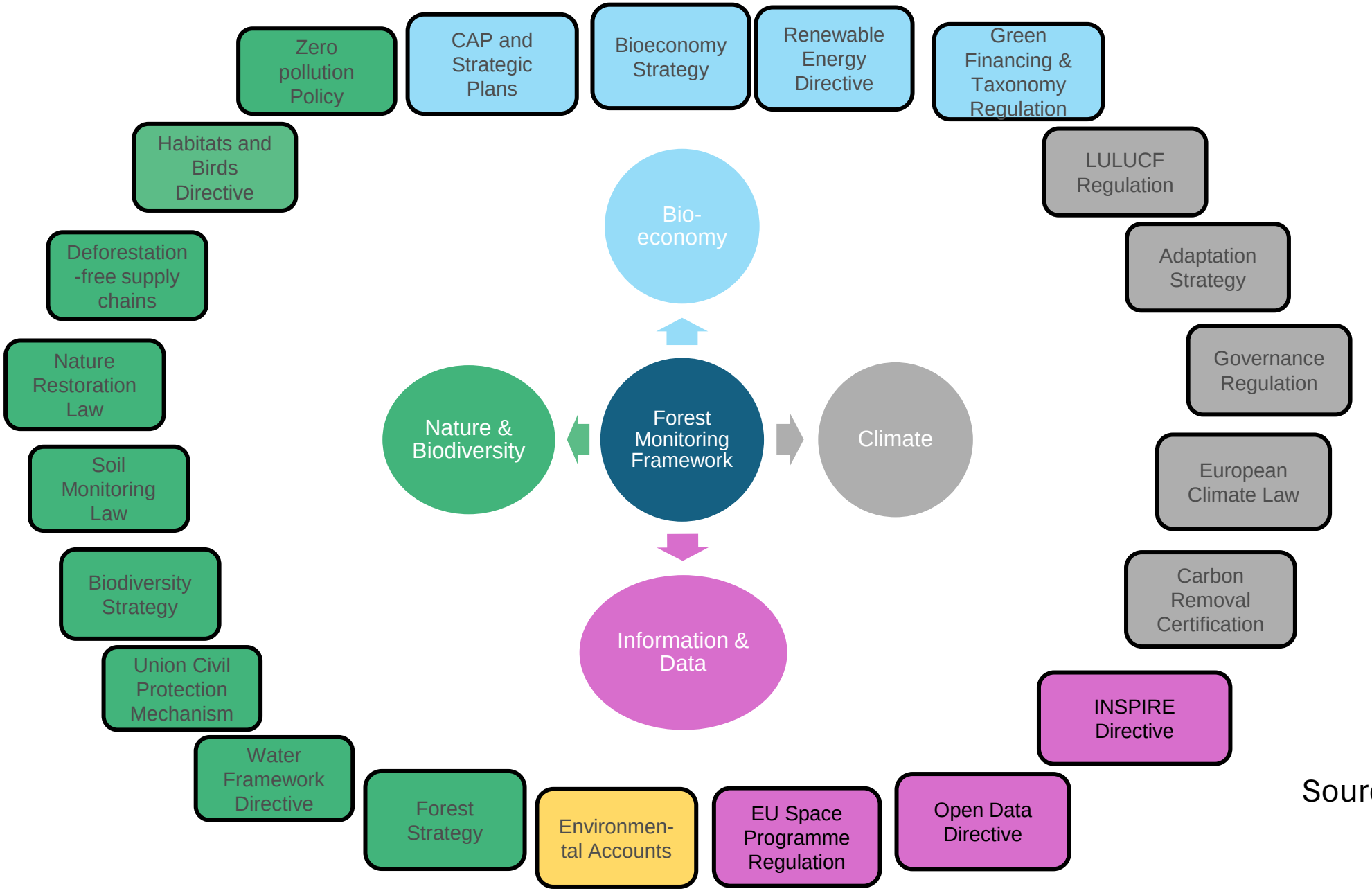
EU Forest Strategy for 2030: the economic, social and environmental functions of forests

- Promoting the **multi-functional role** of forests
- The contribution of sustainable forest-based bioeconomy to **climate-neutrality** by 2050 and **securing rural livelihoods**
- Ensuring that forest ecosystems are **restored, resilient, and adequately protected**.
- Improved **forest monitoring** and **integrated planning** for the future



EU Policy Framework relevant for forests



Source:

