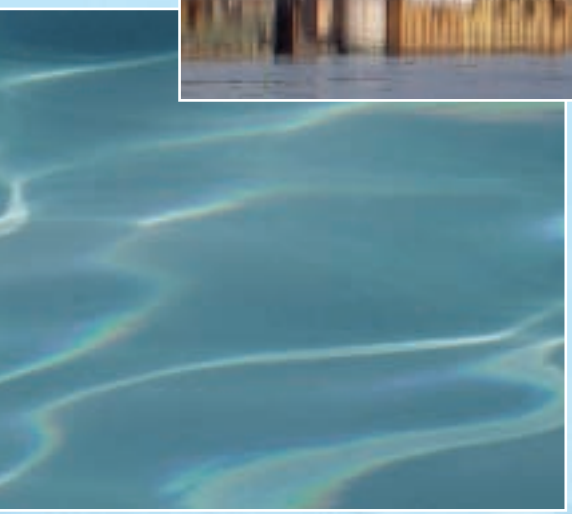
SIWI

# 2005 Synthesis



## WORLD WATER WEEK

in Stockholm
August 21–27, 2005

# Contents



**Note to the Reader**

**In its role as organiser and host of the 2005 World Water Week in Stockholm, the Stockholm International Water Institute has taken upon itself the responsibility to author the Key, Political, Business and Scientific conclusions found in this document.**

**As such, the statements and opinions contained therein do not necessarily reflect the official position of the co-convening organisations of the 2005 World Water Week. Rather, they represent SIWI's synthesis, prepared for the benefit of the participants and the broader water and development communities, of the range of issues, ideas and viewpoints addressed during the week in their totality.**

**The Workshop and Seminar conclusions, on the other hand, are contributed by the respective co-convening organisations.**

**SIWI is also responsible for authoring the Panel Debate, Prize and Award conclusions.**

# Our Key Conclusions

For the World Water Week in Stockholm, a niche is selected and followed for a range of years. The present niche (2003–2007) focuses on "Drainage Basin Security: Prospects for Trade offs and Benefit Sharing in a Globalised World." Often solutions to water policy issues can only be found as part of broader packages that relate to wider issues of national and international policy and development. This year's focus on "Drainage Basin Management – Hard and Soft Solutions in Regional Development" placed very challenging topics on the discussion table.

The actual and perceived need for different kinds of solutions varies. In the so-called hydraulic civilisations, physical structures were organised and governed through strong political and cultural institutions. In the mid 20th century, a wave of strong political support for hydraulic structures swept through the world. Lately, this momentum had been reduced considerably due to environmental and social concerns, tightening budgets, perceived financial and other risks and a relatively poor performance of many of the existing schemes. Apparently, there is now a widespread belief that it is better to improve institutional and governance arrangements rather than build more dams and lay more pipes.

We started our week with the focus on to what extent we needed more infrastructure to solve the water crisis, or if it was better management of water and better governance that was required.

The call for more and better infrastructure was very clear from for example Africa. "Institutions don't deliver water" was an expression that was heard, with the underlying understanding that pipes do. More infrastructure is needed, both for water resource management, including hydraulic infrastructure, and for urban water supply and sanitation. It also became very clear in the discussions that existing institutions tend to favour the large-scale infrastructure before small-scale approaches. There is, however, no single size that fits all. The scale of the structure should be adapted to the need.

In addition we need to look at more site specific solutions. The needs look different in Africa, Asia, Latin America, Europe or North America. Experiences can be shared, but each case, each country and each basin is unique.

In the discussions during the week, it also became very clear that neither pipes nor institutions can solve the water crisis. People are the ones who actually do deliver water. People are the ones who determine whether both pipes and the institutions work. We need a Peoples-Centred Approach, as the 2005 Stockholm Water Prize Laureate Sunita Narain emphasised in one of many discussions. We need to find solutions that work By the People, For the People, With the People. That approach should determine whether hard or soft solutions can be helpful, as well as the scale of those interventions.

That is one of the key conclusions we draw from the 2005 World Water Week. For the hundreds of other ideas that were discussed, we refer to the other summaries in this document.

Photo: Michael Moore

Photo: SIWI

# Scientific Conclusions

The World Water Week's presentations and discussions showed that knowledge of soft and hard solutions is solid in some respects, but gaps in understanding remain. More must be known about what is considered scientifically valid knowledge, what the prevailing perceptions are, and why there is a striking gap between what is known and what is taken up in policies and implemented in concrete management.

As shown in Stockholm, knowledge of the design and functioning of hard infrastructure is impressive and has led to a rapid expansion of water regulation, storage, conveyance and treatment with commensurate benefits for large segments of the population. To what extent benefits are linked to costs of the various human interventions in water courses or in other parts of the landscape is a more difficult question and often a contentious issue. What may be an appropriate approach and solution in one site and for a well defined problem is not necessarily benign in a wider setting.

Throughout the week, repeated statements from high-level political leaders from several developing countries illustrated the need for additional infrastructure facilities to deal with urgent social and economic needs. At the same time, there was an agreement that hard and soft approaches have to be combined for effective water resources management, which includes an obligation to develop and manage water projects in a manner that is conducive to environmental objectives. A truly interdisciplinary approach is necessary.

Knowledge about the role and performance of infrastructure, i.e. hard solutions in a systems context, with all the synergies and complex interactions is, however, beset with uncertainties and reservations. Physical interventions in water courses have often been designed with regard to hydropower generation, irrigation and water supplies and even multi-purpose designs are currently fairly common. Still, the higher order consequences from such interventions for ecological goods and services remains a challenging field of enquiry. As discussed in several workshops and Seminars, there are promising tools to deal with these complex issues, for example, Multi-Criteria Assessment (MCA). Generally speaking, there are a number of methods and tools that potentially will improve water management, in single sectors/issues or in dealing

Photo: Mats Lannerstad

Photo: Michael Moore

with multi-dimensional complexes, for example, the Global Public Goods Concept, Legal Impact Method, Dakar Sanitation Roadmap and GWP Toolbox. Common for these assessments and tools is a need for increased knowledge about their functioning in different locations and in different socio-economic settings. In other words, it is important to recognise that knowledge is usually contextual.

We do, of course, have considerable experience and knowledge from policies and management practices that have been practised and which are now in place. Knowledge about the future is something different. Still it is the critical issue. Can we use forecasts, scenarios and models to say something tangible about the future? One conclusion from the week was that scenarios and models are generally not designed to take uncertainty into account. There is a need for policy advice building on forecasts where the level of uncertainty can be specified.

It is also pertinent to determine when we do know enough to act. Or, asked another way, why is there inaction in spite of compelling signs? In the case of a gradual accumulation of toxic substances in water bodies and in the environment, we have a fairly good knowledge about numbers and amounts of chemicals and also strong indicators of their health implications. We also have substantial inferences to suggest that, if nothing is done to reduce or to contain the chemicals, the health implications, for instance, in terms of the incidence of cancer, will be substantial. With the best possible calculations that can be made today, based on current knowledge, it can be shown that the cost of inaction is much larger the cost to come to grips with the problem. The fundamental problem is that those that "gain" from inaction are not the same as those that "suffer." It is an open-ended question when and to what degree this kind of knowledge will be the basis for decisions to act.

Answers to complex issues must be thought of in terms of careful and systematic research. However, as indicated above it is very important to recognise that there are many issues that will not be possible to answer through scientific enquiry alone. Whenever management refers to values or benefits and when the realisation of one set of benefits will be – or may be – at the expense of other values or benefits, the "best possible knowledge" goes beyond established scientific and academic criteria but certainly does not exclude it. Many water management challenges typically generate queries that will have to be tackled through a dialogue that involves members from relevant academic disciplines/faculties together with representatives from stakeholder groups and from political units. Knowledge from relevant disciplines will always be needed, but it must be built into an inter-disciplinary and societal endeavour. Equally important, knowledge must be continuously conquered.

Soft approaches and solutions, which were interpreted with reference to the socio-political dimension and human resources, i.e. rules, regulations, market, incentives and sanctions, training and education and similar, the picture is probably more complex as compared to natural science and technical questions, which by definition, deal primarily with the hard approaches. Predicting human behaviour is hard enough, foretelling what (s)he should do is dubious. Often, it is enough to say what people are not supposed to do. There is nevertheless an obvious need for more and better knowledge about the role of legal principles and provisions, institutional arrangements and economic instruments. We need more examples of how the institutional arrangements function in various contexts.

It was also emphasised that we need to know more about the mindset of people, which is the key element of the soft dimension. Generally, a piece of physical infrastructure or an institution in the form of an organisation or a legal provision can, in principle be in place within a limited time after a "green light" has been given. But changing the perceptions and the minds of people may take substantial amounts of time and effort and there is "no guarantee" of a certain result. In many cases, it has to be recognised that the soft approach in this sense, is hard. During the discussions about corruption and participation in planning and decision making, a general consensus about the importance of tackling these challenges was demonstrated. Obviously, such enquiries will have to consider social and cultural norms and try to assess what role they play in these regards.

# Policy Conclusions

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The world is rapidly changing and pressure on natural resources such as water is increasing. How policy and decision makers cope with such changes, while acknowledging the physical realities of the Earth, and how such changes are governed on different levels, will define the state of the world by 2025. For people to be well-fed, healthier, wealthier and living more dignified and productive lives, and for expanded urban areas to be well functioning, critical decisions will have to be made and implemented.

Decision makers need to be convinced that investment in water, sanitation and sound water resources management drives economic growth, social development and political stability. Water is inadequately linked to wider macro economic aspects and to the capacity of countries to eradicate poverty and sustain development. Despite this, water's cross-cutting aspects are rarely considered when new policies are developed. Strategies to reach the Millennium Development Goals (MDGs) are fragmented among sectors and actors. The future needs well-balanced decisions in relation to capacity building, institutional development and infrastructure development.

Policy makers need to be made aware that a good mix of two complementary strategies – the hard and the soft – should be used to cope with water challenges. Both infrastructure and functioning institutions with political, legal and popular backing are needed to deliver water to parched fields and settlements. Selecting and balancing between large-scale and small-scale water infrastructure will always be a choice that has to be tailored to the local conditions. Small-scale rainwater harvesting, a viable alternative discussed during the week, could under some circumstances render large-scale solutions unnecessary. Similarly, problems related to eutrophication and hazardous substances require technical solutions as well as legal and other institutional arrangements. The performance depends on the complementarities of the chosen mix but also on circumstances outside the water sector. For instance, electricity outages can devastate the functioning of many treatment plants. The World Water Week focused on both types of strategies and how they could be combined.

Water experts define the physical drainage basin as the geographical framework and natural unit for water management. Clearly, however, socio-economic and political systems are not and will likely never be confined within these geographic boundaries. Since other planning processes follow political and administrative borders, political decisions to develop certain regions rarely will have the basin as the sole water management context. The national level is a key for strategic and long-term water policy and transboundary co-operation. Water experts and managers must adapt by providing policy recommendations and management strategies that fit basin as well as political and administrative boundaries.

Stakeholder involvement at different decision making levels is vitally important. Management in various water sectors, i.e. irrigation, water supply and sanitation, etc., must be harmonised with other arrangements in society such as land policies and social programs. Investments in the water sector need to be seen as an opportunity and not primarily as a cost. A community served with water and sanitation, and with food and energy, receives an economic benefit many times greater than the costs of investments. This paradigm-shifting thinking has not yet permeated through to all decision makers, who still see investments in the water sector as primarily a cost.

Today's and tomorrow's challenges for policy and decision makers are to develop appropriate management strategies and infrastructure for water supply and sanitation in expanding urban areas, to deal with food security in a situation where competition over limited water resources is increasing, and to set up water allocation principles that provide the most benefit per drop of water.

Many high-level public officials emphasised during the week that investments in hydraulic infrastructure are a basic necessity for economic growth in many developing countries. Infrastructure helps in coping with rainfall variability and climate change and in achieving long-term water security. Water-related investments need to be considered within strategies for meeting all the MDGs, and include multiple use hydraulic infrastructure systems, small-scale technologies, ecosystem services and demand side management (when designing new infrastructure).

