

**CHALLENGING PREVAILING WISDOMS:
2006 STOCKHOLM WATER PRIZE LAUREATE LECTURE**

By
Asit K. Biswas, President
Third World Centre for Water Management
Atizpan, Mexico
E-mail: akbiswas@thirdworldcentre.org

Your Royal Highness, Your Excellencies, distinguished guests and friends:

This is the first time since the Stockholm Water Prize was initiated that the award has been given to a person working in the area of national and international water policy. Most of the earlier prizes were awarded for specific scientific achievements. In India, there is a saying that one cannot clap with only one hand. In the area of formulation and implementation of national and international water policies, individually one can only contribute to limited progress. I have been indeed fortunate to have worked with many decision-makers, as well as national and international water and other development-related experts, over the past four decades. Without their support and encouragement, there is no question that my contributions would have been more modest. It is really a pleasure to see so many of my collaborating partners present today. I want to thank them for their support and friendship.

Since the Award was announced some four months ago, one question that I have been asked regularly by the media is what is so special about receiving the Stockholm Water Prize. From my personal experience, this Prize seems to be in a class of its own. Let me share with you my own experience. As of 10th August 2006, the Prize has resulted in 23,274 media stories all over the world. In addition, I have received 3,602 congratulatory letters, some 85% from people I do not know. I am informed that while the media interest in the Stockholm Water Prize has generally been high, this year the interest has been simply phenomenal. This may be due to the fact that the media can directly relate to implications of water policy to improve the quality of life of the people and the environment, rather than discussions of purely scientific work.

Let me move to the technical part of my lecture. The title of the lecture succinctly outlines the focus of my talk: challenging prevailing wisdoms. The citation for the Award this year noted that I have consistently challenged the status quo in the past. Let me continue with this tradition, and take issue with some of the current perceptions and paradigms that are widely used for the water sector, which, in my view are fundamentally flawed, and, thus, at the very least, need to be revisited. Because of paucity of time, I shall address only a few selected issues.

Water crisis – The prevalent majority view is that the world is facing a crisis because of physical scarcities of water. Many international organizations have now produced maps showing how the various regions of the world will increasingly face scarcities because of increasing water shortages in the coming decades.

Research carried out at our Centre indicates that this perception is erroneous. The world is not facing a water crisis because of actual physical scarcities of water. However, the world may face a water crisis in the future because of widespread and continuous mismanagement of water. This is NOT the same as a water crisis resulting from physical scarcities of water. The two issues are very different, and their solutions are equally different. The world has enough water for our current and foreseeable needs, if we can concurrently manage our demand and supply properly. Even for the very arid regions of the world, there should be no water crisis, if we can manage our available water resources prudently and efficiently.

In this connection, my view is very similar to that of the Asian Development Bank, the only major international institution that has pointed out that the world has enough water but it is not being managed properly. It is the mismanagement that is causing all the water-related problems. The water profession should commend the Asian Development Bank for its technically and intellectually correct view, even though the most other international institutions and the international media has thus far preferred the “gloom and doom” scenario of the world’s water future.

Sadly, even though we now have the knowledge, experience and technology to manage water efficiently, these are now, for the most part, being widely ignored. If we can translate our existing knowledge into practice, the world’s water problems will disappear. Water management is exemplary in a few selected parts of the world. For example, countries like Singapore have made remarkable progress in terms of total catchment management, provision of high quality water supply, wastewater management, water conservation and public participation. If other countries and cities can follow the Singapore experience, the urban water supply and wastewater problems of the world will basically disappear. Similarly, a city like Phnom Penh has made absolutely remarkable progress in terms of urban water management since 1993, when its unaccounted for water losses were at 75 percent. By 2006, these losses have been reduced to only about 9 percent, which is better than most of the European cities. Consequently, the residents of Phnom Penh at present have a 24-hour drinkable water supply. Unfortunately, the world at present does not even know much about the best practices in places like Singapore or Phnom Penh, let alone learn from their positive experiences.

