

## Conference Report

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

During the past few years, considerable attention has been given to the water crisis that many regions of the world may face in the coming decades. While the magnitude and the 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 lack of investment funds rather than from physical water scarcities per se (see for example, Asit K. Biswas, "Water Crisis: Current Perceptions and Future Realities," *Water International* 24, No. 3: 363-367).

In spite of the seriousness of continuing water quality deterioration in most countries of the world, 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, in order 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, April 12 and 13, 2004. Participation to the workshop was by invitation only and was restricted to 26 leading experts on the subject from the region. The participants came from different disciplines as well as institutions (academia, federal and state governments, private sector, NGOs, 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 programs, to analyze the impacts of using new and innovative techniques for managing water quality more efficiently, and to identify a set of best practices that can 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 by experts from Argentina, Brazil, Costa Rica, Chile, Colombia, Mexico, Panama and the United States. In addition, the presentations included the experiences of the Inter-American Development Bank, North American Development Bank, and International Food Policy Research Institute. A paper was also commissioned to critically and objectively assess the effectiveness of policy and legislative frameworks for water quality management in India, since the Indian experiences are 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; appropriateness of legal, institutional, financial, and policy frameworks; 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 analyzed.

The World Commission on Water noted that less than 10 percent 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 the range of 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 it 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 restructur-

ing should receive special attention. Furthermore, capacity building in technical and managerial aspects of water quality management is essential, as is reduction of political interferences.

Some participants argued that water quality management would be more effective if it is implemented within the context of river basins since it may be easier to obtain and analyze data, predict water quality trends of the future, and obtain reliable estimates of benefits to the society from increased investments in improving water quality. However, others noted that while this approach may be feasible, the main constraint at present is that the river basin organizations are not yet fully functional in most Latin American countries, nor are the experiences over a significant period of time to draw definitive conclusions on their long-term effectiveness and impacts. Major efforts are needed to substantially improve 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 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, polluters-pay 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 it was noted that a combination of command and control and economic instruments can provide a very efficient method for water quality management. Institutional 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 the laws and regulations are likely to be implemented.

In terms of financing, it was noted that, at present, multilateral development banks are investing less than 5 percent of their funds in water and sanitation-related developments. Unfortunately, in most 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 all 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 widen even more 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 foreseeable future.

In spite of this overall panorama, water quality management in most countries is not receiving the political attention and priority it deserves at the national levels. Simultaneously, the political and the legal conditions have sometimes created an environment which is not favorable for new investments in the sector. In many countries, funding has significantly decreased at the national levels, instead of increasing. For example, in Mexico, despite enormous efforts, the situation has become critical since the government at present can fund less than 30 percent of the needs of the country. The investment shortfall means that the countries must become more and 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 merely the construction and operation of wastewater treatment plants. Efficient water quality management requires a much broader perspective. This could include important issues like formulation and implementation of national water policies, monitoring and evaluation of water quality conditions, presence of appropriate legal and institutional frameworks, and capacity-building programs.

Control, regulation, and impacts of non-point sources of pollution received considerable attention. Even in the United States, 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 may 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) may not be 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 percent of pollution of the rivers in the United States. 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 to non-point sources, primarily because point sources are much easier to handle. Fertilizer and pesticide use per unit of area is increasing steadily in most developing countries to increase agricultural yields. Thus, increasing attention should be paid to manage 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 the 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 programs.

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 realistically examined. 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 this workshop, including the commissioned papers, will shortly be published as a book by Oxford University Press. This book will be the fifth in the series, where the Third World Centre for Water Management, Inter-American Development Bank, and National Water Agency of Brazil have collaborated to distill and synthesize the Latin American experiences in the water sector. The other books in this series are *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 these books are available from Oxford University Press. For more information on the books and the workshop, please contact [thirdworldcentre@att.net.mx](mailto:thirdworldcentre@att.net.mx).

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