To build sustainable societies, infrastructure development strategies and plans need to contribute to equitable develop-

ment, ensure the distribution of benefits (in particular to displaced communities) and help mitigate negative impacts on the environment. Economic and legal instruments together with appropriate stakeholder consultations, as part of a comprehensive infrastructure strategy, help ensure project sustainability. On climate change, adaptation strategies need to be mainstreamed into watershed management and infrastructure development plans.

Urban-rural competition is increasing, but IWRM instruments which facilitate cross-sectoral, cross-regional and cross-basin agreements, including economic and legal tools, can help minimise it, particularly in developing countries. Non-action on wastewater treatment, particularly in fast growing cities, is costly to human and environmental health and in economic terms. Standards, monitoring systems, publicly available water quality data and, above all, wastewater treatment investment, is needed.

Financing infrastructure such as the latter will require new public-private partnership models are needed and which build on the domestic financial community, capital markets, industry, technology companies, local communities and government agencies at local, regional and national levels. There is also a need to develop effective national/regional platforms for advocacy, coalition building, policy development, South-South partnerships and implementation. AMIWASH provide one such good example that could be used in other regions. It was generally recognised that economic incentives could lead to adoption of efficient water use practices. For water resources infrastructure, it will be critical to secure long-term financial sustainability and build adequate human capacity both for development and maintenance.

Corruption, too, must be fought with a wide range of policy-instruments, building on transparency, information sharing, pecuniary incentives, norm change and careful monitoring. Anti-corruption alliances from different sectors, including media, development agencies, private and public sectors, etc., should be promoted and supported.

Transboundary water governance requires rules and regulations, but to invoke legitimacy and ownership, intrinsic and subjective values need to be understood and accommodated in the process. We need to develop incentives that encourage riparian countries to reach agreements, using the linkages between water and other sectors of the society (trade, energy, transport, etc.). Cross-sector water use is also a critical policy issue, for example how water supply and sanitation strategies could be better linked to agricultural water and nutrition use.

The role of UN-Water was also discussed. It needs to be strengthened and made more effective and transparent in order to perform its responsibilities and be more pro-active. However, it should stimulate co-operation not only within the UN-system but also with non-UN actors, and also make efforts to facilitate improved co-operation between UN-agencies also at regional and national levels.

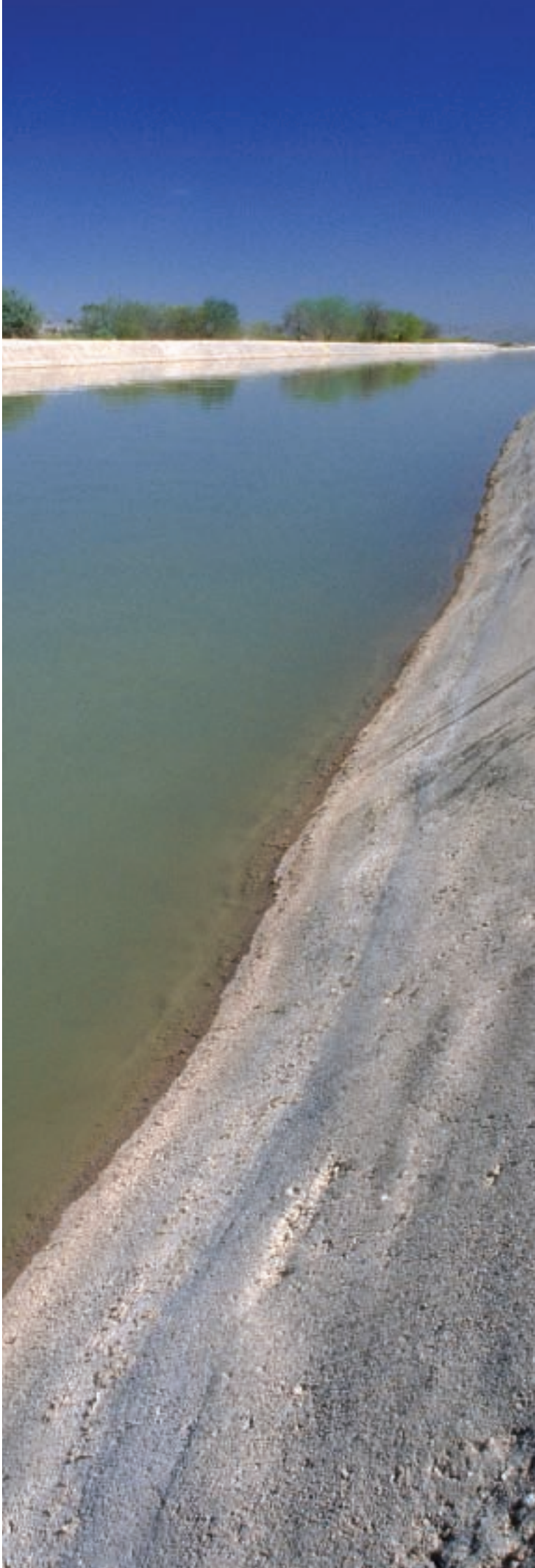

Photo: SIWI

# Business and Industry Conclusions

Photo: SIWI

For business and industry, the challenge as discussed during the 2005 World Water Week is to further develop the understanding of the role that business can and should play in contributing towards reduction of poverty.

It is clear that the relationship between business, water and economic development needs to be more clearly defined, and that the concept of doing business with the poor calls for a change in approach, capturing new markets and moving beyond conventional wisdom. "Sustainable Livelihoods Business" is about "doing business with the poor in ways that benefits the poor and benefit the company." These are activities that are environmentally sustainable, benefit the poor and generate profit.

Rapid economic growth in many countries is often not environmentally sustainable, as it results in substantially increased pollution. Pollution in turn has a negative impact on the health of the poor, in particular, and degrades the environment.

Conventional water and sewerage technology often do not meet the needs of the poor, is neither affordable nor sustainable. What is the role of the private sector at international, national and local levels in finding and promoting alternative technologies?

At least 1.1 billion people lack access to safe water, and 2.6 billion lack access to basic sanitation. This sad reality nonetheless represents an opportunity for the private sector to help improve the situation. With another 3 billion people expected to join the world's population by 2050, the worldwide business community has every interest in making sure that sustainable water management forms an integral part of development.

The international community has committed to achieve the Millennium Development Goals (MDGs) by 2015. It is in the interest of businesses worldwide to support the MDGs, for which water and sanitation targets are widely seen as fundamental prerequisites for achieving many if not all of the goals.

Innovative and low-cost technical options for water supply and sanitation are critical if the MDG targets are to be achieved on time.

New paradigms of doing business are needed in response to market opportunities to serve the poor. Models for provision of water services that increasingly build on partnerships between public bodies, the private sector, NGOs and community groups are evolving. One example is public operators which suffer inefficiencies due to lack of incentives. These operators are replaced by publicly owned and professionally managed companies which outsource many of the functions to the private sector. The following actions are important:

- New management models that clearly define the respective roles in such partnerships should be encouraged.
- Building partnerships take time. A key element of success is common commitment to understanding the challenges faced, building trust and solving the problems together.
- Awareness building and training on how to build and achieve successful partnership are recommended.

Further development and application of alternative technologies such as rainwater harvesting, ecological sanitation and solar- or wind-driven pumps for irrigation are necessary. Business must play a central role in developing alternative technologies and building the necessary partnerships to achieve them.

The PUR product developed by Proctor & Gamble (P&G), which received the 2005 Stockholm Industry Water Award 2005, is a good example of such technology. Using its own resources, P&G developed the product, which is used primarily in emergencies and in connection with natural disasters to help improve access of affected persons to clean water. Such a product can be distributed through normal sales and distribution networks but also through less conventional channels such as religious organisations and NGOs. There is a great potential for innovative partnerships between business, governments, non-governmental organisations and communities. Other new models which are needed are public-private partnerships, built on the domestic financial community, capital markets, industry, technology companies, local communities and government agencies at local, regional national levels.


Photo: Procter & Gamble

WORKSHOP 1

# Design and Operation of Infrastructure for Multiple Development Objectives

Photo: Michael Moore

**Convenor: Stockholm International Water Institute**
**Co-convenor: IUCN – The World Conservation Union, World Water Council**

**Chair:** *Prof. Benedito Braga,* Brazilian Water Agency (ANA), Brazil
**Rapporteur:** *Mr. Jakob Granit,* World Bank
**Co-Rapporteur:** *Mr. Claus Hagebro,* Denmark

The seminar recognised that the needs of developing and developed countries are different. In most cases, developing countries have well-developed hydraulic infrastructure that provides water security. Developing countries, on the other hand, need to build sustainable infrastructure to cope with the variability of rainfall, and with climate change in the longer-term, to ensure adequate water resources societal development. Developed countries focus their attention on efficient operation and rehabilitation of their infrastructure while developing countries need to secure financing and build adequate human capacity to develop in an environmentally and socially sustainable manner.

In acknowledging the developing countries' right to development, it is important to ensure equitable development. Sharing of benefits from medium- and large-scale infrastructure projects with the affected people is critical to ensure ownership and sustainability and to avoid adverse negative impact to the ecosystems. While infrastructure projects have significant direct and indirect benefits in economic and social development, ecological services should be considered at the local level. Full participation of major stakeholders is therefore crucial to ensure sustainability.

In building sustainability, increased efficiency and continuous and flexible management can help to optimise and maximise the capacity of existing infrastructure. Water loss reduction programmes and demand management are important tools. Improved operation of reservoirs may help to reduce both water quality and quantity problems.

Promising tools such as Multi Criteria Assessment (MCA) can help when development projects need to be prioritised. Developed countries in many cases struggle with the negative impacts of too much water and have to address ecosystems that are under serious stress. In water-scarce regions, rehabilitation of natural conditions and activities may be obtained by costly pipeline projects and new water saving techniques.

# Coping with Climate Variability, Climate Change and Water-Related Hazards

**Convenor: Stockholm International Water Institute**
**Co-convenors: Co-operative Programme on Water and Climate, Swedish Meteorological and Hydrological Institute, Swedish Institute for Climate Science and Policy Research at Linköping University, World Meteorological Organization**

CHAIR: *Dr. Avinash Tyagi,* World Meteorological Organization
*Co-Chair: Prof.* Sten Bergström, Swedish Meterological and Hydrological Institute, Sweden
RAPPORTEUR: *Mr. Henk van Schaik,* Co-operative Programme on Water and Climate, UNESCO-IHE, The Netherlands
CO-RAPPORTEUR: *Dr. Thorsten Blenckner,* Uppsala University, Sweden

In general the workshop said that scientists must provide credibility to decision and policy makers; that people in vulnerable areas must learn to cope by preparing for climate variability, change and risks; and that communication between water managers, policy makers and the public is essential. On the horizon is the 2007 report by the Intergovernmental Panel on Climate Change, the panel's fourth such assessment which this time will place particular focus on water issues.

Specifically, several presentations from India, Nepal and Sri Lanka linked the outcome of climate scenario studies with socio-economic development policies and indicators, and on adaptation options in watersheds. According to the studies, a dialogue is necessary to help mainstream climate change impacts into watershed management and development plans. Another study examined the social and economic behaviour of local actors (small holder farmers) when provided with seasonal climate forecasts. The methodology provided insights on decision making by local actors for policy makers and planners. An interesting and policy relevant "value-laden'" study showed the large potential of the Negev desert for carbon sequestration by forest plantation.

A Swedish study showed that nitrogen and phosphorus inputs from agriculture into groundwater and coastal waters can be affected by climate change. Further, research on the impact of climate change on dams in Sweden is expected to lead to modifications to dam operating guidelines. An Egyptian study said the impact of climate change on the operations and functions of the Aswan dam would be minor compared to those of demographic and economic developments.

A case study from Belarus said that climate change would make the country's rivers, lakes and reservoirs more vulnerable to ice regimes, evaporation and temperature variation. A study on the Eastern Caucasus revealed that increasing reliance on groundwater, the creation of water protection zones, development of forests and construction of water reservoirs in combination with hydropower generation (to reduce fuel-generated electricity) will contribute to adaptation and mitigation. Finally, a study on European water policies noted that the European Water Framework Directive does not effectively address risks or climate issues.

In summary, scientific research needs to provide credibility to decision makers (both local communities and policy makers). Climate science should be context specific and interdisciplinary. The workshop showcased many methodologies for climate research, including forecasting, modelling, impact assessments and vulnerability assessments. However, holistic approaches can only be addressed in a multi-disciplinary manner. Therefore, specialists are needed to bridge gaps between distinct disciplines.

