

# **EWRA Symposium on Water Resources Management: Risks and Challenges for the 21st Century**

**September 2-4, 2004  
Izmir, Turkey**

## **EXECUTIVE SUMMARY**

EWRA Symposium on “Water Resources Management: Risks and Challenges for the 21st Century” was held in Izmir, Turkey, between September 2-4, 2004 with the contribution of more than 100 participants from 13 European and Mediterranean countries. The basic objective of the Symposium was to follow up on the assessment of water-related problems, provided by the 2003 UN World Water Development Report and to address the major challenges for the 21<sup>st</sup> century. In particular, the Symposium focused on the preparations and arrangements for capacity building of the European countries to deal with the new challenges, risks and difficulties in water resources management. The main themes of the Symposium cover the 11 major challenges identified in the UN World Water Development Report of 2003, namely:

- Basic Needs for Water and the Right to Health
- Protecting Ecosystems for People and the Earth
- Cities: Competing Needs in an Urban Environment
- Securing Food for a Growing World Population (related to agricultural uses of water)
- Promoting Cleaner Industry for Everyone’s Benefit
- Developing Energy to Meet Development Needs
- Mitigating Risk and Coping with Uncertainty
- Sharing Water: Defining a Common Interest
- Recognizing and Valuing the Many Faces of Water
- Ensuring the Knowledge Base
- Governing Water Wisely for Sustainable Development

The participants considered that the selection of the topics of the symposium according to the 11 major challenges identified by the UN Water Development Report 2003 was an excellent idea. Essentially, these topics and related issues, which are presented UN papers and releases, are on the top agenda or should be on the top agenda of any water related conference.

The symposium included about 80 high quality papers and plus 8 keynotes as speeches, covering nearly all aspects of water resources management and sometimes even beyond. They ranged widely from the water quality management over fuzzy logic application to the EU Water Framework Directive and its application.

The symposium was structured on two main lines along which all presentations were organized:

- a) The characteristics of the new world, which are marked by the impressive population growth and by the accruing negative impact on the environment; and

- b) The expected shortage of water and water resources, which is aggravated by the probable climatic change.

These perspectives, along with several aspects relevant to the values and disciplines characterizing water problems, were dealt with during the symposium in various technical sessions, both by the invited lecturers and the participants. Throughout all sessions, a common guideline was always evident to bind together various subjects presented. In general, the contributions illustrated the benefits that can be obtained through advanced information tools within the general frameworks of hydrology, meteorology, hydrogeology, hydraulics, water chemistry, biology and of economics and social sciences as well. Local problems pertain to many countries, but the majority of these problems concern the eastern corner of the Mediterranean, particularly Greece and Turkey.

This was the first EWRA conference or symposium, which was outside of Europe at least in geographic dimensions, and the results of the conference have shown very clearly that such an EWRA conference in Turkey was long overdue. The Izmir Symposium has shown that there is a very high standard of Turkish scientists and researchers in all fields of water management and that many problems which were shown in the presented papers are rather similar or even the same on both sides of the Bosphorus. The symposium has revealed that European scientists could learn a lot from each other as the problems are very similar and the standards very often the same.

The symposium was not only a Turkish-Greek symposium or convention because the majority of participants were Greek and Turkish, but it was also an international symposium, which provided the opportunity to learn a lot on the problems of European countries, mainly of Southern Europe and Turkey. The meeting has facilitated the exchange of views among participants and the derivation of conclusions, which might lead to future activities focused on the right track. The symposium included papers on Southern Europe and Turkey so that it can also be considered as a Mediterranean conference. In this sense, Turkish scientists may play a very special role both in the context of building a bridge to Asia on one hand, and to the Southern rim of Mediterranean on issues related to water.

The main objective of the symposium was to discuss water resources management problems and to propose remedies. Yet, it also had a social side to it such that one of its purposes was to bring all European Scientists together and to let them know each other. The organizers stressed that the symposium also had a special aspect for Turkey of bringing European scientists and Turkish scientists together. Before the symposium, EWRA was not very well known in Turkey, but now, several Turkish scientists from different parts of Turkey would like to be EWRA members and to contribute to EWRA events and activities.

The attendance to the symposium has been generally very active, and both the authors and the audience have been highly professional in their presentations and discussions. The organization of the symposium in separate technical sessions has empowered active understanding and stimulated discussion. The participation came in majority from the eastern corner of Mediterranean and consisted mostly of young researchers who acquired an immediate familiarity among each other, setting a favorable ambience for the exchange of information and the activation of future cooperation. This is a quite positive outcome of the symposium.

The symposium has also confirmed the validity of the EWRA formula in organization of scientific events. This formula is in contrast to the organizations by some other international associations that bring together more participants for congresses where, unfortunately, the main scientific interest is very often lost due to more formal and external interests. In that sense, the EWRA Symposium in Izmir has produced a positive result.

