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## **Drought and Drought Mitigation in Europe**

J. V. Vogt and F. Somma (Eds.)

Drought is one of the major natural hazards, resulting in significant economical, social, and environmental costs. In Europe water shortage is an important problem in many regions. However, despite the increasing awareness to this hazard, there is no European drought policy and institutional frameworks to cope with drought situations are only weakly developed.

The book is dedicated to further our understanding of the drought problem in Europe and to discuss policy and management options to mitigate its impacts. It covers aspects from the detection of water stress to planning of mitigation strategies. The contributions have been written by recognised experts in their field and represent a unique collection of papers on the topic.

### *Audience:*

The book will be of benefit to the scientists, managers and politicians involved in problems related to water management, risk assessment and spatial planning. Students in Earth sciences, especially in geography, climatology, hydrology and agriculture will find useful material in this collection of papers.

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## ***Preface***

*Drought is one of the major weather related disasters. Persisting over months or years, it can affect large areas and may have serious environmental, social and economic impacts. These impacts depend on the duration, severity and spatial extent of the precipitation deficit, but also and to a large extent on the environmental and socio-economic vulnerability of affected regions. The development and implementation of adequate mitigation strategies, however, gives the opportunity for a significant decrease of such vulnerability.*

*Recent European droughts have emphasised that the impact on European economies can be significant. While Europe as a whole has abundant freshwater resources, there exists a strong regional imbalance across the continent. Water shortage, therefore, is an important problem in many European regions, specifically in the semi-arid and continental climatic zones.*

*In response to the growing concern about this natural hazard, the Joint Research Centre (JRC) of the European Commission initiated a research and development project on drought monitoring and mitigation in Europe in 1997. The aim of this project is to perform and promote applied research in this field and to stimulate co-operation in the European context. In the frame of these activities an international workshop on 'Drought and Drought Mitigation in Europe' was organised in March 1999. The workshop, which was held at the Space Applications Institute (SAI) of the JRC in Ispra (Varese), Italy, was attended by about 30 experts from Europe, the United States and Israel with professional backgrounds in meteorology, hydrology, geography, agronomy, economics and politics. The intention of the workshop was to analyse the state-of-the-art in drought research, drought planning and drought mitigation strategies in Europe and to elaborate recommendations for future action. The papers presented in this volume result from this workshop. All papers have been discussed at the workshop and have been reviewed and revised in the following months. The material has been organised in a way to reflect the various areas of concern as related to the drought phenomenon. It covers aspects of drought definition, drought risk assessment, drought monitoring, and drought mitigation strategies.*

*During the workshop a lively and often controversial discussion emerged over the issues at hand. This controversy of opinions is also reflected in the papers and hopefully reflects the variety of opinions in both the scientific and political communities. In spite of this controversy, the participants agreed to a list of generally accepted conclusions and common recommendations for future action. The importance of a better link between scientific and political programmes and of the necessity to raise the awareness of the political community for the need to implement a pro-active approach to the problem are certainly among the most important ones. As a major outcome, an organisational and thematic structure for the set-up of a European Network on Drought Research and Mitigation has been proposed. This network should work towards a comprehensive understanding of the problem and should provide the necessary link between science, policy and management.*

*The problem of drought is a very complex one. It involves many aspects from science, socio-economics, politics and management, and in this sense is truly interdisciplinary. Yet we hope to offer some useful insights into the various problems related to drought, paying particular attention to the situation in Europe. With this regional focus the book is to be seen as complementary to other books published on the subject, covering both theoretical considerations and examples of drought management and policy in the United States and world-wide<sup>1</sup>.*

*We believe that the book will be of benefit to both the scientific community interested in the various aspects of drought detection, drought monitoring and drought management as well as to managers and politicians involved in problems related to water management, risk assessment and spatial planning at the European, national and regional levels. Finally, students in Earth sciences, especially in geography, climatology, hydrology and agriculture will find useful material in this collection of papers.*

*We wish to thank the Space Applications Institute, JRC Ispra, and the UK National Co-ordination Committee for the International Decade for Natural Disaster Reduction (IDNDR) for their financial and logistic support for the meeting as well as for the continuous encouragement of our work.*

*We hope that the papers as well as the conclusions and recommendations will help to raise the awareness of this important problem and to stimulate future co-operation and co-ordination in this field. A lot of progress is still to be made towards a comprehensive Drought Mitigation Framework for the European continent, including both adequate monitoring facilities and the implementation of pro-active mitigation strategies.*

Ispra, May 2000

Jürgen Vogt  
Francesca Somma

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<sup>1</sup> For example:

Wilhite, D.A. and Easterling, W.E. (Eds.) (1987) *Planning for Drought. Toward a Reduction of Societal Vulnerability*, Westview Press, Boulder and London.

Wilhite, D.A. (Ed.) (1993) *Drought Assessment, Management and Planning: Theory and Case Studies*, Kluwer Academic Publishers, Boston, Dordrecht and London.

White, D.H. (Ed.) (1998) Drought Policy, Assessment and Declaration, Special Issue of *Agricultural Systems*, 57(3).

Wilhite, D.A. (Ed.) (2000) *Droughts. A Global Assessment*, Routledge, London and New York.