Photo: Mattias Rust

WORKSHOP 3

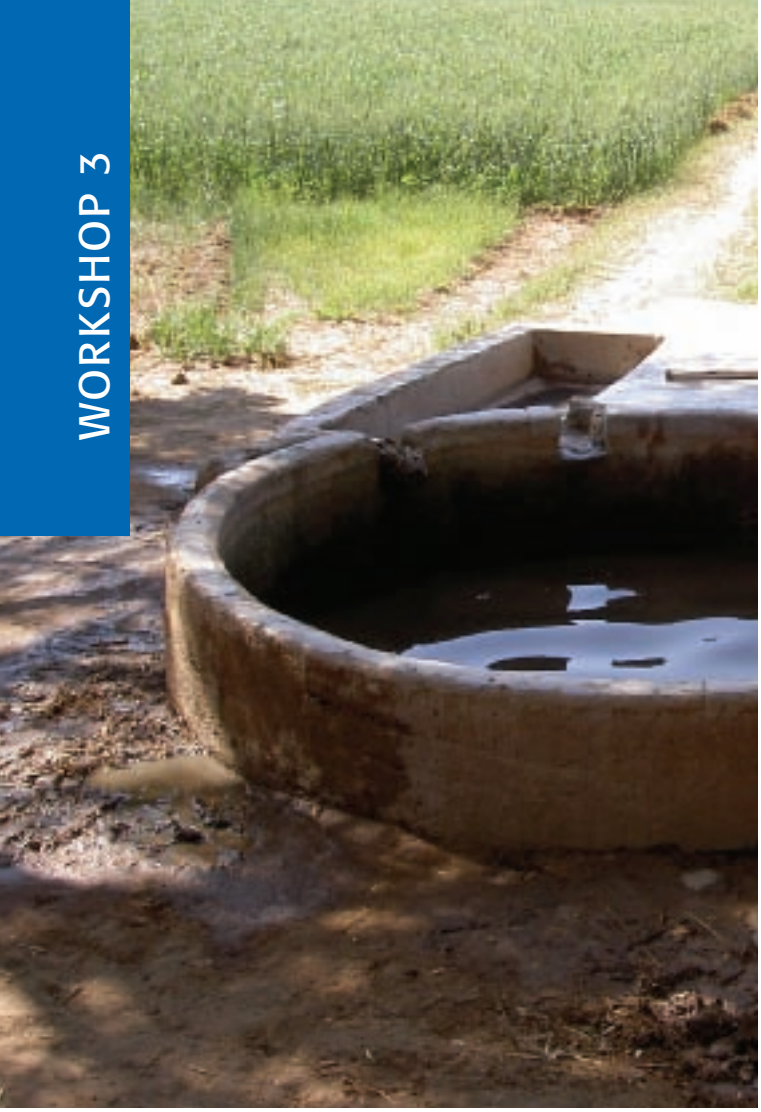

Photo: Mats Lannerstad

Photo: Mats Lannerstad

# Water Provision Across Sectors and Jurisdictions

**Convenor: Stockholm International Water Institute**
**Co-convenors: International Water Association, International Water Management Institute**

**Chair:** *Prof. Olli Varis*, Helsinki University of Technology, Finland
**Co-Chair:** *Dr. Pay Drechsel*, International Water Management Institute, Ghana
**Rapporteur:** *Dr. Anders Jägerskog*, EGDI, Ministry for Foreign Affairs, Sweden

The workshop emphasised that in order to provide water in the urban sector, the river basin is often not enough as a management unit. Decision-making mechanisms need to include a "higher" authority. In large cities there is often a need for interbasin transfers which might require negotiations between different river basin committees, regardless if they are national or international water courses. A problem can be that sometimes, due to bureaucratic/national reasons, there are no direct contacts between those actors that would need direct contacts.

The seminar identified in water scarce situations there might be competition over waters along the urban-rural divide. It was emphasised that it is important to address both supply and demand side options. An important question is who should make the necessary priorities regarding the trade-offs and intersectoral transfers between the different groups involved? How can one achieve equity, efficiency and sustainability simultaneously? Public participation is key.

Another key issue that was discussed was how water supply and sanitation (including public health issues) could be linked to agricultural water use. It was pointed out that fairly cheap measures could minimise public health risks due to irrigation with sewage or untreated water by for example anti-worm campaigns or increased washing of vegetables.

The workshop contributed to the growing realisation that water is not a free good. There is an opportunity cost of water supply. Market based instruments could and should play a role. Studies have shown that people are prepared to pay for water supply given that certain parameters are met. However, full cost for the provision of water is seldom achieved since there is a lack of political will to charge for it.

# Tailoring Water and Sanitation Solutions to Reach the Millennium Development Goals

**Convenor: Stockholm International Water Institute**
**Co-convenors: International Water Association, Water Environment Federation**

CHAIR: *Mr. Paul Reiter,* International Water Association
CO-CHAIR: *Mr. Bengt Johansson,* Swedish International Development Cooperation Agency (Sida), Sweden
RAPPORTEUR: *Ms. Lynn Orphan,* Water Environment Federation
CO-RAPPORTEUR: *Dr. Gunilla Brattberg,* Stockholm Water Company, Sweden

Different strategies are needed to provide water and sanitation services tailored for the national and local setting. Water supply and sanitation must be planned together, first to prevent disease and later to protect drinking water resources and aquatic ecosystems.

Traditional water-based sewer systems and wastewater treatment plants may be appropriate in water-rich urban areas. Dry toilets, latrines and recharge systems that recycle human wastes may be appropriate for rural areas and can provide agricultural benefits. Household-centred strategies such as rainwater harvesting could be useful. Sustainable development requires recycling, water conservation, reservoirs for regional flood control and water storage, and ocean water, desalinated or for non-potable use.

Important aspects in choosing technical solutions include

- Simple operations
- Appropriately small service areas
- Proven applications
- Affordable capital and operational costs
- Up-gradable

Both private and public service can be efficient and stable when there is institutional capacity.

To meet the MDGs, however, progress must be accelerated. Institutional capacity is required for investment and implementation of hard solutions. This requires national-level policies and financial arrangements that provide adequate water and sanitation infrastructure for all people, including land-less families, marginal areas and illegal settlements.

National leadership is necessary to define policies for health and water resources, establish regulatory frameworks and empower local actors. Education, monitoring and intergovernmental cooperation is needed. The national-level government should secure low-cost funding for investment, subsidise some of the capital costs and guarantee that donor funds reach the local construction. User-financing should, however, not be underestimated.

Local communities can help determine the proper delivery level for water and sanitation. Even in large, dense urban areas, some decentralisation is more economically feasible and institutionally sustainable than very large centralised facilities. Local groups must also have responsibility for operations and maintenances, payment schedules (in order to match the local economy and harvests), and how to serve and subsidise those who cannot pay. Local women have often taken this responsibility for training and filling the jobs to collect fees and keep the system in working order.

A community served with water and sanitation receives an economic benefit many times greater than the cost of investment. It is less expensive for the poor to pay for the operation and maintenance of a service essential for life than it is to buy and haul water from vendors. Poor people want to receive a bill and pay to show their status in the community.

Photo: Mats Lannerstad

WORKSHOP 5

# Strategies to Increase Resource Use Efficiency in Industrial and Agricultural Sectors

Photo: Mats Lannerstad

**Convenor: Stockholm International Water Institute**
**Co-convenor: World Business Council for Sustainable Development**

CHAIR: *Mr. Robert Martin*, World Business Council for Sustainable Development
RAPPORTEUR: *Ms. Ulla-Britta Fallenius*, The Swedish Environmental Protection Agency, Sweden
CO-RAPPORTEUR: *Prof. Ausaf Rahman*, USA

Strategies to increase water use efficiency were examined for three areas: overall efficiency, agricultural water use and industrial water use. In general, it was repeatedly emphasised that water use efficiency should include water quality considerations, not just quantity, particularly for water recycling and inter-sectoral reuse. Linkages between efficiency in different sectors were also made apparent. Successful and effective alliances among stakeholders can promote increased efficiencies. Though various driving forces for adopting efficient water use practices were discussed – water scarcity, environmental concerns, etc. – economic incentives emerged as the main driver.

Options for increasing agricultural water efficiency include improved irrigation through practices such as mulching and drip irrigation, though water stressed environment like Sub-Saharan Africa need added measures. There, it was noted that water efficiency and agricultural production increased with improved farming practices such as soil conservation and improved soil fertility. While Sub-Saharan Africa dominated discussions, examples of increasing water efficiency through synergistic effects of supplementary irrigation and soil fertility management were cited from many other parts of the world including India, Kenya, Nigeria and South America. Rain fed agriculture received greater attention, but the discussion differentiated between green water (dispersed in the soil for agricultural purpose) and blue water (water concentrated in channels and other water bodies).

Industry's concern for water efficiency pollution reduction, from raw material to end product, is increasing, as are associated plans of action within some large industries and by different multinational corporations. The catchment-based management approach was emphasised, as was the need on a global level for:

- Improved information and greater awareness by politicians, policy and decision makers, industries and public,
- Global guidelines for water use and discharges by product (e.g. water use and discharge per tonne of product); branch organisations could help formulate such guidelines and measures for implementation,
- Realistic legislation and enforcement, and
- Effective economic instruments.

Other case studies from around the world emphasised the value of rainwater harvesting for industries. In parts of South India this is becoming a mandatory requirement, aided by legislative measures, and necessary in light of competing water users (domestic and agriculture versus industry).

## Political and Social Negotiation Processes:

# Sustainability and the Politics of Water

**Convenor: Stockholm International Water Institute**
**Co-convenor: Global Water Partnership, Stakeholder Forum, Water Supply and Sanitation Collaborative Council**

CHAIR: *Mr. Emilio Gabbrielli,* Global Water Partnership
CO-CHAIR: *Mr. Gourisankar Ghosh,* Water Supply and Sanitation Collaborative Council
RAPPORTEUR: *Mr. Felix Dodds,* Stakeholder Forum, UK
CO-RAPPORTEUR: *Prof. Peter Söderbaum,* Mälardalen University, Sweden

The workshop focused on the changing nature of political and social negotiations in the water sector. A recurring theme was how to build new governance structures involving stakeholders and the public to improve decision making and implementation of decisions.

The 1990s witnessed the growth of globalisation, but also that of a governance deficit. Agenda 21 recognised stakeholder roles and responsibilities, and processes like the Commission on Sustainable Development (CSD) were serious attempts to engage stakeholders as a delivery mechanism for sustainable development.

One of the most emotive issues today is ownership of water. While most people accept that water is a basic human right, a problem has been in the application of that right. Some countries see water for its spiritual and cultural significance; in other countries, the idea of charging for water is something that most people accept. The commodification of water has in fact grown during the last decade. Reconciling the different cultural, spiritual and ideological view points of water is challenging, if not impossible; the stakeholder and public consultation approach can work when all parties are prepared to listen to each other and seek solutions that might not have been on the initial agenda.

Recent experience confirms that successful water projects involve both civil society and stakeholders. Until 1992 governments were entrusted with developing and delivering water projects; people in democracies participated with their vote. The workshop again and again emphasised the multi-stakeholder approach.

The workshop also focused on transboundary waters. There are 261 such basins, growing political change in them and over 60% of the world's people living there. Legally binding common approaches to transboundary waters have been difficult to achieve; some 400 international, freshwater-related agreements exist. The Convention on the Law of the Non-Navigational Uses of International Watercourses (1997) itself took 30 years to negotiate and has been ratified by only 15 of the 36 countries needed for it to enter into force.

The lack of legal frameworks has spurred the development of new governance systems built on cooperation between stakeholders and actors, while respecting the sovereign rights of participatory states. Examples include HELP, the LEGAL IMPACT METHOD, the Global Public Goods Concept, Dakar Sanitation Roadmap, the GWP Toolbox and methods.

For successful implementation of water and sanitation services, full involvement of the community from the planning stage is needed, along with partners from the private sector, civil society and the recognised stakeholders. The workshop identified methods for stakeholder and public involvement; among them are persuasion, education, consultation, joint planning delegated authority and self determination.