By focusing on the real success stories from different parts of the world and also for different water sectors, which are often mostly unknown at present to the water professionals, we can learn what are the best models that are now available, as well as what have been the enabling environments that have allowed such models to function effectively. Countries that are looking for solutions to their specific water problems can review the successful models that are being used in different parts of the world, select one that may suit their needs and the prevailing conditions the best, and then modify the model(s) as appropriated to suit their own specific boundary conditions.

For this positive but essential development to occur, a great deal of knowledge synthesis has to be carried out, especially in developing countries, to objectively identify the best practices, and also carefully assess of the enabling conditions which have made such best practices possible. These studies, for the most part, have yet to be done. I again would like to commend the Asian

Development Bank for being one of the pioneers to initiate a programme of knowledge synthesis to determine in which Asian cities urban water management now works best and why. Similar approaches are needed to find the current best practices for other water sectors and also for all different geographical regions. Once these best practices are identified, assessed and used for managing water, the so-called crisis becomes manageable.

A corollary of the water crisis issue is the idea of water wars. Many people have suggested that some countries are likely to go to war because of conflicts over water scarcities and water allocations. For the record, in some 5,000 years of human history, no two countries have gone to war over water. It can be said with near total confidence that no two countries are likely to go to war in the foreseeable future because of conflicts over water. It is possible that two countries may go to war for which the 15th reason may be water, but the first 14th and the main reasons for the war will be non-water related.

While the media loves the stories about water crises and water wars, none of these are real issues. Paraphrasing Alfred Hitchcock, ideas of water crises and water wars are clever McGuffins at best. Based on my own analyses, and my work in 60+ countries, I am now cautiously optimistic of the global water future. I do not share the gloom and doom scenarios because all these problems are now solvable.

Focus on the means and not the ends – In recent years, the water profession has often forgotten, what are the real ends or objectives of water management. In my view, the “ends” of water management are issues like poverty alleviation, regional income redistribution and environmental conservation. However, if the global focus of the past 15 years is carefully reviewed, one may be forgiven to conclude that significantly more emphasis was being given to the “means”, rather than to the “ends” of water management. In recent years, the mainstream water profession, as well as most international institutions, have been more concerned with means like integrated water resources management (IWRM) or integrated river basin management (IRBM), compared to the end objectives of water development and management. Regrettably, from the time of around the Dublin Conference in 1992, the focus started move to means like IWRM and IRBM rather than the ends desired. Most international organisations and bilateral and multilateral organisations have jumped on such bandwagons, and started promoting these means vigorously, even though they had no clear idea as to what these concepts exactly meant, or whether such means can be operationalised in the real world.

Sadly, one would be very hard pressed to find, at least between 1992 and 2000, serious work on how water developments have contributed, or could contribute, to poverty alleviation, or regional socio-economic development. Even now, millions of dollars are being spent to promote IWRM and IRBM, as if these are the ultimate goals of water management, without seriously analysing how effective these means have been in different parts of the world to improve water management practices and processes and to achieve the end objectives of water management.

Neither of these concepts is new. IWRM or IRBM has been around, albeit under different names, for nearly six to seven decades. Surprisingly, some of the ardent proponents of these concepts have often no idea of the developments of the past (for example, the Global Water Partnership

has erroneously claimed that IWRM is a new concept), or even asked the simple question as to why if these concepts have not worked in the past several decades, they are likely to work at present. Some people and institutions are thus not only rediscovering the wheel, but perhaps even the wood with which the wheel is made of! Basically these are old wine, packaged in a new bottle, with the claim that they will solve our present and future water problems, if they are adopted. In my view, and based on available evidence, in spite of the strong and sustained rhetoric, these paradigms are unlikely to succeed in most parts of the world.

Accordingly, I have considerable difficulty with the current approach which blindly promotes IWRM and IRBM to solve all the water problems of a very heterogeneous world, without even knowing what these concepts actually mean, or what they entail in terms of application. A major problem often is both conceptual and philosophical. Promotion of IWRM and IRBM blindly puts the cart before the horse. In my view, we should first decide on what are the main objectives of water management, and then consider how water resources can be best managed to reach the agreed to objectives. For example, if poverty alleviation is the primary objective, the approach should be how should water be managed so that this objective is best fulfilled in a timely and cost-effective manner. A priori judgment simply cannot be made as to which means is the best to reach the stipulated end, as the proponents of IWRM or IRBM have claimed. The current approach, which I call “solution-in-search-of-a-problem” (that is, we already have the solution, IWRM or IRBM, but we are searching for a problem to which this solution can be applied), will seldom work.

