

## Conference Reports

### **International Workshop on Regional Water Transfer within an Integrated Water Resources Management Perspective, Kalmar, Sweden, 20–23 August 2000**

The University of Kalmar, Royal Institute of Technology, Stockholm International Water Institute and the Third World Centre for Water Management convened an International Workshop on Regional Water Transfer within an Integrated Water Resources Management Perspective, in Kalmar, Sweden, 20–23 August 2000. The workshop was sponsored by IIT Industries of Sweden. The objective of the meeting was to review the complexities and challenges of different alternatives for inter- and intra-basin water transfer at the national and regional levels. Water abstractions from international rivers and water supply from one country to another by diversion schemes and by innovative technological means (e.g. rubber bags) were also analysed. Economic, technological, institutional, social, and environmental implications of current and proposed large-scale water transfer schemes were discussed in depth.

Besides the above mentioned institutions, participants from the International Water Resources Association and Global International Water Assessment, the universities of Jerusalem, Linköping, Kalmar, Helsinki and Denmark, the Centre for Water Problems of China, the Ministry of Water Resources of Ethiopia, Southeastern Anatolia Project Regional Administration, Turkey, Sardar Sarovar Narmada Nigam of India and the Inter-American Institute for Cooperation on Agriculture, Brazil, attended the conference. Private sector companies from Sweden and Norway were also present.

It was generally agreed that the debate about water diversion has become a heated issue, both nationally and internationally. Although numerous water transfer projects have already been carried out in many developed and developing countries, currently an increasing resistance to further developments of this kind can be noted. The people who live in the water-abundant areas are becoming increasingly more reluctant and disturbed about proposals to divert part of 'their water' to water-scarce regions, even when the projects promote economic development, poverty alleviation and environmental protection.

Examples of water transfer in South Africa, China and Brazil were presented, as well as the Sardar Sarovar Project in India, the Southeastern Anatolia Project in Turkey, the Nile River initiative and water resources management in the Jordan River region. Norwegian technology for water transfer in Turkey represented a new approach for water transfer.

Interestingly, but perhaps not surprisingly, the technical issues were not considered by the participants as the main problems for the implementation of the projects. On the contrary, environmental and social issues have become the main constraints on the acceptance and the implementation of the projects.

Coordination, information, communication and even ethics and credibility seem to have become the main challenges for the governments proposing new water transfer projects.

Because of this new opposition to water-transfer schemes, the governmental institutions have to develop innovative strategies to convince the population (and more recently the national and the international media) that specific water transfer projects represent the most efficient alternative available, and that they are both socially and environmentally acceptable.

Effective communication with the affected population has become an essential component of the planning and implementation of such projects. Governmental strategies should include the provision of reliable and timely information to the population as to why certain water transfer schemes have been selected over other options available (e.g. demand management). Their social and environmental impacts have to be carefully assessed, and appropriate cost-effective mitigation measures have to be identified. In order to assure the success of the projects, it is also essential to identify which institutions, laws and policies would favour or impede the implementation of water transfer strategies. Last, but not least, consideration must be given to various trade-offs, which must be considered in the decision-making process.

The general global view at present appears to be that first water must be used in an efficient manner for the development of the regions, with appropriate consideration of overall economic, social, institutional and environmental consequences. New projects should be considered only after water use efficiencies and demand management practices have been taken into account.

The Kalmar workshop was an integrated, multi-disciplinary attempt to review the current status of and need for interregional water transfer, within an overall framework of integrated water resources management, constructively and objectively. The papers presented at this workshop will shortly be published by the Royal Institute of Technology.

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### **Conference on Water Law, University of Zaragoza, Spain, 14–16 March 2001**

The Organismo de Cuenca Confederación Hidrográfica del Ebro, the International Association of Water Law, Cortes de Aragon, the AGBAR Foundation, the Government of Aragon, UNESCO, and the Third World Centre for Water Management, organized a Conference on Water Law at the University of Zaragoza, Spain, 14–16 March 2001. Approximately 300 participants from many different countries participated in the conference.

