State of play and the current situation in forests

Balancing cultural, social, environmental, and economic values through the practice of Sustainable Forest Management

4th OECD Forest dialogue
Economic and biodiversity trade-offs in the Forest Sector
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The Montréal Process

Criteria and Indicators for the Conservation and Management of Temperate and Boreal Forests

A framework for understanding the goals of SFM, and measuring progress

Criteria:

1) Conservation of biological diversity
2) Maintenance of productive capacity of forest ecosystems
3) Maintenance of forest ecosystem health and vitality
4) Conservation and maintenance of soil and water resources
5) Maintenance of forest contributions to global carbon cycles
6) Maintenance of long-term multiple socio-economic benefits
7) Legal, institutional and economic framework for forest conservation and sustainable management

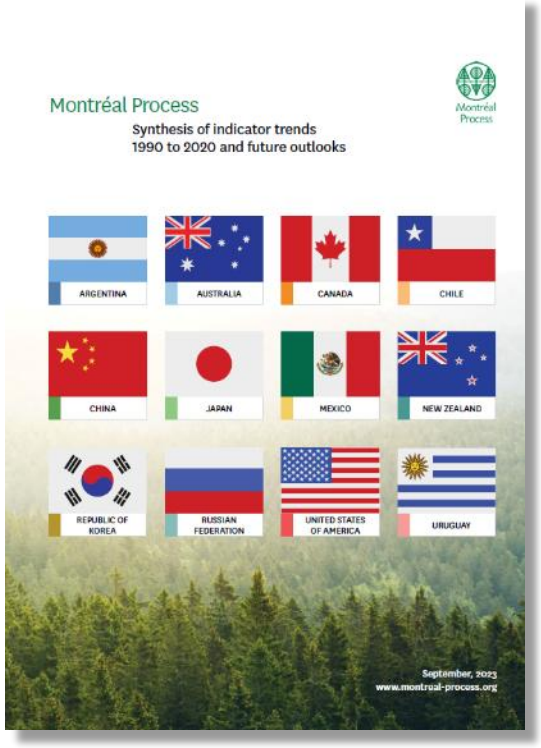
SFM → *Managing for multiple values and benefits to people, simultaneously, and for the long term.*

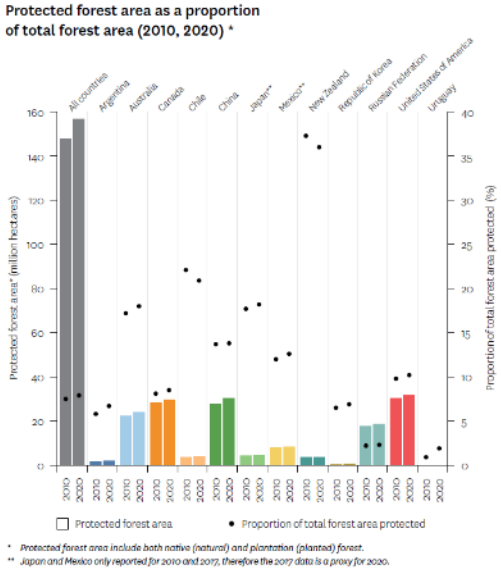
What is the current situation in temperate and boreal forests?

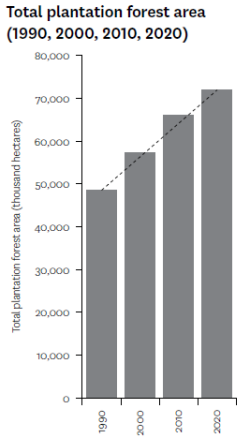
How do we know?

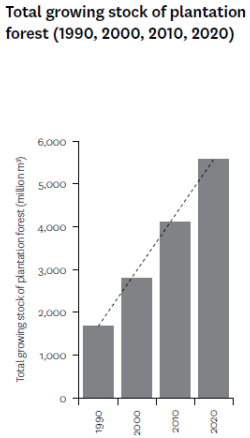
- Forest area is generally stable to increasing in Montréal Process countries overall.
- Increasing protected forest area, but biodiversity conservation remains a concern.
- Increasing insect and fire disturbance.
- Increasing industrial roundwood production (except North America)
- Forest-based employment has been steadily declining.
- Drivers of change affecting forests:
  - Climate change
  - Increasing recognition of forest ecosystem services
  - Digitization