It is somewhat surprising to note that even though IWRM and IRBM have been around for decades, it is very difficult to find cases where these approaches have been successfully applied for either developed or developing countries, especially for macro- and meso-scale projects, policies or programmes. A simple question that has not been asked, let alone answered by the proponents, is that if IWRM and IRBM could not be successfully applied in the past, what conditions have changed so that these can be used effectively at present. The current situation can be described as the triumph of hope over experience! Furthermore, for countries like India or China, it can be said with 99 percent certainty that these techniques will not work, irrespective of the claims of many international institutions to the contrary.

Another issue worth noting is that millions of dollars have been spent on developing a Tool Box for IWRM. In my view, it has been a misguided approach. Let me give an analogy. I can have an actual Tool Box, where all the tools in the box happen to be hammers of different shapes and sizes. If a plumber or an electrician comes to our house with a tool box containing only various shapes and sizes of hammers, but no other tools, our confidence in that person's ability to solve our plumbing or electrical problems will basically disappear.

The present IWRM tool box is a very similar approach. All it has is only different versions of only one tool: IWRM, which have not even been independently and objectively verified as to whether they have worked, or can be useful. IWRM and IRBM are the magic “tools” that are expected to solve all the world's water planning and management problems, irrespective of their nature, geographical distributions or boundary conditions. No other “tools” are necessary! IWRM and IRBM can at best be considered to be as only two tools of many tools that are

available for water management. They are most certainly not the only tools. At best, they can be used some times: but at other times different tools may be necessary.

Some have claimed that IRBM has worked well in France, and thus this approach could be exported to the entire developing world. But the rivers of France are not similar to those of Brazil, China, Congo or India. The scales of the rivers in these countries are simply different, the legal and institutional settings are different, as are social, economic, political, institutional and administrative conditions. For a country like India, technically, economically and administratively, we simply cannot handle a very large river basin like the Ganges-Brahmaputra-Meghna, because of its sheer scale and complexity, even if this entire river basin was located in only one country (it is shared by five countries). We cannot even handle the Indian part of Ganges as a river basin because of its scale. We cannot even handle a tributary of the Ganges, like the Yamuna, as one basin: it had to be split up so that the problems become manageable.

In addition, how should a river basin be defined, especially as inter-basin water transfer is now widely practiced. In a country like South Africa, many of the river basins are already interconnected, as a result of which the country has almost become one river basin! Similar situations are now widespread in many other countries, making application of IRBM exceedingly complex, if not impossible.

In my view, one of the main reasons as to why IRBM has worked in France in the past is the power these basin authorities have had to impose taxes or levies. This has been a contentious issue even in France, where the Parliament is likely to relieve the basin agencies of their taxation power by the end of 2006. If so, will the French basin agencies still work in a few years' time? Only time can tell, but the signs are not good. However, as a policy advisor to 18 governments, I can safely say that I am not aware of any single parliament anywhere in the world which will be willing to abrogate its taxation power to river basin authorities. Without such taxation power, can IRBM work, even in homogenous country like France in the future? The jury will be out for a very long time before this question can be definitely answered.

Urbanisation and megacities – In the water profession, much has been written on urbanisation and megacities. During the past Stockholm Water Symposia, World Water Forums and other major international water gatherings, the water problems due to increasing urbanisation and growth of the megacities have been discussed ad infinitum. While both are complex issues, my view is that these are unlikely to be the most complex urban water problems of the future.

Let us consider megacities, which are at present defined to have populations of 10 millions or more. It will not be an exactly easy task to manage their water and wastewater problems in the future, but they are likely to manage them somehow. This is because megacities like Cairo, Delhi, Dhaka, Jakarta, Mexico or Sao Paulo are politically and economically powerful. The elites and the power brokers live in these cities; they have technical and managerial expertise; financial wherewithal; and good media coverage. These and other associated advantages will ensure that the residents of these megacities continue to have reasonable access to water.

