

Advancing Multifunctional Forests

Pathways for Northern Europe - across Management, Carbon Removal Certification, and Land-Use Change

Based on findings from the PROFOR workshop on science for multifunctional forests in the era of the Clean Industrial Deal

Key messages:

Multifunctionality should serve as a guiding principle for forest governance and investment, complementing production and conservation objectives.

To operationalise this vision, three guiding principles should inform EU and national policies:

- **Plan and manage at the landscape level** balancing production, biodiversity, climate adaptation and social needs in complementary ways. Policies should support a diversity of management practices.
- **Align sectoral policies** to ensure coherence between forestry, energy, biodiversity, climate and social objectives.
- **Reward and support multifunctionality explicitly** through advisory programmes, certification systems, and financial mechanisms that recognise and support diverse management practices.

Context

European forests are at a crossroad. As the EU advances towards its 2050 climate neutrality target, pressures and expectations on forests are intensifying and diversifying. The European Green Deal and the Clean Industrial Deal highlight the need to decarbonise the economy while safeguarding competitiveness. The expansion of renewable energy, sustainable bioeconomy strategies, and new regulatory frameworks such as LULUCF, the EU Deforestation Regulation, the Carbon Removal Certification Framework and the Nature Restoration Regulation promote overlapping and sometimes conflicting views on the use of forest resources. At the same time, climate change and transitioning markets further challenge the sustainability of forest, forest landscape and forestry value chains.

Although central to Europe's green transition, forests are often approached through single-purpose lenses such as sources of biomass, carbon sinks or biodiversity reservoirs. Such compartmental approaches risk undermining forests' broader capacity to deliver additional economic, ecological and socio-cultural services. This can lead to increasing land-use polarisation and a shift away from the multifunctional legacy of Nordic-Baltic forests. To avoid reducing forests to one function at the expense of others, it is essential to promote multiple-use forestry, diversification, and multifunctionality wherever feasible.

The Core Problem: Policy Fragmentation and Single-Use Prioritisation

Despite the strong tradition of multiple-use forestry in Nordic-Baltic countries, current policy frameworks continue to favour single-use objectives, resulting in a fragmented governance landscape. Forest management regulations, renewable energy policies, and emerging carbon and biodiversity certification schemes are designed in parallel, each with its own logics and priorities.

This leads to competing incentives. Expanding areas of unmanaged forests reduces the resource base for bioeconomy, thus capacity to replace fossil materials. Renewable energy expansion can drive increased biomass use at the cost of biodiversity and long-term carbon storage. Poorly designed carbon certification schemes may reward business-as-usual practices that deliver limited climate and biodiversity benefits, while overlooking more effective multifunctional management approaches.

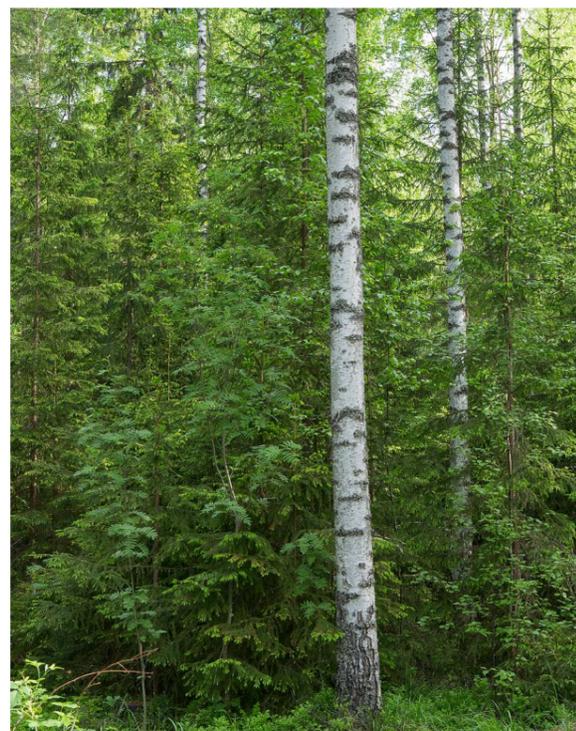
Meanwhile, traditional forestry continues to prioritise biomass production, leaving biodiversity and climate resilience secondary.

Integrated Solutions for Multifunctionality Across Contexts

1. Forest management planning and practices

Research from Nordic and Baltic countries shows that multifunctionality is foundational and varies across space and time, but we cannot have everything, everywhere, all at once. Strategic choices and balancing, however, can enhance synergies and minimise trade-offs. This requires a shift in how forest policies and management planning are designed and implemented.

Operationally, multifunctionality depends on the diversity of forest ecosystem premises and management approaches. Rotation forestry focusing on timber production remain part of the management portfolio, but not to the current dominant extent. Integrated forest management recognises that different parts of the landscape serve different purposes: some for timber, others for recreation and biodiversity, and some are left unmanaged to enhance carbon storage, ecological resilience and biodiversity. Policies should aim for landscape-level planning, ensuring balanced, flexible and adaptive production,



conservation, and multiple use to complement each other across the territory. This approach must also acknowledge the high proportion of small, privately owned forest holdings in the Nordic-Baltic region, and provide advisory and financial support for owners adopting multifunctional practices.

2. Renewable energy and land-use choices

Renewable energy expansion, a central pillar of the Clean Industrial Deal, has significant land-use implications. Biomass harvesting, wind farms, and solar installations can all create direct or indirect pressures on wood production, forest ecosystems and biodiversity. Without spatial planning to identify suitable locations and accounting for cumulative effects, extensive renewable energy land use risks disturbing the socio-ecological landscape characteristics.

However, renewable energy and forestry can coexist. For example, wind parks may allow continued forestry within non-built areas. Integrating multifunctionality into energy policies means directing renewable energy development away from conservation-value areas and aligning decisions with biodiversity, climate, and social objectives. Tools such as land-use zoning, and cumulative-impact assessment can help identify where combined use is appropriate and where restrictions are essential. In addition, mitigation hierarchy involving avoidance,

minimization and restoration or offset of biodiversity effects within and in the proximity of energy farms should be mainstreamed to promote public acceptance and synergy between renewable energy and biodiversity targets.

3. Carbon Removal Certification frameworks (CRCF)

The CRCF offers an opportunity to link climate change mitigation with improved forest management. Yet, without robust additionality, permanence, and sustainability safeguards, certification risks producing low-impact credits that reward business-as-usual practices and fail to deliver biodiversity benefits. Embedding multifunctionality criteria into certification standards can ensure that carbon credits support genuine climate benefits together with other benefits. Aggregation mechanisms and targeted public support for small forest owners are essential to enable participation in carbon and biodiversity markets.

Emerging credit systems also create new opportunities for forest owners. A multifunctionality-based certification or incentive scheme could further diversify the forest-based economy. Neutral advisory bodies and trusted intermediaries should translate complex policies into practical, science-based guidance for landowners and managers.

Conclusion

Embedding multifunctionality across policies and practices will enable forests to deliver on Europe's promise of climate mitigation, biodiversity restoration, and sustainable economic development - ensuring that forests remain both productive and resilient. Future research and policy dialogues should focus on measurable indicators of multifunctionality, the valuation of co-benefits, and monitoring systems that capture synergies among climate, biodiversity, and social outcomes.

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The PROFOR Network

The Nordic-Baltic research network PROFOR focuses especially on the 'Trilemma' approach, which is trying to meet simultaneously; i. enhanced carbon storage and sequestration, ii. increased production of round-wood for wood-based products to substitute fossil-based raw materials and iii. maintained forest biodiversity with capacity to deliver multiple ecosystem services important for human wellbeing.

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