Photo: Mats Lannerstad

WORKSHOP 7

# Approaches To Mitigate Soil and Gully Erosion

**Convenor: Stockholm International Water Institute**
**Co-convenor: Stockholm Environment Institute**

**Chair:** *Dr. Johan Rockström,* Stockholm Environment Institute, Sweden
**Co-Chair:** *Prof. Boniface Egboka,* Nnamdi Azikiwe University, Nigeria
**Rapporteur:** *Dr. Line Gordon,* International Water Management Institute, Sri Lanka
**Co-Rapporteur:** *Prof. Klas Cederwall,* The Royal Institute of Technology, Sweden

Photo: Katarina Andrzejewska

The scale on which land degradation, soil erosion and gully formation affects local livelihoods and contributes to poverty through yield reduction and vulnerability, are enormous, especially in developing countries. However, there are positive examples where land degradation has been reversed and the land returned to a productive state where services important for livelihoods (including crop yield increases) returned. It was concluded that erosion control measures need to include analysis of a broader set of on-site benefits that contribute to local livelihoods.

Water plays a fundamental role in the development of land degradation and gully erosion, and onsite water conservation strategies can be successful in reversing trends. The water community needs to join hands with the soil conservation community to find multifunctional solutions in addressing these problems. The workshop emphasised that investments have to be made upstream, where the source of the problems exists, instead of looking for "end-of-the-pipe" solutions that focus on downstream systems.

The adaptation and adoption of soil and water conservation techniques have sometimes failed, although they often have shown to substantially increase benefits. Reasons cited for failure included critical questioning of the introduced measures, that techniques are not adapted to local preconditions, and distorted preconceptions and poor understanding of the local institutions. More adaptive incentives within multi-objective planning and project implementation need to be found.

The workshop concluded that a gap in our understanding still exist in relation to how upstream water and soil conservation affects downstream systems. Both the off-site benefits and the off-site costs of investments in soil and water conservation need to be analysed. This highlighted the need for understanding by policy and institutions when dealing with complex environmental problems, particularly where uncertainty is inherent. Management strategies, including efficient baseline information systems, need to be developed, as does effective communication with stakeholders. Planning at the catchment and drainage basin scale is also needed when addressing local problems.

Photo: Mats Lannerstad

# Water Quality Degradation by Hazardous Substances and the Cost of Non-action

**Convenor: Stockholm International Water Institute**
**Co-convenors: International Water Resources Association, Third World Centre for Water Management**

**Chair:** *Mr. Patrick Murphy,* European Commission
**Co-Chair:** *Mr. Aly Shady,*
International Water Resources Association
**Rapporteur:** *Dr. Cecilia Tortajada,*
Third World Centre for Water Management, Mexico
**Co-Rapporteur:** *Prof. Saburo Matsui,*
Kyoto University, Japan

The Paris Appeal, an international declaration which focuses on health-related risks of chemical pollution, stressed the importance of managing hazardous substances because of their carcinogenic, mutagenic and reproductive effects. There are increasingly negative impacts of chemicals on human health in terms of allergies in children, breast cancer, decrease of male fertility and other issues. In addition, while there are about 100,000 chemicals which exist, and 30,000 of them are in the market, adequate data exist only for about 5,000 on the basis of which informed decisions can be made. This is an important concern mainly because the current management practices are inefficient. It is therefore necessary to develop a new system to manage hazardous substances more efficiently than at present.

The costs of non-action with regard to toxic pollutants that affect human health and the environment, both from point and nonpoint sources, are many times higher than the cost of taking preventive, corrective or remedial actions. Additional studies are needed so that national and appropriate policies can be formulated on this complex issue.

It is important to promote adoption of toxicological standards, including international thresholds, to protect both human health and the environment. Additionally, a more effective monitoring system in terms of frequency, parameters, density and availability of information to the public is required to make informed and timely decisions. It was noted that a more cost-effective assessment of toxic wastes should be developed, since the current systems are inefficient. Information in this overall area should be shared between developed and developing countries. In addition, developed countries have a moral and ethical responsibility to ensure developing countries do not suffer because of unscrupulous practices of transboundary movements of chemical and hazardous wastes.

# High-Level Panel on Large-Scale Water Infrastructure

A high-level panel on large-scale water infrastructure discussed water infrastructure needs in coming decades, past experiences, issues of equity and long-term benefits, responsibilities of different actors and stakeholders and financing.

Most panellists agreed that investment in such infrastructure is, for most developing countries, a prerequisite for sustained economic growth. The differences in water storage per capita (an indication of water security) for power generation, agriculture, industry and water supply also demonstrate clearly the differences between developed and developing countries, it was said. Physical structures – conveyance systems and reservoirs – are fundamental components for societal development and could be seen as societal investments to meet human aspirations to development and improved well-being. Panellists stressed also that there is a need to consider negative human/societal and environmental impacts, as well as multiple use possibilities, from the beginning of any project. The issue, they said, is not human development versus environmental protection, but rather environmental protection as a necessary part of sustainable human development. To deal with the negative impacts of affected people was also seen as critical. Discussion thus also focused on earlier experiences from projects where the concerns of local communities or for the environment have been inadequately considered, and which have subsequently caused the resistance to large water infrastructure projects to remain strong among many groups. Panellists discussed the World Commission on Dams (WCD) attempt to formalise a process – stretching from the planning phase, construction and operations and management – to ensure fair and equitable participation and benefit sharing from project development. They acknowledged that the contentiousness of the issue have not made it possible for the WCD recommendations to gain global acceptance among all actors. Other initiatives, such as the IHA Sustainability Guidelines, have tried to step in to fill the gap of acceptance, without great success, the panellists noted.

The South's infrastructure need is evident, particularly in relation to meeting the Millennium Development Goal on poverty, where provision of reliable water supplies for economic and social development is crucial. In many developing countries there is not sufficient infrastructure to provide a reliable supply. In addition, sustained financing of such infrastructure remains a challenge; partnerships and other creative solutions could help fill the gap.

## The 2005 Founders Seminar:

# Business, Water and Development

**Convenors: Stockholm Water Foundation, World Business Council for Sustainable Development**

The annual Founders Seminar concluded that:

- New partnerships and relationships between governments, the private sector and civil society need to be built that are based on mutual trust in order to deliver water and sanitation services and to achieve the Millennium Development Goals (MDGs). This takes time.
- A new paradigm is needed for fast-growing economies which is sustainable from a social and environmental perspective. The future challenge is to pioneer this and demonstrate how it can be accomplished.
- More vigorous efforts to develop and promote innovative and cost-effective technology for water and sanitation must be pursued by business in partnership with other actors.

Among the bodies who could facilitate needed actions are umbrella organisations such as The World Business Council for Sustainable Development (WBCSD), the International Council for Local Environmental Initiatives (ICLEI) for Local Government Bodies, international financing institutions, and international as well as local NGOs. WBCSD, for example, is promoting "Sustainable Livelihoods Business." Individual businesses need to adopt this paradigm and explore the potential. Partnerships between multi-nationals, small-and medium-sized enterprises, and local businesses must be developed. Governments need to engage in developing new partnerships with the private sector and NGOs.

There are relatively few occasions, bodies or processes – apart from the World Water Week – which engage all these actors annually. The tri-annual World Water Forum is one, though previous Forums have been very broad and not focused specifically on these issues. The World Water Council and the Global Water Partnership are bodies and processes where these issues can be further pursued.

# From the Millennium Summit to 2015:
## Why Managing Water Resources and Expanding Water Supply and Sanitation Services is Vital to Meeting the Millennium Development Goals – and What Needs to be Done

**Convenors: Stockholm International Water Institute, Swedish Ministry for Foreign Affairs, Swedish Water House, UN Millennium Project**

This seminar was convened by the Stockholm International Water Institute and the UN Millennium Project in preparation for the 2005 World Summit, held in New York in September 2005, where the largest-ever gathering of heads-of-state agreed on a practical plan of action to achieve the Millennium Development Goals.

Chaired by Mr. Anders Wijkman, MP, European Parliament, the seminar included presentations by Hans Rosling, Professor in International Health, Division of International Health, Karolinska Institutet, Sweden; Albert Wright, Co-Coordinator, UN Millennium Project Task Force on Water and Sanitation; Sunita Narain, Executive Director of the Centre for Science and Environment (CSE) and this year's Stockholm Water Prize Laureate; Alfred Langat, Chief, Environmental Sanitation Unit, Ministry of Health, Kenya; Gustavo Heredia, Director of Agua para Todos in Cochabamba, Bolivia; and Roberto Lenton on behalf of the Millennium Project.

The speakers emphasised that the Goals will not be met unless there is deliberate planning and investment in water infrastructure and sound water resources management and use and a dramatically different approach to the worldwide sanitation crisis. They agreed that low-income countries need practical information, tested approaches, domestic capacity and international support to devise needs-based development strategies for water resources as well as water supply and sanitation services over the long term.

Key points that emerged from the session included:

- Innovative solutions that combine hard and soft approaches are needed to achieve the goals.
- Reaching the MDGs will require focused efforts on the part of all key stakeholders – from governments to donors to non-governmental organisations to scientific institutions.
- The 10-year program launched at the Summit provides the appropriate international agenda under which ongoing water-related processes could be integrated.

It is anticipated that the World Water Week could continue to play an important role in these processes throughout the period from now to 2015. In particular, the overarching theme of next year's World Water Week, "Beyond the River – Sharing Benefits and Responsibilities," could provide an appropriate and innovative framework under which to discuss the MDG process.

Photo: Mats Lannerstad

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## Hydraulic Infrastructure as a Platform for Economic Growth:

# The Experience of the Developed World and the Challenges for the Developing World

**Convenors: Stockholm International Water Institute, Swedish International Development Cooperation Agency, World Bank, World Water Council**

The consensus among seminar presenters was that investment in hydraulic infrastructure such as dams is essential for economic growth in developing countries. Examples from Brazil, China, India and Turkey demonstrated how hydraulic infrastructure addressing recurrent droughts and floods and promoting economic diversification can transform regions and nations. How to invest wisely taking into account lessons learned and global best practice was the focus of much of the discussion.

Topping the list of best practices discussed for investing wisely in hydraulic infrastructure:

- Take into account multiple water uses, including environmental flows, and other uses, in upstream design and operation.
- Include stakeholders in the decision making process and ensure that the dam improves the lives of people affected and that benefits are shared.
- Proper options analysis, including infrastructure and demand management are also a vital part of meeting current and future water needs.

One of the biggest challenges of developing large-scale infrastructure is financing it, as demonstrated by the Rusumo Falls Multi-Purpose and Hydropower Project, a cooperative effort by Burundi, Rwanda, and Tanzania to bring electricity to the poverty-stricken Kagera basin. While middle-income economies, such as China, have found innovative solutions to the financing challenge – including issuing national bonds and creating favourable policies to attract private capital and overseas investment – others with weaker and unstable economies still need donor help to achieve water and energy security. Possibilities include grants, carbon trades and providing seed funds to attract much needed private sector investment.

While investment in hydraulic infrastructure can contribute to meeting all eight Millennium Development Goals (MDGs), it has been included in the international agenda only in reference to the water supply and sanitation target. Hydraulic infrastructure investments need to be considered within larger strategies for meeting the MDGs.

Photo: Mats Lannerstad

# Can We Meet International Water Targets Without Fighting Corruption?

Photo: Frida Lanshammar, SB

**Convenors: Stockholm International Water Institute, Swedish International Development Cooperation Agency, Swedish Water House, Transparency International, Water and Sanitation Programme**

"Can We Meet International Water Targets Without Fighting Corruption" was one of the most well-attended seminars during the 2005 World Water Week, an indication of the burgeoning understanding of the malice of corruption and the upsurge in interest to find effective policy measures to abate it.

Two keynote presentations pointed to how corruption in water management has historically been a non-issue or, even worse, accepted as a "necessary evil" that would "grease the wheels" of development. The presenters pointed to recent research and practical experiences that challenge this view and argued that anti-corruption measures are a key to sustainable development. Seven case studies from Latin America, Asia and Africa spanned a diversity of water-related services and management practices from both urban and rural settings. Irrigation, dam construction and water supply and sanitation were discussed.

