Editor's Message

What's ahead in UNESCO's International Hydrological Programme (IHP VI 2002–2007)?

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There has been close co-operation between IAH and UNESCO going back many years that has produced a wide variety of scientific achievements. Looking into the future, there is a new 6-year phase (2002–2007) of the UNESCO intergovernmental scientific programme in water resources. This promises many opportunities to inject new life into a whole series of common activities that are planned between UNESCO and IAH. At the same time, there are some water-related challenges that will be important to the International Hydrological Programme (IHP) VI programme, as well as for meeting UNESCO's priorities in the years to come.

Water Interactions: Systems at Risk and Social Challenges

Although renewable, fresh water is clearly a very limited and vulnerable resource. Given the increasing pressure on this resource, one may ask: does the world face a looming water crisis? The frightening prospect is that water demand and use will go unchecked until the constraints placed by nature and economic costs are felt. There are many parts in the world where physical limits will probably be reached soon. However, it can be argued that there is a substantial margin for water savings through the modification of our priorities, policies and practices. How can this be achieved? The search for methods and solutions leads to an answer, which necessarily requires that cultural and ethical factors also be taken into account.

There are a number of shifts/trends in the international scene related to water sciences and water-resources development and management that we may try to re-

spond to by encouraging or discouraging certain approaches. These trends include: the global demand for water resources that has increased more than sixfold over the past century compared with a threefold increase in world population; globalisation, with the entry of new players, including multinationals; the increasingly acute competition for water giving rise to diverse types of conflicts; and the increasing participation of stakeholders in the decision-making process. These factors have led us to actively promote certain principles and ethical norms to guide development and to help us track systems at risk and related social changes. Hence, in defining the critical research components for 2002–2007, it became clear that what had hitherto been missing was a close investigation of water science and policy 'at the margins'. Consequently, in the coming years, UNESCO's IHP will be placing much greater emphasis on societal, cultural and ethical aspects of water resources and will devote its attention to 'Water Interactions: Systems at Risk and Social Challenges'. Five themes are foreseen under IHP-VI, namely, Global Changes and Water Resources; Integrated Watershed and Aquifer Dynamics; Land Habitat Hydrology; Water and Society; and Water Education and Training.

The launching of the new phase of the IHP also coincides with the emergence of a profound paradigm shift in society's approach towards water. In this regard, the World Water Vision in 1999 made a strong worldwide appeal to make water everybody's business. Responding to the same trends, the Ministerial Declaration on Water Security for the 21st Century (The Hague, UNESCO 2000) delineated specific actions expected from the UN system including the World Water Assessment Programme (WWAP). One of the outcomes of the WWAP, which is hosted by UNESCO, will be the World Water Development Report (WWDR). This periodic report will be published every 3 years, documenting the state and evolution of freshwater in the world. As stated in the conclusions of the monograph on world water resources: "A new appraisal and assessment for the 21st century" (Shiklomanov 1998), the errors in estimating water availability arise because of the lack of groundwater data. As a contribution to the United Nations WWAP, UNESCO's IHP is committed to elaborating a more detailed picture of the world's groundwater resources.

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Groundwater Resources in the IHP

An integrated approach to water resources is the basic underlying concept of the IHP-VI programme. This requires that freshwater resources (including both surface water and groundwater) are handled as a whole in their assessment, development and management, with due consideration to inherent interactions. Since 1965, IHD/IHP has been the prominent UNESCO programme dealing with hydrogeology and groundwater resources at all levels. In the next 6 years, IHP-VI will continue to devote particular attention to groundwater resources. Surface water-groundwater interactions will be studied by the Hydrology for the Environment, Life and Policy (HELP) programme designed to establish a global network of experimental catchments. HELP has been launched by UNESCO and WMO to understand the interactions existing at the interface of the hydrological processes, together with ecology, policy and society. Groundwater resources management will also be one of the concerns of the Regional Centres established at the end of 2001 under the auspices of UNESCO, one located in Cairo (Egypt) for Training and Water Studies of Arid and Semi-arid Zones, and the other in Teheran (Iran) for Urban Water Management.

New IHP Groundwater Initiatives

Three new groundwater-related initiatives will be implemented in co-operation with the IAH. These include a project on International Shared Aquifer Resources Management (ISARM), which aims to improve the understanding of the environmental, socioeconomic, and

institutional components of the management of trans-boundary aquifer systems. The second initiative should create the conditions for the establishment of the International Groundwater Resources Assessment Centre (IGRAC) under the auspices of UNESCO and WMO. The Centre should act as a catalyst for stimulating and focusing Member States' efforts in groundwater data collection, monitoring and assessment. The third initiative will lead to the Worldwide Hydrogeological Mapping and Assessment Project (WHYMAP), which is being compiled for the Groundwater Resources Map of the World.

In conclusion, if the world is facing a looming water crisis in the 21st century, this call is to all of us, whether researchers, educators, end-users, governments or stakeholders. Solidarity, equitable sharing of resources as well as of costs and benefits, could alleviate many of the problems. Therefore, it is imperative that science and politics should act together. This implies more co-operation and partnership in executing programmes. In this regard, intergovernmental organizations (IGOs) should co-operate and join forces with non-governmental organizations (NGOs) on programmes of common interest. UNESCO's IHP looks forward to continuing its collaboration and joint efforts with IAH to achieve this objective.

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