The main objectives of this conference were to review the current status of water law in Ibero-America and Spain in particular, for the new millennium, and to discuss the National Hydrological Plan for Spain 2001, which was at the time being debated in the Spanish Parliament. The latter also included the implications of inter-basin water transfer from the Ebro basin to other basins, like the Cataluña, Jucar and Segura basins and to the province of Almería in the Sur basin. Several sessions on technical, legal and environment-related issues were

organized. The plenary sessions included in-depth reviews of privatization of water-services, effective participation of stakeholders in water-related decision-making, issues related to water and the environment, legal aspects of trans-boundary water resources, and institutions for river basin management.

The two main lectures for the conference were given by Asit K. Biswas (Present status of water management in Ibero-America) and Antonio Embid (Evolution of water laws and policies in Spain). The participation of specially invited water experts from several countries enriched the discussions of the water-related problems in Ibero-America, especially in Spain. Legal and economic aspects of water markets and water pricing were also extensively discussed and the experiences of the Inter-American Development Bank on wastewater quality standards were reviewed. Discussions were wide-ranging, from price, value and cost of water to issues of equity and the ability of the poor to pay the true economic cost of water and management services. Management aspects of water markets in Chile were discussed, as were the incorporation of water rights in the legal regime of Spain (a subject that is particularly topical in the country at present).

The conference had concurrent sessions on water pricing, water markets, wastewater treatment, quality and reuse, water markets in Chile, water rights in Peru, Panama and Spain, environmental implications of water management and environmental impact assessment of water projects in Spain and Mexico. Among other issues discussed were trans-boundary water management, water rights in Chile, water management in Spain and Portugal, groundwater management and the management of international rivers such as the Plata and Parana Rivers (Argentina and Uruguay respectively)—issues that are expected to be the critical components of water management in Ibero-America in the coming years.

One session was dedicated to the discussion of the legal aspects of trans-boundary water management, especially in terms of the legal regimes for water management in Spain and Portugal. The legal aspects of water rights in Central America, the ownership of water in Chile and legal regimes for groundwater in Argentina and Spain were also covered. Basin organizations were of special interest and discussed in great depth during one of the sessions.

Among the topics reviewed were the experiences of Chile and Spain in integrated water management, water management practices in Cataluña, and in the state of Guanajuato, Mexico, and a review of river basin organizations in Ibero-America. The case of privatization of water services and the experiences of the cities of Cartagena de Indias and Murcia were also addressed.

The issue of stakeholder participation received special attention. The Sindicato Central de Regantes del Acueducto Tajo-Segura, and the National Federation of Irrigation of Spain, examined the process of the transfer of irrigation districts to the farmers. The results of a similar transfer in Mexico were reviewed. The National Hydrological plan of Spain 2001 and its economic, social and environmental considerations were debated intensively. Before and during the discussion of this plan in the Spanish Parliament, it was intensively analysed, and several changes were made. In spite of these discussions and changes, many controversies remain, especially in the autonomous communities, from where the water will be transferred.

During the discussion of the plan, it was noted that technical, environmental, economic and legal aspects are important and should be given adequate attention. Irrigation requirements were debated. Some felt that the actual water

demands in the Mediterranean basins are lower than those estimated in the plan. Groundwater management, agricultural water pricing, desalination and alternative solutions available for water-related problems were also considered.

The participants from the National Federation of Irrigation Communities, the General Irrigation Community of Alto Aragon and the Irrigation Community of the Canal de la Izquierda del Ebro supported the acceptance of the plan based on the different water projects and compensation measures that it proposed. The discussion of the plan also included its technical, economic, legal, environmental and social aspects.

The conference provided an excellent forum for a discussion of the latest issues and problems from Ibero-America. The multidisciplinary approach to the complex water issues and the constructive spirit of the participants were important reasons for the overall success of the conference. The papers presented during the conference will be published shortly.