The seminar arrived at three main conclusions:

- Need for more knowledge: Despite the rich cases presented at the seminar, the need for more knowledge on the extent and character of corruption is evident. Quantifying the level of corruption, while not easy, will help in building a stronger case for action, and knowing more about the dynamics of corruption will help facilitate the design of effective measures to curb it.
- Need for better policy instruments: Most international development agencies adhere to the need to combat corruption. Nevertheless, little is known about what policy instruments are effective under what conditions, and how different instruments can be used in conjunction to maximise impact. Attendees pointed to the need of employing a wide range of policy instruments that build on transparency, information sharing, pecuniary incentives, norm change, and active construction of social and professional identities. Close monitoring and evaluation of these measures should be made to arrive at more effective anti-corruption strategies.
- Need for strong encompassing alliances: To build and maintain momentum for the fight against corruption, there is a need for actors from all sectors of society. International development agencies, the private sector, media agents and others can form an alliance to design, support and help implement research and policy instrument.

# SIWI Seminar for Young Water Professionals:
## Water Demand Management – An Effective Strategy That Incorporates Both Soft and Hard Solutions?

Photo: Mats Lannerstad

**Convenor: Stockholm International Water Institute**

Water demand management aims to improve water use efficiency by incorporating soft solutions (water pricing, information, education and regulations) with hard solutions (technical improvements, re-use and recycling). The trend in population growth, urbanisation, increased agricultural production and economic growth raises the need for additional water supply in many parts of the world. But can we afford to ignore the inefficient and wasteful use of water and the fact that up to 80% is lost through leakage from piped water systems? In many parts of society, people continue to be in desperate need of water for their daily basic requirements. Water demand management, therefore, plays a critical role and involves both controlling demand and meeting demand.

This seminar presented a platform for a number of presentations by young water professionals on the role of water demand management. One conclusion that could be drawn from the various presentations was the importance of involving all stakeholders in the process. It was recognised, however, that this is also one of the biggest challenges in water demand management, as it requires a change of attitude, involvement of the entire community and the use of incentives at all levels.

During the panel discussion, it was agreed that there is often a lack of political commitment to implement water demand management. Motivation tends to come from the community, even in circumstances where politicians have lost interest in the method. Moreover, a contradiction often exists between short-term solutions for quick delivery of water and more sustainable long-term solutions. In other words, how do we seek a balance between protection of the environment and the urgent need for socio-economic growth?

It was emphasised that young water professionals should be encouraged to help demonstrate the benefits of the water demand management approach, together with existing international programmes, such as the Global Water Partnerships's Southern Africa Youth Water Action Team and the International Water Association's Young Water Professionals Programme. Improved capacity building and broad participation across all levels are absolutely necessary to ensure the success of water demand management.

Photo: Mats Kullberg

## SIWI Seminar:

# Benefit Sharing from Integrated Land and Water Use in River Basins

**Convenors: Stockholm International Water Institute, Global Environment Facility**

Since land and water productivity are closely interlinked, the single sector approach is a central problem. By maximising benefits from one sector, it fails to account for linkages among components in a catchment which interact, impact and complement with one another. Integration is particularly urgent in basins that are already closed or closing.

This seminar scrutinised strategies for how to optimise and share benefits from water in the river basin. A new conceptual tool was proposed in terms of the hydro-social balance, conceptualising the production of services and their dependence on water flows; both the green water in rain-fed economic sectors, blue water in the river for instream uses, and offstream categories of water supply and use. Benefits to share may include income generation, opportunities for production, energy, food marketing, and improved health/disease risk alleviation. By distributional analysis, sources of income can be traced, as can the potential to multiply the income.

The issue of sharing benefits between upstream, midstream and downstream use is simple in design but complex in application. The end use of the water resource has to be seen as the starting point for a discussion of benefit sharing. Core steps in the integration process as practised by the Global Environment Facility include fact finding and development of negotiated strategic action plans.

Cases were presented including the Nile basin with its extreme complexity; The Euphrat-Tigris basin where a track 2 process had been introduced; the Okavango basin with its internationally supported delta ecosystem in the downstream end; the Mekong basin with the special problems of the flood dependence of the fishery in the Tonle Sap; the Murray-Darling basin with its CAP; and the Bermejo basin, contributing 80 percent of the silt flow to the Parana river.

In conclusion, the pathway to management of a river basin from source to sea demands trust and goodwill for benefit sharing in efforts towards a holistic approach

Photo: Maria Stenström

# AMIWASH – African Ministers Coming Together to Achieve the Millennium Development Goals

**Convenors: African Ministers Council on Water (AMCOW), Water Supply and Sanitation Collaborative Council, The Water and Sanitation Program**

One of every three Africans currently has access to basic sanitation, and some 288 million are without access to a safe water supply. For Africa to achieve the Millennium Development Goals (MDGs), the rate of provision for water supply must be doubled, while that for sanitation must be trebled.

Workshop speakers told of challenges but also encouraging signs of progress. South Africa hopes to eradicate backlogs and provision of access to basic services for both water and sanitation by 2008 and 2010 respectively; has enshrined access to water and sanitation in the constitution; and provides government grant funding for development of infrastructure to ensure provision of basic services, particularly for the poor and most vulnerable people.

Senegal's new Ministry for Prevention, Public Hygiene and Sanitation addresses the low coverage of water and sanitation services. With community, local NGO and private sector involvement, coverage rose within 5 years from less than 15% to 17% for rural sanitation, and from 30% to 57% for urban sanitation.

Ethiopia's community-based WASH and health programmes improve health and productivity through decentralisation, people-centred approaches and involvement of all stakeholders at all levels. Latrine coverage in the Woreda district, for example, increased to 75% from about 10% within a year.

Photo: WSSCC

Lesotho stresses formal and informal education and has established a multi-stakeholder Lesotho Water Partnership. A strong youth group for WASH advocates the WASH principles by conducting road shows, initiating cleaning campaigns and sensitising people on how to keep their water clean.

NETWAS, a Kenyan NGO, presented a multi-stakeholder project where social mobilisation, community training, media and construction activities aim at mobilising at least 500,000 of the estimated 800,000 residents of the Kibera informal settlement in Nairobi. By June 2006 more than 70% of the children in Kibera are expected to live and study in clean and child friendly environments.

**Seminar highlights:**

- Political leadership is the driving force for success;
- Building on the WASH campaign AMIWASH has captured attention and raised the profile;
- Involving all stakeholders coalitions, civil society, including local government, build bridges between water and health.
- Coordination: all actors should get their act together in a coordinated, not divergent fashion, including external support, and on data and statistical information.
- Mainstreaming gender, through 'Women and Water Awards,' gender-sensitive policies showing real action on the ground.
- Good, solid analyses, clear roadmaps to achieve the MDGs, and even exceeding the goals.
- Pro-poor policies and institutional reforms, engaging the private sector while States maintain control.
- Investing in people, especially in children, particularly girls' education.
- Mobilising investment, whether through own resources or with external support.
- AMCOW: widened reach of WASH campaigns with youth involvement, WASH in schools, annual "Sanitation Weeks" celebrations; and
- Critical importance of Hygiene, which is often forgotten.

AMIWASH, the workshop organiser, brings together African Ministers from different sectors to step-up their countries' efforts in meeting the MDGs on water supply and sanitation.

# UN-Water

Photo: Frida Lanshammar

**Convenors: The 24 UN system entities that work on water issues and cooperate through "UN-Water"**

A wide-ranging seminar on UN-Water mirrored the wide-ranging involvement of United Nations (UN) agencies and programmes in water-related activities around the world. Representatives of the UN system agencies presented the UN-Water mechanism which was created to coordinate activities and programmes in water resources and sanitation in the UN system. Major joint programmes include the Joint Monitoring Programme for Water and Sanitation, the World Water Assessment Programme and the Global Programme of Action for the Protection of the Marine Environment. The UN system is also working together in coordinating activities for the International Water for Life Decade (2005–2015), and encouraged partners at all levels to get involved in these efforts. An interagency task force on gender and water had been created to ensure that gender considerations were given prominence in Decade programmes. One panellist suggested that country level water programmes would have a great chance to be funded if they were mainstreamed through country level processes such as the UN Resident Coordinator system and the UN Development Group country teams.

The audience contributed ideas on how to improve the effectiveness of these programmes. Participants felt that UN-Water needed to be strengthened to discharge its responsibilities and to make it more pro-active at the national level. While they felt that joint UN-system activities had been effective in monitoring coverage of water and sanitation and in assessing water quality and quantity, such programmes would benefit from more direct involvement of national water authorities. A more proactive collaboration between the United Nations system and non-UN actors would also enhance the impact of water management programmes at the country, regional and global level.

It was also widely felt that the issues of water and sanitation needed to figure much more prominently in the outcome document of the Millennium Summit in September 2005, and UN-Water members were requested to take this message to the President of the General Assembly.

# Shared Water Problems in the Middle East: Water for Agriculture

Photo: USAID

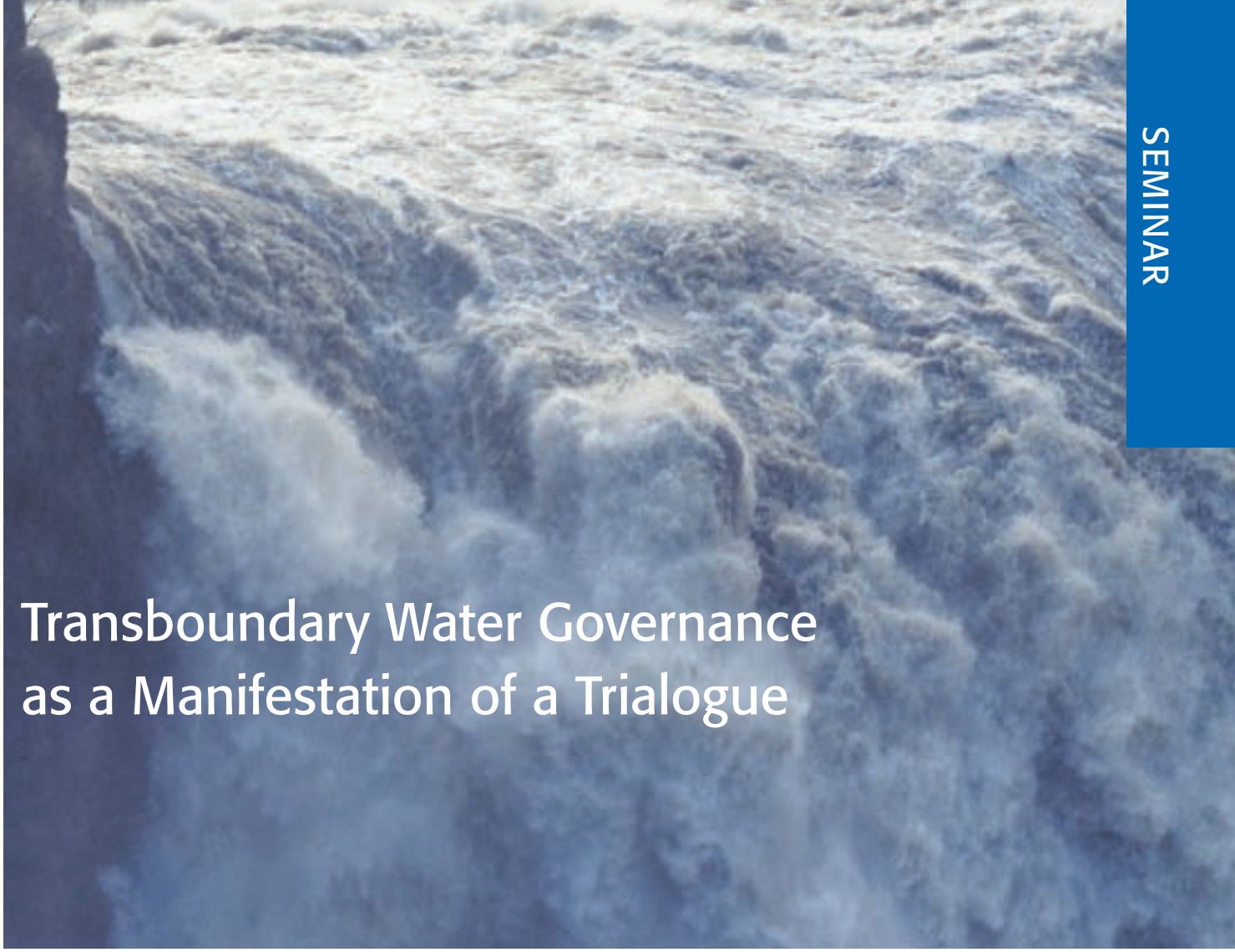
**Convenors: Global Water Partnership-Med., Israel/Palestine Center for Research and Information, Stockholm International Water Institute, Swedish Ministry for Foreign Affairs, Swedish Water House**

The seminar centred on food security, the water-saving potential of technology development and water demand management, and existing and potential forms of cooperation in the region. The purpose of the seminar was to address common challenges on water for agriculture in the Middle East; promote dialogue and knowledge sharing among actors within the same river basin and between river basins; and to stimulate actors in the region to identify and define concrete entry points for enhanced cooperation in the region with a view to initiate new or take part in already existing processes related to shared waters in the region.

