SECURING THE WORLD'S WATER FUTURE

by Asit K. Biswas

The water sector will meet its greatest challenges from non-water related sectors and issues. Asit K. Biswas highlights key factors affecting the turning tide.

The predominant view at present is that the world is facing a water crisis in the foreseeable future that previous generations did not confront. Just typing "water crisis" in Google search topics on the Internet will bring 15,800,000 entries. Discussing water crisis is now the "flavour of the month".

To what extent is this view correct? In order to answer the question, the Lee Kuan Yew School of Public Policy of Singapore, Third World Centre for Water Management of Mexico, Middle East Technical University of Ankara and International Water Resources Association organised a special session of eminent water personalities during the 6th World Water Forum in Marseille in March 2012, attracting 25,000 participants from 180 countries to make it one of the most well-attended water meetings ever held.

The session was organised at the invitation of the World Water Council, and was co-chaired by the author and Dogan Altinbilek of the Middle East Technical University. Among the eminent participants were the Chief Executives of Veolia Water, the leading European water and waste water management company, Singapore's utility PUB and Xylem Inc., a specialist in water technology, and very senior executives from consumer companies Nestlé SA and Coca Cola Co. and Organisation for Economic Co-operation and Development (OECD).

The overall focus of the Forum was on solutions of water and water-related problems of the world. However, as is normal for water and other development sectors, the main focus at the Forum was on the water problems of the recent years and to what extent have these problems been solved, how they were solved, what lessons could be learnt from these solutions and the potential to replicate the model. There was a dearth of discussion over the future of the world's water beyond 2025. There is no question that the water profession is missing the future.

Lawrence Peter once said, "An economist is an expert who will know tomorrow why the things he predicted yesterday didn't happen today." In terms of predictions, most professions, including water, are not very different. While forecasting the future in an extremely difficult task, one issue can be predicted with complete certainty—the world in two decades will be vastly different to what is today.

The water sector is an integral component of the global system and thus would not be immune to these changes. However, unlike earlier times, many of these changes will originate from non-water sectors and non water-related issues on which the water sector will have no, or at most, limited say or control. Thus, water management beyond 2025 will become an exceedingly complex task and this complexity can only increase with time.

For the water sector, there will be many drivers of change, some known but others unknown. Since these drivers are not mutually exclusive, their interactions will often contribute to changes that mostly will be very difficult to predict. Even for the known drivers, it would not be easy to predict their overall societal impacts in terms of timings of their onsets, magnitudes and temporal and spatial variations.

For instance, the potential effect of population and urbanisation could be very different to what are being considered today. Linear extrapolation of past trends will give misleading views of the future. Take population. At present we do not know what would likely to be the effect of ageing on water demand in the Asian countries. By 2030, China will have more elderly people than the entire population of the United States at present. The implication of such rapid increases in elderly population in terms of water quantity and quality management is basically unknown, and this is sadly an ignored topic.

The second category of drivers would concern how economic growth and advances in science and technology might affect patterns of water use and consumption as well as wastewater generation and treatment. This category of factors has seldom been considered explicitly in policy formulation.

The third category of drivers that is being

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completely ignored evolve around issues such as globalisation, free trade, migration between countries and within countries, communication and information revolution, diseases such as HIV/AIDS, changing planning and management paradigms, increases in people's aspiration and rapidly evolving social attitudes and perceptions. They will affect water use and availability patterns directly or indirectly.

Increasing uncertainties

Various types of uncertainties will make reliable water policy formulation in the future a very difficult task. A major uncertainty will stem from speculation over how climate change might affect Asian countries. The risks of facing growing number of extreme weather conditions and catastrophes are high. Their social economic and environmental impacts are expected to increase with time.

Water-related natural disasters such as floods, droughts and tsunamis can disrupt the normal process of economic development. Even earthquakes have major water implications. For example, during the Kobe earthquake of Japan in 1995, more people died due to fire rather than the earthquake because access to water was cut off. Developing countries which are already facing serious resource and capacity constraints will be forced to divert their limited resources from planned development activities to immediate relief and rescue operations because of such disasters. This may set back their development plans by years.

For example, the World Bank estimated that Thailand floods of 2011 inflicted damages of US $45 billion, with long-term development implications. Such uncertainties are hard to predict and even harder to manage. What is certain is that they will continue to have major impacts on the countries where they occur.

Another uncertainty will come from accelerating energy demands due to the economic growth of the emerging Asian countries. These are happening on a scale previously unthinkable. Their implications for the water sector are at present only partially appreciated and understood.

A major uncertainty of the future will arise from changing food habits. As the standard of living of tens of millions of Asians improves, their food habits and dietary patterns will change. Higher meat consumption will have severe implications on water capacity as raising livestock requires significantly more water to produce than a vegetarian diet.

21st century challenges

As the 21st century progresses, the water profession is facing a problem the magnitude, extent and complexity of which no previous generation had to face. The profession at present faces two stark choices. It can either carry on as before with a business-as-usual and incremental attitude and endow future generations with a legacy of poor water governance and a plethora of partially resolved water-related problems, or accelerate efforts to identify, understand and then efficiently manage the likely problems of the future.

All the major issues facing the world are increasingly interrelated. The dynamics of the human future would not be determined by any one single issue such as water. Increasing population, urbanisation, globalisation and lifting standards of living require more food, energy and other raw materials, as ever-more efficient management of these resources. Achieving food, energy and environmental security would require good water governance on a long-term basis. The common requirements for all practical responses must include greater and more efficient investments; use of more knowledge, technology and expertise; eschewing dogmatic and/or solution-in-search-of-a-problem approaches; functional institutions; and intensified cooperation and coordination between sectors as well as within countries and between countries.

During the next two decades, policy makers would have to juggle regularly with the competing, conflicting and changing needs of water for different purposes and by various stakeholders, as well as to coordinate effectively the increasing needs of concurrently assuring water, energy, food and environmental security in order to maximise human welfare. Water will be one of the important common threads that will bind all the four concerns.

The question of whether the world would face a water crisis is moot, given how water is being managed as a resource today. Poor water management will increasingly become a serious constraint for the development of many nations and also a serious constraint to a good quality of life. Better management practices, coupled with rapid advances in technology, may lead one to be cautiously optimistic of the world's water future. GIA

Asit K. Biswas is a Distinguished Visiting Professor at the Lee Kuan Yew School and the Founder of the Third World Centre for Water Management, Mexico. He received the Stockholm Water Prize in 2006, which is the equivalent of the Nobel Prize for work related to water. His email is ✉ akbiswas@thirdworldcentre.org