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### **Second Asian Conference on Water and Wastewater Management, Teheran, Iran, 8–10 May 2001**

The Second Asian Conference on Water and Wastewater Management was convened in Teheran, Iran, 8–10 May 2001. In his opening statement, President Mohammed Khatami of Iran pointed out that over the long term, peace and security of the Middle Eastern countries, where a serious water crisis already exists, will be influenced by the mechanisms to solve the water problems of the region. The performances of the governments to solve the water problems will determine the levels of economic and social development of the region. The President pointed out that despite the serious attempts made in the past, depletion and destruction of water resources are continuing unabated in many places. It is not enough to raise public awareness of the water crisis: actions must be taken to confront the existing and future challenges so that the welfare and security of future generations could be assured. The President urged the development of suitable mechanisms for enhanced regional cooperation to ensure greater transfer of technology, experience and knowledge to solve the multi-faceted water problems.

In an address to the conference, the Minister of Energy, Mr Bitaraf, pointed out that the Iranian Constitution stipulates public ownership of water resources. The Ministry of Energy is responsible for the provision, development and protection of water resources, as well as for urban water supply and wastewater management systems. The Ministry of Agriculture and Jihad is responsible for rural water supply and wastewater disposal.

The following three basic principles are being followed by the Iranian government:

- construction of necessary infrastructures to ensure availability of good quality water and proper wastewater disposal services for each citizen of the country;

- handover of management to NGOs, and encouragement of more public participation; and
- privatization of the water supply and wastewater services to create a suitable environment for fair competition, increased investments, and better quality of services.

Minister Bitarak also promoted the need for demand management, which has not received adequate attention in the past.

In his key-note address, G.R. Manoochehri, Deputy Minister of Energy for Urban Water and Wastewater Affairs, said water has always been considered to be important in Iran. For example, Herodotus noted that “the Persians do not allow anyone to pollute water, and they respect it highly”. However, as the population of the Middle East has doubled over the past 30 years, and it is estimated that it will grow from the present 270 million to reach 500 million over the next 30 years, the region’s limited water resources are under unprecedented threat. The negative water balance of the region is estimated at 17 000 MCM per year, of which Iran alone contributes to 5000 MCM. Desalination has been practised in Iran since the 1950s. It is estimated that desalination capacity will increase from 2300 MCM in 1996 to over 3000 MCM by 2020.

Mr Manoochehri noted that investments in the wastewater sector have been inadequate in the past, mainly because it received little attention. Furthermore, existing installations are not properly maintained and operated. These two factors have seriously affected water quality. He pointed out the importance of regional cooperation to improve the existing water management practices significantly.

In a second key-note address, Prof. Asit K. Biswas said that water management practices are likely to change more during the next 20 years than in the past 2000 years. Unlike the past, many of these changes will be driven by factors outside the control of the water profession, such as globalization, technological advances in areas such as biotechnology and desalination, and the information and communication revolution. These are issues to which the water profession has given scant attention in the past.

Most of the important advances in water management practices are now occurring in the field (in contrast to academia in the past), and in developing countries such as Brazil, China, India and Turkey. This is not surprising since major water development projects have generally not been constructed during the past two decades in the United States or Western Europe, but in Brazil, China, India, Iran and Turkey. However, these advances in developing countries are generally not well-known, often even within the country itself. He thus recommended that the Teheran conference be made the main venue for technology, knowledge and experience transfer between developing countries on a regular basis.

The conference considered seven main topics for discussion. These were on the water crisis: effective factors and consequences; trends in structural and managerial changes in the water sector; demand management; financial resources and the water sector economy; technological developments in the water and wastewater industry; health and environment; and regional and international cooperation. The conference thus covered a wide ground, with important contributions by the foreign and the Iranian participants. It was very well-organized, and the hospitality of the organizers was simply overwhelming.

At the end of the conference, the participants unanimously approved the following Declaration.

### **Teheran Declaration**

We, the participants of the 2nd Asian Conference on Water and Wastewater Management, held in Teheran, Islamic Republic of Iran, during 8–10 May, comprising 1600 individuals from 39 different countries, firmly believe that fresh water is indispensable for human survival, and is an essential requirement for sustainable development.