A number of participants from the region took part in the event and contributed greatly to the discussions and outcomes. Looking at the outcomes of the event, there are many positive points to be mentioned. The widening of the scope of the conference compared to the earlier two meetings resulted in a very rich addition in the form of the Euphrates and Tigris basin.

The seminar pointed to a need for broader regional water initiatives. If regional cooperation is to take a firm root, it will require increased political will and continued processes to build trust between countries. It was, among other things, suggested that an incremental approach be used to enhance political will and trust. Some of the proposals put forward during the event included increased support to strengthen existing transboundary waters networks; promote further hydrological data sharing initiatives; and strengthen negotiation capacities, particularly with regard to the World Trade Organisation and agricultural policies within the European Union.

Another area that was debated was a need for reviewing water legislation and comparing uniformity and possibilities to harmonise legislation in the region. Examples here including reviewing water ownership and allocation laws; sharing information on how other governments employ incentives to improve water reuse and wastewater treatment through tax reductions, income tax relief, or tariff reductions; and reviewing how to more realistically employ wastewater reuse standards. *More details on the rich and lively seminar are at www.swedishwaterhouse.se.*



# Transboundary Water Governance as a Manifestation of a Trialogue

Photo: SIWI

**Convenors: Expert Group on Development Issues (EGDI) at the Swedish Ministry for Foreign Affairs, Swedish Water House, UNESCO, Universities Partnership for Transboundary Waters**

Presentations and discussions during the seminar "Transboundary Water Governance as a Manifestation of a Trialogue" focused on soft solutions. In addition to describing transboundary water governance (TBWG) in the more conventional context of formal and informal institutional arrangements, it was emphasised that TBWG is basically about people, leadership, mutual trust and other manifestations of human resources and relations. It is necessary to build governance on rules and regulations, but for smooth and effective implementation of governance – and to invoke legitimacy and "ownership" – the process needs to accommodate intrinsic, subjective and objective values.

To be sure, sovereign states are pivotal actors; they can make or break a promising TBWG process. In view of the variation in the relative political, financial and other strengths of riparian governments, there is a need to identify incentives that may stimulate strong riparian partners to negotiate and collaborate. In addition, governments are able to bridge various interests. Their mandate includes the formulation and execution of a coherent policy that capitalises on the linkages between water and other sectors in society (trade, energy, etc.).

With more than 400 existing international water treaties, TBWG is clearly high on the international agenda. The process, however, is slow and the actual outcome and performance of the treaties is limited. In addition, many treaties do not deal with all riparians in a basin. Millions of dollars are spent and years if not decades literally lapse before riparians get together and start serious talks and negotiations. The perception of the zero-sum game and a common mutual suspicion must be overcome. There are win-win solutions, especially for water quality improvements. Contrary to the poor overall progress, it is well to recognise the strong commitment of many international organisations and governments, illustrated at the seminar by the role of UNESCO and the Government of Sweden.

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## 4th World Water Forum:

# Local Actions for a Global Challenge

**Convenors: Secretariat of the 4th World Water Forum, World Water Council**

The seminar on the 4th World Water Forum, to be held March 16–22, 2006, allowed frank and open views to be exchanged with participants on the importance of selecting, from the large number of potential topic-sessions already registered, good quality and balanced sessions and local actions to be presented within them. It also allowed the exchange of ideas on how to link this thematic process with the ongoing regional preparation, so as to provide substantive and coherent input to the Forum's Ministerial component.

The presentation from the Forum Secretariat allowed participants to observe that the preparatory process was well underway, with the support of the regions of the world, key thematic organisations and civil society groups. One example of a clear result from the World Water Week is the setting up of the European Regional Committee, which completes the global coverage, with the other Committees in Africa, Asia-Pacific, the Middle East and the Americas.

The participation of local actors was highlighted in the seminar as crucial to the success of the Forum, to have participants share and learn from their experiences, with the aim of brokering mutual knowledge sharing. A Learning Centre will be available at the Forum to further enhance this process. The Forum Secretariat announced that it was actively seeking creative financial mechanisms and support to facilitate the participation of local actors.

The various issues raised during the Stockholm World Water Week will be considered as substantive input to the 4th World Water Forum. The subjects of some of the Week's workshops and seminars will be discussed in sessions during the Forum.

Photo: SIWI

# Water and Energy

**Convenors: Third World Centre for Water Management, International Hydropower Association, Helsinki University of Technology, International Water Resources Association**

Water and energy are interlinked, and will be even more so in the future. In spite of this, the water profession as a whole has given inadequate attention to the energy sector.

Seminar case studies included water-energy interlinkages for Brazil, China, India, Australia, Laos, an overview of the situation in Latin America, and resettlement issues from Indonesia. Issues discussed included water and energy resources management, how water and energy requirements of various regions of the world could be met in the future in a timely and cost-effective manner, as well as institutional arrangements and capacity building requirements. Water and bioenergy linkages were also analysed in terms of their future requirements.

The challenge the world is facing to provide adequate water and energy resources to an expanding global population is enormous. Economic development and ensuring good quality of life for all the world's citizens will require appropriate access to water and energy. Estimates provided by The World Bank indicated that:

- 1.4 billion people do not have access to clean water;
- 2.6 billion people lack basic sanitation;
- 2 billion people do not have access to electricity; and
- 2.4 billion people rely on biomass for cooking and heating, with corresponding adverse health and environmental-related impacts.

Achieving water and energy security will require tremendous investments. Acceptable coverage for clean water in the developing world will require investment of USD 30 billion per year up to 2015; meeting the power requirements will be require an additional USD 120 billion per year up to 2010. Concurrent the investments, good governance will be needed for both the water and energy sectors, along with functional and uncorrupt institutions, which can work efficiently without undue political influences. Each developing country will have to formulate and implement its long-term water and energy strategies, which should depend upon its own aspirations, and economic, social and environmental conditions. Ensuring that adequate management and technical capacities exist to formulate and implement such strategies will be an important challenge that has to be overcome.

Seminar participants agreed that improvements in the economic and living conditions of developing countries would simply not occur without extensive infrastructural developments. These developments, however, must be sensitively and carefully carried out to ensure that they are economically efficient, socially acceptable and environmentally sound.

Bioenergy production was noted as a rapidly growing commercial activity, which should rely on sound water supply and water infrastructure. Bioenergy exploitation still occurs in a somewhat uncontrolled fashion, which could lead to massive environmental problems in terms of deforestation, erosion, desertification and air quality problems. The links between bioenergy production and efficient water resources management, including related infrastructure, have thus far been largely ignored.

Photo: Olli Varis

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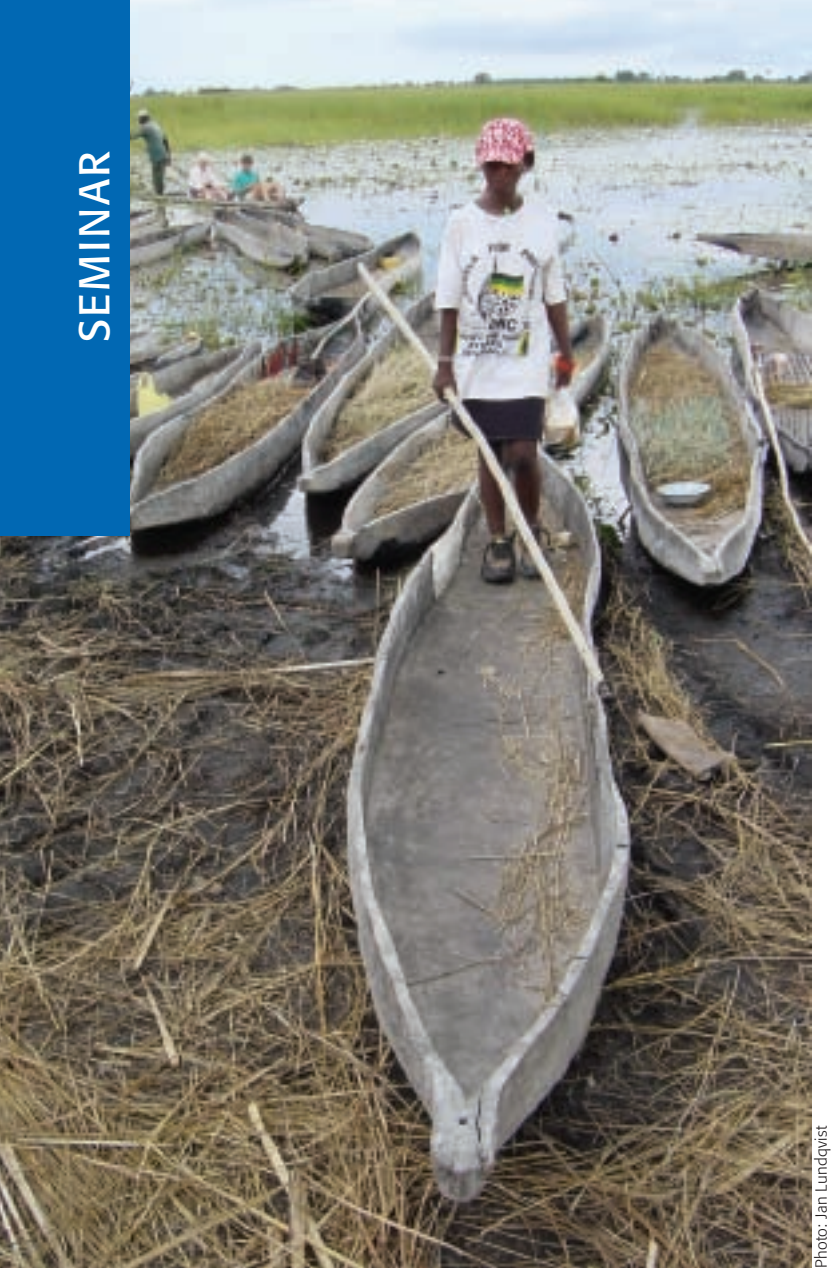

Photo: Jan Lundqvist

# EU Water Initiative Partners Meeting

**Convenor: European Commission, Supported by the Swedish Water House**

The annual Multistakeholder Forum of the European Union Water Initiative (EUWI) provided a framework for discussion and consultation with a broad group of water-sector and development co-operation interests on the design and implementation of the Initiative. The meeting was well attended and the discussion was lively and constructive. Participants included representatives from EU Member States, partner governments in Africa and elsewhere, civil society and water operators, and they came from all geographic regions affected by the Initiative.

The primary focus of the Forum this year was to advise on a strategy for development of the EUWI. Conclusions from the discussion at the Forum included the following:

- There is a need to raise the political profile of the EUWI among the EU Member States
- Civil society stakeholder involvement should be strengthened
- There should be more emphasis on measurable outputs
- The EUWI needs a strategy to communicate better its objectives and operations

These and other conclusions will be discussed by the EUWI Steering Group and incorporated in a revised version of the strategy paper.

Three specific seminars preceding the Forum had generated views and ideas on issues of partnerships, country dialogues, innovative financing and linkages between water supply and sanitation and integrated water resources management. Actors from the different regions learned from one another's experiences, and emphasis was placed on exchange of good practice.

In conjunction with the forum there were meetings of EUWI working groups covering water supply and sanitation in Africa, integrated water resources management in Africa, finance, and monitoring and reporting.

