

PROJECT INFORMATION

Project title: Cloud-based Decision Support System:
EDE4.0 - Enhanced Dynamic Felling Planning 4.0

Project ID: 236

Contact person: Joachim Fallmann // joachim.fallmann@kit.edu

PROJECT DESCRIPTION

In the framework of this BMEL (German Federal Ministry of Food and Agriculture) funded project, the South German Climate Office supports forest management in Baden-Württemberg with regional decadal and long range climate predictions in order to adapt to future extreme events. The Institute of Geography and Geoecology, IfGG joins the project and shares the expertise in forest research, thus providing the necessary link between forest data and climatological information. The aim of the development of the planned decision support system of "EDE4.0 - Enhanced Dynamic Felling Planning 4.0" is primarily to increase the economic efficiency of harvesting measures and other tasks of operational forest management while taking environmental protection and sustainability into account by means of a digital service.

By combining decadal predictions and results from high-resolution regional climate model ensembles, model output should guide both the planting process but also the tree species selection for a future climate in regional forest stands. By that, the risk of extreme weather events during the growing phase of tree seedling is assessed, whereas climate information helps to estimate future probabilities of forest relevant extreme events such as droughts. Linking modelling data to forest inventories and local expertise via artificial intelligence, the project aims to support decision making on an economic basis but also helps to maintain ecosystem services of forests and trees in the future. The ICP Forests database hence provides valuable insights into the growth conditions of European forest stands and is a valuable information for evaluating tree growth- and species distribution models. These models are yet to be selected, and the ICP Forests dataset can significantly support this selection process and accompany the selection criteria of parameters within the growth model r3PG.