The problems are likely to be much more complex and difficult for small-to-medium size urban centres, with populations between 20,000 and 250,000. They have access to limited funds, as well as to management and technical expertise. They have no economic or political power. These are likely to be the urban areas where the people are likely to face serious water problems in the future, for which implementable and long-term solutions will be very difficult to find.

Similarly, while urbanization has been an important concern for the water profession, we have completely ignored “ruralisation”, a term that we have coined at our Centre. By ruralisation, we mean the growth of new hamlets of 2,500 inhabitants or less. From Mexico to Morocco, the growth of these small hamlets has been exponential. They are dispersed, and inhabited with poor people, without any economic and political power. How we can provide all types of services, including water and sanitation, to this increasing number of hamlets is completely ignored at present. Not a single country and not a single international institution has even considered the issue of ruralisation, let alone formulate a policy to resolve this accelerating problem. Not even a single person anywhere in the world is now working on this exceedingly complex problem. And yet, this is likely to be a major water-related issue of the future.

An associated, but equally complex problem of the future will unquestionably be water-related needs of the elderly. The number of elderly in the developing world will start to go up exponentially from about 2010. By 2025, China alone will have more elderly people than the entire current population of the United States. And yet, even though one can easily identify hundreds of workshops on water-related issues for women and children, not even a single event anywhere in the world has thus far focused on the water needs of the elderly. At present, we simply do not have much information on water and the elderly. It is another forgotten issue that requires our urgent attention.

Millennium Development Goals – An important millennium development goal (MDG) has been to reduce the number of people that do not have access to clean drinking water by half, between 2000 and 2015. The MDGs did not refer to access to sanitation. However, the Johannesburg Declaration stipulated that the number of people not having access to sanitation should be reduced by half, by 2015.

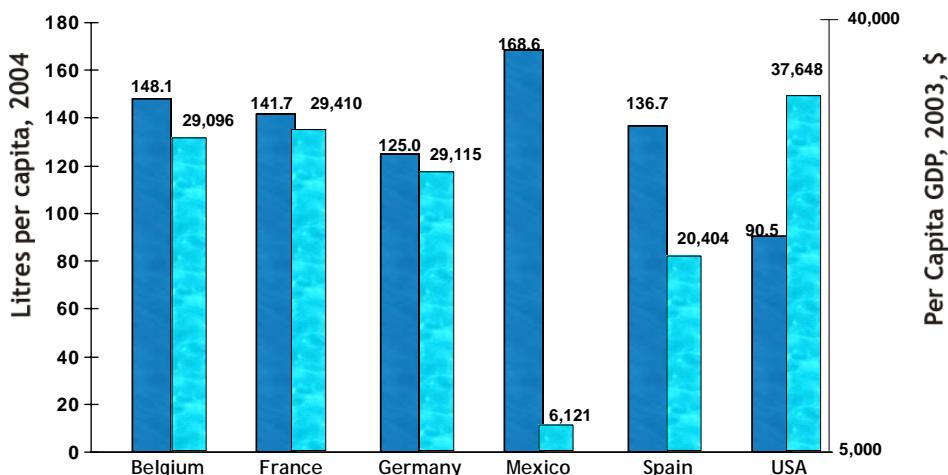
During the preparatory process of the United Nations Water Conference that was held in Mar del Plata, Argentina, in 1977, we proposed that the decade of the 1980s should be proclaimed as the International Water Supply and Sanitation Decade so as to accelerate access to water supply and sanitation. The implicit understanding, when the Decade was first considered, was that access to water meant a source that was drinkable, and access to sanitation, at least in the urban context, meant that wastewater will be collected, treated and disposed of in an environmentally-safe way. However, the situation is now very different in terms of statistics that are currently being used in terms of access to water supply and sanitation, at least achieving the MDG targets.

From Mumbai to Mexico City, and Delhi to Dhaka, water that the urban residents currently get is not drinkable, and the service delivery is restricted for only a few hours (generally 2–4 hours each day). Consequently, residents now have to boil water, or use a filtration system. In cities like Delhi, the quality of water supplied has deteriorated so much in recent years that the

traditional methods like boiling or filtration are no longer adequate to safeguard health concerns. Accordingly, households are now being forced to use membrane technology, at significant costs, in order to ensure that the water supplied is drinkable.

