

## Conference Report

### **Workshop on Water Quality Management for the Americas, Fortaleza, Brazil, 12–13 April 2004**

Considerable attention has been given over the past few years to the water crisis that many regions of the world might face in the coming decades. While the magnitude and extent of the global water scarcity problem of the future should not be underestimated, a few leading international experts have recently pointed out that the main water crisis in the coming years is likely to stem primarily from water quality deterioration and a lack of investment funds rather than from physical water scarcities per se (e.g. Biswas 1999).

In spite of the seriousness of continuing water quality deterioration in most countries, water quality management is still a somewhat neglected issue in the international water community. Even the magnitudes and extents of the water quality problems are not reliably known in most developing countries. Accordingly, to assess the current situation in water quality management in the Americas, and to discuss the alternatives available to improve the existing and future conditions in a cost-effective and timely manner, the Third World Centre for Water Management in Mexico, the National Water Agency in Brazil (Agência Nacional de Águas, ANA), and the Inter-American Development Bank organized a workshop on 'Water Quality Management for the Americas' in Fortaleza, Brazil on 12–13 April 2004. Participation to the workshop was by invitation only and was restricted to 26 leading experts on the subject from the region. Participants derived from different disciplines as well as institutions (academia, federal and state governments, private sector, non-governmental organizations, and intergovernmental organizations).

Among the main objectives of the workshop were to examine the experiences in water quality management in the Americas to assess the effectiveness of current policies and programmes, to analyse the impacts of using new and innovative techniques for managing water quality more efficiently, and to identify a set of best practices than could be used for the region. The workshop also made a special effort to promote South–South transfer of knowledge and experiences in this area to determine what works and what does not, and why. Case studies were specifically commissioned from Argentina, Brazil, Costa Rica, Chile, Colombia, Mexico, Panama and the USA. In addition, presentations included the experiences of the Inter-American Development Bank, the North American Development Bank and the International Food Policy Research Institute (IFPRI). A paper was also commissioned to assess critically and objectively the effectiveness of policy and legislative frameworks for water quality management in India, since the Indian experiences are likely to be of considerable interest to many Latin American countries.

The issues discussed in depth during this high-level workshop included, but were not restricted to, the current situations and future trends in water quality management in the world in general and in the Americas in particular; priority water quality issues for the region; the appropriateness of legal, institutional, financial and policy frameworks; the roles of river basin organizations as units for water quality management; and new economic instruments that could be used, including water rights and market-oriented approaches. Both point and non-point sources of pollution were analysed.

The World Commission on Water noted that less than 10% of contaminated water in Latin America is properly treated and disposed of in an environmentally sound manner. The health impacts of these practices have not yet been properly assessed, but their annual economic costs to the region are bound to be in billions of dollars. It was agreed that water quality management in the region did not receive adequate attention in the past, and should receive more attention than what is getting at present.

Water quality data from much of the region are not easily available, and the reliability of the available data leaves much to be desired. It was thus noted that regular and reliable monitoring and evaluation of water quality conditions are prerequisite for efficient water quality management of the region. In addition, the data collected should be easily accessible to anyone who requires that information.

With the institutional responsibilities for water quality management fragmented at present, inter-institutional coordination and institutional strengthening and restructuring should receive special attention. Furthermore, further capacity building in technical and managerial aspects of water quality management is essential, as is the reduction of political interference.

Some participants argued that water quality management would be more effective if it was implemented within the context of river basins since it may be easier to obtain and analyse data, predict future water quality trends and obtain reliable estimates of the benefits to society from increased investments in improving water quality. However, while this approach may be feasible if planned properly, the main constraint at present is that the river basin organizations are not really functional in most Latin American countries. At the current stage of development, river basins are unlikely to be efficient units for water quality management. Major efforts are needed to improve substantially the operational and management efficiencies of the existing river basin institutions if water quality is to be properly managed within the framework of river basins. The Brazilian experience of the Paraíba River Basin Committee has given some encouraging results.

Regarding instruments for water quality management, it was noted that their implementation depends mainly on the appropriateness of the legal and institutional frameworks, and on the existence of necessary technical and managerial capacities and political will. If the frameworks are not suitable for national and/or regional conditions, such instruments are likely to be of limited use. Economic instruments (bulk water charges, water rights, tradable permits, polluter pays principle, incentives when necessary, etc.) are likely to improve water quality management practices in Latin America. While economic instruments can be of significant assistance to the region to improve the existing water quality management practices, more efforts are still needed to improve the boundary conditions within which such instruments are to be applied. Institu-

tional innovations, as well as major strengthening of their capacities, are necessary. Legal and regulatory regimes should be carefully tailored to meet the technical, social, economic and environmental requirements of the specific countries and regions. Only then are the laws and regulations likely to be implemented.

