



Conference Reports

Workshop on Innovative Approaches for Water Management, Mexico City, 29–30 October 1999

Water has become one of the most critical resources for the long-term sustainable development of the world as a whole, and Mexico is not an exception. It is now clear that water can no longer be considered to be a free good from technical, economic, environmental and social viewpoints. Water management is steadily becoming a more complex and difficult task owing to the increasing population and the attendant accelerating demands on water for domestic and industrial uses, as well as for agricultural production, electricity generation and environmental preservation. Furthermore, the increase in population and economic activities will continue to result in higher levels of production of solid and liquid wastes, which, if not properly managed, will contribute to increasing contamination of surface and groundwater. Experiences from all over the world indicate that the traditional approach to water resources management, which considers mainly technical solutions, has been overwhelmed by environmental and social problems, scarcity and conflicts over ownership of the resource. The main challenge in the coming years will be how to maximize the positive impacts of water-related projects and minimize the negative ones in terms of all social, political, economic, environmental and cultural issues. This will not be an easy task, but is one that must be done.

With the objective of analysing these complex interrelationships and to discuss better alternatives for management of water resources, the Mexican National Committee of the International Water Resources Association, the Autonomous Metropolitan University in Xochimilco, and the Third World Centre for Water Management co-sponsored a national seminar on innovative approaches to water management, in Mexico City, 29–30 October 1999.

Participation at the seminar was open to public and private organizations, educational and research institutions, NGOs and the public interested in water-related issues. Based on the abstracts received as the result of a call for papers, papers were selected for final presentation and discussion. These papers covered many aspects: development of future water scenarios, methodologies for planning and management, use of economic instruments, integral management of natural resources, project evaluation, environmental education and case studies of technical, economic, social, environmental, legal and institutional aspects of water resources development and management from Mexico.

Many of the papers directly or indirectly emphasized the lack of qualified and experienced human resources for managing water resources on an integrative basis. Universities and research institutions are currently developing 'experts' with the traditional disciplinary and sectoral approaches, which have a narrow focus. The rapidly changing conditions, and the complexities of the present and future water problems require professionals who are capable of handling both

management and planning from an integrative viewpoint, and able to interact with experts from different disciplines, as well as with the necessary vision to detect new trends to successfully solve problems at the national, regional and local levels. In order to achieve this goal, universities located in the north-western part of Mexico are working jointly with Canadian universities to develop postgraduate programmes which will allow the professionals to analyse water-related problems concurrently from political, social, economic, environmental and cultural perspectives. They are also developing the so-called 'networks of water', which can take advantage of the latest advances in information and communication technologies to develop fora for discussion and exchange of information. Through such networks, some of the most critical problems of Mexico, such as lack of data and information and absence of meaningful interactions between the water professionals, can be addressed and, it is hoped, resolved.

The management of water resources has been controlled so far by the engineering profession. The main focus in the past has generally been on technical and economic solutions, with very limited contributions from experts from natural and social sciences. However, the complexities of the current water problems require a holistic approach to management. Traditionally, social participation in the development and implementation of projects in Mexico has been very limited, with all the major decisions taken almost exclusively at the central governmental level, with no meaningful input by the local populations. Experiences from the rural levels in Mexico have already demonstrated that the successes of water projects depend to a significant extent on people's acceptance of the project, their direct participation in all stages of planning, implementation and management of the projects, and on their potential economic benefits to bring about an improvement in their quality of life. Thus, in order to ensure long-term sustainability of water projects, participation and decision making should be encouraged at the local level and not be limited to the top-most central governmental levels, where many needs of the people and alternatives available are simply unknown. Regrettably, this is the case at present in Mexico, and thus needs to be changed radically and soon.

The traditional approaches have been to meet the immediate financial resources needed for the development of the projects only. Future needs, including operation and maintenance requirements, are only partially considered. This and other issues have contributed to the repeated failures of projects in Mexico, with consequent lack of interest on the part of communities in any further participation. Successes of water projects and improvements in the quality of life of the affected people require broader considerations which should ensure economic and social success of projects. This would encourage people to accept some financial and management responsibilities.

In the case of Mexico, water resources administration lies mainly with the federal government. However, objective reviews of past performance indicate that the federal entities have not been able to implement their functions properly, efficiently or cost-effectively in a timely manner. Consequently, current water services leave much to be desired. Clearly, one of the best alternatives for better management is decentralization, which has so far been unsuccessful, mainly because the state governments have not been able to take full responsibility for the administration of the resources, and because of continued excessive control from the central institutions. Generally, problems should be solved at the

level where they are generated. The roles and responsibilities of the various levels of the government should be decided. As much participation as possible of the population should be encouraged, with the government establishing the regulatory frameworks but delegating responsibilities to the different regional and local levels.

A country with a hundred million users of water should have effective management practices for this resource, which should be based on proper administration, reassignment of the roles for the different levels of government, promotion of informed social participation in sectoral decisions and understanding of the fact that the challenge implies a joint programme of work between government and the rest of civil society. Much work remains to be done before this can be achieved. However, in the long run, continuation of the present business-as-usual approach is not an option. Management and administrative practices must change. At the dawn of the 21st century, Mexico simply has no other option.

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Workshop on Water Conservation, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, 3–5 April 2000

The Water Section of the Centre for Environment and Water of the Research Institute, King Fahd University of Petroleum and Minerals (KFUPM), organized a Workshop on Water Conservation in Dhahran, Saudi Arabia, 3–5 April 2000. The primary objective of the workshop was to provide a forum for exchange of knowledge and experiences on recent advances on water conservation for domestic, industrial and agricultural uses. Some 800 participants from different disciplines attended the Workshop. The presentations included experiences from Bahrain, Brazil, Finland, Kuwait, Sweden, Saudi Arabia, the UK, and the USA. All technical papers by local experts covered a broad spectrum of water-conservation issues from various disciplinary orientations.

The issues discussed included water management and conservation for industrial purposes; treatment and reuse of industrial wastewater; protection and conservation of groundwater for industrial purposes; and impacts of industrial wastewater on the environment. National, regional and global perspectives on industrial water conservation were analysed, and very good presentations on technical, economic, environmental and policy-related issues gave the participants opportunities for in-depth discussions.

Water resources management has become an important issue for the world, and Saudi Arabia is not an exception. The country is located in an arid region, and has less than 150 mm of average annual rainfall, high evaporation, limited surface and groundwater, as well as high living standards and population growth. According to the World Development Report 1999–2000 of the World Bank, the population of Saudi Arabia increased from 9.4 million in 1980 to 20.7 million in 1998, and is expected to double by 2025. The challenges imposed by the climate, geography, and steady increases in population and economic activities have resulted in an accelerating pressure on the government to provide