



Forest Sector Outlook Study, 2020-2040 (FSOS)

Kit Prins

Rome

22 November 2021



FSOS is not a forecast, but a tool for evidence based policy making. It aims to be pragmatic, transparent and objective. Through scenario analysis and literature review, it offers the possibility for stakeholders to evaluate the long term consequences of policy choices.

**FSOS is structured around six questions:
Three address structural change in the
forest sector
Three address climate change.**

How would different **demand** changes affect the UNECE forest product markets?

- **Scenarios:**
 - Increased wood-based construction in China
 - Increased wood based construction in Europe and Russia
 - Increased production of wood-based textiles
- **Projections**
 - Increased harvests – forest growing stock lower than in reference scenario, but still increasing
 - Prices rise
 - Changed trade patterns

How would different **supply** changes affect the UNECE forest product markets?

- **Scenarios:**
- **Global forest area +10% by 2040 (in line with official commitments) => higher harvests, higher growing stock, lower prices**
- **More plantations (outside ECE Region) => higher harvests, consumption and production, higher growing stock, lower prices**
- **Increased disturbances => higher share of salvage harvests, lower prices, but global markets tend to dampen fluctuations due to local disturbances, even if they are severe. If disturbances constrain wood supply over long term, prices would rise.**

How would significant **trade** restrictions affect the UNECE forest product markets?

- **Tariff and non-tariff barriers have declined. Nevertheless, trade disputes occur**
- **Interests vary by group, not only by country: for instance producers v. consumers, importers v. exporters**
- **Analysis confirms that higher trade barriers, with retaliation, lower overall welfare.**

How will UNECE forests be **affected by climate change?**

- **Climate change and forest ecosystems are both extremely complex. FSOS reviews the state of the art for:**
 - **Forest productivity (increasing, but uncertain future trends and limits)**
 - **Species distribution ranges (moving towards poles and mountains). Concern about speed of change**
 - **Natural disturbances have increased in number and severity, often in combination**
 - **Storms cause significant and long-lasting economic damage in the region affected**
 - **Droughts have also increased in number and severity, and increase vulnerability of trees**
 - **Significant damage from fire is reported all over the UNECE region. The number, size and intensity of fires are expected to increase**
 - **Insects and pathogens are also causing increased damage, most recently in central Europe and by the mountain pine beetle.**
 - **Snow and ice cause damage, but may increase or decrease in intensity**
 - **Warmer winters may cause problems for harvesting operations**

How could UNECE forests contribute to **climate change mitigation**?

- **Carbon sequestration in forests through changes in forest management, afforestation and reforestation (IPCC: + 1 billion ha globally to keep below 1.5°C)**
- **Increasing the carbon pool in harvested wood products**
- **Avoidance of emissions by fossil- and carbon-intensive materials (but reductions in forest carbon pool roughly equivalent to avoided emissions)**
- **Wood energy use is driven by policy and the subject of intense debate at present.**

How could UNECE forests **adapt to climate change**

- **Adaptive forest management uses ecological understanding regarding future climate change impacts to create a resilient forest, one that is able to cope with a range of future conditions while still providing the main services requested by society.**
- **At the stand level, there are many possible opportunities, including change of species, of thinning regime, of forest type, or treating natural disturbance as an opportunity to take a new direction.**
- **Given the uncertainty about future climate and about forest ecosystems' reaction to the changed circumstances, the effectiveness of management choices must be monitored and strategies adapted if necessary.**

Food for further thought

Disturbances and the forest sink

- **UNECE forests continue as a carbon sink in all scenarios**
- **Disturbances are expected to become more frequent and their GHG emissions are roughly comparable to the forest sink**
- **Mitigation and adaptation are intimately linked**
- **Questions:**
 - **How to combine mitigation and adaptation strategies?**
 - **What silvicultural solutions minimise risk, while optimizing both mitigation and resilience, over the whole cycle?**
 - **How to measure and monitor disturbance and resilience?**

Demand for land for increased carbon sequestration by forests

- **Increased carbon sequestration (forests/biomass or carbon capture) is part of all mitigation strategies.**
- **There are calls for huge areas (0,4-1 billion ha, 10-25% of global forest area) to be afforested. This presents many challenges:**
 - **land availability**
 - **silviculture**
 - **social adaptation and land tenure**
 - **financial resources**
 - **forest management objectives**
- **Questions:**
 - **Is it possible to increase forest area by the amounts called for in the climate strategies?**
 - **How much land is realistically available in the UNECE region for mitigation of climate change?**
 - **How to resolve the inevitable conflicts and trade-offs which would accompany such a significant change in land use?**
 - **How can forest managers find the optimum balance between carbon accumulation and wood production?**

Putting substitution in a wider context

- **Increased consumption of forest products, including for substitution of carbon intensive products, avoids emissions.**
- **However, this pathway also reduces the global forest biomass carbon stock compared to the reference scenario**
- **The avoided emissions (substitution factors) depend crucially on the detail of the substitution: what is substituted, by what?**
- **Questions:**
 - **How to develop strategies which both encourage substitution for carbon-rich materials and minimise reduction to the forest growing stock?**
 - **Which carbon-intensive products and pathways to substitute?**
 - **How to minimise carbon emissions in the wood value chain?**
 - **How to encourage the circular use of wood and forest products?**

- **FSOS**

Trade measures

- **The global trading system for forest products may be about to experience fundamental change with the arrival of a new “layer” of trade measures focused on environmental and social governance (e.g. “deforestation-free” value chains)**
- **Questions:**
 - **How to use the developing trading system to promote sustainable forest management worldwide, and the achievement of the Sustainable Development Goals? And still minimise protectionism?**
 - **What would be the long-term consequences of these changes to the rules of the international trading system for the forest sector of the UNECE region? If applied globally? Or only in some regions?**

Need for a system-wide, holistic approach to strategies and policies

- **This study has shown that policy choices made now, in one part of the world, may have consequences over long time periods and in far-distant regions, even for the global climate system**
- **Therefore, analysis based on a less than complete vision of the forest sector worldwide may be considered potentially misleading, if it fails to take a system-wide holistic approach.**
- **Questions:**
 - **How to develop analytical tools which reconcile the complexities of a system approach with the local realities of forest management and national or subnational policy formulation?**
 - **How to help national and subnational policy makers take into account the system approach?**



THANK YOU

Kit Prins
Consultant to ECE/FAO
Geneva, 22 November 2021