We further believe that appropriate quantity and quality of water must be available at reasonable cost to satisfy various human needs and activities, and for ecosystem conservation. Accordingly, water resources of each nation must be managed efficiently, equitably and sustainably for all human uses and environmental needs.

We stress that the foundation of rational water and wastewater management should be based on the conclusions and recommendations of the United Nations Water Conference held at Mar del Plata, Agenda 21 of the Earth Summit of Rio de Janeiro, and the report of the World Commission on Water. However, progress in implementing these recommendations has been painfully slow so far, and thus must be significantly accelerated.

We are also concerned with the deterioration of water quality, continuing depletion of groundwater, and the lack of adequate investments which is making rational management of water quantity and quality difficult, especially in developing countries.

We believe firmly that the efficient management and the rational development of water resources are important means to an end: the end being poverty alleviation, employment generation, sustainable regional development and environmental conservation. For the Asian countries, storage works are essential to account for high variations in intra-annual and inter-annual precipitations. Properly planned and managed storage works will ensure reliable water availability for all purposes on a regular basis. These objectives can only be achieved by forming functional partnerships between government agencies, other public sector institutions, the private sector, NGOs and the people, within overall policy and regulatory guidelines formulated by the governments.

Many important issues were discussed at the conference. The participants wish to stress the following:

- At the national level, the budget available for water and wastewater management needs to be increased very significantly so that needs of present and future generations can be met successfully. At the household level, people have to be made aware that water is not a free commodity, and they should be prepared to pay more for water and wastewater services. In this connection, the needs of the poor should be properly addressed, with appropriately targeted subsidies.
- For each river basin, long-term water management plans should be prepared, with due consideration of integrated water management principles, future demands for all purposes, including ecosystem conservation, and sustainability of water resources in terms of quantity and quality.
- Developing countries are becoming increasingly urbanized. For all urban

centres of more than 200 000, long-term development plans should be formulated for provision of good quality drinking water and collection, treatment and disposal of wastewater and urban runoff, with special emphasis on protecting the quality of groundwater and surface water within and around them.

- The efficiency of management of all water resources systems must be significantly increased. For municipal water supply systems, priority should be given to reduce the current losses due to leakages and for unaccounted use. Equally, losses from the irrigation systems should be reduced.
- The present capacities of public and private sector institutions; industries; research, development, and training institutions; and NGOs must be significantly improved. Emphasis must be given to capacity building and institutional strengthening, with special consideration of the needs for the future.
- All activities related to the water sector, ranging from policy making to institutional development, financial mobilization and capacity building, both within and around the sector, must be managed systematically and holistically within an overall approach of project management.

Establishment of a regional centre on urban water management in Teheran is most desirable. Such a centre should give priority to the solution of regional water and wastewater management problems. Such a centre should be established as soon as possible.

We further believe that knowledge, experience and technology transfer between developing countries is absolutely critical so that we can learn from each other as to how best to develop and manage our water resources in a cost-effective and sustainable manner. Unfortunately, however, no mechanism currently exists where the latest advances and experiences from various developing countries could be reported, reviewed, and assessed on a regular basis. The First and the Second Asian Conferences on Water and Wastewater Management have played important roles in facilitating South–South knowledge transfer.

The participants thus respectfully request the Iranian Ministry of Energy to consider the possibility of making the Teheran Conference on Water and Wastewater Management a regular event, which could be organized every second year at a specific time. The Iranian Association of Water and Wastewater Experts (IAWWE) could be given the overall responsibility for the coordination of the organization of these conferences. The major international water associations and institutions could be requested to co-sponsor these conferences, and also to provide appropriate funding support. An International Scientific Programme Committee could be formulated under the chairmanship of H.E. G.R. Manoochehri to formulate a long-term strategy to ensure the success of the proposed conferences, and also to initiate the process to organize the next.

The participants wish to express their sincere appreciation to the Ministry of Energy, Government of the Islamic Republic of Iran, and H.E. G.R. Manoochehri for organizing an outstandingly successful conference.

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