The World Water Week provides a unique opportunity for the EUWI to give attention to the priority given by the European Union to water development and to interact with water professionals from all over the world.

Photo: Frida Lanshammar

## Prediction in Ungauged Basins (PUB):

# Data, Science and Policy

**Convenor: International Association of Hydrological Sciences**

Hydrological data are the cornerstone of hydrological science and engineering, but more importantly, the foundation for all water resources planning and policy making. The complete lack of data in many cases and the decline in existing hydrological networks worldwide are barriers to the development of robust policy. Without such data and information, Integrated Water Resources Management (IWRM) becomes a highly theoretical exercise. The PUB seminar presented experiences in dealing with water resources assessment in a wide range of data-sparse environments. Presentations included the assessment of the environmental effects of afforestation through to the uncertainty associated with global water availability estimates. A common conclusion of the seminar was that reliance on emerging models or measurement technologies is insufficient to provide realistic water resources insights, and that the apparent decline in routine monitoring of key hydrological variables must be reversed if better IWRM outcomes are to be achieved.

Photo: Michael Moore

# Modelling the World of Water

## – Decision Support Tools for Water Resources Management

**Convenors: DHI Water & Environment**
**Co-convenor: Institute of Water Resources Planning (IWARP) Vietnam, Institute of Water Modelling (IWM), Bangladesh, Hydroinform, Prague, Czech Republic**

"Modelling the World of Water" included presentations on cases from Denmark, Czech Republic, Mexico, Bangladesh and Vietnam, covering models for integrated water resources management, urban water management, river basin and transboundary water management.

The main conclusion was that models have proven to be very useful tools in water management for prediction and documentation of effects on the future water resources situation. As a management tool, models have helped decisions makers in deciding upon actions for disaster mitigation and for economic optimisation of "value-for-money" in choosing between alternative management solutions. Models can also be used, as was seen with the case from Mexico, to facilitate transboundary water management.

Participants said that the challenges for modelling in the future include: how to better integrate environmental and social values in models; how to improve the possibilities of using models in direct dialogue with stakeholders to enhance public participation; and how to make models more accessible to policy makers.

Photo: CSE

# The Political Economy of Defecation:

## Tales of Water and Excreta: The Imperative of Rainwater Harvesting, Reuse and Recycling in Cities of the South

**Convenor: Centre for Science and Environment, Swedish International Development Cooperation Agency**

The "Political Cconomy of Defecation" seminar jointly convened by the New Delhi-based Centre for Science and Environment and the Swedish International Development Cooperation Agency called for an alternate "soft" sewage paradigm for environmental sustainability in the South. Chaired by eminent water economist Dr. A. Vaidyanathan, the discussions brought out the failure of the prevalent hardware-oriented water intensive sewage paradigm in the Indian cities and its impact on the river health. It concluded that the resource-poor South cannot face the challenge of human excreta by resorting to the western model of "pollute and clean up." Through case studies on decentralised wastewater management and eco-sanitation, the seminar proposed an alternate paradigm for excreta management in urban areas built around the "soft" principles of sustainable sanitation and resource reuse.

## Finance for Water Solutions:

# How Capital Markets, Banks, Insurers and Asset Managers Can Work for Water

**Convenors: Stockholm International Water Institute, United Nations Environment Programme – Finance Initiative (UNEP-FI), World Business Council for Sustainable Development, DRM World Institute for Disaster Management, World Economic Forum Water Initiative**

Innovative mechanisms are needed to finance development in the water and sanitation sector, n order to achieve the Millennium Development Goals (MDGs). That was the main message from the seminar entitled "Finance for Water Solutions."

The seminar gathered key public and private sector figures for presentations about innovative finance mechanisms that can work for water. An insightful presentation by the Hon. Maria Mutagamba, Minister of State for Water of Uganda and Chair of the African Ministerial Council on Water and Sanitation (AMCOW), captured the essence of the seminar. The Minister suggested that there is a great need to expand the current understanding of public-private partnerships to include a wider range of possibilities, such as the domestic financial community, capital markets, industry, technology companies, local communities and governments at regional, national and local level.

# Harnessing Uncertainty:

## Taking Complexity and Vulnerability Seriously in Integrated Water Resource Management

**Convenor: The Resilience and Freshwater Initiative (Swedish Water House)**
**Co-convenors: Centre for Transdisciplinary Environmental Research (Stockholm University), Stockholm Environment Institute, Institute for Social and Environmental Transition USA/Nepal, Stockholm International Water Institute**

Global environmental change is likely to entail increasing environmental variability and increased occurrence of extreme weather events. The increasing complexity of freshwater resources poses a fundamental challenge for conventional approaches such as integrated water resources management.

A number of hard and soft solutions were discusses as strategies to undertake this challenge. Water policy makers should take the potential of adaptive management seriously. The capacity of local stakeholders to adapt from environmental change should be strengthened by promoting social learning, network building and collaborative risk assessments. Hard solutions should be designed to enhance the capacity of communities to self-organise after extreme events and surprises such as flooding and drought.

A number of actors need to get involved in the issue, such as United Nation agencies and programmes, non-governmental organisations, international aid agencies and national governments. The World Water Week provides a key arena where these diverse actors can elaborate novel solutions to increase the resilience of social-ecological freshwater systems.

## Integrated Water Resources Management (IWRM)

# – Do We Practice It in the North?

**Convenor: Northern Water Network**

The Northern Water Network (NoWNET) mobilises Northern countries to promote and facilitate good water development and management practices by creating partnerships for North-North and North-South knowledge exchange. A NoWNET member should be a non-exclusive and recognised network which represents the water sector of its country to the international water community and encourages an active participation of multi stakeholders (governments, private sectors, non-governmental organisations and academia) in water-related activities. In the seminar, "IWRM – Do We Practice it in the North?," panellists from the European Commission, Denmark, Netherlands, Sweden, the United States and Japan described integrated water resources management (IWRM) as it is practiced in the Northern countries. The European Water Framework Directive (WFD) was cited as an example of IWRM in Europe which has valuable elements that can be shared beyond Europe.

# Best Practices in the NGO Sector:

## The Role of Rotary Clubs in Supplying Safe Water to Communities Worldwide

**Convenors: Rotary International**

Non-governmental organisations (NGOs) need to be more fundamentally involved in helping to provide the hard and soft solutions to water issues. Seminar participants discussed how non-governmental organisations can provide local, community-based answers to global water issues. The World Water Week serves as a catalyst for NGOs, government agencies, scientific leaders and other interested parties to come together to develop connections and establish a communication network between the groups.

Rotary, the organiser of the seminar, is an organisation of business and professional men and women who provide humanitarian service to communities in need. With 1.2 million members and 33,000 clubs worldwide, Rotary provides a network of volunteers in 166 countries. Rotary members recognise the importance of providing access to potable water and sanitation in suffering communities. The seminar focused on how Rotary clubs and other NGOs have served as partners in the global fight for safe drinking water and sanitation.


# The Stockholm Water Prize

Photo: SIWI

The 2005 World Water Week in Stockholm may best be remembered for the deep and varied contributions of the 2005 Stockholm Water Prize Laureate, the Centre for Science and Environment (CSE) and Ms. Sunita Narain, to the overall programme. HM King Carl XVI Gustaf of Sweden handed over the Prize to Ms. Narain and CSE for its oustanding achievements, nationally and internationally, on behalf of water and the environment, human rights, democracy and health.

In many ways, CSE as an organisation and Ms. Narain as an individual personified the hard-soft discussion and debate; their work has shown great respect for science and technology, and always with a social conscience which puts people first.

As the representative for CSE, Ms. Narain was an active participant of the week. In the opening session, Ms. Narain drew a standing ovation – the first, to the recollection of most, in the 15-year history of the event – for her moving Laureate Lecture, "The Want and Waste of Water: the Paradigm Shift for Water Management in the South."

She also addressed the Stockholm Junior Water Prize Award finalists, spoke during the Founders Seminar and provided insights during several plenary panels. In addition, CSE organised a seminar together with the Swedish International Development Cooperation Agency entitled "The Political Economy of Defecation: Tales of Water and Excreta – The Imperative of Rainwater Harvesting, Reuse and Recycling in Cities of the South" and a related side event on rainwater harvesting.

Beyond the events she was personally involved in, or those which CSE organised, the work of her organisation had relevance to a whole series of programme points. In general, Ms. Narain said that water cannot become everybody's business until there are fundamental changes in the ways we do business with water. Policy will have to recognise that water management, which involves communities and households, has to become the biggest cooperative enterprise in the world.

CSE's work on rainwater harvesting was on display in Stockholm; the organisation has campaigned for rainwater harvesting to be accepted as an important element in the sustainable use of water. They succeeded in convincing the central and state governments in India to initiate several water harvesting projects, and applications have followed internationally. CSE has set up a National Water Harvesters Network to strengthen the hands of those who are promoting this strategy in water management. Among the many important publications from CSE on rainwater harvesting are the eye-opening masterpiece "Dying Wisdom: Rise, Fall and Potential of India's Water Harvesting System" (1997) and the encyclopedic "Making Water Everybody's Business; Practice and Policy of Water Harvesting" (2001).

Coping with climate variability and climate change was on the agenda in Stockholm. In this area, CSE has been very active. Through Ms. Narain, CSE became involved in the discussions preceding and succeeding the Rio conference and continuing in Kyoto. They remain very critical to the unfair

emission quotas set in Kyoto, favouring rich countries. Campaigning for global as well as local democracy, they support the argument that the atmosphere is a global common and should be equally shared by all citizens. For India, the effects of climate change could be disastrous, Ms. Narain said.

In addition to working for better decentralized water supply through rainwater harvesting, CSE has long been concerned with the other side of the coin – pollution of the limited water resource, a subject also discussed in workshops in Stockholm. In 2003 CSE launched a campaign on the issue of groundwater quality. National awareness about pesticide residue contamination was created through analytical studies on the quality of bottled water and soft drinks, both of which largely use groundwater. The studies were widely covered by national and international media. The ensuing uproar in Parliament led to a Joint Parliamentary Committee, which fully endorsed CSE's findings and its recommendations to address the larger issues of food safety and regulation.

CSE initiated early a programme of intensive field research on ecosystems and their relation with the human populations they support. The evidence, from India and elsewhere, supports a growing awareness that environmental degradation leads to human poverty, rather than the converse. This degradation puts a heavy load on women by increasing their daily chore to collect firewood and water to run their households. In CSE's work for fundamental human rights to cover basic human needs, integrated water resources management, with rainwater harvesting (RWH), is essential.

Convinced that a decentralised decision process is a guarantee against the gigantism favoured by central authorities, but so detrimental to the underprivileged part of the population, CSE works passionately for a transfer of decision power from the Centre to the village communities. The inspiration is the Gandhian republic of democratically governed villages. In the CSE publication "Down to Earth" the shortcomings of the Establishment are revealed, including undemocratic bureaucracy and technocracy dealing with droughts and floods, water and air pollution, and health and food safety.

Empowerment is important to CSE, which constantly informs through a steady output of timely web-based materials, publications and other learning aids, including many new initiatives for knowledge retrieval from ever widening networks. In all respects, environmental sustainability, respect for science, nature's diversity and traditional knowledge; equity and public participation; education and training, and documentation and pollution monitoring are important components of its work.

All of this, and more, was on display during a memorable World Water Week in Stockholm and 15th jubilee celebration of the Stockholm Water Prize.


Photo: SIWI

# The Stockholm Junior Water Prize

Photo: SIWI

The international Stockholm Junior Water Prize competition is, at its core, a soft endeavour, though one could argue that many exciting hard solutions are on display through it. As a grass-roots educational- and awareness-building activity, it focuses on the human dimension of young people in water management. It asks a fundamental question: what can we do now – today – to foster a more environmentally-aware and socially conscious water leader for the future.

At the 2005 World Water Week in Stockholm, one needed to look no further than the 47 young people from the 27 countries who participated. More specifically, one needed to look no further than three young South Africans – Pontso Moletsane, Motebele Moshodi and Sechaba Ramabenyane from Durban's Setjhaba Se Maketsee Combined School – who won the 2005 Stockholm Junior Water Prize for developing the "Nocturnal Hydro Minimiser."