The basic conclusions drawn as a result of the symposium are summarized in the following:

- 1) Water resources management, if properly and correctly understood, remains one of focal commitments in modern life. The need for provision of suitable measures to guarantee an acceptable environment for future generations is still a challenge for mankind, and this need should be better considered among the initiatives the responsible authorities will take in order to solve the actual and the future problems in the entire world.
- 2) Regarding research to be conducted in immediate terms, the symposium has shown two essential policies. One is the accomplishment of the best technological breakthrough in terms of data manipulation and in terms of models. Software available for the solution of the most important problems should be adapted and managed in order to achieve to information useful for the decision making process. Second, the outputs of scientific research must be transferred to the responsible authorities that make the decisions. Thus, researchers and decision makers should be in close collaboration.
- 3) The application of advanced technological tools in water resources management can lose its momentum and significance if no data are available. The need to search for appropriate data is still one of the principal commitments of the scientific community. Scientists should not only promote experimental research but also the collection of data in all fields relevant to water resources management. These issues can be the focus for future activities of EWRA.
- 4) It is important for a meeting like this to show the outside world, the society, the politicians, and the general public what the conclusions are and how important water problems are. Risks and challenges in water resources management deserve more attention than just the production of symposium proceedings that will end up in the library.
- 5) Regarding needs for data, it may be observed that meteorology and oceanography have developed more or less worldwide standards for measurements of the atmosphere and those of the oceans. The time has come to realize that monitoring of the hydrological resources in a routine way is very important, and EWRA could take an initiative, maybe in the form of a European project to develop a standardized measurement package for hydrological measurements that would allow to come up with compatible, comparable and reliable data that would really show us what is going on and that would allow to built reliable long time series.
- 6) The same considerations hold true for the models. The aim of models is to support decision making; to simulate and to forecast what future will bring; to advise water resources managers and politicians on what to do and what not to do. Many different models were presented in the Izmir Symposium, and the time has come to make an exercise and compare models to see what their strong points are. We should have an idea about the reliability and compatibility of models, as they are one of the basic tools for decision-making.
- 7) Water is basically a “renewable” primary source of energy. The renewable property of water is highly significant in terms of sustainable development. That means, a

renewable source has primary importance when compared to other energy sources. Water is the cleanest means of producing energy. Certainly, environmentalists oppose to development of large hydraulic structures, but still water power is the less hazardous and the less damaging kind of implementation of natural resources. Furthermore, in the case of waterpower, most of the water power structures, especially the dams, are multipurpose structures. They serve directly or indirectly for flood mitigation, sediment trapping, and water supply for irrigational, urban and industrial uses. Such a multipurpose utilization places waterpower development in a special position.

- 8) There are already certain countries like the United States, Japan, and the majority of the European countries, which have already developed their economically exploitable waterpower potential and have come to a point of stagnation. On the other hand, some countries like Canada, Brazil, China and the former Soviet Union are still rapidly increasing their hydroelectric power generation. There are several countries, which generate their electricity at a level of more than 90%, or even 100%, from hydraulic resources, or waterpower. Unfortunately, this rate remains as low as 33% for Turkey. It is expected that all countries, namely the developing countries including Turkey should develop their water resources during the 21<sup>st</sup> century, and preferably before the middle of the century. This has to be considered as a prerequisite for development of such countries as otherwise, their population will remain thirsty and hungry and will be sitting in the dark. That is the risk and the global challenge for the 21<sup>st</sup> century.
- 9) The impact of a scientific meeting is probably one of its most important outcomes: the impact, the spreading of the information, enlarging the knowledge base of general public as well as the professionals, the politicians or the decision makers. The Izmir symposium was very well publicized right from the start, and the public was informed of the objectives and outcomes of the meeting through press interviews. This effect now has to be intensified, maybe by contacting even local industry or the general public and maybe by writing articles in newspapers or other releases just to have a larger impact of such a conference beyond any publication in scientific journal. This could really make such a conference a very valuable tool in finding solutions for the pressing problems of our world and to arrive at a better, more sustainable use of precious resources, especially water resources.
- 10) Water resources management is not totally scientific in nature. There are three axes to it: one is the technical axis that belongs to the scientists; the other two are the organizational side of management and the implementation process. These two last axes belong to all people, all the stakeholders, and all the politicians. Besides analyzing hydrologic and quality data and developing models, there is another important task for scientists, which is to persuade people to deal with water. That means, it is better to manage people; management of water means management of people.
- 11) An integrated approach to water resources management must be followed to the extent that this approach is pragmatic and realistic. It must use methods which actually give results.
- 12) Out of the three volumes of symposium proceedings, two little volumes will further be produced. One volume will be a special volume for the journal of EWRA, called "Water Resources Management", which was earlier published by Kluwer Academic Publishers and now by Springer. Another volume will be published by the "European Water" which is EWRA's internet bulletin.

**The Organising Committee of the Symposium.**