



Climate change information supporting adaptation in forestry and agriculture – results and challenges

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Recurrent droughts of the last decades have led to severe impacts in forestry and agriculture in the sensitive and vulnerable low-elevation regions of Southeast Europe. Observed impacts are very likely to occur with increasing probability under projected climate conditions throughout the 21st century. In order to suggest options for adaptation and mitigation, a GIS-based Decision Support System is under development in the frame of the joint EU-national research project “Agroclimate”.

Impact assessments and adaptation support services are based on the simulation results of 12 regional climate models (www.ensembles-eu.org) using the A1B emission scenario until 2100.

The development of the Decision Support System requires the balancing of available climatic information and required data for research and economically relevant projection needs of the end users. Here, concrete examples of the development process will be shown for the stepwise analysis and comparison of the followings:

1. Provided climate services:

- projected tendencies of temperature and precipitation means and extremes until the end of the 21st century, spread of the simulation results.

2. Required information for climate impact research:

- types and characteristics of climate input data,
- methods and functions for deriving possible climate change impacts in forestry and agriculture (e.g. on species distribution, growth, production, yield, soil water retention, ground water table, runoff, erosion, evapotranspiration and other ecosystem services and soil properties).

3. Required climate information from the end users’ side for developing adaption strategies in the affected sectors:

- types of climate indicators,
- possible range of the expected impacts (in magnitude and probability).

4. Gaps between climate services and the needs of impact researchers and end users (e.g. spatial and temporal scales, interpretation techniques).

Experiences of supporting climate change adaptation in forestry and agriculture confirm that the main challenges for bridging the gap between the supply and demand of climate information are the heterogeneity of users and needs, quantification and communication of uncertainties, as well as the appropriate bias correction methods for impact research.

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