

Preface

The Symposium on Regional Management of Water Resources stands in the long tradition of IAHS symposia about water management problems and techniques. The practical application of hydrological sciences in water management has been one of the main concerns of IAHS for many decades. Milestones along this way were symposia like Hamburg 1983, Jerusalem 1985, Baltimore 1989, Beijing 1990, Boulder 1995 and Rabat 1997.

More effective and better integrated water resources management at the regional scale is needed more than ever to complement the increasing demand on water resources. The scarcity of water, considering quantity as well as quality, will cause serious problems for the supply of water for drinking and other essential uses, such as hygiene and food preparation. In addition, water demand for food production will strongly increase, especially in arid and semiarid areas. But not only is the demand rising, also the paradigms of water management are shifting by an increasing recognition of the importance of ecosystem functions providing the life support system for the planet.

These and other challenges call for new activities of the scientific community. The general orientation of IAHS towards a more holistic and comprehensive approach in water management becomes obvious by the subdivision of this symposium into three parts:

- Lessons learned from past management practices
- Sustainable regional water management for conflicting interests
- Tools for water resources management

The first topic considers the need to evaluate the effects of past management practices. It is shown that in some cases the planned effects of water management could not be realized. Often, practical water management is influenced by external forces in a way that was not foreseen during the planning period. A general result of the case studies presented in the first part of the symposium is the need for a permanent monitoring of water management systems in order to react to unforeseen developments as well as to assess the effectiveness of the management practices themselves. Monitoring can also provide a more comprehensive view on economic, ecological and social impacts of water management systems. In this part of the symposium, not only experiences in regional water management, but also examples of how to adapt water management facilities to changing conditions are demonstrated.

The second part of the symposium is dedicated to regional water management under conflicting interests. Of particular concern in water management is the mounting public expectation for healthy rivers and wetlands. Degradation of the environment becomes less tolerable. Examples of conflicting interests discussed here are those between ecology and economy, between competing water users and between competing usages of water at different stages of the hydrological cycle. It becomes obvious that a more holistic approach is needed in water management and that administrative and disciplinary boundaries limit our ability to react in a sustainable

way. The extension of these boundaries seems to be an urgent challenge of the near future.

The third part of the symposium is dedicated to the evaluation of new techniques for integrated water resource management. It covers especially the wide field of methodological developments in modelling at different scales and presents applications of different types of models addressing open questions in practical water management.

In general, the response to the call for papers for this symposium was very good, in total 78 abstracts were submitted. However, the different parts of the symposium were covered unevenly, such that 23% of the abstracts were dedicated to the first part (Lessons learned from past management practices), 30% to the second part (Sustainable regional water management for conflicting interests) and 47% to the third part (Tools for water resources management). Not all the papers submitted could be accommodated for oral presentation. Some of them will be presented at the symposium as posters.

As this symposium is dedicated to interdisciplinary problems of water management, the leading commission for the symposium, the IAHS International Commission on Water Resources Systems, was supported by co-convenors from two other Commissions of IAHS: the International Commission on Surface Water and the International Commission on Water Quality.

The board of editors thanks all authors for their collaboration and the manifold efforts to present the result of their research activities in an attractive way. We regret that the limitations of the space available for publication forced us in many cases to ask the authors to compress their contributions. We hope, however, that these restrictions will be overcome through personal communication during the symposium in Maastricht. All the authors are sincerely congratulated on their excellent and dedicated work.

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