

Trends and Future Challenges in Agrometeorology

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Abstract

Agriculture is the major human land use across the globe and agricultural activity was and is the main basis for global food production. During the next decades, growing global population, changing life styles and growing negative impacts of climate change on natural resources will significantly affect global food security and risk. Agrometeorology as an interdisciplinary field of science can significantly contribute to the manifold evolving problems for ensuring food security and welfare of people. One of the main challenges in Agrometeorology is to make research results as well as operational services and products better useable for end-users, such as decision makers and farmers. For example, there is already a lot of work at global or national scales, but there is still a strong demand on regional or local studies, which are addressing local problems in agricultural production. Tasks include better tested and calibrated models for specific conditions and applications (including irrigation models, crop pest and disease models, agro-climatic indices, climatic interpolation methods etc.) or improving temporal and spatial resolution and uncertainty of monitoring activities (such as drought monitoring) from short to long term forecasts. Under climate change, significant shifts of the growing conditions for crops can be expected, where local specific information would be crucial for long term planning such as land use change or strategic change of a production system. In operational Agrometeorology there is still room for improving services and products for end-users, especially in developing countries. Globally, Agrometeorology especially in its role for improving the use of natural and other resources (such as water and farm inputs) will play an increasingly important role, a challenge which should be addressed and supported at all levels including the political level.

Biographical Note

Professor Josef Eitzinger is Head of the Institute and Working Group of Agrometeorology of the Department of Water, Atmosphere and Environment at the University of Natural Resources and Life Sciences (BOKU) in Vienna. Among others, he was a member of the WMO RA VI Commission for Agrometeorology (CAGM) Expert Team on "Impact of Climate Change Variability on Medium- to Long-Range Predictions for Agriculture". He is a founding member of the International Society of Agrometeorology (INSAM) and national delegate of past COST 718, COST 734 and actual COST ES1106 action (AGRIWAT). He has been a partner in EU projects "AGRIDEMA" (Introducing tools for agricultural decision-making under climate change conditions by connecting users and tool providers) and "CECILIA" (Central and Eastern Europe climate change impact and vulnerability assessment). He was also coordinator of the FP6 project "ADAGIO" (Adaptation of agriculture in European regions at environmental risk under climate change). He has been a partner in national and bilateral research projects on development and application of agrometeorological models. He is involved in projects on development of a drought monitoring system for crop production in Austria, assessment of climate change impacts on soil water and nutrient balance, soil erosion, crop production and adaptation.

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