South Africa's low annual rainfalls, combined with high evaporation, means that some communities experience a water scarcity that adversely affects the everyday lives of people. Also, research has shown that 35% of the water of an average household is used for irrigating gardens, which affects the limited water resources.

Therefore the young South Africans developed their revolutionary solution: the Nocturnal Hydro Minimiser. The electrically operated automatic watering system was designed to use water efficiently for irrigation by activating the water tap at night when evaporation levels were very low. The product watered the gardens only when the soil had lost the necessary moisture needed by the plants. Thereby, a very limited water resource could be used more efficiently. The Nocturnal Hydro Minimiser was outfitted with four electrodes inserted in the ground to detect when moisture levels had dropped.

As an invention, the Nocturnal Hydro Minimiser showed World Water Week participants the great potential to improve the lives of many rural communities in South Africa by ensuring that their gardens produce much-needed food while saving the very limited water resources.

But, as is often the case, the sum is worth more than its parts. The victory by the young South Africans is, in the words of their water minister, Ms. Buyelwa Sonjica, "one example of triumph over adversity, where children who are from a disadvantaged background, are even able to overcome all constraints related to their humble social backgrounds, to achieve the best results. This proves beyond reasonable doubt that any child given an opportunity could rise to any challenge."

That bodes well for our common future.

# The Stockholm Industry Water Award

Safe, clean drinking water is a prerequisite to good health. In a perfect world, the provision of safe drinking water is done in a consistent, sustainable manner. In our imperfect world, however, this isn't always possible. Crisis, disasters and emergency situations necessitate that alternatives be found when clean water isn't easily available. Tragedies of the last year, from the Indian Ocean tsunami to the Gulf Coast hurricanes, underscored the vulnerability of our drinking water systems. At those times, safe, clean drinking water is a prerequisite to survival.

During the World Water Week in Stockholm, the recipient of the 2005 Stockholm Industry Water Award, the Procter & Gamble Company, USA, present its winning PuR – Purifier of Water® drinking water treatment system. The product consists of a sachet of chemicals commonly used in conventional municipal water treatment. Each sachet contains powder to treat 10 litres of water and is effective in removing bacteria, viruses, parasites and some heavy metals in contaminated water. Since its introduction in 2000, PuR® has provided 260 million litres of safe, clean water. It has been used in the Philippines, Guatemala, Morocco, Pakistan, Haiti, Liberia, Bangladesh, Kenya, Uganda, Chad, Botswana, Malawi, Zimbabwe, Sudan, Iran, Ethiopia, Iraq, and in the tsunami ravaged region of South East Asia, where 15 million sachets were delivered – enough to treat 150 million litres of water.

World Water Week discussions focused very much on different hard and soft solutions. They also focused closely on the role of different stakeholders, from governments to non-governmental organisation to the private sector. Procter & Gamble – very much so a "bricks-and-mortar" hard-solutions oriented company – assumed both the initiative and the costs for developing the product. It also had the vision to realise to use "social marketing" in terms of distribution and education, was equally important. To that end, it has worked closely with non-governmental organisations, local and national governments and health organisations such as the International Federation of Red Cross and Red Crescent Societies and UNICEF to make the product available where needed.

Photo: SIWI

Photo: Procter & Gamble

Attendees at the World Water Week each received their own Purifier of Water® drinking water treatment satchet. Procter & Gamble, through an exhibition and presentations by company representatives, had multiple opportunities to present its vision on the holistic use of the product. Some criticism was heard during the week; that this is not the only product of its type, and that it is not a long-term, sustainable solution. Certainly, neither point could be disputed. The broader view, however, held, namely that the PuR – Purifier of Water® drinking water treatment system represented more than environmental window-washing. It represented an honest effort by a private sector actor wishing to make a positive contribution, and to do so in a collaborative and transparent way. That point could not be disputed as well.

# The Swedish Baltic Sea Water Award

The theme of the 2005 World Water Week in Stockholm, "Drainage Basin Management – Hard and Soft Solutions in Regional Development," encapsulated the work done by the Vodokanal St. Petersburg and its General Director, Felix Karmazinov as the winner of the 2005 Swedish Baltic Sea Water Award.

Drainage Basin Management: the Baltic Sea is the final repository for the waste from the activities of more than 80 million people in 12 countries living in the Baltic Rim, and the winner's efforts will in the long-run be a important for Russia's contribution to the health and management of this semi-enclosed brackish sea.

Hard Solution: steel-and-concrete, technically advanced facilities are in many ways the very definition of a hard solution. With completion of the Southwest Wastewater Treatment Plant, which went on-line in September 2005, 1.5 million citizens of the city no longer send on a daily basis the equivalent of 330 Olympic-size swimming pools of untreated wastewater straight into the Neva River and from there, the Gulf of Finland and the Baltic Sea.

Photo: SIWI

Soft Solution: To complete the SWTP Mr. Karmazinov and his colleagues at Vodokanal worked diligently in recent years to get the project finished under circumstances where many other issues have had a higher profile on the local agenda. They accomplished this in part through public awareness and stakeholder involvement. In doing so, Mr. Karmazinov and Vodokanal fostered an understanding that the city's wastewater must be cleaned. Many hands were shaken and meetings held along the way.

Regional Development: whether in a developed or developing country, multi-million dollar financing of such facilities does not come easily. The Baltic Sea is a regional resource, and problem. Mr. Karmazinov and Vodokanal recognised this and assembled an impressive collaboration of international and Russian actors to get the EUR 130 million needed to complete the project.

Untreated wastewater from St. Petersburg has been the Baltic Sea's single biggest pollution point source. Among the many benefits of eliminating this "hot spot" will be the eventual easing of problems caused by the excessive growth of algae, which reduce dissolved oxygen in the water and thus can kill other marine life. The completion of the treatment plant will not solve the whole problem of eutrophication in the Baltic Sea, but it will be important toward improving its water quality. Eutrophication, which is the overload of nutrients in aquatic systems, is one of the most serious environmental threats facing the Baltic Sea

Designing, financing, building and operating a major new wastewater treatment facility is among the "hardest" of solutions when seeking ways to reduce water quality degradation. It may not be appropriate in all situations. In this case it was the physical manifestation of a concerted, stakeholder-focused, transparent and international effort. As such, it found its own unique mix of hard and soft solutions for regional development.

# Convenors of the 2005 World Water Week

- Centre for Science and Environment, India
- Centre for Transdisciplinary Environmental Research (Stockholm University), Sweden
- Chalmers, Sweden
- Co-operative Programme on Water and Climate
- Council for the Stockholm-Mälar Region, Sweden
- DHI Water & Environment, Denmark
- DRM World Institute for Disaster Management
- Environment Canada,
- European Academy of Sciences and Arts
- European Commission
- Expert Group on Development Issues at the Ministry for Foreign Affairs (EGDI), Sweden
- Global Water Partnership
- Global Water Partnership-Mediterranean
- Globetree, Sweden
- Harvard University, United States
- Helsinki University of Technology, Finland
- Hydroinform, Prague, Czech Republic
- Institute for Social and Environmental Transition USA/ Nepal
- Institute of Water Modelling, Bangladesh
- Institute of Water Resources Planning, Vietnam
- International Association of Hydrological Sciences
- International Development Enterprises
- International Food Policy Research Institute
- International Hydropower Association
- International Water and Sanitation Centre
- International Water Association
- International Water Management Institute
- International Water Resources Association
- Israel/Palestine Center for Research and Information
- IUCN – The World Conservation Union
- IVL (Swedish Environmental Research Institute)
- Lake Victoria Region Local Authorities Cooperation
- Local Conflict Group (Swedish Water House)
- Northern Water Network
- Partners for Water and Sanitation (PAWS)
- Regional Land Management Unit (RELMA)
- Rotary International
- Secretariat of the 4th World Water Forum
- Stakeholder Forum
- Stockholm Environment Institute
- Stockholm International Water Institute
- Stockholm Office of Regional Planning and Urban Transportation (RTK)
- Stockholm County Administrative Board
- Stockholm Water Company
- Stockholm Water Foundation
- Swedish Institute for Climate Science and Policy Research at Linköping University
- Swedish International Development Cooperation Agency
- Swedish Meteorological and Hydrological Institute
- Swedish Ministry for Foreign Affairs
- Swedish Royal Institute of Technology
- Swedish Water House
- Swedish Water and Wastewater Association
- The 24 UN system entities that work on water issues and cooperate through 'UN-Water'
- The International Working Group guiding the Global Review of PSP
- The Resilience and Freshwater Initiative (Swedish Water House)
- Third World Centre for Water Management, Mexico
- Transparency International
- UN Millennium Project
- Union of the Baltic Cities
- United Nations Educational, Scientific and Cultural Organisation (UNESCO)
- United Nations Environment Programme – Finance Initiative
- Universities Partnership for Transboundary Waters
- University of Toronto, Canada
- Varim, Sweden
- VERNA Ekologi AB, Sweden
- Water and Sanitation for the Urban Poor
- Water and Sanitation Programme
- Water Environment Federation, United States
- Water Management Authority, Czech Republic
- Watershed Media Project
- Water Supply and Sanitation Collaborative Council
- Water Supply and Saniation Technology Platform
- World Agroforestry Centre (ICRAF)
- World Bank
- World Business Council for Sustainable Development
- World Economic Forum Water Initiative.
- World Health Organization
- World Meteorological Organization
- World Water Council

# WORLD WATER WEEK

in Stockholm
August 21–27, 2005

## Stockholm – Where the Water World Meets

Organised by the Stockholm International Water Institute, the World Water Week in Stockholm is the leading annual global meeting place for the world's diverse water community. It includes the Stockholm Water Symposium, topical plenary sessions and panel debates, scientific workshops, independently organised seminars and side events, exhibitions and festive prize ceremonies honouring excellence in the water field.

**www.worldwaterweek.org**

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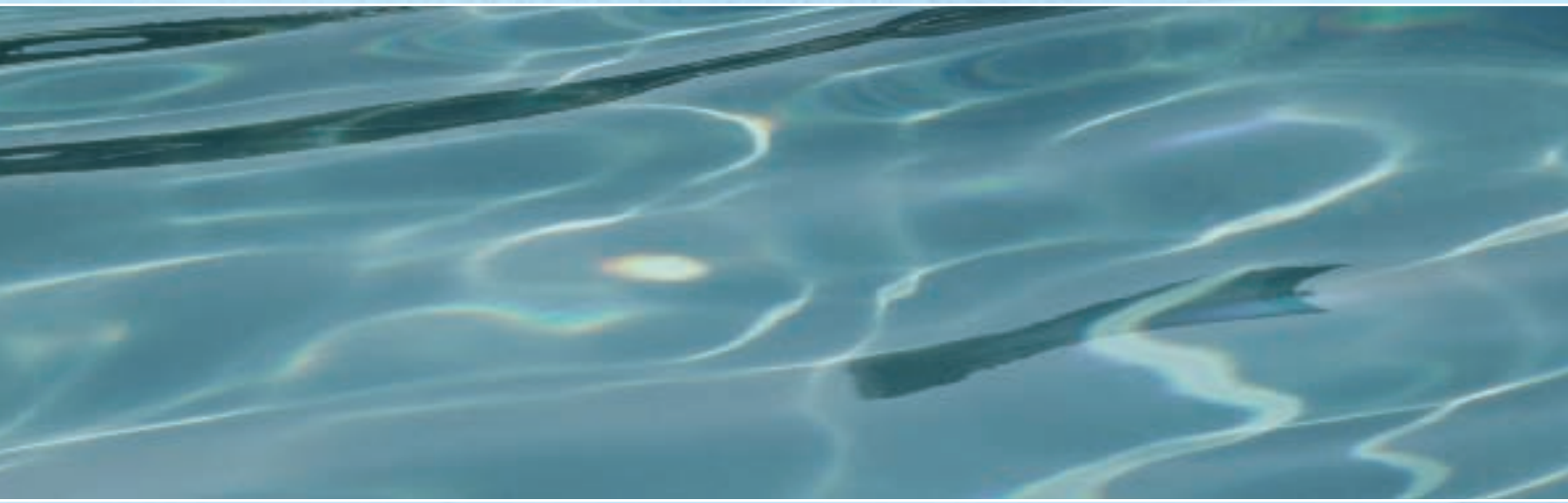
**www.siwi.org**



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