Because of poor quality of water supplied, use of bottled water is increasing exponentially in the developing world. At present, annual per capita use of bottled water in Mexico is nearly twice that of the United States, even though the per capita GDP in Mexico is approximately 1/6th that of the USA (Figure 1). This is because the quality of tap water is generally considered to be unacceptable in Mexico, as a result of which the residents are either forced to buy bottled water for drinking, or use a good household filtration system. This situation has ensured that the consumption of bottled water in Mexico is exceptionally high.

Figure 1. Comparison of per capita bottled water consumption (2004) and per capita GDP (2003) in U.S. dollars



The issue that thus needs to be discussed urgently is whether under these conditions we can consider that the residents of these urban centres can be considered to have access to safe drinking water in terms of achievement of the MDGs, as it is assumed at present.

The situation is equally unsatisfactory in many urban centres of the developing world in terms of access to sanitation. At present, in many urban centres of the developing world, practices and processes in terms of collection, treatment and disposal of wastewater continues to be poor and thus unacceptable. In cities all over the developing world, wastewater management needs to be very substantially improved. In many cities, wastewater is collected, but not treated, or only partially treated, before being discharged to rivers, oceans or land, creating serious contamination problems. The approach is almost equivalent to “out of sight, out of mind”. Cities as diverse as Delhi, Dhaka, Manila, Mexico and Sao Paulo are discharging untreated, or partially

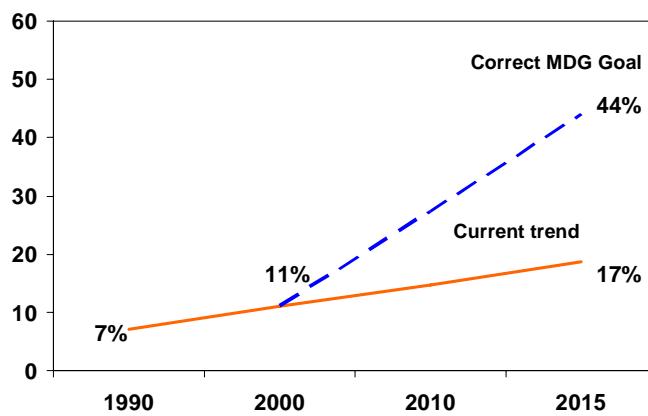
treated, wastewater to land and water surfaces. For example, at present Mexico City discharges over $45\text{m}^3/\text{sec}$ of untreated wastewater to the Mezquital Valley, which is then used for irrigation. Because of such discharges of untreated, or partially treated, wastewater, water bodies in and around major urban centres of the developing world are often seriously contaminated. These will have long-term adverse impacts on the human health and the environment.

Surprisingly, in the context of achieving the sanitation target by 2015, it is assumed that the residents of these cities have access to sanitation, even though wastewater is not properly treated. It is true that wastewater is taken away from the places where they are generated, but this was not what was meant by access to sanitation when we first proposed the Decade of the 1980s. The global discussions and debates regarding the MDG-associated goals need to be rephrased: playing statistical games to achieve the targets is not the solution, nor should this be the goal.

Let us approach the problem in a slightly different way: that is, the percentage of people that had access to reasonable wastewater treatment in 2000, and then take the MDG philosophy of halving the number of people who may not have access to wastewater management by 2015.

Viewed in this way, in Latin America, only about 11 percent of the people had access to wastewater treatment in 2000. This means that if we apply the general philosophy of the water-related MDGs, by 2015, this percentage should increase to 55.5 percent (Figure 2). By considering the progress that have been made up to 2006, it can be said with almost with near-total certainty that the realistic probability of achieving this target for Latin America as a whole, by 2015, is almost close to zero!

Figure 2. CORRECT MDG GOAL : percentage of population in Latin America with wastewater treatment



Our Centre has not done similar studies for the Asian developing countries or Africa. Nor are we aware of any such studies by any other organisation for these two continents. However, my view, based on anecdotal evidence, is that the situation is likely to be somewhat similar in Asia and Africa, as noted in Latin America. In other words, Asia and Africa are facing similar mammoth problems in terms of wastewater management.

