

Sustainable and multifunctional use of forest biomass (SustMultBiomass)



Our project aims to identify pathways of sustainable future forest management that develops the bioeconomy and multifunctional forests that will contribute to mitigating climate change, delivering non-woody forest ecosystem services (FES) and preserving biodiversity. We will do this based on extensive analyses of synergies and trade-offs of alternative uses of forest biomass for the coming 30 and 100 years. The approach is to simulate a large number of forest management alternatives into the future and then apply multi-objective optimization (MOO) to identify the future pathways that fulfil objectives to be specified for the forest. Uniquely, this MOO will include harvest and forest variables, FES, biodiversity and climate impact assessment based on LCA, all handled by the MOO tool to be developed in the project. The specific WP on climate impact LCA further investigates uncertainties and sensitivities of results to different assumptions, e.g. on substitution and how it may change into the future as the world decarbonizes resulting from societal targets on GHG reductions. Next, we optimize the forestry to reach specified targets on harvest levels, climate change mitigation, FES delivery and biodiversity conservation. In parallel to the interdisciplinary scientific work, we conduct transdisciplinary work by collaborating with a wide range of stakeholders on simulating/optimizing the forest use that they advocate. The aim is for them to obtain an understanding of the long-term consequences of the forest use that they advocate on forest(ry) variables, climate change mitigation, FES provisioning and biodiversity. Finally, we will write a synthesis report on the climate, FES and biodiversity impacts of alternative forest uses in the Nordic countries, including the project results. The report is intended to a broad range a knowledge users, and will facilitate the application of the new knowledge in practical forestry, conservation and environmental policy development.

More information

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- Project website: under construction