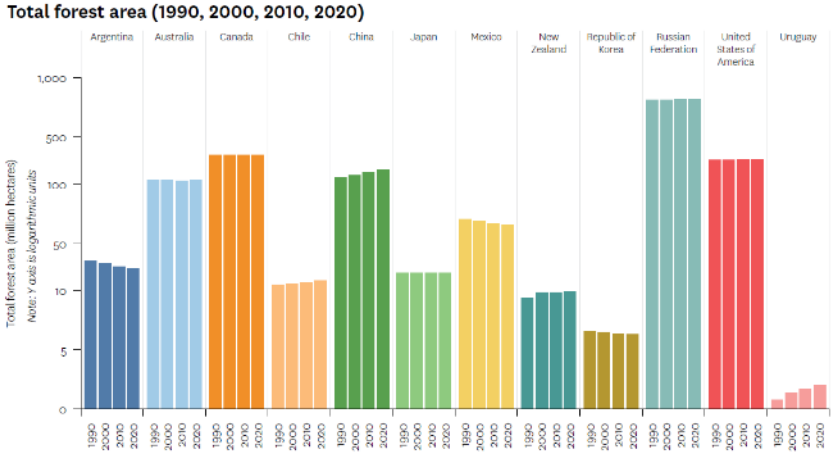
Criteria & indicators monitoring and reporting (Montréal Process)

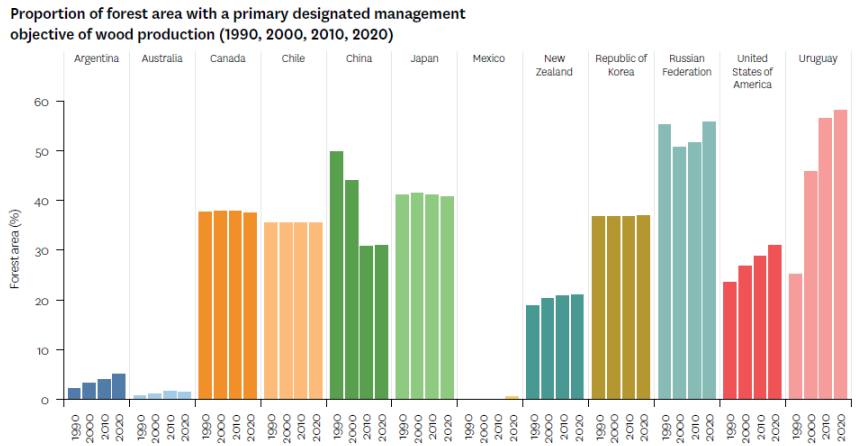




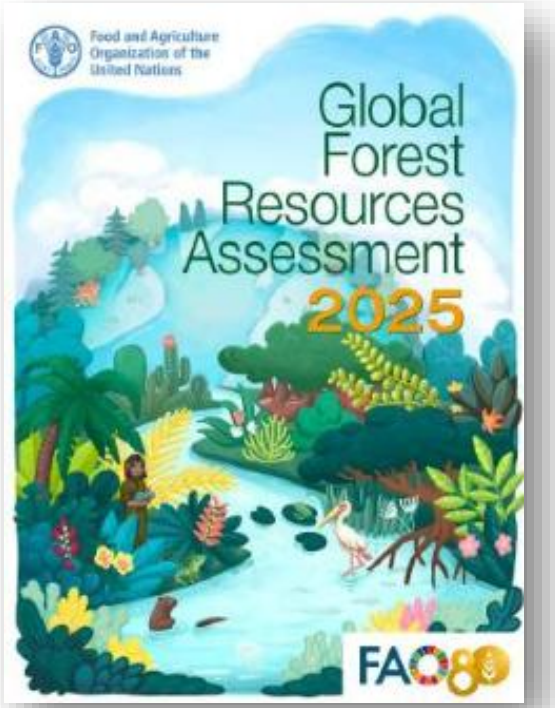








Criteria & indicators monitoring and reporting (Global)