Sentinel satellites and their capabilities

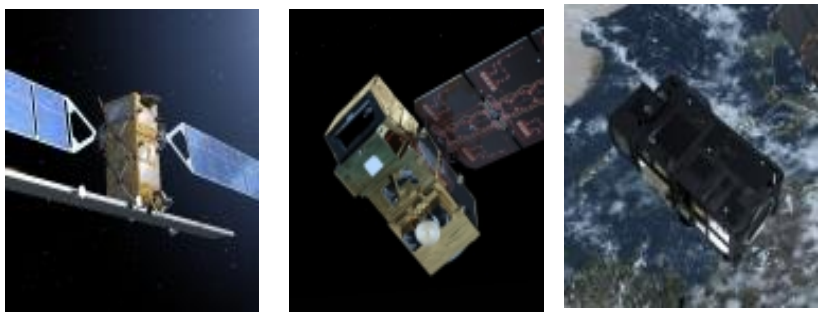
High-Resolution Imagery

Vegetation health assessment

Forest Cover Changes

Carbon stock assessment

Sentinels 1-3



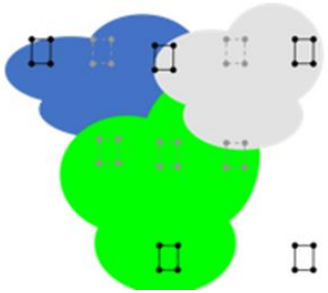
Frequent Revisit Times

Forest Cover Mapping

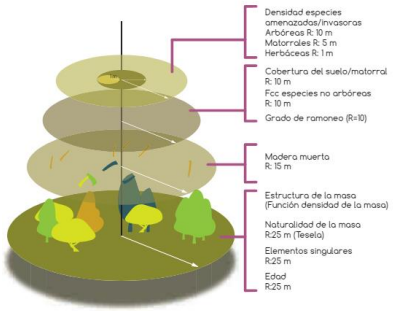
Biodiversity Monitoring

Disturbance Monitoring

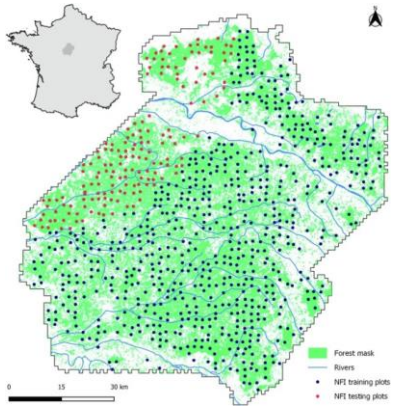
