– A case study for sessile oak (Quercus petraea) distribution – Preliminarly results of a Decision Support System for climate impact analysis

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Rainfed sectors of forestry are threatened by projected climate change especially in low-elevation regions in Southeast Europe, where precipitation is the limiting factor of production and ecosystem stability. To initiate preparation for frequency increase of extreme events, disasters and economic losses, a Decision Support System is under development, which provides GIS-supported information about the most important regional and local risks and mitigation options regarding climate change impacts.

The case study will focus on the following aspects:
• For the time period 1961-2010, precipitation and temperature means and extreme events have been analyzed in the Carpathian basin, using gridded station data from the EU-project CARPATCLIM (http://www.carpatclim-eu.org).
• The climate indicators have been identified that characterize and determine the distribution, healty status and vitality of sessile oak.
• As a product of the Decision Support System a distribution model is under development, which describes the connection between climate conditions and the distribution of sessile oak.

The case study shows, how climate data can be used for impact analyses in the forestry sector. Applying different climate change scenarios, the expected distribution of tree species can be simulated.

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