Mapping forest biomass available for wood supply in Europe

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Knowledge of the spatial distribution of forest available for wood supply is key to support policies that depend on the assessment of woody biomass potential, such as the Renewable Energy Directive and the European Bioeconomy Strategy. Current information of wood availability in Europe is however limited to summary statistics at national scale. Fourteen European National Forest Inventories collaborated in an effort to assess, in a harmonized approach, the main restrictions to wood availability in forest areas, quantifying the environmental, social or economic restrictions with a significant impact on the current or potential supply of wood.

In this study, we used the results from this collaborative study and official national statistics to map the forest area and related biomass stocks available for wood supply in Europe. We used an "approach by exclusion," which is to map the forest area that is not available due to various constraints, and subtract this area from the existing forest area.

An accurate forest map was the basis for this analysis. First, we assessed six pan-European maps to identify the one that was most compliant with harmonized statistics on forest area at sub-national level. We then identified the datasets that could be used to quantify and spatially distribute the main restrictions to wood availability. High altitude and slope, low yield and poor accessibility, and protected areas where the main criteria that we used to map the areas not available for wood supply. Due to the differences in natural environment and forestry practices between regions in Europe, the restrictions and their thresholds (e.g., maximum slope) were selected and calibrated at country scale. The result is a map of forest available and not available for wood supply at medium spatial resolution (100 m) that is consistent with the national statistics.