
Book review

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Applied Agrometeorology, ed. K. STIGTER. xxxvii + 1100 pp. Berlin, Germany: Springer (2010).
€199.95/£180.00. ISBN 978-3-540-74697-3 (hardback).

Applied Agrometeorology is the first extensive compendium on the complex problems and challenges of agrometeorological applications, with a strong focus on agrometeorological services in developing countries. It contributes, therefore, to one of the most important global issues, both currently and for future decades: food security and the welfare of the majority of people in the developing part of the world. In view of ongoing global and climate change, the challenges for producing enough food for a growing global population, and to fight poverty and regional discrimination on the participation of global economic growth are enormous. Sustainable agricultural production and the availability of enough good-quality food is, and will continue to be, the basis of human welfare in all parts of the world, but especially in agriculture-dominated economies in developing countries. Beside policy, institutional and infrastructural framework at a specific site or region, the local agricultural production conditions are, however, especially determined by the single farmer's needs for improving performance with regard to food production, income, welfare and education. Any attempt to improve these conditions at a local scale, therefore, needs a bottom-up approach and both a working link of information flow from the farmer to the research and service institutions (local needs, conditions, experiences, etc.) and from research level and extension services to the farmer (adapted 'know-how', forecasts and warnings, advice, etc.). This is the main message that Kees Stigter and as many as 113 contributing authors to the various chapters of this book describe in the field of agrometeorology and agrometeorological services supported by a number of presented case studies for various agricultural production systems under different environmental conditions in several developing countries. The book could be named as the 'bible' of 'how to do in applied agrometeorology' in order to create and make agrometeorological know-how useful

for farmers and the welfare of people, especially in rural regions of developing countries.

This is based on many authors' long-term experience in field research and training activities in developing countries in the field of applied agrometeorology. Kees Stigter, the editor and main author of the book, has probably the best global overview on the related problems, not least due to his past position as President of the Technical Commission for Agricultural Meteorology (CAgM) of the World Meteorological Organization from 1991 to 1999. He was active over a long period in teaching, projects, expert groups related to agrometeorology in several institutions (such as FAO, agricultural universities, etc.) and in developing countries (especially in Asia and Africa).

The recommendations and conclusions in the book, supported by detailed case studies and many specific references, contribute to preparing farmers for (1) extreme events and (2) the beneficial use of climate, both under the specific socio-economic conditions of different farming systems and different income groups. Examples are given on the current situation of agrometeorological services by the case studies analysed and also, based on the authors' experiences and successful examples described, recommendations on how these services could be improved. All important aspects of applied agrometeorology and related services are discussed in the different chapters, including aspects such as communication approaches.

The agrometeorological problems of the main production systems are outlined in separate chapters, including monocropping, multiple cropping, forestry, agroforestry, animal husbandry and under-cover cropping. For each of these production systems, these chapters address: (1) the strategic use of climate information for land use and cropping pattern, for preparedness strategies and more efficient use of agricultural inputs, for adapted management, for microclimatic modification options and for protection measures against extreme climate, (2) how to cope with climate variability and change by improving climate forecasts, by sustainable use of agroecosystems, by detection and awareness of increasing climate variability and risks and by adaptation strategies to climate changes, (3) how to cope with extreme meteorological events by describing problems, solutions and challenges and by designing and improving efficient early warning strategies, (4) how to make

decisions based on weather information by describing problems, solutions and challenges and by selecting related tactical management and (5) how to develop risk management strategies including aspects such as the definition, management and coping strategies for weather- and climate-related risks in agriculture, the development of scales and tools for related risk quantifications, the improvement of related risk assessments, the design and communication of risk information products for the farm level and the improvements of coping strategies with risks (such as insurance). The final chapter deals in detail with the supportive methods as tools and approaches successfully used in applications leading to agrometeorological services. It includes the roles of ethics and policies, expert systems, education, training and

extension, agricultural physics, chemistry and data, statistics, climate prediction and weather forecasting, remote sensing, crop modelling and simulation, adaptation and mitigation, Geographical Information Systems (GIS) and others.

Overall, this book presents valuable and in-depth information and enormous background knowledge for practical applications in agrometeorology and related services. It can be highly recommended for students as well as scientists, policy makers, persons in extension services and NGOs and others who are active or interested in operational services in the field of agriculture, food production and agrometeorology, especially in and for developing countries.

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