Current Forest Monitoring Practices



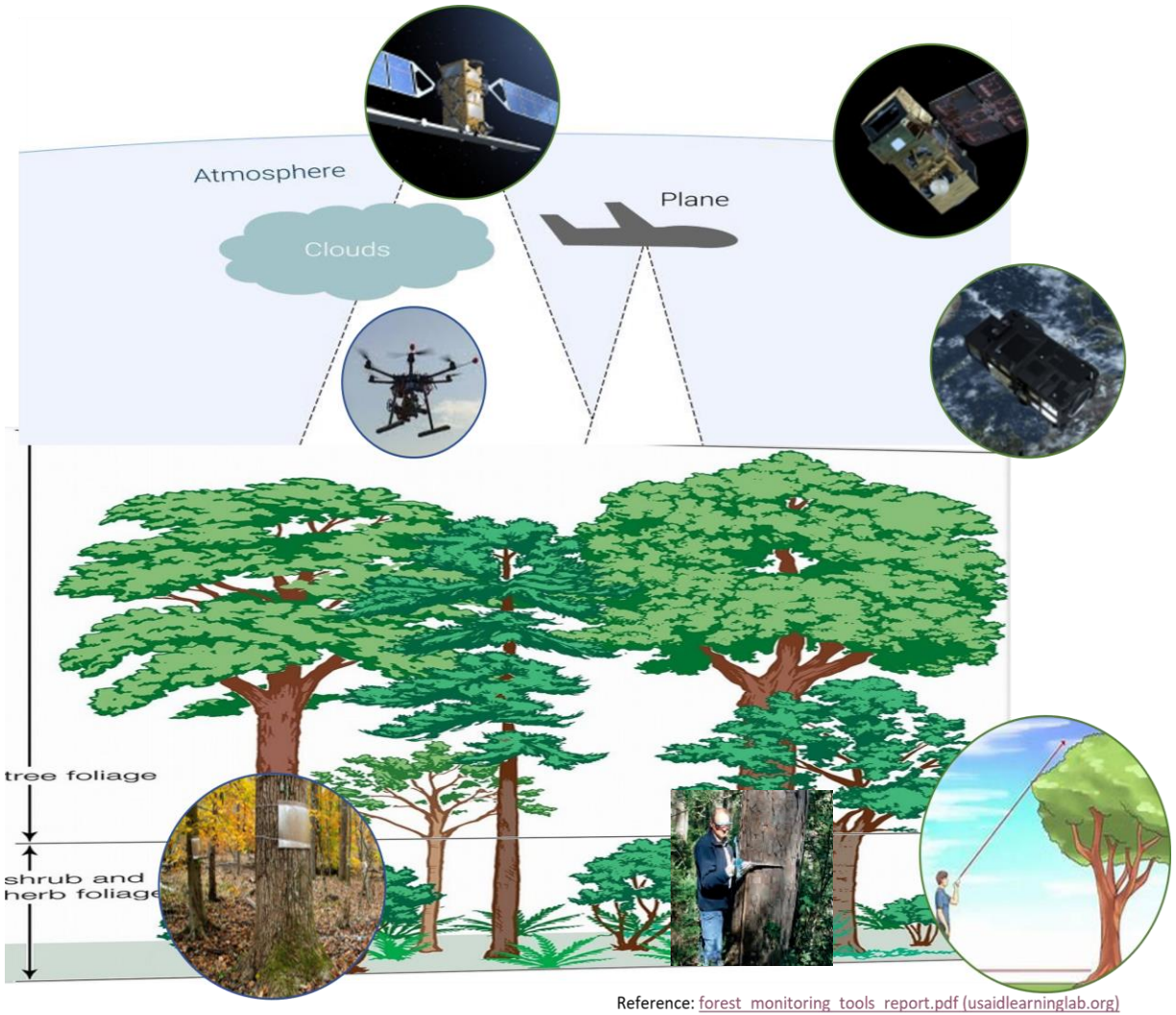
NFI-Denmark



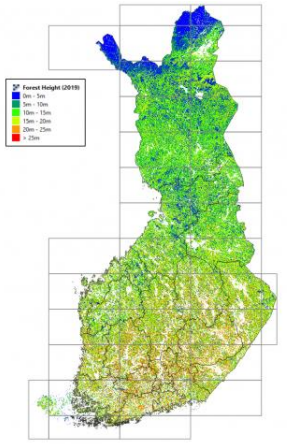
IFN-Spain



IFN-France



Reference: forest_monitoring_tools_report.pdf (usaidlearninglab.org)



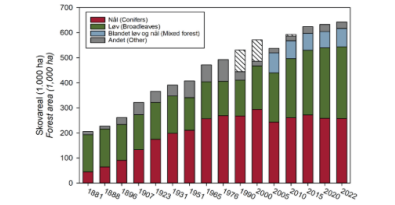
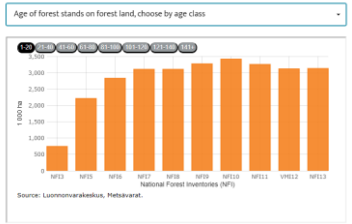
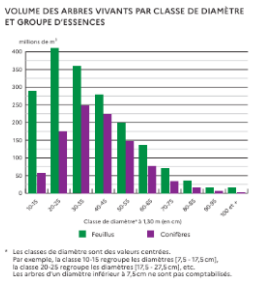
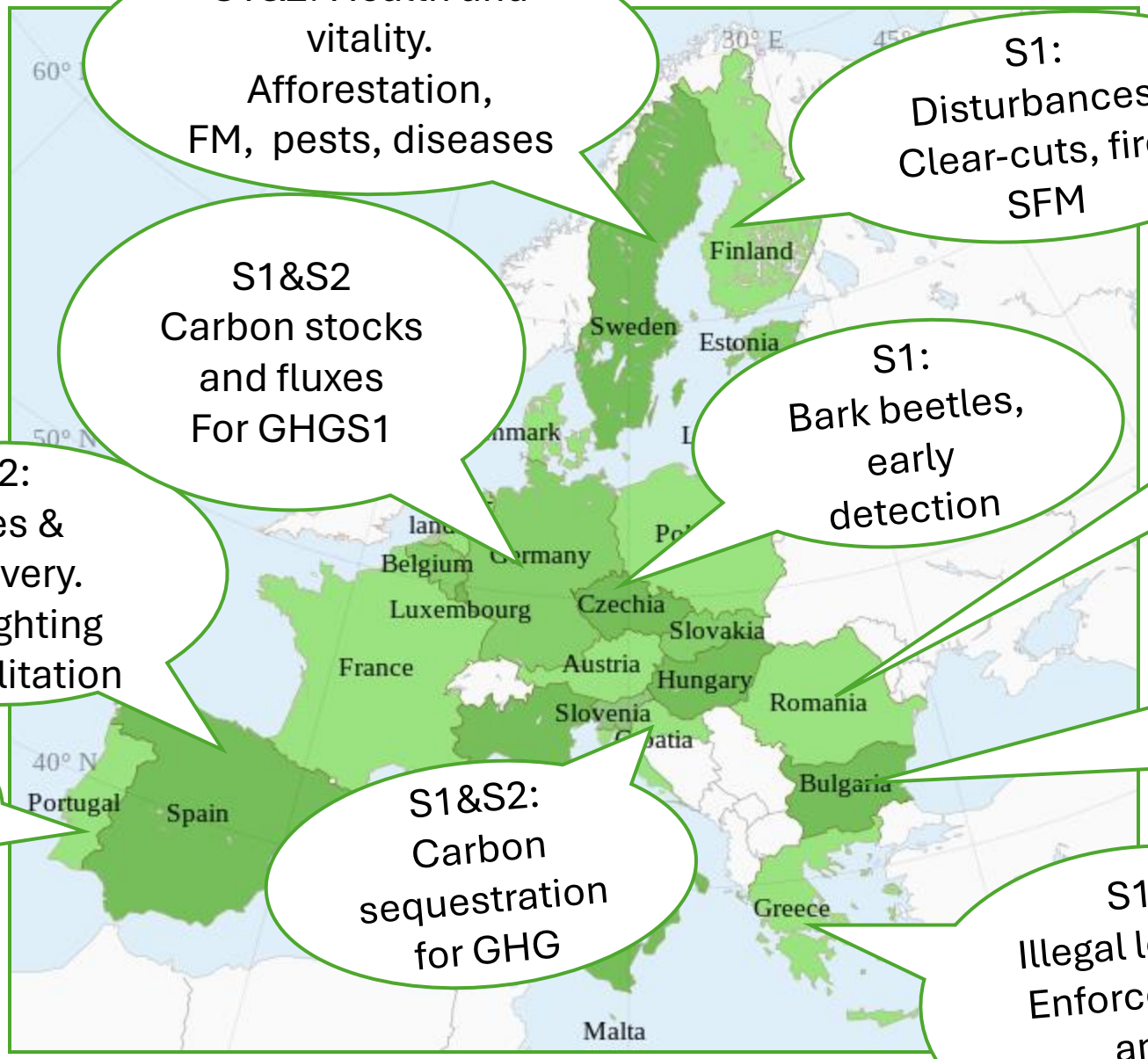


