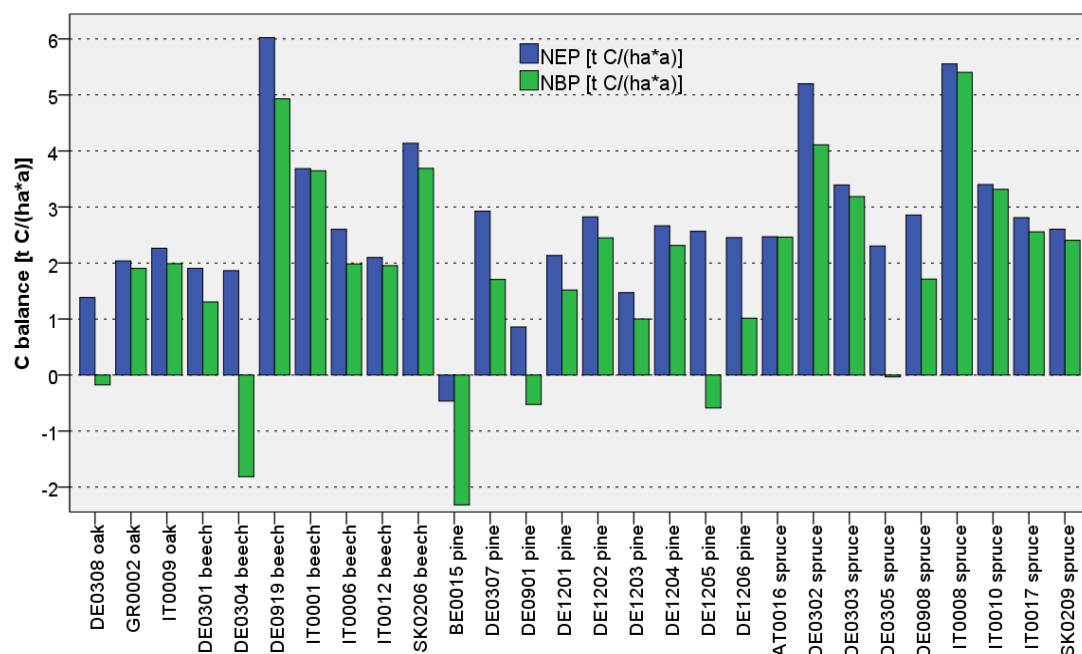


# Carbon budgets of forest stands under changing climate

Climate change has the potential to modify the relation between biomass assimilating and dissimilating sub-processes and to change the resulting carbon sequestration. It is of relevance to environmental politics to understand the sub-processes of the carbon budget of forest ecosystems and to assess the source-sink relationship for carbon under current and future climate conditions. The carbon budgets of 28 selected ICP Forests Level II plots were simulated using the modified model Biome-BGC. The 28 plots are situated in Germany (16 plots), Italy (7), Slovakia (2), Austria (1), Belgium (1), and Greece (1). They covered the topics meteorology, stem growth, litterfall, phenology, leaf area index, soil respiration, stand precipitation, soil water content and soil temperature. The effects of climate change on the carbon budget were simulated using two popular climate scenarios described in the Special Report on Emission Scenarios (SRES) by IPCC (2000). The chosen scenarios were A1B (quick spread of new and efficient technologies, balanced emphasis on all energy sources) and B1 (introduction of clean and resource efficient technologies). The simulation periods were 2040-2059 and 2080-2099 with 1990-2009 as calibration period.

Twenty two plots could be identified as carbon sinks and 6 plots as carbon sources between 1996 and 2009.

Further information and discussion of results are available in [FutMon Scientific Report](#)



Simulated NEP (Net Ecosystem Production) and NBP (Net Biome Production) of investigated plots using measured climate data from 1996 to 2009