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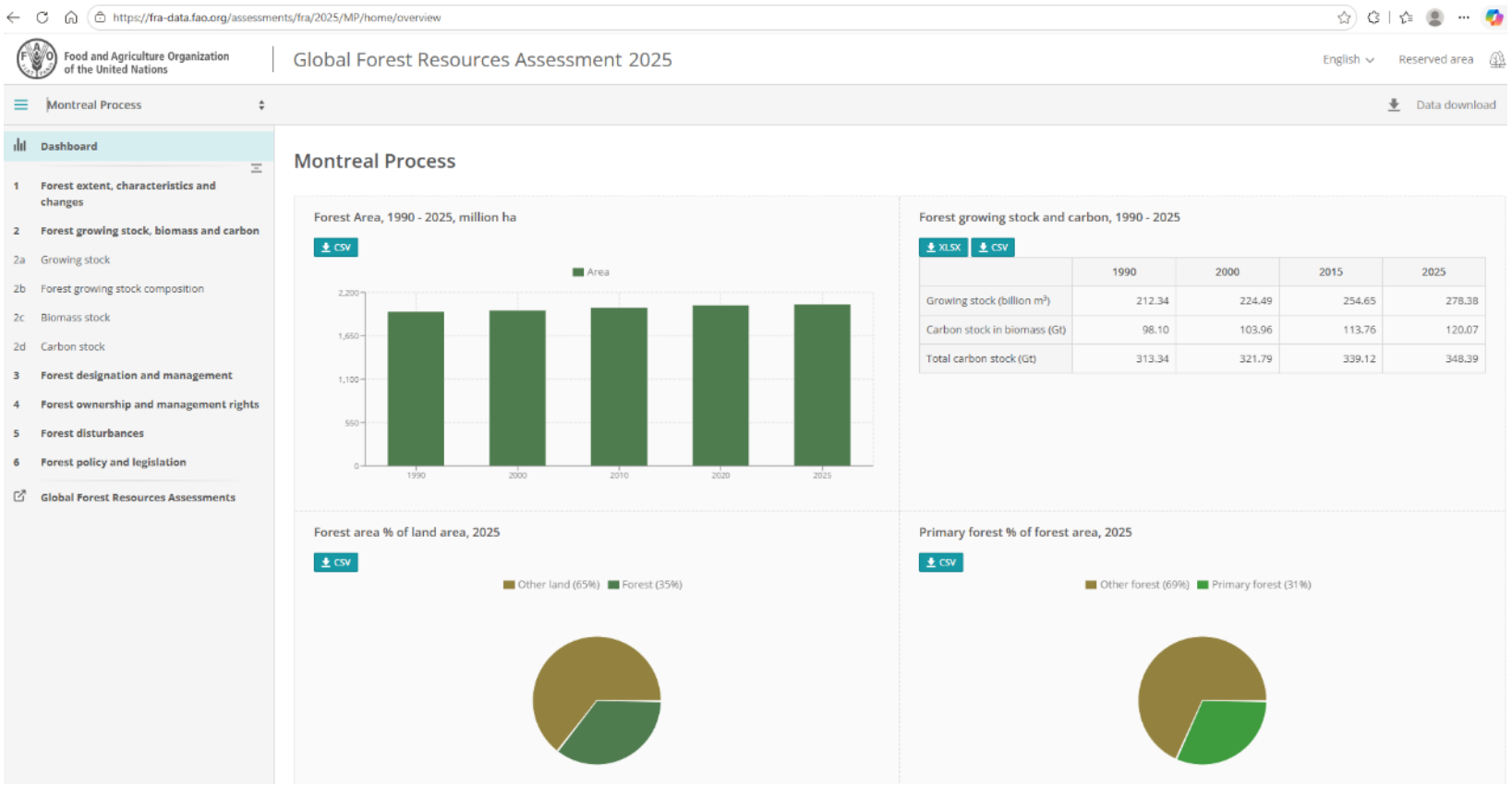

https://fra-data.fao.org/assessments/fra/2025/WO/home/overview

How confident can we be in the data?

- Some sources (e.g., **NFI**'s) are **robust by design** (unbiased, with quantified uncertainty)
  - *Costly sampling lengthens re-measurement cycles and limits small area estimation*
- **Remote sensing** provides **comprehensive time series coverage at scale**
  - Modelling *uncertainty is difficult to quantify* and often downplayed.
- **Analytical capabilities are advancing** at unprecedented speed
  - What was once science fiction is or will soon be possible, but with *novel bias and uncertainty challenges*
- FAIR data principles, Open Data standards, and interoperable services (IaaS, SaaS, DaaS…) make **data more accessible than ever before**
- Many reports from diverse sources, and more coming.
  - **Better information overall**, but *noise, misinformation and hallucinations* create challenges

Economic and biodiversity trade-offs in the forest sector

- **How can we effectively inform this dialog with indicator data?**
  - Some indicators inform directly about biodiversity (Criterion 1) or economics (Criteria 2 & 6)
  - Many indicators inform indirectly about both (Criteria 3, 4, 5, & 7)
- **How can we expand our thinking toward a broader systems perspective?**
  - Forests are ecosystems: *everything is connected to everything*
  - The forest sector is a highly interconnected industrial ecosystem

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