

## Project Description:

**“FaguFuture”: Wood production, carbon sequestration and resilience of beechwood forests in selected regions of Germany - opportunities and trade-offs in the short-, medium- and long-term”**

The FaguFuture project aims to analyze beech forests and the climate impacts of wood biomass utilization in relation to its potential for industrial production of biochemical and other products of the forest based bioeconomy. Forests are recognized as the most significant carbon storage systems, and this project seeks to contribute to the discussion on preserving the climate-optimal use of forests while sustainably harvesting wood to create bioproducts. The project employs a methodology called FARO (Forest Assessment Resource Optimization, developed by HSWT – Sustainable Business Economics) to model wood yield and carbon sequestration rates in beech forests and mixed stands over short-, medium-, and long-term periods in selected federal states of Germany. The objective is to quantify the carbon balance and the development of carbon pools in beech forests over the next 20, 50, and 120 years under three scenarios: business as usual, retaining 10 percent of the forest area, and proactive conversion of old stands into mixed forest. The data for forest development is based on national forest inventory data from 1990 to 2022 (BWI 1 - 4), which will be analyzed until 2040, 2050, and 2120. Another project goal is to quantify the GHG balance and assess the climate impacts of different end-use products based on industrial beech. The project has the potential to inform industries about the synergies and trade-offs associated with the production of beechwood-based products and their climate effects.

The main project components can be described as follows:

- Identification of management strategies for beechwood
- Quantification of carbon pools in various forest components
- Carbon balance modeling under different scenarios
- Synergies analysis and evaluation of trade-offs between beechwood production and climate benefits

The project is coordinated by the HSWT - Professorship for Sustainable Business Economics at the TUM Campus Straubing for Biotechnology and Sustainability (SBE).

Project coordinator: Prof. Dr. Hubert Röder

Project partners: Industry

Project start: 15 July, 2024

Project end: 31 May, 2025