In terms of financing, it was noted that at present multilateral development banks are investing less than 5% of their funds in water- and sanitation-related developments. Unfortunately, in most of the developing countries, Latin America included, conventional funds available for investments in the water sector (including water quality) are grossly inadequate. In other words, the public sector cannot provide the necessary funds for the development of the water sector, and the investments currently available from the private sector and the multilateral and bilateral funding agencies are inadequate. Thus, the entire issue of how to meet the investment needs for the water sector (including water quality) needs urgent attention. Current trends indicate that the gap in funding availability between what is needed and what is available is likely to become even more serious in the future. Thus, the funding requirements for water quality management and how this funding can be obtained are important issues that need to be resolved in the near future.

In spite of this overall panorama, water quality management in most countries is not receiving the political attention and priority it deserves at national levels. Simultaneously, the political and legal conditions have sometimes created an environment not favourable for new investments in the sector. In many countries, instead of increasing, funding has significantly decreased at national levels. For example, in Mexico, in spite of enormous efforts, the situation has become critical since the government at present can fund less than 30% of the needs of the country. The investment shortfall means that the countries must become increasingly more innovative in terms of generating new funds.

Rational water resources management is simply not possible without proper water quality considerations. Furthermore, water quality problems are much broader than only the construction and operation of wastewater treatment plants. Efficient water quality management requires a much broader perspective. This could include important issues like the formulation and implementation of national water policies, the monitoring and evaluation of water quality conditions, the presence of appropriate legal and institutional frameworks, and capacity building programmes.

Control, regulation and impacts of non-point sources of pollution received considerable attention. Even in the USA, non-point sources continue to remain a serious problem. In developing countries, a determined effort over the long term is essential if non-point sources of pollution are to be successfully managed. The effectiveness of point and non-point sources trading was extensively debated. While in some countries it could be an important alternative, it can only be of limited use in some other countries, mainly because of their current economic conditions. In other words, the payment for a service (e.g. environmental service) might be not feasible in the near future for countries where people face serious problems to satisfy their own basic needs.

It was noted that agricultural activities are now contributing to about 50% of pollution of the rivers in the USA. This means that non-point sources of pollution need more attention if the current situation is to be improved.

Generally, control of point sources of pollution has received more attention compared with non-point sources, primarily because point sources are much easier to handle. Fertilizer and pesticide use per unit area is increasing steadily in most developing countries to increase agricultural yields. Thus, increasing attention should be paid to manage the water pollution resulting from agricultural chemicals.

No one solution would solve all the problems: there is simply no single 'magic bullet' to solve all the water quality problems of any specific country. Countries are heterogeneous in terms of physical, climatic, economic, social, institutional and environmental conditions. No single paradigm is likely to be valid for all countries of the American region. Use of approaches like command and control, public involvement, and use of economic instruments are all likely to be helpful under appropriate conditions. Equally, other considerations are necessary, such as formulation and implementation of country-specific integrated water quantity and quality management policies and programmes.

Overall, the Fortaleza workshop was an unique event, where all the major issues related to water quality management for the countries of the American region were objectively, comprehensively and critically examined, without any dogmas, consideration of vested interests or political correctness. The effectiveness and impacts of different water quality management practices were examined realistically. The level and quality of discussions during the workshop were consistently high. This is not surprising since the organizers made a special effort to invite the best experts from the region.

The conclusions of the workshop, including the commissioned papers, will shortly be published by Oxford University Press. The book will be the fifth in the series, where the Third World Centre for Water Management, the Inter-American Development Bank and the National Water Agency of Brazil have collaborated to distil and synthesize the Latin American experiences in the water sector. Other books in this series include *Water Policies and Institutions in Latin America*, *Integrated River Basin Management: The Latin American Experience*, *Women and Water Management: The Latin American Experience* and *Water Pricing and Public Private Partnership in Latin America*. All are available from the publishers. For more information on the workshop and the forthcoming book, contact [thirdworldcentre@att.net.mx](mailto:thirdworldcentre@att.net.mx)

*Cecilia Tortajada*  
*Third World Centre for Water Management*  
*Atizapan, Mexico*  
*Email: [thirdworldcentre@att.net.mx](mailto:thirdworldcentre@att.net.mx)*

## Reference

- Biswas, A. K. (1999) Water crisis: current perceptions and future realities. *Water International*, 24(3), pp. 363-367.