Figure 1.1. Forest area development. The category "Other" represents temporarily unstocked and auxiliary areas. Hatched area represents the difference in forest area between forest surveys and later mapping of the forest area from satellite imagery.





Examples of use of Sentinels



S1&2: Health and vitality. Afforestation, FM, pests, diseases

S1: Disturbances, Clear-cuts, fires SFM

S1&S2 Carbon stocks and fluxes For GHGS1

S1: Bark beetles, early detection

S2: Illegal logging Enforcement, protection

S2: Fires & recovery. Firefighting rehabilitation

S2: Forest cover changes, biodiversity SFM and conservation

S2: Fire extent & severity

S1&S2: Carbon sequestration for GHG

S1: Illegal logging Enforcement and biodiversity

Challenges in Implementing Forest Monitoring Policies and Utilizing Sentinel Data

- **Data Accessibility Issues:**
  - Licensing restrictions and cost.
  - Inconsistent data availability in some regions due to satellite coverage and cloud cover.
  - Complexity in integrating data from multiple sources and sensors.
- **Technical Complexities:**
  - High volume of data requiring significant storage and processing capacity.
  - Need for specialized technical expertise to analyze and interpret satellite data.
  - Challenges in standardizing data formats and processing methodologies across different platforms.

Opportunities with Advancements in Satellite Technology and Data Processing

- **Enhanced Capabilities:**
  - Increased spatial and temporal resolution more detailed and frequent data.
  - Advanced algorithms and machine learning more accurate and automated data analysis.
  - Improved cloud computing solutions for handling large datasets efficiently.
- **Policy and Management Improvements:**
  - Better decision-making support through more accurate and timely data.
  - Enhanced ability to monitor
  - Support for international collaboration and data sharing initiatives, promoting global forest conservation efforts.

Probable Future Directions

Use of Sentinels

- Evidence-Based Decision Making
- Transparency and Accountability
- Cross-Border Cooperation
- Policy Evaluation and Adaptation
- Capacity Building and Technology Transfer

Forest Policy Perspectives

- Climate Change Mitigation and Adaptation
- Disturbances
- Biodiversity Conservation:
- Circular Economy and Sustainable Wood Products
- Digitalisation and Innovation
- Participation and Engagement


Thanks for your attention!!
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