The global situation in terms of the percentages of the people that have access to drinkable water supply and proper sanitation practices are significantly lower than what the world has been led to believe thus far. By playing statistical games, we may be able to achieve the MDG targets, but we shall not be able to solve the real problems. In the water profession, we have failed to ensure that the global water debate on these complex but important issues remains correct and relevant.

Same old stuff (SOS) – A major global syndrome at present in the global arena is what I call SOS (same old stuff). One can go from one meeting to another, and listen to the same old stuff time and again. They are based on past experiences, past mind-sets and past knowledge. The world has moved on, but we in the water profession generally have not. We have been saying for at least the past 35 years that business as usual is not the solution and thus cannot continue. However, we behave as if there is no other solution! Activities have often become synonymous with progress: and simply treading water will not allow us to make good progress.

Let us consider the last two World Water Forums in Kyoto and Mexico City. Not even a single presentation focused on what the world of water will look like in 2010, let alone in 2020 or beyond. Some of the papers presented could have come even from the 1960s, let alone from the 1980s or 1990s. Not surprisingly, the impacts of these megaconferences at national, regional or global levels have simply been indiscernible. Such events have not contributed to even one person getting better water supply or sanitation, no national, international and institutional policy has changed because of these events, and our knowledge-base has not improved even one iota because of these events.

At our Centre, we have carried out a comprehensive study on these impacts of megaconferences. Only 2.27 percent of the 2,326 respondents from 121 countries that were contacted felt that such meetings have been useful and cost-effective. This is not surprising since these large meetings have never formulated any specific criteria for measuring their success. Nor have the organisations concerned have encouraged or assisted with independent evaluations to identify their strengths and weaknesses. The criteria of success have invariably been how many people participated, and from how many countries. As long as a large number of participants from 100+ countries did participate, these meetings are considered to be very successful, irrespective of any perceptible impacts. In retrospect, there is no question that even if these meetings had not taken place, the world of water would not have been any different at present.

The best that can be said for these large gatherings is that they provide an opportunity to meet old friends, and make some new ones. They provide opportunities to the participants to do some side business on water-related issues. They can also be a useful mirror to gauge the views of the water establishment, which change very slowly. It would be fair to say that we should stop

pretending that these are useful and desirable water events for the world, except perhaps for some few participants for their own personal reasons.

The costs of these events have now become astronomical. It is estimated that the total cost of the Mexico Forum was around 200 million dollars. Only the Secretariat cost of the Kyoto Forum has been estimated at 28 million dollars. By any standard, these are huge amounts for events which have had no discernable impacts on the water sector. It is time that we reassessed the needs of these mega and expensive events, which mostly produce SOS: the same old stuff.

Concluding Remarks – In this brief exposition, I have discussed some of the current perceptions and developments in the water sector, which at least in my view, need to be revisited. By being politically correct, and saying everything is fine, will not even allow us to identify the real water problems of the world, both current and future, let alone solve them.

The world is heterogeneous, with different cultures, social norms, physical attributes, skewed availability of renewable and non-renewable resources, investment funds, management capacities, and institutional arrangements. The systems of governance, legal frameworks, decision-making processes, and types and effectiveness of institutions differ from one country to another in very significant ways. Furthermore, countries are at different stages of development, and thus their water and development needs and requirements, which vary with time, are also different. Accordingly, and under such diverse conditions, one fundamental question that needs to be asked is if it is possible that a single paradigm, like IWRM or IRBM can encompass all countries, or even regions, with diverse physical, economic, social, and cultural conditions? Is it feasible that a single paradigm can be equally valid for technological giants like the United States and Japan, the world's most populous countries like China and India, and for countries as diverse as Brazil and Burkina Faso? Is it possible for a single concept to be equally applicable for Asian values, African traditions, Japanese culture, and Western civilization? My personal view is that they do not. In this heterogeneous world, one size does not fit all.

The world's water problems are solvable. We already have the knowledge, experience and technology to solve them. If we do not manage to solve them, we should remember the salutary remarks of William Shakespeare in Julius Caesar (I, ii, 140–141):

“The fault, dear Brutus, is not in our stars,
But in ourselves, that we are underlings.”